



GED Educational Resource Manual





GED Educational Resource Manual

Office of Multiple Pathways to Graduation

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Section One:

**TEACHING AND LEARNING
IN THE CONTENT AREAS**

INTRODUCTION: GED ESSENTIALS

In 2005, the New York City Department of Education’s Office of Multiple Pathways to Graduation (OMPG) was established to develop a portfolio of schools and programs targeted to the needs of over-age, under-credited (OA/UC) students. Data show that over-age and under-credited students are more likely to graduate if they stay in a comprehensive high school (with an OA/UC graduation rate of 19%) than to achieve a GED if they enter a GED program (with an OA/UC GED attainment rate of 17%). The Chancellor set a targeted goal to increase the GED attainment rate to at least 30%, nearly doubling it. To achieve this goal of creating a higher-performing GED model we convened a team of public and private educators who are experts in the fields of youth development, adolescent literacy, teaching, and administration. This team was charged with creating innovative GED program models with a blended focus on both GED attainment and post-secondary options – models tied directly to the age, credit profile, and differentiated learning needs of the target population. Access GED, which is a full-time program that offers an academically-rich curriculum and focuses on post-secondary planning, and Learning to Work (LTW) GED evening programs, part-time options for students with daytime commitments, resulted from this model development work. Committed to offering high-quality GED options, OMPG provided ongoing support through monthly professional development and coaching. And in the first year, the Chancellor’s goal of nearly doubling the GED attainment rate was exceeded.

GED programs designed to meet the needs of over-age, under-credited youth are faced with several challenges. For example, teachers have a limited amount of time to work with students before they age out of the system and they are required to cover content, concepts, and skills in five different subject areas. Additionally, both full-time and part-time GED programs admit students throughout the school year and students exit the programs at different times, so schools must become adept at integrating new students into ever-changing school communities. Part-time GED programs present further challenges: the hours are shorter, the facilities are not permanent, and – for many teachers and students – night school comes after a full day of employment and between other responsibilities. Since New York City supports student choice regarding enrollment at the age of 18 or older, it is our responsibility to provide high-quality GED options. And for young New Yorkers who will age out of the public school system before they complete all graduation requirements, a GED is the only means to attain a high-school equivalency or continue to post-secondary studies. Part-time GED programs, specifically, serve the needs of those who have daytime responsibilities such as work or family commitments. Therefore, we designed this manual to help full- and part-time GED teachers cover a broad amount of content through an instructional roadmap, or framework, for prioritizing core concepts, key skills, and habits of mind.

To create this manual, the Office of Multiple Pathways to Graduation collaborated with GED teachers and administrators to adopt standards, articulate instructional priorities and strategies, and assemble a collection of valuable resources for GED practitioners. The mission was to provide an instructional framework for full- and part-time GED programs and build upon it through reflections, conversations, and fieldwork.

The result of this collaboration and two years of professional learning is this GED Educational Resource Manual, which may be used to design a course of study that prepares students for the GED Test and facilitates their transitions to post-secondary education and careers. This manual establishes the following:

- Guidelines for what a student needs to know to be successful on the GED Test and make the transition to post-secondary education/careers;
- A set of instructional strategies to facilitate student achievement;
- Rigorous academic standards and high expectations;
- Evidence-based strategies and lesson plans that are flexible enough to be implemented within the wide variety of settings that accommodate and meet the needs of both full- and part-time GED programs;
- The Framework for Effective Instruction, as a means of planning, implementing, and observing teaching and learning.

We hope this resource manual pushes your thinking about the scope of content that needs to be covered in a GED preparation program that is equally focused on post-secondary transitions. Since engaging students is imperative for student success – not only in traditional secondary school settings but in GED programs as well – this manual couples student-centered learning with authentic reading materials and resources.

How to Use this Book

Introduction: GED Essentials

The first portion of this manual provides baseline information on the GED Test and resources for teaching and learning in GED programs, including the following:

- The ***Integration of Youth Development Philosophy in the GED Classroom*** provides a short overview for students and practitioners and lays the foundation for meaningful GED instruction;
- An ***Overview of the GED Test*** provides practitioners and students with a snapshot of the exam and includes content, levels of thinking, and contexts;
- The ***GED Resource Guide*** lists GED classroom resources including weblinks, teacher’s guides, texts, and periodicals.

Section One: Teaching and Learning in Five Specific Content Areas

This section addresses teaching and learning in the content areas. For each content area, the following are provided:

- ***Core beliefs and underlying philosophy*** from master teachers;
- ***Recommendations and teaching strategies*** to prepare students for the GED and beyond;
- ***GED Test content and composition***, with test specifications for each subject area;

- **Test-taking tips and strategies** for students;
- **Performance standards** to describe what students must know and be able to do in each subject area;
- **Differentiated instruction guidelines** and examples to plan learning experiences for students at three different levels: pre-GED/basic, GED-ready/complicated, and post-secondary/complex;
- A **GED Sample Test** to serve as a mini-predictor of how students will do on the GED Test.

Section Two: Teaching and Learning Across the Curriculum

The final section provides a common structure and language for planning lessons but, more importantly, demonstrates how the use of the workshop model can create an engaging, student-centered lesson that is responsive to the needs of the GED population. This section includes the following:

- A **description of the Framework for Effective Instruction (FEI)** that supports the development of lessons across the disciplines, and **introduces seven critical learning strategies** and a few key **metacognitive skills** as central components;
- **Practitioner templates** for planning, implementing, and observing lessons;
- **FEI-aligned lessons** that provide a rich sample of classroom activities.

Acknowledgements

This collection of resources and frameworks stands on the shoulders of several practitioners and administrators in the field.

The development of the Introduction and Section One of this resource was led by Steven Gleicher, an experienced GED teacher and administrator in the New York City Department of Education. The following individuals contributed their ideas, classroom knowledge, demonstrated tools and practices, and intensive experience within the GED classroom to make this resource a reality for all teachers:

Judy Caputo, Teacher, Manhattan Access GED Program;

Linda Correnti, Principal, Manhattan Access GED Program;

Derrick Griffith, Director and Principal, CUNY Prep;

Lynette Lauretig, Senior Instructional Manager, Office of Multiple Pathways to Graduation.

Section Two was written by Antonia Rudenstine, in collaboration with Lew Gitelman, and reflects The Center for Urban Education’s approach to the training and development of educators. We thank Steven Gleicher and

Linda Correnti for their critical contribution to the lessons included in this section (in particular for conceptualizing the following: *Graph Analysis*, *Coordinate Geometry*, *Speed Dialogue*, and *Life Expectancy and World Population*) without which this document would not exist.

This manual was produced by the New York City Department of Education Office of Multiple Pathways to Graduation, led by JoEllen Lynch, CEO, Partnership Support Office and Office of Multiple Pathways to Graduation and Leah Hamilton, Executive Director. The Office of Multiple Pathways to Graduation pilot GED program models are supervised by Cami Anderson, Senior Superintendent, District 79.

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Integration of Youth Development Philosophy in the GED Classroom

Underlying the content and process of meaningful GED instruction are practices that support the full development of young people. As a philosophy, youth development emphasizes providing young people with opportunities and support to develop competencies that enable them to grow, develop their skills, and become healthy, responsible, and caring youth and adults.¹

A central tenet of teaching and learning with a youth development approach is that **young people will take responsibility for their learning, and for learning how they learn.** The ultimate goal is to instill a love for learning that carries them far beyond the exam and stays with them throughout their lives.

As young adults, students must develop a clear, consistently updated **understanding of their progress, challenges, and next steps.** Through **ongoing assessments** and team-based supports, students learn how to **self-assess, articulate strengths, and take ownership of the process.**

Teaching and learning is transparent. Teachers provide students with copies of the GED Chart and curriculum outlines, and share their rationale for what students need to learn, how they are teaching it, and what they hope students will derive from the instruction.

Students are consistently encouraged to ask questions about what they don't understand and to confirm their knowledge. This is accomplished through **classroom discussions, informal conversations, reflective journals, student portfolios, and creative expression.**

Staff knows students well as individuals and learners. Staff treats students as young adults.

¹ National Clearinghouse on Families and Youth

The content of the curriculum is engaging. Even within the constraints of a part-time program charged primarily with preparing students to pass a multiple choice test, students encounter great and moving literature, the inventiveness of human scientific discovery, the power of data and evidence, the utility and beauty of mathematics in everyday life, and the relevance of national and world events to their lives and communities.

Overview of the GED Test

As an alternative pathway to a high school credential, the GED measures the lasting outcomes of a secondary education. The 2002 test series, the current administration, is comprised of five sub-tests: Language Arts, Writing; Language Arts, Reading; Social Studies; Science; and Mathematics. Candidates are required to demonstrate proficiency in two ways: achieve a total score of 2250 or greater, and a minimum score of 410 on each sub-test. Due to the comprehensive nature of the exam, the GED Test contains 240 questions and is generally administered over the course of two days; therefore, students will need to sustain concentration and build stamina.

Many successful GED programs are built around three core premises: reading is the fundamental skill that influences performance in all areas, the failure rate in mathematics is the highest of all of the sub-tests, and students must be able to compose a satisfactory essay in response to a given prompt. Teachers should plan learning experiences that focus upon higher-order critical thinking skills, problem solving, visual literacy, and communication. On-line professional development is available at <http://www.ket.org/ged2002/>.

Originally restricted to veterans, the GED is now open to adults 19 years of age or older, and 16-18 year olds who meet state eligibility requirements and are enrolled in approved GED preparation programs. The test is designed primarily for adults: all of the sub-tests feature community and workplace settings. As Learning to Work (LTW) GED evening students are older adolescents, many of them may be unfamiliar with contexts that are known to adults, for example, mortgages, employee benefits, and credit cards.

For detailed information about the GED, please refer to the GED map on the following page. For additional information about the GED Test in New York State, visit <http://www.emsc.nysed.gov/ged/>.

TEST AREA	CONTENT	CONTEXT
Language Arts Writing, Part I 50 Questions + Part II Essay/ 120 minutes	Sentence structure 30% Usage 30% Mechanics 25% Organization 15%	Workplace and community documents How-to texts Informational texts
Language Arts, Writing, Part II	An expository essay that explains, clarifies, or informs readers about a subject through personal observations, experiences, and knowledge.	
Social Studies 50 Questions/70 Minutes	US history 25% World history 15% Geography 15% Civics and government 25% Economics 20%	60% Global perspective 40% United States Historical documents - one of the following: Declaration of Independence, US Constitution, or landmark Supreme Court cases One practical document e.g., tax form, voter's guides
Science 50 Questions/80 Minutes	Life science 45% Physical science 35% Earth and space science 20%	Unifying concepts and processes Science as inquiry Science and technology Science in social and personal perspectives History and nature of science
Language Arts, Reading 40 Questions/65 Minutes	Literary text 75% At least one of each: -Poetry -Drama -Prose fiction before 1920, 1920-60, post- 1960 Non-fiction 25% Two of the following three: -Non-fiction prose -Critical review of visual/performing arts -Workplace and community documents	Selections represent diversity of candidates' backgrounds and experiences.
Mathematics Part I: calculator use permitted 25 Questions/45 Minutes Part II: calculator not permitted 25 Questions/45 Minutes	Number operations and sense 20-30% Measurement and geometry 20-30% Data analysis, probability, and statistics 20-30% Algebra, functions, and patterns 20-30%	Mostly real-world applications: Workplace, citizenship, technology, and consumer.

Adapted from ACE www.acenet.edu

COGNITIVE LEVELS	FORMAT
All items measure candidate's ability to revise and edit workplace and informational documents.	Multiple choice 100% Passages are 12-22 sentences long; sentences and paragraphs are numbered Correction 45% Revision 35% Construction shift 20%
Synthesis	One essay in response to writing prompt
Comprehension 20% Application 20% Analysis 40% Evaluation 20% All questions require higher-level thinking skills and prior knowledge of important social studies concepts, principles, skills, and events.	Multiple choice 100% Prose 40% Visual text 40% Written and visual text 20%
Candidates must demonstrate that they can interpret and analyze different types of visual text. Articles written at a reading level that does not interfere with assessment of candidate's knowledge and application of science principles.	Multiple choice 100% Text Visuals (e.g., graphs, tables, diagrams) Up to 60% of questions presented with visuals. Approx 25% of questions are grouped into item sets that share material.
Comprehension 20% Application 15% Analysis 30-35% Synthesis 30-35% Questions measure candidate's ability to comprehend and interpret workplace and academic reading selections and to apply those interpretations to new contexts.	Multiple Choice 100% Excerpts range from 200 to 400 words Poetry excerpts are 8-25 lines Each selection is preceded by a purpose question.
Procedural 20% Conceptual 30% Application/modeling/problem-solving 50%	Multiple choice 80% Alternate format 20% Standard grid 16% Coordinate grid 4%

GED Resource Guide

Electronic

<http://www.gedtest.org>

American Council on Education's Official GED site: information for teachers and students

<http://thirteen.org/edonline/itv>

Over 50,000 multimedia resources including full-length videos, video segments, image library, lesson plans, quiz creator, available through New York State Education Department via Channel 13. Access code required.

<http://www.ket.org/ged2002>

Online professional development and support from the creators of GED Connections television programs

<http://www.emsc.nysed.gov/ged>

The home page for GED information from the New York State Department of Education

<http://www.lacnyc.org>

Referral, training, information, and technical assistance services for adult education and GED

www.pbs.org/literacylink

Interactive GED student site: special attention is given to teaching writing, mathematics, and critical thinking/visual literacy; electronic classrooms available by license

<http://www.cde.state.co.us/cdeadult/GEDlinks.htm>

Colorado's all-inclusive site

<http://www.floridatechnet.org/GED/teacher/GED2002/..%5CGED2002%5CPDFTOC.htm>

Florida GED Teachers' Handbook

<http://www.floridatechnet.org/GED/LessonPlans/Lessons.htm>

Florida Lesson Plan Bank

<http://www.floridatechnet.org/gedplus/2006Institute/GEDPLUSCurriculumGuide06.pdf>

Florida GED Plus guide (295 pages)

<http://www.nwlincs.org/NWLINCWEB/gedclass.htm>

Northwest LINCS' classroom resources

<http://www-tcall.tamu.edu/taesp/resources/ged02lesson/ged2002toc.htm>

Texas GED Lessons

<http://www.valrc.org/publications/gedasproject>

Virginia Workforce Development Education's GED as Project Inquiry-based collaborative exploration of GED.

<http://www.gedmath.com>

<http://www.gedwriting.com>

<http://www.gedreading.com>

<http://www.gedsocialstudies.com>

<http://www.gedscience.com>

Contemporary's series of GED sites: section for students includes flashcards, test practice, and more; section for teachers contains teaching strategies and other links

<http://www.gedpractice.com>

Steck Vaughn's GED site: section for students includes test practice

<http://www.womenemployed.org/index.php?id=27>

Competencies and lessons for fast-track GED

These websites provide icebreakers that are ideal to use during the first few days of class:

http://www.education-world.com/a_lesson/lesson/lesson196.shtml

http://www.educationworld.com/a_lesson/lesson/lesson318.shtml

<http://adulted.about.com/od/icebreakers/a/onthehunt.html>

<http://www.pde.state.pa.us/able/cwp/view.asp?a=13&Q=71697>

GED Preparation: Lesson Plans by the Pennsylvania Department of Education

<http://www.gogedgo.org/GED/Text/GEDres.html>

GED Preparation: Resources on the Web by the Maryland Adult Literacy Resource Center

http://www.uvm.edu/~dewey/reflection_manual/activities.html

Chapter 5 of the Manual for Leaders and Educators: Facilitating Reflection Activities, by University of Vermont Faculty

http://education.qld.gov.au/public_media/reports/curriculum-framework/productive-pedagogies/html/manual.html

Classroom Reflection Manual by the State of Queensland Department of Education

<http://www.usability.gov/design/cardsort.html>

Information on Open and Closed Card Sorting by the US Department of Health and Human Services

http://www.educationworld.com/a_lesson/02/lp251-03.shtml

Lesson Planning Article: Jeopardy (a way to review material) by Education World

<http://www.utexas.edu/academic/diia/research/projects/hewlett/cooperative.php>
Cooperative Learning Structures (including the Gallery Walk) by the University of Texas Division of Instructional Innovation and Assessment

<http://www.cct.umb.edu/gallerywalk.html>
The Gallery Walk activity (as a way to determine prior knowledge) by University of Massachusetts Graduate College of Education

http://www.education-world.com/a_lesson/archives/hunt.shtml
Scavenger Hunt Exercise by Education World

http://www.readwritethink.org/lessons/lesson_view.asp?id=247
Working with Similes in Wartime Poetry Article by Read Write Think; includes “Hot Seat” activity

www.google.com/images
Resource to search images by Google

<http://www.teachertube.com>
Resource for teacher media clips and video by Teacher Tube

<http://www.amazon.com/Get-Together-Problems-Groups-Grades/dp/0912511532>
Get it Together: Cooperative Math Lessons Grades 4-12 book seen via Amazon.com

<http://serc.carleton.edu/introgeo/gallerywalk/references.html>
References for Gallery Walk Math and Science Lessons by Starting Point

<http://www.mathnstuff.com/papers/games/whohas/whointr.htm>
“Who Has” Math Game by Math N Stuff

<http://www.mathlibs.com>
Math Libs Game by Math Libs

http://www.csun.edu/science/ref/measurement/data/graphpaper/linear_1.pdf,
Graph Paper PDF file

<http://incompetech.com/graphpaper/plain>
Resource to download graph paper

<http://funbasedlearning.com/algebra/graphing/default.htm>
Graphing games for Algebra Graphing by Fun Based Learning

<http://www.techtrekers.com/sim.htm>
Educational Simulations for various subjects by Tech Trekers

<http://www.purplemath.com/modules/index.htm>
Algebra resources, lessons, and website by Purplemath

<http://www.sciencesimulations.com/simulations.htm>
Science Simulations and Experiments by Science Simulations

<http://www.explorelearning.com>
Teacher resource for information and lesson plans, including interactive math and science simulations by Explore Learning

www.hyperhistory.com
Resource for historical facts and information on the world by The World History Project

www.perseus.tufts.edu
Perseus Digital Library of the Humanities by Tufts University

www.fordham.edu/halsall
Internet History Sourcebooks Project: a collection of historical texts by Fordham University

<http://www.webenglishteacher.com>
Resource for teachers on the English subject, including study guides and summaries of literature by Web English Teacher

<http://www.awesomelibrary.org/english.html>
Resource for the English and Language Arts subjects, including lesson plans, by Awesome Library

<http://www.ncte.org>
Resource for English teachers, including professional development information and teaching resource collections by the National Council of Teachers of English

All web links in this manual are correct as of the publication date but may have become inactive or otherwise modified since that time.

Print: Instructor's Guides

- Literacy Link Teacher's Guide (PBS) – how to use workbooks, videos, and literacy link website
- GED Instructor's Resource Guide (Steck Vaughn) – strategies and lesson plans
- Official GED Test Administrator's Manual (Steck Vaughn) – sample essays, predictor questions classified according to content and cognitive levels

Print: Texts

- Cracking the GED (Princeton Review) – five-subject book, focuses upon test-taking strategies, GED level
- Kaplan GED 2007 – five-subject book, concise format
- Access: Critical Thinking Skills (Steck Vaughn) – text illustrates higher-level thinking skills in reading, science, and social studies; written for Pre-GED level

Print: Periodicals

- NY Times – may be available at no cost to schools
- The Daily News – available at no cost to schools
- USA Today – executive summaries, graphics, etc.
- Newsweek – readability is appropriate for GED level

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*Teaching and Learning
in the Content Areas:*

Reading

The vision... is that all students must have the opportunities and resources to develop the language skills they need to pursue life's goals and to participate fully as informed, productive members of society.

*– The International Reading Association (IRA) &
The National Council for Teachers of English (NCTE)*



NYCTM

**Department of
Education**

TEACHING AND LEARNING IN THE CONTENT AREAS: READING

Introduction

Most students know *how* to read. However, this is much different than understanding, applying, analyzing, and synthesizing what they read. We read and process words and graphics without even thinking about it. In every aspect of life reading (in some form) is as necessary as breathing. And, the GED is no different. Across all five subject area tests, students will be asked to demonstrate specific types of reading: communication, information processing, graphic literacy, and problem solving.

Classroom Strategies and Recommendations

1) Emphasize the value of reading, both the pragmatic reasons and the less tangible rewards of reading. That is, emphasize how reading enables you to acquire new information, respond to the needs and demands of society and the workplace, and to feel a sense of personal fulfillment. The ability to learn about new subjects and find helpful information on anything from health problems to consumer protection is extremely important.

2) Create a classroom library that will promote reading from a wide range of literature in many genres permitting students to build an understanding of the scope of human experience. Assist students in making general connections and personal connections relevant to their own lives. Students will develop an understanding of and respect for diversity through reading literature whose content and/or authors are from various parts of the world. As they read, encourage your students to see commonalities and universal themes that connect humanity, rather than focus on the surface differences in language usage, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles. Enable your classroom to be a bridge between young adulthood and relevant literature.

Note: Start with a Reading Survey to create a classroom library that will be of interest to your students.

3) Establish an allotted time for reading. Too often, we hear people say they have no time to read anymore. For young adults, who are technologically inundated, time is even more limited. Let your classroom provide a space where students can read silently and temporarily escape from the stress of the “real world.” Set aside a minimum of 20-30 minutes for silent reading. This will help your students build the concentration and stamina it takes to stay focused and attentive when reading passages on the GED. We all know that reading requires active concentration. As students read, they put in a great deal of effort looking at the words, figuring out meanings, and building up images, thoughts, and opinions within their minds. Moreover, if they are reading and their concentration stops, even for a second, their comprehension stops. Most likely, they will have to go back and reread the passage; this can waste precious minutes on a GED exam. Students can practice developing reading stamina by starting with 10 minutes of silent reading and adding an additional 5-10 minutes during each session. The space should

have limited distractions. Also, emphasize how getting enough sleep and eating the right foods will benefit concentration and build reading stamina.

Note: Students can use a reading log to record what they are reading. Teachers can use the reading logs as well to maintain the overall status of the class.

4) Create an environment where students will feel comfortable breaking down texts in an effort to make meaning. Demonstrate how to utilize strategies to comprehend, interpret, evaluate, and appreciate texts. Students should draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sentence structure, context, graphics).

5) Inform students of the necessity to adjust their understanding as they approach different texts. A text can be written for a different audience and for a different purpose. As they read, they can apply knowledge of language structure, language conventions, figurative language, and genre to create, critique, and discuss.

6) Encourage your students to conduct research. They should use resources in electronic or hard-copy formats, and start with topics of their interests and/or current issues. In collecting information, they will practice evaluating and synthesizing data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience. At one time, experts predicted the impending death of the written word, but ironically, the internet has made reading more and more a part of people's daily lives. The internet is an enormous new source of information and recreation, and essentially most internet communication is based on the written word or graphics (icons, etc.). The internet has become a "primary" resource for most, and the ability to effectively utilize internet information and judge the authenticity of this material is an essential skill for students as they move beyond the GED. This skill requires proficiency in both reading comprehension and critical thinking. Aside from the internet usage, there are software programs, like Microsoft Excel, that have the ability to process and analyze the exact same data in endless variations of charts and graphs.

7) Encourage students to utilize the competencies developed in reading as a resource for developing an understanding of content in every discipline.

8) Promote reading every day. Encourage your students to read as much as possible at every opportunity – whether it's a newspaper, magazine, or book – even if it's on the internet. Outside of the school day and on weekends, they should always have something ready to read if the time should arise (riding the train/bus, waiting in line, waiting for an appointment, etc.).

9) Develop a Reading Workshop with the following components:

- **Read Aloud:** Teachers read aloud to their class in a dramatic and engaging way by changing the inflection of their voice where necessary in order to convey greater meaning to the students/listeners.

- **Shared Reading:** Teacher and students read together. The teacher begins and the students follow along and join in. Together, they add new words to the Word Wall. By using this strategy, teachers should see improved reading fluency and accuracy in their students.
- **Guided Reading:** Teachers guide the interaction of students with the text through discussion of shared reading problems and critical thinking to solve their problems. Students may read orally or independently working in small groups.
- **Independent Reading:** Students select books from the classroom library and read on their own during a specific time in class every day, and reflect upon what they are reading verbally or in their writing journals.

10) Do “Word Work” to develop student fluency and vocabulary.

- **Fluency:** Students read quickly and accurately (silently and aloud) with expression and proper emphasis. Students begin to keep their eyes on several words ahead of their voice in order to read parts of sentences with more meaning.
- **Vocabulary:** Students should recognize and use words that appear often in print and in conversation. New words should be identified, and students should use knowledge of known words to determine meaning. New words can be added to the Word Wall.²

11) Make sure students understand the definition of non-fiction prose and its main forms.

Non-fiction prose consists of written works that deal with real people, places, events, and social issues. The three main types of nonfiction prose are:

- **Informative essays:** educate the reader about a selected subject.
- **Critical essays:** present an in-depth analysis of a subject.
- **Reviews:** briefly describe the content of a work of art and evaluate its strengths and weaknesses.

12) Recognize that the more comfortable a student is with reading a piece of literature, the better he/she will perform on the GED exam. For example, a student who is answering questions about a piece of poetry for the first time may not understand how the structure of a poem can contribute to its overall meaning. Therefore, one of the most important things you can do is expose your students to each genre of literature that they will encounter on the GED exam. Although you do not know the exact literature from which excerpts will be chosen, your students will have had the experience of reading and practicing skills within each type/genre (poetry, drama, fiction, non-fiction).

² #9 and #10 from *A Comprehensive Approach to Balanced Literacy: A Handbook for Educators K-6*. Published by the NYC Department of Education, Children First Initiative, c.2003. From Section 1 (grades 6-9).

Tips for Teaching Non-Fiction Prose

Adapted from Contemporary/McGraw-Hill www.gedreading.com

- Encourage students to read columnists in newspapers and magazines whose writing could be considered literary and whose work might even appear on the Language Arts, Reading Test. Examples include Dave Barry, P. J. O'Rourke, Anna Quindlen, and William Safire.
- If your school/class doesn't already have one, perhaps your class can create a newsletter, written for and by students. Students can practice different types of writing, including commentaries on arts and entertainment they have seen, heard, or read. Interesting or popular TV shows, movies, books, music/dance/theater performances can be reviewed. Students can model their writing after a professional example.
- Students can bring in business-related documents they receive in the mail or at work. Students can also create their own business documents based on their experiences at work, at home, or in the classroom.

13) Remember that the goal of this is for your students to be prepared for the exam, college, a career, and eventually whatever the future holds. That is, to have the skills and metacognitive strategies to break down a difficult text because, ultimately, reading is the key that will open doors to information. With proficient reading skills, students will have access to all of the accumulated knowledge of the great minds and ideas of the past and present. There are many great men and women in the world, and through reading, students can communicate with the greatest minds that have ever lived: the smartest scientists, the wisest philosophers, the best poets, and the most talented storytellers.

GED Test Content and Composition: Language Arts, Reading

According to the American Council on Education (ACE), it is explicitly stated that literature will come from a diverse background of authors in order to reflect the diversity among the GED test candidates. ACE also states that, in order to ensure diversity, the subject matter chosen reflects multicultural backgrounds, various age groups, and a range of “life” experiences. The selected authors will be of a recognized stature and any of the pieces selected could be found in a high school library.

CONTENT AREA	PERCENT	TOPICS THAT MAY BE COVERED
Fiction and Literature	75% (five reading selections)	<ul style="list-style-type: none"> ■ Poetry ■ Drama ■ Prose fiction before 1920 ■ Prose fiction 1920 – 1960 ■ Prose fiction after 1960
Non-fiction	25% (two reading selections)	<ul style="list-style-type: none"> ■ Non-fiction prose ■ Critical review of visual and performing arts ■ Workplace and community documents, such as mission and goal statements, rules for employee behavior, legal documents, letters and other communication, and excerpts from manuals

The selected excerpts usually range from 200-400 words. The length of a selected poem will generally consist of 8-25 lines. Each excerpt will be followed by four to eight questions. There are a total of 40 multiple choice questions, for which students will have 65 minutes.

Types of Questions

The Language Arts, Reading portion of the GED, and the entire GED exam for that matter, presents questions in the design of Bloom’s Taxonomy – the hierarchy of critical thinking skills. The Reading component includes questions that require the following skills: Comprehension, Application, Analysis, and Synthesis.

QUESTION TYPE	PERCENT	DESCRIPTION
Comprehension	20% (8 questions)	Comprehension skills assess the students’ ability to understand the basic meaning and intent of the passage.
Application	15% (6 questions)	Application skills assess the students’ ability to use information in a new context or situation.
Analysis	30-35% (13 questions)	Analysis skills assess the students’ ability to break down information into its parts. This requires understanding of the writer’s craft – for example, examining specific words or the general mood created.
Synthesis	30-35% (13 questions)	Synthesis skills assess the students’ ability to make connections among various parts of the text or to integrate information from outside the passage with information within the passage.

Test-Taking Tips and Strategies³

- Each excerpt is preceded by a purpose question that appears in bold before each selection; because the selection is part of the whole, the question is designed solely to help students focus and provide a frame for reading the text out of context. You are not asked to answer the purpose question.
- It is important to glance to the end of the excerpt to see the source of selection. You may recognize the piece or the author, or the title itself may provide insight. Familiarity with texts and authors can boost your confidence during the exam.
- Reading the passage first or reading the questions first? This is really your personal preference. Find a reading test-taking strategy that works best for you. Some test-takers benefit from looking at the test questions before reading the actual selection; others prefer to read the selection first.
- Use the numbers alongside the selection. These are the line references that may also appear in questions; these line references will direct students to reread specific lines of the text. It is a good idea to read a few lines before and after the indicated lines in order to put them in context.
- When reading an excerpt of a play/drama, always take into consideration all the text, even what is set off in [square brackets] or *stage directions* (which are usually *italicized*) in plays. These sections are important because they include significant information about the setting and characters' actions and emotions, and may help you choose the correct answer.
- To find the meanings of unfamiliar words, use the context of the surrounding words and sentences.
- Read the questions carefully to determine what exactly is being asked. An answer choice may be a true statement, but it may not answer the particular question that is asked. Therefore, you should read through all the multiple choice answers so you can choose the answer that is most accurate.

³ Adapted from *Pass the GED: Language Arts, Reading Test: Five Steps to Test Success*, 2003, Train Publishing, Distributed by New Readers Press, Publishing Division of ProLiteracy, used by permission.

PERFORMANCE STANDARDS: READING

ACROSS CONTENT AREAS ⁴	FICTION/ LITERATURE	NON-FICTION	POETRY	DRAMA
<ul style="list-style-type: none"> ■ Activating relevant prior knowledge or schema before, during, and after reading. ■ Determining the most important ideas and themes for further focus and exploration. ■ Asking questions of themselves, the author, and the text. ■ Creating visual, auditory, and sensory images to deepen their understanding of the text. ■ Drawing inferences from the text by using their prior knowledge or schema to reach conclusions and make judgments or predictions. ■ Retelling, summarizing, or synthesizing to better understand what one has read. ■ Using fix-it strategies to solve comprehension problems (e.g., re-reading, keeping a list of new words, taking notes, etc.). 	<ul style="list-style-type: none"> ■ Making inferences. ■ Identifying theme. ■ Getting meaning from context. ■ Identifying plot elements. ■ Applying ideas. ■ Identifying cause and effect. ■ Visualizing and analyzing character. ■ Analyzing tone and mood. ■ Identifying and interpreting figurative language. ■ Comparing and contrasting. ■ Understanding setting. ■ Identifying conflict. ■ Identifying point of view. ■ Understanding sequence. 	<ul style="list-style-type: none"> ■ Finding the main idea and supporting details. ■ Summarizing main ideas. ■ Restating information. ■ Applying ideas. ■ Making inferences. ■ Identifying style and tone. ■ Recognizing author’s viewpoint. ■ Detecting author bias. ■ Drawing conclusions. ■ Comparing and contrasting ideas. ■ Distinguishing fact from opinion. 	<ul style="list-style-type: none"> ■ Identifying the effects of rhythm and rhyme. ■ Interpreting figurative language. ■ Interpreting symbols and images. ■ Making inferences. ■ Interpreting theme. 	<ul style="list-style-type: none"> ■ Interpreting dialogue. ■ Understanding stage directions and punctuation. ■ Recognizing and understanding plot. ■ Inferring character. ■ Understanding motivation. ■ Interpreting theme. ■ Identifying conflict.

The GED reading standards were chosen for this document to be the most accessible and practical for its users. GED teachers will find the language in which these standards have been presented is the same of the GED Testing Service, ACE, and most GED publications. It is recommended that teachers use the “Habits of Good Readers” as a central component to their instruction of the four main reading genres. Research has confirmed that having strong isolated reading skills does not necessarily create a proficient reader as once was thought. Rather, a proficient reader is defined as one who is metacognitive; that is, one who thinks about their own thinking strategies while reading. Using the habits of good readers in all the content areas to teach the necessary skills to pass the GED enables your students to pass the GED and enter college or the workplace confidently.

⁴ Adapted from Keene, Ellin Oliver, and Susan Zimmermann. *Mosaic of Thought: Teaching Comprehension in a Reader’s Workshop*. Portsmouth, NH: Heinemann, 1997. 22-23.

DIFFERENTIATED INSTRUCTION: LANGUAGE ARTS, READING

The following examples illustrate how achievement of standards can be assessed through a continuum of increasing complex questions and tasks. Each example includes a reading and a chart with activities for students along a continuum of basic to complex.

CONTENT TYPE: POETRY	STAGE 1 BASIC	STAGE 2 COMPLICATED	STAGE 3 COMPLEX
<p>Text: “<i>Sympathy</i>” by Paul Laurence Dunbar (1899)</p> <p><i>Skills Developed:</i></p> <p><i>Identify the effects of rhythm, rhyme, and repetition; interpret figurative language; interpret symbols and images; make inferences; interpret theme; understand setting; analyze tone and mood.</i></p>	<p>Summarize each stanza, identify and interpret the use of repetition, and understand setting.</p> <p>Writing Activity: Summarize the main idea and/or action of each of the three stanzas individually.</p> <ul style="list-style-type: none"> ■ 1st Stanza - Narrator establishes spring as the setting. A caged bird is singing as the first signs of spring are described. ■ 2nd Stanza - Narrator describes this same bird in a more violent scene, where there is blood on the bars of the cage from the beating of its wings. ■ 3rd Stanza - Narrator understands this bird’s singing, not as a song, but a prayer-despite its bruises and sores. 	<p>Compare and contrast, and identify author’s tone/ mood and point of view.</p> <p>Compare and contrast the mood of the first two stanzas. (There is a contrast in the mood of the first two stanzas. One is peaceful and serene; the other is violent and bloody.)</p> <p>The narrator uses the subjective pronoun “I” to show understanding of the bird’s plight. Explain what these direct statements and repetition suggest about the narrator’s experience. (This suggests that, like this bird, the narrator identifies with the bird and may be “caged” or have been “caged.” These can be in ways that are real and/or felt.)</p> <p>Students may also speculate on the title of the poem “Sympathy” in relation to the content. (An understanding of the suffering of others.)</p>	<p>Interpret symbols, make inferences, interpret theme, and apply ideas.</p> <p>Writing Activity: Learning that both of Dunbar’s parents were former slaves – and that his father, in particular, was an escapee, who then went on to fight in the Civil War – may contribute to the reader’s analysis of the poem’s use of symbols. Create a list of examples of what the “bird” and “cage” may symbolically represent to the author or the reader.</p> <p>Writing Activity: Maya Angelou, an African American writer, titled her autobiography <i>I Know Why the Caged Bird Sings</i>. With this in mind, speculate on the theme of Ms. Angelou’s autobiography in relation to the overall theme of Dunbar’s poem.</p>

Sympathy by Paul Laurence Dunbar (1899)

I know what the caged bird feels, alas!
 Ah me, when the sun is bright on the upland slopes,
 when the wind blows soft through the springing grass
 and the river floats like a sheet of glass,
 when the first bird sings and the first bud opens,
 and the faint perfume from its chalice steals.
 I know what the caged bird feels.

I know why the caged bird beats his wing
 till its blood is red on the cruel bars,
 for he must fly back to his perch and cling

when he fain would be on the bow aswing.
 And the blood still throbs in the old, old scars
 and they pulse again with a keener sting.
 I know why he beats his wing.

I know why the caged bird sings.
 Ah, me, when its wings are bruised and its bosom sore.
 It beats its bars and would be free.
 It's not a carol of joy or glee,
 but a prayer that it sends from its heart's deep core,
 a plea that upward to heaven it flings.
 I know why the caged bird sings.

CONTENT TYPE: NONFICTION	STAGE 1 BASIC	STAGE 2 COMPLICATED	STAGE 3 COMPLEX
<p>Text: <i>The Autobiography of Malcolm X as told to Alex Haley. (1965)</i></p> <p><i>Skills Developed:</i></p> <p><i>Find the main idea and supporting details, summarize main ideas, restate information, apply ideas, make inferences, identify style and tone (detect author’s bias), draw conclusions, compare and contrast ideas, recognize author’s viewpoint, distinguish fact from opinion.</i></p>	<p>Summarize main ideas and supporting details, make inferences, and draw conclusions.</p> <p>Describe the setting of the excerpt and identify characters.</p> <p>Infer the reaction of the prison officials toward inmates who were interested in books.</p> <p>Explain why Malcolm would be annoyed with the “lights out” at 10pm rule.</p>	<p>Make inferences, identify a use of figurative language, and draw conclusions.</p> <p>Infer what the general population thought about the weekly debates between the teams of inmates.</p> <p>Writing Activity: Malcolm refers to certain inmates as “walking encyclopedias.” Determine what literary technique is being used and summarize the author’s meaning of the comparison.</p> <p>If Malcolm X were alive today, which of the following statements would he be most likely to support?</p> <ul style="list-style-type: none"> ■ Classroom instruction is not effective. ■ Debates often result in arguments. ■ People have the ability to educate themselves. ■ Prison libraries are poorly stocked. ■ University students know less than self-taught convicts. 	<p>Identify style and tone, recognize viewpoint and opinion, and apply ideas.</p> <p>Writing Activity: Compose a paragraph explaining the major belief that Malcolm conveys in the passage.</p> <p>Writing Activity: <i>Traditionally, debate has been an important element in many literary circles. It provides for a free and lively discussion of literature and clarification of ideas.</i></p> <p>Identify words or phrases from the excerpt that show Malcolm’s feeling about debates.</p>

Excerpt from *The Autobiography of Malcolm X as told to Alex Haley (1965)*

From *The Autobiography of Malcolm X* by Malcolm X and Alex Haley, copyright © 1964 by Alex Haley and Malcolm X. Copyright © 1965 by Alex Haley and Betty Shabazz. Used by permission of Random House, Inc.

The Norfolk Prison Colony’s library was in the school building. A variety of classes was taught there by instructors who came from such places as Harvard and Boston Universities. The weekly debates between inmate teams were also held in the school building. You would be astonished to know how worked up convict debaters and audiences would get over subjects like “Should Babies Be Fed Milk?”

Available on the prison library’s shelves were books on just about every general subject. Much of the big private collection that Parkhurst had willed the prison was still in crates and boxes in the back of the library—thousands of old books. Some of them looked ancient: covers faded, old-time parchment-looking binding. Parkhurst, I’ve mentioned, seemed to have been principally interested in history and religion. He had the money and special interest to have a lot of books that you wouldn’t have in general circulation. Any college library would have been lucky to get that collection.

As you can imagine, especially in a prison where there was heavy emphasis on rehabilitation, an inmate was smiled upon if

he demonstrated an unusually intense interest in books. There was a sizable number of well-read inmates, especially the popular debaters. Some were said by many to be practically walking encyclopedias. They were almost celebrities. No university would ask any student to devour literature as I did when this new world opened to me, of being able to read and understand.

I read more in my room than in the library itself. An inmate who was known to read a lot could check out more than the permitted maximum number of books. I preferred reading in the total isolation of my own room.

When I had progressed to really serious reading, every night at about ten pm I would be outraged with the “lights out.” It always seemed to catch me right in the middle of something engrossing.

Fortunately, right outside my door was a corridor light that cast a glow into my room. The glow was enough to read by, once my eyes adjusted to it. So when “lights out” came, I would sit on the floor where I could continue reading in that glow.

CONTENT TYPE: DRAMA	STAGE 1 BASIC	STAGE 2 COMPLICATED	STAGE 3 COMPLEX
<p>Text: <i>A Raisin in the Sun</i> by Lorraine Hansberry (1959)</p> <p><i>Skills Developed:</i></p> <p><i>Understand plot, infer character, understand motivation, interpret theme, understand stage directions and punctuation, interpret dialogue, identify conflict, identify and explain uses of figurative language.</i></p>	<p>Infer character, identify conflict, determine tone/mood, understand stage directions.</p> <p>Infer Walter’s occupation, and explain how this work makes him feel.</p> <p>Describe Walter’s dream.</p> <p>Identify and explain the tone of conversation (dialogue) between Walter and his mother.</p> <p>Identify signs of conflict in the dialogue and/or stage directions.</p> <p>Explain how the stage directions are important to visualizing and interpreting the scene.</p> <p>Determine what is most important in life to Walter.</p>	<p>Infer character, compare and contrast, understand motivation.</p> <p>Mama mentions a time when “freedom” was “life.” Determine what time period this was in US history for African Americans and connect with Mama’s response. Explain Mama’s attitude toward what is most important in “life” as compared to Walter’s. Describe how Walter’s attitude makes his mother feel.</p> <p>Here are some famous words about money. In Mama’s opinion, what do you think her character would say in response to each of these quotes? A. Money is the root of all evil. B. Time is money. C. Money is power. D. More money, more problems. E. It’s not the money, it’s the principle. F. Money changes people.</p>	<p>Identify and explain figurative language (simile and metaphor), apply new ideas, compare overall theme.</p> <p><i>Hay for the Horses</i> (excerpt) By Gary Snyder</p> <p>“I’m sixty-eight” he said, “I first bucked hay when I was seventeen. I thought, that day I started, I sure would hate to do this all my life. And dammit, that’s just what I’ve gone and done.”</p> <p>Compare this poet’s view on his “occupation” with Walter’s description of his job. Assess whether Walter imagines his future will look similar to what the above excerpt conveys.</p> <p>Lorraine Hansberry used a line of Langston Hughes’ poem, “Dream Deferred,” as the title of her drama, <i>A Raisin in the Sun</i>. Compare the theme of the poem to the character of Walter Younger. Determine if there is connection between Walter’s “dream” and the “dream” in the poem.</p> <p>Writing Activity for further study: Using Hughes’ poem, compose a written response for each of the comparisons/similes, and how they effectively convey the author’s intent.</p>

Excerpt from *A Raisin in the Sun* by Lorraine Hansberry

From *A Raisin in the Sun* by Lorraine Hansberry, copyright © 1958 by Robert Nemiroff, as an unpublished work. Copyright © 1959, 1966, 1984 by Robert Nemiroff. Copyright renewed 1986, 1987 by Robert Nemiroff. Used by permission of Random House, Inc.

Walter: I want so many things that they are driving me kind of crazy....Mama—look at me.

Mama: I am looking at you. You a good-looking boy. You got a good job, a nice wife, a fine boy and—

Walter: A job. [Looks at her] Mama, a job? I open and close doors all day long. I drive a man around in his limousine and say, “Yes, sir; no, sir; very good, sir; shall I take the drive, sir?” Mama, that ain’t no kind of job...that ain’t nothing at all. [Very quietly] Mama, I don’t know if I can make you understand.

Mama: Understand what, baby?

Walter: [Quietly] Sometimes it’s like I can see the future stretched out in front of me—just plain as day. The future, Mama. Hanging over there at the edge of my days. Just waiting for me—

a big, looming blank space—full of nothing. Just waiting for me. [Pause]

Sometimes when I’m downtown and I pass them cool, quiet-looking restaurants where them white boys are sitting back and talking ‘bout things...sitting there turning deals worth millions of dollars...sometimes I see guys don’t look much older than me—

Mama: Son—how come you talk so much ‘bout money?

Walter: [With immense passion] Because it is life.

Mama: [Quietly] Oh—[Very quietly] So now it is life. Money is life. Once upon a time freedom used to be life—now it’s money. I guess the world really do change.

Walter: No—it was always money, Mama. We just didn’t know about it.

CONTENT TYPE: PROSE FICTION	STAGE 1 BASIC	STAGE 2 COMPLICATED	STAGE 3 COMPLEX
<p>Text: <i>To Build a Fire</i> by Jack London (1908)</p> <p><i>Skills Developed:</i></p> <p><i>Find meaning in context, identify plot elements, apply new ideas, identify cause and effect, analyze and visualize character, analyze tone and mood, make inferences, compare and contrast, interpret theme, understand setting, identify conflict, identify point of view, determine theme, understand sequence.</i></p>	<p>Find meaning from context, understand setting, identify plot elements (conflict), identify cause and effect, understand sequence.</p> <p>Explain why the “tremendous cold” and darkness “made no impression on the man.”</p> <p>Give examples that show the character’s conflict with nature and how he aims to combat the natural elements.</p> <p>Define the underlined word by using context clues: “He was a newcomer in the land, a <i>cheechako</i>, and this was his first winter.”</p> <p>Describe the general setting of the excerpt and predict how long this man will survive.</p> <p>Demonstrate, with examples from the text, how the second paragraph emphasizes the extreme cold.</p>	<p>Analyze and visualize character, analyze tone and mood, make inferences, identify point of view.</p> <p>Infer the meaning of “dark hairline” cutting through the snow. What does the line represent to the man?</p> <p>What is the narrator suggesting about this man through the following lines? “He was quick and alert in the things of life, but only in things, not in the significances.” and “Fifty degrees below zero was to him just precisely fifty degrees below zero. That there should be anything more to it than that was a thought that never entered his head.” Compose a paragraph detailing your answer.</p> <p>What word best describes the author’s opinion of this man?</p> <p>A. Smart B. Brave C. Scared D. Ignorant E. Nervous</p>	<p>Identify and explain figurative language (simile and metaphor), apply new ideas, compare overall theme.</p> <p><i>Fire and Ice</i> By Robert Frost</p> <p>Some say the world will end in fire, Some say in ice. From what I’ve tasted of desire I hold with those who favor fire. But if it had to perish twice, I think I know enough of hate To say that for destruction ice Is also great And would suffice.</p> <p>Writing Activity: Use the text above to compose an interpretation of the narrator’s point of view concerning nature, specifically fire and ice, and the risk both present in destruction. (Nature dually represents life threatening danger as well as beauty.)</p> <p>Hypothesize that you are able to share this short poem with the man in London’s text and speculate on his interpretation of nature – specifically “ice” and temperature. Do you think Frost’s sense of finality and mortality would make an “impression on the man”?</p>

Excerpted from *To Build a Fire* by Jack London

The man flung a look back along the way he had come. The Yukon lay a mile wide and hidden under three feet of ice. On top of this ice were as many feet of snow. It was all pure white, rolling in gentle undulations where the ice-jams of the freeze-up had formed. North and south, as far as his eye could see, it was unbroken white, save for a dark hairline that curved and twisted from around the spruce-covered island to the south, and that curved and twisted away into the north, where it disappeared behind another spruce-covered island. This dark hairline was the trail—the main trail—that led south five hundred miles to the Chilcoot Pass, Dyea, and salt water; and that led north seventy miles to Dawson, and still on to the north a thousand miles to Nulato, and finally to St. Michael on Bering Sea, a thousand miles and a half thousand more.

But all this—the mysterious, far reaching hairline trail, the absence of sun from the sky, the tremendous cold, and the strangeness and weirdness of it all—made no impression on the

man. It was not because he was long used to it. He was a newcomer in the land, a *cheechako*, and this was his first winter. The trouble with him was that he was without imagination. He was quick and alert in the things of life, but only in things, not in the significances. Fifty degrees below zero meant eighty-odd degrees of frost. Such fact impressed him as being cold and uncomfortable, and that was all. It did not lead him to meditate on his frailty as a creature of temperature, and upon man’s frailty in general, able only to live within certain narrow limits of heat and cold; and from there on it did not lead him to the conjectural field of immortality and man’s place in the universe. Fifty degrees below zero stood for a bite of frost that hurt and that must be guarded against by the use of mittens, ear flaps, warm moccasins, and thick socks. Fifty degrees below zero was to him just precisely fifty degrees below zero. That there should be anything more to it than that was a thought that never entered his head.

CONTENT TYPE: DRAMA	STAGE 1 BASIC	STAGE 2 COMPLICATED	STAGE 3 COMPLEX
<p>Text: <i>Business Related Document</i></p> <p><i>Skills Developed:</i></p> <p><i>Find the main idea and supporting details, restate information, apply ideas, make inferences, identify characteristics of the author's style and tone (detect author's bias), pay close attention to language and overall structure of the passage, draw conclusions, compare and contrast ideas, distinguish fact from opinion (use this information to support the author's point of view and make your own conclusions and inferences).</i></p>	<p>Examine the type of language used in the excerpt and identify the document as a(n): news article, advertisement, invitation, legal policy or story.</p> <p>A. A news article reports the facts and details of an event, generally in a specific style and/or order using journalistic conventions.</p> <p>B. An advertisement is a type of writing designed to attract attention, making something known, persuading people to purchase or patronize.</p> <p>C. An invitation is a written request for presence or participation of guests to an event or celebration.</p> <p>D. A story contains a narrative format, where there is a specific notion of plot, descriptive setting, and character development. Usually fictional prose / narrative is intended to interest, amuse, or entertain the reader.</p> <p>E. A legal policy details legal rights and duties in formal language; it demonstrates a specific form of writing and a specialized vocabulary commonly used by lawyers and judges.</p>	<p>Make inferences based on the policy (text) and cite specific information from the text to support your conclusions.</p> <p>Explain how each of the following cases would or would not be cause for litigation under this policy.</p> <p>A. A pregnant woman discovers she was not promoted because she informed her supervisor that she was pregnant and would soon need maternity leave.</p> <p>B. An employee, who recently makes known his/her homosexuality, is fired.</p> <p>C. A prospective employee discovers she was not hired for a position even though she was more qualified than any of other interview candidates. This prospective employee learns that the less experienced woman was hired in her place because the company's CEO considered her to be more attractive.</p> <p>D. An employee, who is reprimanded because he/she refuses to work with a co-worker of Arab descent, wants to begin the litigation process toward Stratford, Inc.</p> <p>E. Although Mr. Smith is the most qualified for the job, he discovers he was not hired because he is 51 years old.</p>	<p>An <i>Electric Company</i> employee would consider the main purpose of the document/policy to be:</p> <ul style="list-style-type: none"> ■ To point out the rules for termination. ■ To prevent against the hiring of incompetent employees. ■ To ensure an indiscriminating workplace. ■ To prevent the company from being sued. ■ To lay out the rules for promotion. <p>Writing Assignment:</p> <ul style="list-style-type: none"> ■ Create a student handbook for your school or class. Include information for students about your school's rules, regulations, grading policy, dress code, schedule of classes, code of conduct, disciplinary procedures, curriculum, and coursework.

Policy Statement: *Electric Company* Equal Opportunity and Affirmative Action Policy is to apply to all employees and applicants

1. It is the Company's policy to provide equal employment opportunity to all employees and applicants for employment without regard to race, sex, color, creed, religion, national origin, age, disability, marital status or sexual orientation in accordance with all applicable laws, directives and regulations of federal, state and city entities. This policy applies to all the terms and conditions of employment including, but not limited to hiring, placement, promotion, termination, layoff, recall, transfer, leave of absence, compensation and training. Advancement to positions of greater responsibility is based on an individual's abilities and demonstrated performance.

2. The Company is committed to Equal Employment Opportunity and as part of our Affirmative Action Plan we shall:

(a) Recruit, hire, upgrade, train and promote in all job classifications, without regard to race, sex, color, creed, religion,

age, national origin, disability, marital status or sexual orientation in accordance with all applicable laws, directives and regulations of federal, state and city entities;

(b) Base employment decisions on the principles of Equal Employment Opportunity, and with the intent to further the Company's Affirmative Action commitment;

(c) Ensure that all terms and conditions of employment such as compensation, benefits, layoff, return from layoff, Company sponsored training, educational tuition assistance, social and recreation programs, shall be administered without regard to race, sex, color, creed, religion, age, national origin, disability, marital status or sexual orientation in accordance with all applicable laws, directives and regulations federal, state and city authorities; Ensure that promotion decisions will be made in accordance with the principles of Equal Employment

Opportunity and Affirmative Action by imposing only valid requirements for promotional opportunities; Take action to prevent harassment including sexual harassment or intimidation of all employees, particularly those encompassed by the Company's affirmative action efforts.

3. The Company will vigorously pursue opportunities to recruit and develop job candidates who have the desire and potential for becoming qualified employees through our Affirmative Action Program.

4. Management performance in this program will be evaluated, as is performance in other company goals.

5. The Human Resource executive has been assigned responsibility for the implementation and administration of the Affirmative Action Program. He/She also has been designated to develop and administer the Affirmative Action Program and ensure that the intent and practice of this policy is carried out.

Additional Resources: Reading

Electronic Resources

- www.gedreading.com (McGraw-Hill). An electronic version of Contemporary's GED Language Arts, Reading print publication. Very interactive and easy to use. Contains chapter outlines, quizzes, flashcards, practice questions, and tips. Contains student and instructor sections.
- www.acenet.edu – Official site of the GED Testing Services.
- www.nytimes.com/learning – Lesson plans for teachers in all subject areas. Student Connections is part of New York Times Learning Network (grades 6-12).
- www.ket.org/ged2002 – Kentucky Department for Adult Education and Literacy sponsors GED Connection workbooks & DVDs. This is a joint project of PBS, Kentucky Educational Television, The National Center on Adult Literacy, and the Kentucky Department of Education. Website includes interactive on-line professional development series for teachers.
- www.cnn.com/studentnews – Includes questions and quizzes, learning activities, videos, top stories (national and international), and transcripts.
- www.nieonline.com – Newspapers in Education – Website contains access to newspapers across the country. Provides lesson plans, political cartoons, local news quizzes, “today in history,” and “front page: talking points.”
- www.cerritos.edu/reading/tutorials.html – Cerritos College is a community college in California, whose website provides on-line Reading Skills Tutorials appropriate for GED students.
- www.dictionary.com – An excellent language resource (dictionary, thesaurus, and encyclopedia).
- www.ala.org – The American Library Association provides lists of books categorized by genre and grade level. Most popular list includes: Outstanding Books for the College Bound.
- www.poets.org – Excellent site for finding poets and their poems. Contains: audio, poetry in the classroom, essays, curriculum, teaching tips, calendar of events, etc.

Print Resources

- *USA Today* and *The New York Times* – Excellent resources for editorial and opinion pieces, including reviews in the Arts.
- Magazines
 - *National Geographic Magazine*
 - *Consumer Reports*
 - *Sports Illustrated*
 - *College Bound Magazine*
 - *Newsweek*
 - *PC World*
- *GED Access Point: Language Arts, Reading*
National Center on Education and the Economy (NCEE), 2006
- *GED Skill Workbook* (series) *Language Arts, Reading*
New Readers Press, 2005
- *Pass the GED: Language Arts, Reading Test – Five Steps to Success*
New Readers Press, 2003
- Scholastic’s Classroom Magazines:
 - *Literary Cavalcade* (grades 9-12) – English Language Arts Magazine
 - *Scholastic Scope Magazine* (grades 6-10) – English Language Arts Magazine
 - *Scholastic Action Magazine* is a reading intervention magazine with topics of interest for students in grades 6-12, who are reading below grade level. Material is accessible for young adults reading between grade levels 3-5.
 - *Scholastic Choices* (grades 7-12) addresses issues relevant to students’ lives.
- *GED Language Arts, Reading – McGraw Hill/Contemporary (2002)*
- *Top 50 Reading Skills for GED Success* – (Contemporary/McGraw Hill) The text is organized into 50 manageable skills identified by the GED Testing Service. The format is very easy to follow and is organized into instruction and practice sections.
- *Pre-GED Language Arts, Reading* – McGraw-Hill/Contemporary

- *GED Language Arts, Reading* – Steck Vaughn (2002)
- *Pre-GED Language Arts, Reading* – Steck Vaughn
- *GED Connection: Language Arts–Reading & Writing* – Literacy Link PBS/KET
- *GED Skill Book – Higher Order Thinking Skills* (Steck Vaughn 2002)
- *GED Skill Book – Language Arts, Reading: Literary Texts* (Steck Vaughn 2002)
- *GED Skill Book – Language Arts, Reading: Nonfiction Texts* (Steck Vaughn 2002)
- *Essential Words for the GED* (Barron’s)
- *Access English: Building Literacy Through Learning (ELL)*(Great Source 2005)
- Great Source Publishers
 - *Vocabulary for Achievement*
 - *Writer’s, Inc.*
- *Poetry Speaks:* (includes three CDs) *Hear Great Poets Read Their Work from Tennyson to Plath.*



*Teaching and Learning
in the Content Areas:*

Writing

Writing is a lifelong process that requires continuous development. Current research states that there are several factors which influence a writer's proficiency, including: prior academic performance, audience awareness, language aptitude, writing guidance, feelings of confidence, and value/appreciation of writing.

– University of Houston – Undergraduate Writing Assessment 2005

Writing

A black and white photograph of two students sitting at a desk, focused on writing. The student on the left is wearing a sweatshirt and holding a pen. The student on the right is wearing glasses and a striped hoodie. A large, semi-transparent box with the NYC Department of Education logo is overlaid on the right side of the image. The logo consists of the letters 'NYC' in a large, bold, sans-serif font, with 'Department of Education' written below it in a smaller, bold, sans-serif font. A teal vertical bar is on the left side of the logo box.

NYC
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Education**

TEACHING AND LEARNING IN THE CONTENT AREAS: WRITING

Introduction

Writing involves communicating thoughts clearly on paper. To this day, modern societies are fascinated by evidence that points to early forms of writing. Knowing that there was a desire to write during the earliest times conveys the value of the written word. Today, writing continues to be of significant importance, and for many of the same purposes and in many different contexts.

Writing for work, academic writing, and personal writing are just a few examples where writing can make an impression:

- “In the highly literate and technological workplace of the [twenty-first] century, literacy is one of the keys to economic success” (Rhodes 1996). Regardless of what career you choose, there will be writing – inventory, layouts, note taking at meetings/conference calls, business letters, a web-page, informational brochure or advertisement, resume or cover letter, letter of response, memorandum, e-mail, recommendation letter, order forms, supply lists, reports, directions, thank you notes, schedules, and agendas.
- In the academic world, writing is a means of assessment. Regardless of what subject an individual decides to study in college, there will be written assignments, whose purpose is to evaluate learning. Classes may require term papers and/or in-class assignments that will be evaluated in much of the same way as the GED essay.
- Writing in one’s personal life takes place electronically and in print. Because of accessibility to the internet and e-mail, more and more people are writing more frequently. For instance, it is common to hear someone discuss creating a personal web-page with an online diary detailing day to day life. Also, extended families write online to keep in touch or send invitations. Message boards are set up and threads are posted, where people from around the world respond with their opinions and questions about a current topic.

Although writing symbols and tools have evolved a great deal, the purpose of writing is still the same – that is, to communicate ideas, knowledge, and information. To do this effectively and to the best of one’s ability is what the GED requires.⁵

⁵ Adapted from Rhodes, L. K. & Dudley-Marling, Curt. (1996) *Readers and Writers With A Difference: A Holistic Approach to Teaching Struggling Readers and Writers*. 2nd Edition. Portsmouth, NH: Heinemann.

Classroom Strategies and Recommendations

1) **Recognize all students as writers** and know some are more comfortable while others are more reluctant. There are different levels of confidence among writers. For the most part, this stems from past academic performance. Over the years, some students have seen so many corrections on their papers, that there is a general anxiety when it comes to putting anything down on paper – even when you tell them *not* to worry about grammar, spelling, or punctuation.

2) **Create a Writer’s Workshop in the classroom.** A Writer’s Workshop is based on the assumption that student writers – like published, professional writers – need predictable, concentrated amounts of time to write each day (Rhodes 1996). Students of different levels of proficiency can write in the same classroom. Teachers should build on this community of writers by writing with the students. During other times, teachers can offer support and direction based on specific needs of the students. A Writer’s Workshop will allow your students the opportunity to get comfortable with the process of writing. It is important for students to make the connection between daily practice and writing improvement.

Incorporate some of the ideas below in your Writer’s Workshop:

- **Free writing** for five to ten minutes each day. Free writing allows the student to write down anything that comes to mind without making corrections. The purpose of free writing is to get the students writing – the pen never leaves the paper – writing is continuous.
- **Looping** takes place directly after free writing. After free writing, students reread what they have written and underline key phrases and ideas. After choosing one of the phrases or ideas, they can begin to free write again, this time narrowing in on one of the ideas from the initial writing. This will help develop ideas and build details.
- **Focused free writing** is where students work from a list of topics they have generated individually or with the class. This list should include some common GED essay writing topics.
- **Journal writing** works best if done daily. Students should date their entries to keep their ideas organized. For some, the hardest part of writing is simply getting started. The idea is to get things down on paper as you think of them. When making an entry, students write from beginning to end before rereading or editing. Journals are not graded for grammar, spelling, or punctuation.
- **Written conversation or dialogue journal.** In written conversation, two people talk to each other about topics of interest to both of them, passing the paper back and forth. The nature of this activity encourages students to take a point of view, focus on ideas, and to write rapidly. This format provides the opportunity for immediate clarification between writers with different viewpoints.

- **Show. Don't tell.** Practice using anecdotes as examples. The anecdote is a story that illustrates a point. Anecdotes add details and color to your essay, making your writing more interesting. It is important they are short, to the point, and relevant to your topic.
 - Add Sensory Details: Depending on your topic, you may want to include descriptive details. Incorporate not only what the reader can see, but also what the reader can taste, smell, feel, and hear.
 - Incorporating anecdotes and sensory details can boost your overall essay score.

3) Make sure your students know what is expected of their writing for this exam. To do this, it is a good idea to let them see the relationship between writing expectations and outcomes. One of the best ways to accomplish this is to review the GEDTS rubric (*Please see an official copy in this manual*) in detail and then practice grading the pre-graded sample essays. This also allows you to introduce the assessment process in a non-threatening way. You can find sample essays and their scores in any GED preparation book (*Please see the resource list provided in this manual*). Use pre-graded sample essays for your students to practice holistic grading using the official GEDTS rubric. This will help test candidates understand how the official raters grade essays.

4) Have students engage in peer evaluation and self-assessment. Once your students have an understanding of the official GED essay scoring rubric (GEDTS), you can begin to use student essays (anonymously) to illustrate various levels of writing. Through this process, students can work together as evaluators and develop ongoing effective peer editing sessions. The work is more meaningful and relevant because it is their own. Evaluation sessions can focus on the whole essay or on specific parts of the essay (the introduction, the body, or the conclusion). Utilizing peer writing samples as lesson material can help your students learn to critique their own writing as well. At the official exam, they will not have the benefit of peer evaluation. However, students can prepare themselves to self-assess their writing by using the *Performance Analysis for Essays* at the end of this section.

Designing class assignments and leaving room for peer evaluation opportunities can prepare students to succeed in the twenty-first century workplace. Collaboration among students in the classroom can replicate the following twenty-first century skills: communication, socialization, team work, problem solving, and interpersonal relations.

5) Convey to your students that writing is a craft that requires hard work, dedication, and practice (Rhodes 1996). Remind your students that it can take several drafts to create and complete a proficient essay. Professional writers often revise and re-think their work several times. For some students, in the beginning, it may take several drafts to complete a satisfactory essay.

6) Teach all stages of the essay writing process in different ways, from understanding the prompt to submitting a final copy in **ink**. Expose your students to various strategies for generating ideas, revising,

editing, and proofreading their writing. There is more than one way to successfully manage all steps of the writing process. Allow your students to practice different strategies in timed and unrestricted formats.

- The ultimate goal, for the GED exam, is for students to compose and submit an essay (from first draft to final copy) under timed conditions.
- At the official exam, students will be given two hours to complete Part 1 (50 multiple choice questions) and Part 2 (essay). The suggested/recommended time for writing the essay is approximately 45 minutes. This does not preclude the student from using more or less time for the essay. In fact, students can begin with either Part 1 or Part 2 at the official exam. They can return to the essay after completing the multiple choice portion or vice versa. Through the classroom practice, students should be prepared and develop an approach that works best for them.
- The stages of the writing process are as follows:
 - Reading the Topic Carefully
 - Brainstorming Ideas
 - Creating an Outline
 - Writing a First Draft
 - Revising and Editing
 - Writing the Final Draft in Ink

7) Incorporate different types of writing in your classroom, such as:

- **Modeled Writing:** Teachers demonstrate all stages of comprehension and skills by thinking aloud and including the students in their thinking processes, including: brainstorming, planning, outlining, spelling, sentence structure, starting, concluding, revising, and word choice.
- **Shared Writing:** Teachers and students work together to compose a piece of writing. The teacher records what the students want to say and supports the process.
- **Guided Writing:** Teachers and students work together focusing on the same writing strategy, depending upon the needs of the class, a small group, or individual student. Teachers guide the process by observing, coaching, and encouraging.
- **Independent Writing:** Students have the opportunity to write with their own purpose and interests in mind using different topics and genres.⁶

⁶ *A Comprehensive Approach to Balanced Literacy: A Handbook for Educators*. New York City Department of Education, Section 1.

8) Promote writing across the curriculum by encouraging students to:

- Activate their prior knowledge and brainstorm on a subject before beginning. Encourage your students to generate “real” questions based on their lives.
- Write unit/lesson reflections after completing a topic.
- Write letters to politicians on current issues or interests to your community locally.
- Write to organizations for more information for specific details on what work they do for your community.
- Write at the beginning of class to summarize the previous day’s lesson or homework assignment.
- Stop reading during a passage and take notes to summarize or ask questions.
- Use academic journals or learning logs to keep notes.

9) Promote writing in specific subjects other than ELA, such as:

- **Science:** Writing a lab report is similar to writing an essay. It is based on the scientific method that provides a specific format. Students begin by formulating questions, observing and recording data, organizing the data, explaining the results, and reflecting on the process. Both the essay and lab report require stages of development to demonstrate a coherent organization and overall structure.
- **Social Studies:** While students are studying different forms of government, they can write a student handbook for the school with a clear outline of rules and expectations. Or they can write reports on various cultural groups in their community or research a political, social, or economic topic of interest to them.
- **Math:** Because there are more ways than one to solve a math question correctly, students should always keep a math journal, where they can stop and write the steps to the math problem in their own words.

10) Teach grammar and specific skills in context. Use student sentences (anonymously) as examples. Most likely, you will see students have similar weaknesses and patterns of usage problems in writing.

- Use the Writing standards found on page 42 as a reference and/or starting point.
- Do not spend time on obscure rules of the English language.
- Teach skills that can be the most helpful in a student’s own writing.

- Teach Prioritized Performance Standards⁷:
 - Know and apply comma rules.
 - Recognize and correct fragments, run-ons, and comma splices.
 - Determine and use correct subject-verb agreement.
 - Know regular and irregular verb forms and tenses.
 - Determine and use correct case of pronoun usage and agreement.
 - Understand the purpose of the topic sentence.
 - Understand paragraph development and division.
- Do not lose sight that the multiple choice questions and essay writing process are related. When you teach your students how and when to use commas, they will recognize misplaced commas in Part 1 questions and use them correctly in their own writing on Part 2.

11) Incorporate writing rituals into your classroom. Writing rituals are personal habits that people routinely perform when they are faced with a writing task. The benefits of writing rituals include: decreasing stress, increasing confidence, and easing the writing process.

GED Test Content and Composition: Writing

Part 1 and Part 2 of the Writing portion of the GED are designed to assess similar skills:

- Part 1 assesses a student’s writing ability, editing, and proofreading skills through 50 multiple choice questions.
- Part 2 provides a writing prompt in the form of a question or statement. Students demonstrate their writing abilities by responding to the prompt in an essay format.

The essay was added to the GED test in 1988 to measure a candidate’s ability to compose a coherent essay. Essentially, the writing sample makes certain that students are as well prepared for college and the workplace as their peers completing high school.

⁷ *The GED Essay: Writing Skills to Pass the Test*. McGraw-Hill/Contemporary, 2001. 243.

Writing Part 1 (Multiple Choice Questions)

Writing Part 1 contains 50 multiple-choice questions which require students to demonstrate the ability to revise, proofread, and edit workplace and informational documents. Part 1 comprises 65% of the total writing score.

Content of Questions

CONTENT AREA	PERCENT	TOPICS THAT MAY BE COVERED
Organization	15%	How ideas are organized within paragraphs and within an entire passage.
Sentence structure	30%	How ideas are expressed within complete sentences.
Usage	30%	Using the correct choice of words according to standard English.
Mechanics	25%	Using proper spelling, punctuation, and capitalizing.

Context of Questions

The context of the writing multiple choice questions represents the kinds of texts people read and write in daily life.

CONTEXT	PERCENT	EXAMPLES
Workplace and community documents	20%	Memos, letters, notices, editorials, reports, executive summaries, applications, or meeting notes.
Instructional or “How-to” texts	80%	Instructions or directions for using technology, increasing personal effectiveness, improving family life, or preparing for the business world.

Types of Questions

TYPE	PERCENT	DESCRIPTION
Correction	45%	<ul style="list-style-type: none">■ A correction type of question will be followed by a question, such as, “What correction should be made to this sentence?”■ Correction questions can address any of the four content areas: organization, sentence structure, usage, or mechanics.
Revision	35%	<ul style="list-style-type: none">■ A revision type of question may ask the student to revise a sentence, several sentences, a paragraph, or the text as a whole. The portion of the text to be revised will be underlined. Candidates are asked to choose the best way to revise the underlined portion of the sentence.■ Revision questions can address three of the four content areas: sentence structure, usage, or mechanics.
Construction shift	20%	<ul style="list-style-type: none">■ A construction shift type of question requires the student to choose the best way to rewrite a sentence or combine two sentences. Note: In this type of question, the original sentence contains no error; however, the student’s job is to understand how the ideas are related in the original sentence and which of the choices grammatically combines the two sentences without losing its meaning.■ Construction shift questions can address two of the content areas: organization or sentence structure.

Special Tips for Construction Shift Questions:

- The original sentence is written correctly.
- The meaning of the original sentence cannot be changed.
- The wording of the original sentence can change.
 - Synonyms may be used.
 - Sentence structure can be changed to create a better sentence.
 - Paragraphs can be combined or separated.
 - New sentences can be inserted.

Writing Part 2 (The Essay)

The Sample Essay Format has three main components: Introduction, Body, and Conclusion.

The essay needs to have a clear and logical organizational plan. Using the **five-paragraph essay** format can help you structure an essay on any topic. There are three components: an introductory paragraph, three body paragraphs, and a concluding paragraph.

- **Introductory paragraph:** This paragraph introduces the topic of your essay, states the main idea, and gives the thesis statement. The **thesis statement** tells your main idea and gives an indication of how the rest of the essay will be organized. Usually, an introductory paragraph is organized from general to specific.
- **Three body paragraphs:** Each of these paragraphs gives specific information to support the thesis statement. Each body paragraph should begin with a **topic sentence**, which gives the main idea of the paragraph.
- **A concluding paragraph:** Your concluding paragraph restates the main idea of your essay and relates your main idea to broader ideas. Usually, a good concluding paragraph is organized from specific to general, beginning with a restatement of the thesis statement and ending with a broader statement that gives a sense of completeness to the essay.

*For a detailed explanation of a sample essay form, please see the *Traditional Essay Format* on page 55.

For the purpose of the GED, students are required to write an expository essay that explains, clarifies, or informs readers about a single subject. This can be a challenge for some, but with the right preparation, students should feel confident about approaching any topic they may encounter.

- Writing: Part 2 assesses the students' ability to write an essay.
- One essay topic per student is provided by the GED Testing Service.
- For exam security, students can only use the scrap paper provided at the testing center, which will be collected at the end of the exam.
- The topics **do not** require any special information or knowledge. They are expository in nature and ask students to analyze or explain a topic.
- Students will be asked to draw on their general knowledge, experience, and observations.
- Note: Students are not given a choice of topics.

Please refer to the *Performance Standards for the GED Essay* on page 44 for a more detailed list of necessary skills to submit a passing essay.

Essay Scoring:

- Student writing is scored holistically using a four-point scale:
1 = Inadequate, 2 = Marginal, 3 = Adequate, 4 = Effective.
- Two readers score each essay, and the final score is an average of these two scores.

For a detailed analysis of essay scoring, please see the Rubric provided by GEDTS in this manual on page 62.

The five major criteria used in evaluating an essay are listed below:

- **Response to the Prompt** refers to how well the essay responds to the topic, including whether or not the focus of the response shifted.
- **Organization** refers to evidence that the candidate had a clear idea about what he/she would write and how well he/she was able to establish a definable plan for writing the essay.
- **Development and Details** refers to the candidate's ability to expand on initial concepts or statements through use of examples and specific details – rather than using lists or reiterating information.
- **Conventions of Edited American English (EAE)** refers to the candidate's ability to use appropriately edited English – including the application of the basic use of grammar, mechanics, usage, and sentence structure.
- **Word Choice** refers to the candidate's ability to use varying and appropriate words to express an idea.

Scoring for Parts 1 and 2:

Test candidates receive a final score, which is a combination of scores from Part 1 (65%) and Part 2 (35%). A table of scores can be found with the grading materials supplied with the Official Practice Tests or online at www.gedwriting.com. A student's essay score is correlated with the number of multiple choice questions answered correctly to produce a final score for the Writing portion of the exam.

Note: If a student's essay score is below 2 (e.g., 1.5, 1.0, or 0), he/she will not receive a complete Writing score on the final score report. Therefore, students who do not score a minimum of 2 will not receive a score for their multiple choice answers.

Writing, Part 1: General Test-Taking Tips

Grammar: Use student writing (anonymously) as examples of correct and incorrect writing models to teach specific skills. Most of your students will probably have similar gaps in their writing. Using student writing provides authentic text for students to learn from.

Common Types of Errors on the Writing Exam:

From: *GED Essay: Writing Skills to Pass the Test* - Contemporary/McGraw Hill

- **Organization:** Improper text division, lack of a topic sentence, lack of unity or coherence.
- **Sentence Structure:** Sentence fragment, run-on sentence or comma splice, wordy or repetitive sentence, incorrect subordination or coordination, misplaced or dangling modifier, lack of parallel structure.
- **Usage:** Incorrect verb tense, subject-verb disagreement, pronoun-antecedent disagreement.
- **Mechanics:** Incorrect capitalization, improper comma usage, misspelled homonym, incorrect possessive or contraction.

Comma Usage: Comma usage is emphasized on the GED exam, but there is one comma usage that will not be tested on the GED exam. Multiple choice items on Language Arts, Writing, Part I will **not** test the comma use between the next to last and last item. However, the comma between the first two items (in a series of three or more items) will be tested.

Multiple Choice Questions: Some questions will have a choice that reads “no correction necessary” and some questions will have the unchanged text listed as an answer choice. If the original is the best way, choose option 1.

Commonly Confused Words: absence/absent, choose/chose, desert/dessert, formal/former, loose/lose, moral/morale, quiet/quite, accept/except, affect/effect, board/bored, brake/break, capital/capitol, coarse/course, council/counsel, precede/proceed, principal/principle, role/roll, sight/site, weak/week, weather/whether, to/too/two, their/there/they’re.

Spelling: Spelling is tested regarding homonyms, possessives, and contractions.

Promote Regular Reading: Reading everyday can enable students to become better writers. As they begin to absorb what they read, students also begin to integrate proficient writing skills. Inherently, reading and writing are connected and should not be learned or taught exclusively. Both skills use similar cognitive structures for organizing information into a meaningful whole. Many studies

suggest that reading experiences contribute to writing performance, and the reverse is true as well. In a writing class, considering time limitations, newspapers can be an excellent resource to model good writing. The writing style which journalists use can enable students to sense an organization of facts and a particular flow of sentences in most articles. Noticing correct punctuation, sentence structure, paragraph organization, use of capitals and transition words, etc. can intuitively become part of one's writing style. In general, it is safe to assume that regular readers make better writers.

Parts 1 and 2 Reflect Each Other: As mentioned earlier, the skills assessed in Part 1 of the Writing exam are designed to reflect all stages of the essay writing process, and vice versa. For instance, if a student understands what a paragraph should be and is able to compose one, he/she will be able to divide a given text into effective paragraphs. On Part 1 of the exam, students will be tested on paragraph division (15% of the exam covers Organization skills) – and similarly on Part 2, students will demonstrate understanding of paragraph division by separating their own text into clear paragraphs as they write their essay.

Lettered Paragraphs and Numbered Sentences: Questions will refer to specific letters and numbers of the selected text. These letters and numbers are especially important when answering questions which address the organization of a paragraph or the entire piece.

Test-Taking Tips and Strategies for Reluctant Writers: Writing, Part 2

Don't Panic: With the clock ticking, the pressure is on. Writing during an exam can make you lose control of your writing skills although you may be thoroughly intact outside of an exam setting. Writing for an exam essay allows little time for rewriting, so make sure your first draft is as coherent as possible under the circumstances. Remember not to lose sight of the topic. It's a good idea to include some of the key words from the topic in your opening paragraph, and return to it in your conclusion. The effect will be to make clear that you have indeed kept your answer on the topic.

Self-Assessment: Practice self-checking by individualizing your proofreading process. This will help you proofread more efficiently and effectively. Explore what errors you typically make. Is there a pattern? Learn to fix them on your own until you can avoid them.

Do Not Stare at a Blank Page for Long: Force yourself to write down something even if you think it is poorly worded or just not good enough. Do not let the voice inside your head criticize your writing before you start. Begin writing and other ideas will come to you – go on with the next idea. You can revise later. The purpose of breaking the writing process into steps is good for all writers, but especially those who feel their writing is weak or are just afraid to write.

Start Writing at Whatever Point You Like: If you want to begin in the middle, fine. Leave the introduction until later. The reader will never know that you wrote the paper “backwards.”

Pretend You Are Someone Else Writing the Paper: Consider being someone with a different perspective from your own. By looking at the topic from a different point of view, you can see things that you may not see thinking from your own perspective. To start, you might want to think how a friend, a sibling, or a parent might respond to the prompt.

200-250 Words: ACE does not indicate a specific number of words or paragraphs for a passing essay. The irony in this is that by definition an essay is a logical, coherent, well-developed piece of writing on a single controlling idea. Although you do not want to count the words after each sentence, you will have to write a substantial amount, especially in the body paragraphs of your essay.

Organize Your Writing: Make sure your essay establishes a clear organizational pattern. There are four main patterns: time order, order of importance, cause and effect, and comparison and contrast. In order to decide which pattern to use, look for key words in the prompt. For instance, you should use time order when you are asked to describe a process or procedure. Order of importance is used when you must identify what is most important and least important. Cause and effect is used when you must provide reasons or results, and comparison and contrast is used when you need to write about how things are alike and how they are different. Pay close attention to the prompt. For example, if the prompt says “explain why...” make sure to write about causes or reasons.

Performance Standards: Writing (Part 1)

SENTENCE STRUCTURE	USAGE
<p>Identify complete sentences.</p> <p>Distinguish between independent and dependent clauses.</p> <p>Recognize the following different types of incomplete sentences:</p> <ul style="list-style-type: none"> ■ Fragments ■ Comma splices ■ Run-ons <p><i>Correct incomplete sentences by choosing the most effective combination of ideas or separation of ideas using the necessary punctuation.</i></p> <p>Use appropriate punctuation (comma, semi-colon, period) and connecting words when correcting: Compound and complex sentences with:</p> <ul style="list-style-type: none"> ■ Coordinate conjunctions (for, and, nor, but, or, yet, so). ■ Conjunctive adverbs (also, furthermore, for example). ■ Subordinate conjunctions (because, if, after). <p>Recognize and correct errors in parallel structure: Know that words in a series that perform the same purpose must have the same grammatical form.</p> <p>Parallel structure applies to:</p> <ul style="list-style-type: none"> ■ Noun phrases, verb phrases, adjectives, and adverb phrases. <p>Recognize and revise sentences with dangling or misplaced modifiers that cause confusion in the meaning of a sentence.</p>	<p>Apply appropriate VERB usage:</p> <p>Recognize correct forms of REGULAR and IRREGULAR verbs and their principal parts which include:</p> <ul style="list-style-type: none"> ■ Present, present participle, past, and past participle. <p>Choose the correct tense of verb based on word clues as they relate to:</p> <ul style="list-style-type: none"> ■ Consistency of tense in sentences and paragraphs. ■ Simple tense and references to time: present, past, future. ■ The three perfect tenses which include helping/ auxiliary verbs (has, have, had, will have). <p>Determine and use correct SUBJECT-VERB AGREEMENT in the following cases:</p> <ul style="list-style-type: none"> ■ Subject and verb must match in number. (i.e., a singular subject requires a singular verb). ■ An interrupting phrase within a sentence that separates a subject from its verb. ■ A sentence written in inverted order – that is the subject follows the verb. ■ A sentence that contains a collective noun (a group of people or things). Identify when a collective noun acts as one, the verb is singular. <p>Determine the correct case of pronoun depending on its use in a sentence:</p> <ul style="list-style-type: none"> ■ Subjective (subject of the sentence) ■ Objective (object of the verb) ■ Possessive (e.g., mine, hers, his) ■ Use of relative pronouns (e.g., that, which, who) <p>Identify and revise pronoun shifts in agreement:</p> <ul style="list-style-type: none"> ■ Pronouns must agree in number, gender, and person with the word/noun (antecedent) it is replacing.

MECHANICS	ORGANIZATION
<p>Know basic rules of punctuation, including:</p> <ul style="list-style-type: none"> ■ Period, question mark, colon, semi-colon, exclamation point, and quotation marks. <p>Know and apply comma rules in-depth:</p> <ul style="list-style-type: none"> ■ In a series or list. ■ With coordinating conjunctions to combine two independent clauses. ■ With subordinate conjunctions to combine an independent and dependent clause. ■ After introductory words or phrases. ■ With appositives. <p><i>Recognize incorrect use and overuse of the comma.</i></p> <p>Know basic rules of capitalization including:</p> <ul style="list-style-type: none"> ■ The first word of a sentence. ■ The pronoun “I.” ■ Proper nouns (e.g., months, days of the week, holidays, addresses, seasons, titles, countries, religions). ■ Proper adjectives formed from proper nouns. <p><i>Understand common nouns are not capitalized.</i> <i>Recognize overcapitalization.</i></p> <p>Notice spelling errors in homonyms (words that have the same pronunciation but different meaning).</p> <p>Know where and when to use the apostrophe in:</p> <ul style="list-style-type: none"> ■ Forming singular and plural possessives. ■ Contractions. 	<p>Recognize a unity of ideas and a logical order of sentences within a paragraph or a multi-paragraph document.</p> <p>Use effective transition words or phrases:</p> <ul style="list-style-type: none"> ■ Make clear transitions between ideas, sentences, and paragraphs. ■ Create new paragraphs to indicate a new main idea. <p>Choose an effective topic sentence.</p> <ul style="list-style-type: none"> ■ Identify topic sentences that state the main idea in a broad sense. <p>Understand that a paragraph contains a group of sentences about one main idea.</p> <ul style="list-style-type: none"> ■ Recognize that supporting sentences provide details, examples, and reasons. <p>Select effective text division of paragraphs by:</p> <ul style="list-style-type: none"> ■ Forming new paragraphs. ■ Combining paragraphs. ■ Separating paragraphs. <p>Edit for unity and coherence by:</p> <ul style="list-style-type: none"> ■ Adding a new sentence. ■ Identifying and removing irrelevant sentences. ■ Moving sentences.

Performance Standards: Writing (Part 2)

At the official GED exam, students are given two hours to complete the Language Arts: Writing portion of the test; this includes both the essay and 50 multiple choice questions. It is strongly advised that students use their time wisely and spend approximately 45 minutes – from start to finish – on their essays. This leaves roughly 75 minutes for the writing multiple choice questions.

In order to compose a passing GED essay in approximately 45 minutes, students must be able to:

RESPOND TO THE PROMPT	DEMONSTRATE ORGANIZATION
<p>Respond to the assigned prompt.</p> <p>Understand the essay prompt by noticing key words to determine what is being asked. (Note: the prompt may be a question or a statement.)</p> <p>Examine the subject from different angles.</p> <p>Use effective pre-writing strategies to generate or brainstorm ideas:</p> <ul style="list-style-type: none"> ■ Listing ■ Mapping ■ Clustering ■ Graphic organizers <p>Establish a clear main idea or point of view and write a thesis statement using key words from the prompt.</p> <p>Identify potential supporting details or examples to support your main idea.</p>	<p>Use clear organizational structure that is easy to follow.</p> <p>Use an organized essay format appropriate to the prompt and the main idea of the essay (e.g., five paragraph essay framework – introduction, body, and conclusion).</p> <p>Create an outline, chart, or picture to show a logical organization of ideas, e.g.:</p> <ul style="list-style-type: none"> ■ Chronological order ■ Compare and contrast ■ Cause and effect ■ Order of importance <p>Identify main ideas and group supporting details.</p> <p>Combine or eliminate ideas that are too similar.</p> <p>Plan paragraphs with clear topic sentences, effective transitions, and a logical sequence.</p> <p>Show paragraph shift/form by indenting.</p>

INCLUDE DEVELOPMENT AND DETAILS	APPLY CONVENTIONS OF EAE (EDITED AMERICAN ENGLISH)	EXHIBIT VARIED WORD CHOICE
<p>Follow a selected writing process, and begin putting ideas in complete sentences.</p> <p>Write an introductory paragraph that restates the essay prompt and engages the reader.</p> <p>Work from preliminary writing to develop and fully elaborate main ideas in body paragraphs through relevant and specific supporting details.</p> <p>Provide clear supporting ideas by including examples of personal observations, knowledge, experience, and opinions.</p> <p>Maintain clear and consistent focus.</p> <p>Write a concluding paragraph that restates or “wraps up” the thesis or the main idea of the essay.</p> <p>Avoid listing and repetition of information in body paragraphs.</p>	<p>Edit and revise first draft.</p> <p>Apply basic rules of grammar and self-correct errors in mechanics (capitalization and punctuation), usage, and sentence structure.</p> <p>Use a variety of sentence structure (simple, compound, complex, etc.) for fluency.</p> <p>Vary sentence length (e.g., combine shorter sentences to tie together connected thoughts).</p>	<p>Use a variety of words to avoid monotony; use precise word choice to express ideas clearly.</p> <p>Use transition words or phrases to show how ideas are related within sentences and paragraphs.</p> <p>Use transition words to: emphasize, clarify, compare, contradict, show chronology, or show cause and effect.</p> <p>Understand audience – use words and tone appropriate for the GED topics.</p> <p>Use descriptive language and/or sensory details that create a picture in the reader’s mind.</p>

Differentiated Instruction: Language Arts, Writing

The following examples illustrate how achievement of standards can be assessed through a continuum of increasing complex questions and tasks. **Note:** Unlike other parts of the GED exam, where questions range in levels of Bloom’s Taxonomy, all multiple choice questions in Writing are APPLICATION QUESTIONS. These questions measure the candidate’s ability to use previously learned information and transfer understanding to a situation that differs from the context in which the ideas were originally presented.

LANGUAGE ARTS: WRITING	BASIC	COMPLICATED	COMPLEX
	Question Type: Correction	Question Type: Revision	Question Type: Construction Shift
<p>QUESTION CONTENT: Sentence Structure</p> <p>PERFORMANCE STANDARD: Recognize and correct different types of incomplete sentences, such as:</p> <ul style="list-style-type: none"> ■ Fragments ■ Comma splices ■ Run-ons <p>ACTIVITY: Correct incomplete sentences by choosing the most effective combination of ideas or separation of ideas using the necessary punctuation.</p>	<p>Example Text: <i>Another healthy way to get exercise with a bike.</i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Recognize that the example is a fragment. 2) Recognize and explain why the example is a fragment. (It is missing the necessary verb “is” to complete the sentence.) 3) Identify the correction need to make the fragment a complete sentence. (The correction should be to insert the verb “is” after “exercise.”) 	<p>Example Text: <i>Studies show that most people can increase their overall health 30 to 50 percent. <u>Exercising and lifting weights at the gym each day.</u></i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Recognize the best way to re-write the underlined portion of the text. 2) Recognize that the second statement is a fragment. 3) Explain why the second statement is a fragment and the first statement is a complete sentence. 4) Join the fragment to the complete sentence which precedes it. The fragment must be connecting in a way that is grammatically correct. 5) Add the appropriate connecting word “by” to connect the fragment and correctly demonstrate the relationship of ideas. 	<p>Example Text: <i>It has been widely proven that having healthy exercise habits can affect your overall health and decrease your risk of disease. These habits include biking and lifting weights.</i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Recognize that there is nothing grammatically wrong with these two sentences. 2) Determine the most effective combination of these two sentences. 3) Understand that moving the two habits, biking and lifting weights, into the first sentence would improve the writer’s effectiveness. 4) Create the new, smoother sentence, “It has been proven that having healthy exercise habits, such as biking and lifting weights, can affect your overall health and decrease your risk of disease.”

LANGUAGE ARTS: WRITING	BASIC	COMPLICATED	COMPLEX
	Question Type: Correction	Question Type: Correction	Question Type: Revision
<p>QUESTION CONTENT: Usage</p> <p>PERFORMANCE STANDARD: Determine and use correct subject-verb agreement.</p> <ul style="list-style-type: none"> ■ Match subject and verb in number (i.e., a singular subject requires a singular verb). ■ Recognize an interrupting phrase within a sentence that separates a subject from its verb. ■ Identify a sentence that contains a collective noun (a group of people or things). ■ Identify when a collective noun acts as one and uses a singular verb. 	<p>Example Text: <i>Books, magazines, and newspapers helps your vocabulary.</i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Recognize incorrect subject-verb agreement. 2) Apply knowledge and rules of subject verb agreement. 3) Know the verb “helps” is singular. 4) Know that in this sentence, “books, magazines, and newspapers” represent a plural subject (three items) and therefore require the plural verb “help.” 5) Determine the correction should be to change “helps” to “help.” 	<p>Example Text: <i>A superfluous commercial or other interruption are annoying when watching television.</i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Recognize incorrect subject-verb agreement. 2) Apply knowledge and rules of subject-verb agreement. 3) Know the conjugation of the irregular form of the verb “to be” and know that “are” is its plural form. 4) Recognize that the compound subject, “A superfluous commercial or other interruption” is joined by the connecting word “or.” 5) Know when a compound subject is connected by “or,” the verb must agree with the second subject “interruption.” 6) Determine the correction should be to change the verb form from “are” to “is” since “interruption” is singular. 	<p>Example Text A: <i><u>We at The Entertainment Store</u> is delighted to supply you with great service at little inconvenience to you.</i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Recognize the best way to rewrite the underlined portion of the text. 2) Apply knowledge and rules of subject-verb agreement. 3) Identify incorrect subject-verb agreement; the singular verb “is” does not agree with the plural subject “we.” 4) Notice that even though the subject and verb are separated by an interrupting phrase, they must still be in agreement of case, tense, and form. 5) Determine the correction should be to change “is” to “are.” <p>Example Text B: <i>The American public are encouraged to watch the traffic reports to prevent further delays.</i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Recognize the subject is a collective noun. Identify the plural verb “are” does not agree with the subject, “public,” a collective noun. 2) Know and apply rules for collective nouns; collective nouns require singular verbs.

LANGUAGE ARTS: WRITING	BASIC	COMPLICATED	COMPLEX
	Question Type: Correction	Question Type: Correction	Question Type: Revision
<p>QUESTION CONTENT: Mechanics</p> <p>PERFORMANCE STANDARD: Know and apply comma rules, including:</p> <ul style="list-style-type: none"> ■ Commas in a series or list. ■ Commas with subordinate conjunctions to combine independent and dependent clauses. ■ Commas with appositives. ■ Unnecessary commas. <p>Note: The serial comma (the comma after the second to last item in a list of words, before the word “and”) is optional and will not be tested on the GED exam, nor will it appear as an answer choice.</p>	<p>Example Text: <i>Any student who receives an “A”, is going to get a prize.</i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Apply their knowledge of comma rules in order to make the necessary correction. 2) Understand comma usage and rules for sentences. 3) Know if the placement of the comma does not fall into any of the categories or reasons for which commas are used, it is not necessary. 4) Determine the comma in the sentence above is unnecessary. 5) Correct this example by removing the comma after “A.” It provides no purpose to the meaning of the sentence. 	<p>Example Text A: <i>If you want to go bowling the next time don’t forget to do your homework.</i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Apply their knowledge of comma rules in order to make the necessary correction. 2) Recognize “if” as a subordinate conjunction. 3) Apply comma rules for sentences beginning with subordinate conjunctions. 4) When a sentence begins with a subordinate conjunction, a comma is necessary before the sentence’s independent clause. 5) Determine the correction requires a comma to be inserted after “time.” <p>Example Text B: <i>The artist will receive one third at the start one third halfway through the job, and the final third upon completion of the artwork.</i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Know and apply comma usage for items of more than two in a series/list. 2) Know the first two items in a list always require a comma placed between them. 3) Correct this example by placing a comma after the word “start” to separate the first two items. 	<p>Example Text A: <i>The best grade in the class is given to a member of the project <u>team</u>, based on his or her group work rather than a particular individual paper.</i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Recognize the best way to rewrite the underlined portion of the text(s). 2) Know and apply comma rules; if the comma does not fall into any of the categories or reasons for which commas are used, it is not necessary. 3) Recognize the comma in the sentence above is unnecessary. 4) Determine the revision of this sentence requires the comma after “team” to be removed. Know its purpose is unnecessary to the meaning of the sentence. <p>Example Text B: <i>It was five years ago that two lawyers John and Brad, merged their rival firms.</i></p> <p>Students at this level should be able to:</p> <ol style="list-style-type: none"> 1) Know and apply comma rules. 2) Recognize the appositive in the sentence above. An appositive adds extra non-essential information to the sentence. 3) Determine the appositive needs to be set off by commas. 4) Correctly revise the sentence by placing a comma before and after the appositive “John and Brad.”

LANGUAGE ARTS: WRITING	BASIC	COMPLICATED	COMPLEX
	Question Type: Correction	Question Type: Construction Shift	Question Type: Construction Shift
<p>QUESTION CONTENT: Organization</p> <p>PERFORMANCE STANDARD:</p> <ul style="list-style-type: none"> ■ Recognize a unity of ideas and a logical order of sentences within a paragraph. ■ Use effective transitions words to combine sentences. ■ Choose effective topic sentences. ■ Select effective text division by dividing paragraphs. 	<p>Example Text: <i>Studying Abroad</i></p> <p><u>Paragraph X</u> (1) Studying abroad has become a popular trend among U.S. college students. (2) U.S. universities report that each year the number of students who study abroad tends to increase. (3) Many students choose to study abroad in Europe. (4) There are many European programs to choose from, but some students also chose programs in Asia, Australia, or even Africa. (5) The possibilities for studying abroad are vast; however, there is usually a minimum grade point average requirement to do so. (6) It is important that you study hard if you want this wonderful opportunity!</p> <p>Students at this level should be able to determine an effective revision of sentence (6) It is important that you study hard if you want this wonderful opportunity!</p> <ol style="list-style-type: none"> 1. Move sentence (6) to the beginning of Paragraph X. 2. Add “Therefore,” to the front of the sentence. 3. Move sentence (6) to follow sentence (4). 4. Remove sentence (6). <p>The correct answer is Option (2). The transition phrase “Therefore,” makes the relationship between ideas in sentences (5) and (6) clearer.</p>	<p>Example Text: <i>Boat Cruises</i></p> <p><u>Paragraph Y</u> (1) There are many different activities to choose from. (2) Some passengers decide to swim, while others play casino games. (3) Other activities include dance lessons or fishing, but many people like to stick to the buffet. (4) From time to time, a boat cruise may even stop at an island to explore the local shops and restaurants.</p> <p>Students at this level should be able to choose the most effective topic sentence for Paragraph Y from the following options:</p> <ol style="list-style-type: none"> 1. Sometimes passengers will get sea-sick. 2. It is fun when the whole crew begins a game of volleyball. 3. Boat cruises are becoming increasingly popular as a vacation option. 4. Boat cruises often offer affordable prices or “specials”. 5. Many passengers report hating their experience on the boat. <p>Students must know that a topic sentence is a general statement of the main idea of a paragraph. Students must also recognize the above paragraph lacks a topic sentence and contains only supporting details. Option (3) is the best choice for the above paragraph’s topic sentence.</p>	<p>Example Text: <i>Tips to do Well in School</i></p> <p><u>Paragraph Z</u> (1) Pay attention in class and take notes. (2) Do your homework. (3) Review your notes daily. (4) Bring questions into class to ask your teacher. (5) If you do not understand the material, see the teacher after class for extra help. (6) Review all your notes and past homework assignments to study for the test. (7) Once you get your first test back, you can review the progress you have made. (8) See the teacher for extra help to have him or her explain the questions that you did not answer correctly. (9) Once you build a close relationship with your teacher, he or she will understand the areas of the material that you struggle with and will greatly aid in your learning. (10) It is important to follow up on his or her explanation by reviewing the material again, individually, to ensure a full understanding.</p> <p>Students at this level should be able to understand that a new main idea indicates a new paragraph, recognize a main idea’s supporting details, and determine where to begin a new paragraph: with sentence (3), (4), (5), (6), (7), or (8).</p> <p>Students must recognize a shift in ideas occurs with sentence (7). The main idea switches from studying for the first test to following up on the test results. Sentences prior to (7) support the initial main idea of preparing for the test.</p>

Additional Resources: Writing

Electronic Resources

McGraw-Hill GED Writing

www.gedwriting.com

An electronic version of *Contemporary's GED Language Arts, Writing* print publication. Website is very interactive and easy to use. It contains student and instructor sections with chapter outlines, quizzes, flashcards, practice questions, and tips.

On-line essay scoring chart correlated with multiple choice can be found at:

http://higher.ed.mcgraw-hill.com/sites/0809222280/student_view0/ged_score.html

American Council on Education

www.acenet.edu

Official site of the GED Testing Service

New York Times Learning Network

www.nytimes.com/learning

Lesson plans for teachers in all subject areas

Kentucky Department for Adult Education and Literacy: GED Connection

www.ket.org/ged2002

The Kentucky Department for Adult Education and Literacy sponsors GED Connection workbooks & DVDs. This is a joint project of PBS, Kentucky Educational Television, The National Center on Adult Literacy, and the Kentucky Department of Education. Website includes interactive on-line professional development series for teachers.

Lesson Plans:

<http://www.floridatechnet.org/ged/LessonPlans/LanguageArtsWriting/Writing.html>

<http://www.floridatechnet.org/GED/LessonPlans/Lessons.html>

Grammar Resources (printable worksheets):

<http://owl.english.purdue.edu/handouts/print/index.html>

<http://owl.english.purdue.edu/>

<http://www.dailygrammar.com/archive.shtml>

<http://aliscot.com/bigdog/>

Journal Entry Topics:

<http://www.angelfire.com/ok/freshenglish/morejournaltopics.html>

New York City Board of Elections: Voter Registration Form

www.vote.nyc.ny.us/register.html

The information provided by the Board of Elections in the City of New York includes qualifications, how to register, party affiliation, keeping your registration current, where to vote, and district maps.

Print Resources

- Essential Words for the GED (Barron's)
- GED Language Arts, Writing (Steck Vaughn)
- Pre-GED Language Arts, Writing (Steck Vaughn)
- GED Exercise Book: Language Arts, Writing (Steck Vaughn)
- GED Essay, Steck Vaughn (2002): Provides a detailed explanation of the writing process and encourages students to use the acronym P.O.W.E.R. as an easy way to remember the essay writing steps – Plan, Organize, Write, Evaluate, Revise.

Steck Vaughn GED Skill Books:

- Language Arts, Writing: Essay
- Language Arts, Writing: Sentence Structure and Organization
- Language Arts, Writing: Mechanics and Usage

Note: The Steck Vaughn GED Skills Books are consumables

Contemporary/McGraw Hill GED Resources:

- GED Language Arts, Writing
- Pre-GED Satellite Book: Language Arts, Writing
- GED Exercise Book: Language Arts, Writing
- GED Essay: Writing Skills to Pass the Test

General Writing Resources

- School to Work (Sourcebook) Book 1 - Writesource Great Source Educational Group
- Grammar for Writing (Course 4 – Grade 9), (Course 5 – Grade 10) - Sadlier Oxford Pub.
- Success in Writing: Grammar Skills for Writers – Globe Fearon
- Success in Writing: Writing to Describe – Globe Fearon

- Success in Writing: Writing to Explain – Globe Fearon
- Better Sentence Writing in 30 minutes a Day – (Better English Series), Dianna Campbell
- Fifteen Steps to Better Writing – Amsco School Publishers
- Essentials of Writing – Barron’s
- Elements of Style, Strunk & White
- The Little Brown Essential Handbook for Writers, Prentice Hall

Reading Material to Support Writing

Materials found on the Writing portion of the GED exam include documents that represent the kinds of texts people read and write in daily life. It is important to expose your students to various types of writing by *making them a part of your classroom library*. Immerse your students in literature and encourage them to notice overall writing style, sentence structure, punctuation, and organization.

Suggestions for Relevant Reading Materials:

- Pick up free instructional brochures from large chain stores, such as Home Depot or Lowe’s, that specialize in teaching people “how-to” complete various home projects on their own. You may find similar material discounted or discarded at your local hardware store.
- Klutz is a popular publisher of various “how-to” books for all ages. While their material may not be something found on the GED exam, the topics are of high-interest, and the format and writing style of their publications will definitely provide useful practice. Example topics include: knitting, juggling, making pom-pom animals, learning yo-yo tricks, making really big bubbles, making beaded bobby pins, learning Chinese jump-rope, cat’s cradle, face painting, hand shadows, making paper airplanes/origami, folding a dollar bill, tying knots, and playing jacks.
- Have your students look up “how-to” articles on-line. Some topics can be just for fun (how to make a bird house) and others can be practical (how to write a resume, how to pay for college, how to study, or how to write a GED essay).
- Some of your part-time students may also be attending Co-Op Tech. They will most likely be more comfortable with reading these types of documents. Ask for their assistance in collecting materials to use with the entire class, in areas such as car maintenance, cooking/culinary arts, computer programming, accounting, plumbing/heating, barbering, air conditioning/refrigeration, etc.
- Pick up job applications from stores you frequent.

- Save product instructions and warranties from electronics you purchase. Ask students to bring in some of their own. They are probably just sitting in a drawer somewhere.
- Policies, regulations, or monthly meeting notes from a Co-op/Condo/or Housing Development.
- Your students can research a college of their interest and read general policies regarding:
 - Sexual assault prevention policy
 - Residence hall smoking policy
 - Vehicle and pedestrian traffic/parking regulations
 - Student conduct regulations/General discipline code
 - NYS Alcoholic Beverage Control Law and Vehicle and Traffic Law
 - NYS Penal Law: Controlled Substances Offenses, Offenses Involving Marijuana and Criminal Diversion of Prescription Medications
 - Drug Free Schools and Communities Act/Drug-Free Workplace Act Compliance
 - Policy regarding military recruitment on-campus
 - Prohibition on the marketing of credit cards on-campus
- It is important to make these exercises relevant and meaningful to your students' lives. Encourage your students to conduct similar research on large private companies or public city agencies of their interest regarding similar topics in the workplace:
 - For example, Goldman Sachs presents the following information in its Code of Business Conduct and Ethics on its website:
 - Compliance and reporting
 - Personal conflicts of interest
 - Public disclosure
 - Confidentiality
 - Fair dealing
 - Equal employment opportunity and harassment
 - Corporate opportunities
 - All New York City agencies can be accessed through www.nyc.gov
 - New York City Department of Sanitation website posts public notices regarding illegal dumping and recycling
 - Public Access Portal to the laws of the City of New York
 - The Equal Employment Opportunity Policy of the City of New York is available on-line through The Department of Citywide Administrative Services
 - New York City Department of Buildings – Code of Conduct

Writing the GED Essay

At the official GED exam, students are given two hours to complete the Language Arts: Writing portion of the test; this includes both the essay and the multiple choice questions.

It is strongly advised that students use their time wisely and spend approximately 45 minutes from start to finish on their essays.

Writing a well developed passing GED essay includes the following steps:

- Reading the topic carefully

- Brainstorming ideas

- Creating an outline that shows a logical organization of ideas, e.g.:
 - Chronological order
 - Compare and contrast
 - Cause and effect
 - Order of importance

- Writing a first draft

- Revising and editing

- Writing the final draft in ink

Traditional Essay Format with Five Paragraphs

Introduction

- Your first paragraph is your **INTRODUCTION**.
- It is organized from general to specific. (Think of zooming in like a camera. Your angle starts off broad or wide, then narrows in and becomes more specific.)
- The first 2-3 sentences restate the topic. The last sentence of this paragraph is called your thesis statement, which states your point of view and briefly tells the reader what to expect in each body paragraph.

1st Body Paragraph

- Your 1st body paragraph explains one idea that supports the main idea of the essay. It should have several detailed sentences that support the topic sentence.
- The supporting sentences should include examples and details to strengthen your essay's main idea.

2nd Body Paragraph

- Your 2nd body paragraph discusses another (different) idea that supports the main idea of the essay.
- It should also contain several detailed supporting sentences that support the topic sentence. The supporting sentences should include examples and details to strengthen your essay's main idea.

3rd Body Paragraph

- Your 3rd body paragraph discusses yet another (different) idea that supports the main idea of the essay. It should also contain several detailed supporting sentences that support the topic sentence.
- The supporting sentences should include examples and details to strengthen your essay's main idea.

Conclusion

- Your last paragraph is your **CONCLUSION**. Your concluding paragraph is organized from specific to general.
- Be sure to restate your thesis statement, and end your essay with a statement that summarizes your opinion and relates to the essay topic.

Suggestions for Time Management — Writing the GED Essay in 45 Minutes

Time Limit:
10-15 minutes

- Reading the Topic Carefully
- Brainstorming Ideas
- Creating an Outline (Organize and Plan a Format)

Time Limit:
20-25 minutes

- Writing a First Draft (Follow Your Outline/Plan)
- Revising and Editing
- Proofreading your essay for spelling, punctuation, capitalization, grammatical agreement, sentence structure, and paragraph transitions

Time Limit:
10-15 minutes

- Writing the Final Draft Legibly in Ink
- At this stage of the writing process, if you make an error while copying from your “rough draft,” neatly cross it out by drawing one line through it and make your own correction as clearly as possible. If you are adding a word or phrase, use a ^ caret. Your writing will not be penalized for either of these corrections.

Common Transitional Words and Phrases

To contrast

- However, nevertheless, although, even though, on the other hand, in spite of, despite, on the contrary, yet, regardless, though, contrarily, notwithstanding, but, however, nevertheless, in contrast, yet, on one hand, on the other hand, rather, nor, conversely, while this may be true.

To provide an example or emphasize

- For example, that is, for instance, in fact, specifically, to illustrate, in other words, as an illustration, in particular, above all, indeed, truly, of course, certainly, surely, in truth, again, namely, such as.

To add to an idea

- Additionally, besides, furthermore, also, moreover, in addition, both _____ and, another, equally important, first, second, etc, again, last, finally, not only _____ but also, as well as, in the second place, likewise, similarly, in fact, in the same way.

To show cause or result

- Therefore, as a result, consequently, thus, hence, because, so that, accordingly, for this reason, so, due to.

To show order or time

- Meanwhile, so far, at last, then, first, when, next, after, afterward, before, once, at length, formally, rarely, usually, another, finally, soon, at the same time, for a minute/hour/day/etc., during the morning/day/week/etc., most important, later, ordinarily, to begin with, generally, in order to, subsequently, previously, in the meantime, immediately, eventually, concurrently, simultaneously.

To summarize

- Therefore, finally, consequently, thus, in short, in conclusion, in brief, as a result, accordingly, on the whole, to sum up, to conclude.

To provide details

- Specifically, especially, in particular, to explain, to list, to enumerate, in detail, namely, including.

To compare

- In the same way, likewise, similarly, also, just as.

Performance Analysis for Essays: Sample Checklist

Along with the prescribed rubric provided by the GED Testing Service, teachers may use a checklist for providing feedback on student essays. Students may also be encouraged to use a checklist for peer evaluation of essays.

Yes	No	Response to the Question
<input type="checkbox"/>	<input type="checkbox"/>	Is the main idea clear?
<input type="checkbox"/>	<input type="checkbox"/>	Is the essay on topic?
Organization/Structure		
<input type="checkbox"/>	<input type="checkbox"/>	Does the introductory paragraph include a general overview of what the essay will be about as well as a clear thesis statement?
<input type="checkbox"/>	<input type="checkbox"/>	Is there effective use of transitions between paragraphs and ideas?
<input type="checkbox"/>	<input type="checkbox"/>	Does the essay follow a logical progression of ideas?
<input type="checkbox"/>	<input type="checkbox"/>	Do the body paragraphs each include a topic sentence and details to support the topic sentence?
<input type="checkbox"/>	<input type="checkbox"/>	Does the concluding paragraph restate the thesis and review the main points of the essay?
Development		
<input type="checkbox"/>	<input type="checkbox"/>	Do the paragraphs include specific details and examples that support the topic sentence?
<input type="checkbox"/>	<input type="checkbox"/>	Does the essay support the thesis statement?
Rules of Edited American English (EAE)		
<input type="checkbox"/>	<input type="checkbox"/>	Are ideas written in complete sentences?
<input type="checkbox"/>	<input type="checkbox"/>	Does sentence structure vary?
<input type="checkbox"/>	<input type="checkbox"/>	Are punctuation marks used correctly?
<input type="checkbox"/>	<input type="checkbox"/>	Are words spelled correctly?
<input type="checkbox"/>	<input type="checkbox"/>	Is capitalization used correctly?
<input type="checkbox"/>	<input type="checkbox"/>	Do all the subjects and verbs agree?
<input type="checkbox"/>	<input type="checkbox"/>	Is there consistency in verb tense?
Word Choice		
<input type="checkbox"/>	<input type="checkbox"/>	Is the use of words varied?
<input type="checkbox"/>	<input type="checkbox"/>	Is the use of words appropriate and accurate?

Sample Essay Topics

- What are three qualities you look for in a friend? Be specific, and use examples to support your views.
- Who is someone you admire? Explain why you admire that person.
- What makes a good parent? Support your opinion with specific reasons and examples.
- What is one important goal you would like to achieve in the next few years?
- Despite laws that require people to wear seatbelts, many people do not wear them. Why?
- How important is having a GED or high school diploma when you apply for a job?
- Is it better to live for the moment or plan for the future?

Sample Essay Outline

Topic: _____

A. Introduction

1. Introductory statement
2. Thesis statement: _____

B. Body

3. First Supporting Idea (Topic Sentence): _____
 1. _____ Detail or Example
 2. _____
 3. _____
4. Second Supporting Idea (Topic Sentence): _____
 1. _____ Detail or Example
 2. _____
 3. _____
5. Third Supporting Idea (Topic Sentence): _____
 1. _____ Detail or Example
 2. _____
 3. _____

C. Conclusion

6. Closing statement
7. Restate thesis: _____

Journal Writing Topics⁸

- What is your favorite time of year?
- Describe a family member.
- Compare your first impressions of this school/program to your expectations.
- Describe your travel to and from school.
- Compare the personalities of two friends.
- I was happiest when...
- What is the most important thing you will ever do?
- Write about an incident that illustrates (shyness, kindness, courage, selfishness).
- Describe the best hour of the day.
- Describe your holiday traditions.
- Describe the qualities of a good teacher, parent, friend, etc.
- Describe a favorite toy you had as a child.
- Describe the place where you feel (or have felt) most at home.
- Describe the perfect day. Make it a possible day, not a dream day.
- Write a letter to yourself to be sealed now and opened and read by you in ten years. What will you want to remember then?

Quotes About Writing

- However great a man's natural talent may be, the art of writing cannot be learned all at once. (Rousseau)
- The purpose of paragraphing is to give the reader a rest. The writer is saying . . . : Have you got that? If so, I'll go to the next point. (H. W. Fowler)
- The most important fact about a comma is that there are places where it must not be used. (Bergen Evans and Cornelia Evans)
- Punctuation marks are the road signs placed along the highways of our communication – to control speeds, provide directions, and prevent head-on collisions. (PicoIyer)
- The best writing is rewriting. (E. B. White)
- There are no dull subjects. There are only dull writers. (H. L. Mencken)

⁸Journal Writing Topics available at www.angelfire.com/ok/freshenglish/morejournaltopics.html.

Sample Writing Survey

(for use with the whole class or with students individually)

Name _____

Date _____

1. Do you like writing? If yes, is there a specific type of writing you enjoy (school-related or not school-related)?
2. Do you know how to organize your ideas when writing an essay?
3. Are you comfortable with letting others (including classmates) give you feedback on your writing?
4. Are you able to communicate your ideas easily through writing?
5. Have you had positive experiences with writing in school or outside of school?
6. When have you used writing for a purpose other than a school assignment?
7. Are you confident in your writing ability?
8. Do you feel you have been prepared by your previous schools/teachers to write an essay?
9. Do you know how to edit and revise your writing?
10. Do you usually ask for help when you have a writing assignment?
11. Do you find it difficult to write more than a few sentences on a given topic? *Or* does it depend on your interest or knowledge of the topic?
12. Do you think that writing is an important and valuable skill?
13. Do you ever procrastinate when you have writing to do?
14. Do you “switch gears” when you write for school compared to when you write for yourself?
15. Do you write online messages or text messages? Do you use abbreviations?
16. Overall, would you say that writing is easy or difficult for you?
17. Would you rather write a report / essay or a piece of creative writing, like a short story or poem?

RUBRIC: GED Essay

The five major criteria used in evaluating an essay are as follows:

- **Response to the Prompt** refers to how well the essay responds to the topic, including whether or not the focus of the response shifted.
- **Organization** refers to evidence that the candidate had a clear idea about what he/she would write and was able to establish a definable plan for writing the essay.

SCORES → CATEGORIES ↓	1: INADEQUATE READER HAS DIFFICULTY IDENTIFYING OR FOLLOWING THE WRITER'S IDEAS.
Response to the Prompt	Attempts to address prompt but with little or no success in establishing a focus.
Organization	Fails to organize ideas.
Development and Details	Demonstrates little or no development, usually lacks details or examples or presents irrelevant information.
Conventions of EAE (Edited American English)	Exhibits minimal or no control of sentence structure and the conventions of EAE.
Word Choice	Exhibits weak and/or inappropriate words.

Official GED Testing Service ESSAY Scoring Guide from The American Council on Education (ACE)

- **Development and Details** refers to the candidate’s ability to expand on initial concepts or statements through use of examples and specific details, rather than using lists or reiterating information.
- **Conventions of Edited American English (EAE)** refers to the candidate’s ability to use appropriately edited English – including the application of the basic use of grammar, mechanics, usage, and sentence structure.
- **Word Choice** refers to the candidate’s ability to use varying and appropriate words to express an idea.

Essays are scored holistically using a four-point scale. Two readers score each essay, and the final score is the average of these two scores.

2: MARGINAL READER OCCASIONALLY HAS DIFFICULTY UNDERSTANDING OR FOLLOWING THE WRITER'S IDEAS.	3: ADEQUATE READER UNDERSTANDS THE WRITER'S IDEAS.	4: EFFECTIVE READER UNDERSTANDS AND EASILY FOLLOWS THE WRITER'S EXPRESSION OF IDEAS.
Addresses the prompt, though the focus may shift.	Uses the writing prompt to establish a main idea.	Presents a clearly focused main idea that addresses the prompt.
Shows some evidence of an organizational plan.	Uses an identifiable organizational plan.	Establishes a clear and logical organization.
Has some development but lacks specific details; may be limited to a listing, repetitions, or generalizations.	Has focused but occasionally uneven development; incorporates some specific detail.	Achieves coherent development with specific and relevant details and examples.
Demonstrates inconsistent control of sentence structure and the conventions of EAE.	Generally controls sentence structure and the conventions of EAE.	Consistently controls sentence structure and the conventions of EAE.
Exhibits a narrow range of word choice, often including inappropriate selections.	Exhibits appropriate word choice.	Exhibits varied and precise word choice.



*Teaching and Learning
in the Content Areas:*

Mathematics

The teaching of mathematics can make sense to students and its pleasures can be recovered, if its isolation, its otherness, is understood and solved.

– *Teaching for Depth: Where Math Meets the Humanities*, by Dale Worsley

The GED Math Test assesses ability to think and solve problems. Therefore, the challenge for GED instructors is to teach math as a thinking skill.

– KET

Can the students transfer what they know here and now to another related set of problems at another time...in other words, do they really know... have they learned anything that will last a lifetime?

– Ian Hauser, as quoted in *Teaching for Depth: Where Math Meets the Humanities*, by Dale Worsley

Tools Table Window Help Adobe PDF Acrobat Comments

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New York, NY
January 2007

New York, NY
September 2008

Queens, NY
June 2006-August 2009

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NYC

Department of Education

Mathematics



TEACHING AND LEARNING IN THE CONTENT AREAS: MATHEMATICS

Introduction

Although mathematics is known as the universal language, for many of us, it is a foreign language, full of seemingly arbitrary rules to be memorized and forgotten, lacking relevance to everyday life. The way in which we teach and learn mathematics shapes our perceptions. Teaching mathematics as a tool for problem solving promotes critical thinking and encourages students to apply learning to various contexts. It is essential to understand how skills and concepts are related. When students have learned to value process as much as, or more than, the answer, they have arrived.

Teaching Strategies and Recommendations

- 1) Teach students, not math programs.** Too many students see mathematics as a disconnected stream of numbers, and a source of anxiety. Know your students well, as learners and as individuals. Address and evaluate students' attitudes and beliefs regarding math, and provide opportunities for students to process their thoughts through journal writing, conversations with other students, and inquiry-based activities. Remember, each individual is unique. Assess strengths and weaknesses and communicate findings: the goal is for students to take ownership of the process. Vary methods, materials, and modes of instruction. For additional information about math anxiety, visit http://www.mathgoodies.com/articles/math_anxiety.html.
- 2) Teach from whole to part.** Think about the relationships of the standards and competencies to the major domains of math prior to planning lessons: note the presentation, context, and order of the ACE competencies for number sense on page 71 (calculation skills are 1.6, not 1.1) – students need to build concepts prior to performing operations. When introducing a new topic, explain, or better yet, have students describe how the topic relates to larger ideas. Examples include: teaching fractions, decimals, and percents as parts of a whole (and perhaps teaching them contemporaneously); relating equations to graphs and formulas; and learning computation skills within the context of word problems. At the end of a lesson or a unit, assess students' understanding of the larger frames: written responses to open-ended prompts can be quite useful in this regard.

3) Teach students how to read word problems. While there is an abundance of models for problem solving, the question remains: Why are many students capable of reading complex literary texts, but unable to read word problems? Perhaps the design contributes to the confusion – the question (main idea) appears at the end of a word problem (story), not the beginning, and there are no titles. In addition, challenging word problems may contain extraneous information as well as voluminous text, and address more than one concept. Factor in math anxiety and traditional approaches that promote non-thinking (pages full of identical, undifferentiated word problems), and it is easy to understand why students shut down.

Model the process: start out by identifying the question, annotating text, separating and color-coding information that is needed and not needed, confirming understandings by engaging in the metacognitive process of asking and answering internal questions, and creating visuals. You may wish to remove the numbers from word problems to promote analysis. In addition, ask students to create reality-based problems and disseminate them. As there are no simple solutions to this complex issue, cohorts of content area teachers are encouraged to brainstorm literacy-based approaches, and specifically address methods to increase stamina.

4) Teach multiple strategies for solving problems. The National Council of Teachers of Mathematics (NCTM) has identified eight major strategies for solving problems: compute or simplify; use a formula; make a model or diagram; make a table, chart, or list; guess, check, and revise; work backwards; eliminate; look for patterns. Students should be conversant with all of the strategies: knowing them will help students to think through a problem, explaining them will strengthen understanding. Good problem solvers are able to talk through a problem. Collaborative problem solving is highly recommended; it will break down the isolation, improve critical thinking, and promote the value of different perspectives. Students who learn and apply multiple strategies are more skilled at identifying the correct responses to set-up questions, a standard component of many standardized tests. For related online professional development, visit <http://ket.org/ged2002>.

5) Teach in an interdisciplinary manner. In life, the GED, and in higher education, math does (or should) not exist in a vacuum; it is part of a contextualized whole, a tool for problem solving and understanding relationships. Visual literacy, a major strand of the GED, connects math with social studies, science, and reading. Newspaper/magazine articles that contain data embedded in text and graphs connected with text, recipes, construction projects, budgets, and mortgages, are natural sources for exploration. Coordinate grids and map reading are the same skill: teaching them consecutively will reinforce learning and promote transfer. Projects, for example, designing a survey and presenting findings verbally and in text, can provide authentic experiences and motivate students. Steck Vaughn's GED Skill Book, "Interpreting Visual Information," a pamphlet that applies learning to several context/subject areas, is recommended.

6) Teach estimation skills, mental math, and calculator skills. In our everyday experiences and on tests, we need ways to evaluate the reasonableness of our solutions. When teaching short cuts, emphasize the concepts that underscore these methods – it will help students to create their own devices. For example, teach students how to calculate benchmark percents mentally and illustrate connection to place value. Incorporate calculator use in problem-solving activities. The appendix of this section contains calculator directions and warm-up activities.

7) Know the GED Test and use backwards planning. If you haven't already done so, take predictors and sample questions contained in this manual: get to know the test as a student would. Emphasize priority areas: word problems, graphic literacy, the formula sheet, ratios and proportions, equations, set-up questions, order of operations, and equivalencies. Introduce number lines, coordinate grids, and isolating the variable early in the process. Focus upon process and application; integrate and spiral instruction – **the test frequently assesses more than one concept in a single question.** Explicitly model test-taking strategies.

For information about the CUNY Math Placement Tests, visit
<http://www.hostos.cuny.edu/oaa/compass/index.asp>.

GED Test Content and Composition: Mathematics

The GED Mathematics Test assesses different ways of applying math skills through the use of three different question types. Cognitive skills are tested through the use of procedural, conceptual, and application/modeling/problem-solving questions. The chart below explains how these types of questions are broken down.

QUESTION TYPE	PERCENT	DESCRIPTION
Procedural	20%	<p>Procedural questions require test-takers to select and apply the appropriate process for solving a problem. Procedural questions test the ability to:</p> <ul style="list-style-type: none"> ■ Select and apply the correct operation or procedure to solve a problem. ■ Verify and justify the correctness of a procedure using concrete models or symbolic methods. ■ Modify procedures to deal with factors inherent in problem set. ■ Use numerical algorithms. ■ Read and interpret graphs, charts, and tables. ■ Execute geometric constructions. ■ Round, estimate, and order numbers as needed in a given situation.
Conceptual	30%	<p>To answer conceptual questions, candidates must demonstrate their knowledge of how basic math concepts and principles work. In some conceptual problems, candidates will be required to identify how to solve a problem, but they will not be required to actually compute the answer. Candidates who have a clear understanding of math concepts and principles know how, when, and why to use a particular mathematical concept. These questions assess the ability to:</p> <ul style="list-style-type: none"> ■ Recognize and label basic mathematical concepts. ■ Generate examples and counter-examples of concepts. ■ Interrelate models, diagrams, and representatives of math concepts. ■ Identify and apply concepts and principles of mathematics. ■ Know and apply facts and definitions. ■ Compare, contrast, and integrate related concepts and principles. ■ Recognize, interpret, and apply signs, symbols, and mathematical terms. ■ Interpret assumptions and relationships.
Application, Modeling, and Problem-Solving	50%	<p>Application/modeling/problem-solving questions assess the ability to apply mathematical principles and problem-solving strategies. These questions assess the candidate's ability to:</p> <ul style="list-style-type: none"> ■ Recognize and identify the type of problem that is represented. ■ Decide whether or not there is sufficient information provided to solve a problem. ■ Select only the information that is necessary to solve a given problem. ■ Apply the appropriate problem-solving strategy to compute an answer. ■ Adapt strategies or procedures to solve a problem. ■ Determine whether an answer is reasonable and correct.

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Content Areas Covered

CONTENT AREA	PERCENT
Number Operations and Number Sense	20-30%
Measurement and Geometry	20-30%
Data Analysis	20-30%
Algebra, Functions, and Patterns	20-30%

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Test-Taking Tips and Strategies:

- **Take the Official Practice Tests under simulated test conditions** and identify areas for additional study. Understand the **targeted feedback** you receive from your teachers using teacher-made analyses of questions or breakdowns provided by Steck Vaughn or Contemporary. The feedback will help you identify your strengths and weaknesses.
- **Think like the test writer.** Relate questions to standards for the GED, analyze distracters, and practice set-up questions. Notice that there are common threads in seemingly different questions; sometimes test-takers do not realize that two problems are exactly the same because they are in a different format or the question is asked differently. Think about how the problem is similar to problems you have encountered in the past. Make connections to what you have studied and recognize what the question is designed to assess.
- **Become familiar with the test.** Learn the test directions for each section and practice alternate formats, including standard and coordinate grid questions. Make sure you understand that in the alternate format grids, it is impossible to record mixed numbers, degree symbols, and percent signs. Understanding this before the test will reduce your test anxiety and save you time on the test.
- **Use the process of elimination.** Eliminating two obviously incorrect choices increases the likelihood of ascertaining the correct choice by 40%. If the remaining choices are far apart, calculations may not be necessary. Explicitly model this strategy and incorporate estimation into daily learning experiences. Work backwards to find the best possible answer. One of the answers will always be correct.
- **Use partial answers.** For example, if a question asks how much a retailer would charge for an item that he purchased for \$150 and marked up by 50%, one of the choices would probably be \$75, since \$75 is 50% of \$150. However, to complete the answer you must add \$75 to \$150 to get \$225. Make sure you complete the problem before choosing your answer. Use incorrect answer choices to determine the correct option.
- **Pay particular attention to special words.** If a word appears in **bold**, it is that way for a reason; if a word connotes estimation, the choices will be rounded, not exact; if there is a negative word, the answer should be consistent. (For example, which of the following is *never* true?)

- **You should be able to recognize when you can use a formula to solve a problem.**

The mathematics formula page contained in the appendix is provided to all test-takers on the day of the test. Knowing how and when to use a formula, understanding how to “reverse” a formula, and recognizing alternate set-ups for formula questions are keys to success.

- **You should learn to use the calculator as a tool for problem solving.** Make sure you are familiar with special features and peculiarities, especially procedures for inputting signed numbers, inputting signs when expressions contain brackets, and calculating square roots. The test itself contains calculator instructions, but the best time to learn how to use the calculator is during class, not during the exam. Also, know when and how a calculator can be helpful.

- **The official calculator of the GED Test, the Casio FX-260, will be provided to you.** You may not use your own calculator, cell phone, or any other electronic devices during the test.

- **If the test seems difficult, don’t panic.** The GED Test is a normed test: how many questions a candidate needs to answer correctly to obtain a passing score is based upon how well the standardized population does on that particular test. Somewhat surprisingly, many test-takers report that the section for which calculators are permitted is the more difficult of the two.

- **Answer all questions.**

Performance Standards: Mathematics

Excerpted from the American Council on Education website, the performance standards delineated in the following chart describe what students need to know and be able to do. Unlike objectives contained in many GED texts, these standards frequently apply learning to many contexts; for example, 1.3 states: *recognize equivalencies and order relations for whole numbers, fractions, decimals, integers, and rational numbers*. Although 1.3 addresses what we might describe as a lower-level competency, consider the breadth of its application, and structure the type of experiences that will encourage students to make connections that cut across artificial boundaries. Concise, targeted, linear objectives may be found in many of the texts and software programs listed in this resource guide.

Teachers and students can analyze sample predictors to understand how achievement of these standards is assessed. Looking at the questions through the lens of the standards provides a foundation for backwards planning and developing insights into the way that the test is created.

Remember, GED Mathematics Test is primarily a thinking endeavor. Standards such as 4.1: *analyze and represent situations involving variable quantities with tables, graphs, verbal expressions, and equations* illustrate the type of mathematical thinking and agility required of successful candidates: 21st century, worker-citizens and students seeking admission to post-secondary institutions. The test assesses critical thinking – lessons that reflect these standards will prepare students to perform well on the exam and facilitate the acquisition of highly valued, problem-solving skills.

Performance Standards: Mathematics

OPERATIONS AND NUMBER SENSE	BASIC MEASUREMENT AND GEOMETRY	DATA ANALYSIS	ALGEBRA, FUNCTIONS, AND PATTERNS
<p>1.1 Represent and use numbers in a variety of equivalent forms (integer, fraction, decimal, percent, exponential, and scientific) in real-world and mathematical problem situations.</p> <p>1.2 Represent, analyze, and apply whole numbers, decimals, fractions, percentages, ratios, proportions, exponents, roots, and scientific notation in a variety of situations.</p> <p>1.3 Recognize equivalencies and order relations for whole numbers, fractions, decimals, integers, and rational numbers.</p> <p>1.4 Select the appropriate operations to solve problems (for example, when should I divide?).</p> <p>1.5 Relate basic arithmetic operations to one another.</p> <p>1.6 Calculate with mental math, pencil and paper, and a scientific calculator using whole numbers, fractions, decimals, and integers.</p> <p>1.7 Use estimation to solve problems and assess the reasonableness of an answer.</p>	<p>2.1 Model and solve problems using the concepts of perpendicularity, parallelism, congruence, and similarity of geometric figures.</p> <p>2.2 Use spatial visualization skills to describe and analyze geometric figures and translations/rotations of geometric figures.</p> <p>2.3 Use the Pythagorean theorem to model and solve problems.</p> <p>2.4 Find, use, and interpret the slope of a line, the y-intercept of a line, and the intersection of two lines.</p> <p>2.5 Use coordinates to design and describe geometric figures.</p> <p>2.6 Identify and select appropriate units of metric and customary measures.</p> <p>2.7 Convert and estimate units of metric and customary measure (all conversions within systems).</p> <p>2.8 Solve and estimate solutions to problems involving length, perimeter, area, surface area, volume, angle measurement, capacity, weight, and mass.</p> <p>2.9 Use uniform rates (e.g., miles per hour, bushels per acre) in problem situations.</p> <p>2.10 Read and interpret scales/meters/gauges.</p>	<p>3.1 Construct, interpret, and draw inferences from tables, charts, and graphs.</p> <p>3.2 Make inferences and convincing arguments that are based on data analysis.</p> <p>3.3 Evaluate arguments that are based on data analysis, including distinguishing between correlation and causation.</p> <p>3.4 Represent data graphically in ways that make sense and are appropriate to the context.</p> <p>3.5 Apply measures of central tendency (mean, median, mode) and analyze the effect of changes in data on these measures.</p> <p>3.6 Use an informal line of best fit to predict from data.</p> <p>3.7 Apply and recognize sampling and bias in statistical claims.</p> <p>3.8 Make predictions that are based on experimental or theoretical probabilities, including listing possible outcomes.</p> <p>3.9 Compare and contrast different sets of data on the basis of measures of central tendency and dispersion.</p>	<p>4.1 Analyze and represent situations involving variable quantities with tables, graphs, verbal descriptions, and equations.</p> <p>4.2 Recognize that a variety of problem situations may be modeled by the same function or type of functions (e.g., $y = mx + b$, $y = ax^2$, $y = a^x$, $y = 1/x$).</p> <p>4.3 Convert between different representations, such as tables, graphs, verbal descriptions, and equations.</p> <p>4.4 Create and use algebraic expressions and equations to model situations and solve problems.</p> <p>4.5 Evaluate formulas.</p> <p>4.6 Solve equations, including first degree, quadratic, power, and systems of linear equations.</p> <p>4.7 Recognize and use direct and indirect variation.</p> <p>4.8 Analyze tables and graphs to identify and generalize patterns and relationships.</p> <p>4.9 Analyze and use functional relationships to explain how a change in one quantity results in change in the other quantity, including linear, quadratic, and exponential functions.</p>

Differentiated Instruction: Math

PERFORMANCE STANDARD	BASIC	COMPLICATED	COMPLEX
<p>Number Operations and Number Sense</p> <p>1.2 Represent, analyze, and apply whole numbers, decimals, fractions, percentages, ratios, proportions, exponents, roots, and scientific notation in a variety of situations.</p>	<p>Analyze basic concepts.</p> <p>Linda is shopping at the mall, trying to decide which coupon to use.</p> <p>Coupon 1: 25% discount</p> <p>Coupon 2: \$25 off</p> <p>What advice will you give to her?</p>	<p>Identify problem type; apply problem-solving procedures.</p> <p>A house with a market value of \$120,000 was assessed for 60% of its market value. The house is taxed at 2% of the assessed value. What is the yearly tax on the house?</p>	<p>Identify necessary information; adapt problem-solving strategies.</p> <p>John's medical plan includes a \$150 deductible and covers 80% of medical costs incurred after the deductible has been met. The first time that John visited a doctor in 2007 he paid \$190, out-of-pocket. How much did the medical plan pay?</p>
<p>Measurement and Geometry</p> <p>2.3 Use the Pythagorean theorem to model and solve problems.</p>	<p>Determine if there is sufficient information; select and apply a formula or procedure.</p> <p>In triangle EDF, if ED is 5 ft and DF is 10 ft, what is the distance in inches from E to F to the nearest whole number?</p> <p>A. 15</p> <p>B. 50</p> <p>C. 180</p> <p>D. 189</p> <p>E. There is not enough information to solve the problem.</p>	<p>Create a model; apply formula and problem – solving procedures.</p> <p>On the first leg of a hiking trip, Jenny traveled 12 miles due north. On the second day, she traveled east, but did not know how many miles she had covered. Fortunately, on the third day, Jenny located a southwest trail that took her directly back to her starting point in the shortest amount of distance, and she hiked the 15 miles in just under 6 hours. Had she not located the shortcut, she would have retraced her steps. How many miles did she save by taking the shortcut?</p>	<p>Compare, contrast, and integrate related concept; synthesize findings.</p> <p>Working with a partner, analyze, illustrate, and explain how the following formulae and concepts are related:</p> <p>Pythagorean relationship Distance between two points Slope</p> <p>Present your findings in narrative form supported by models. Share findings with classmates in five-minute presentations.</p>

PERFORMANCE STANDARD	BASIC	COMPLICATED	COMPLEX												
<p>Data Analysis, Statistics, and Probability</p> <p>3.5 Apply measures of central tendency (mean, median, and mode) and analyze the effects of changes in data on these measures.</p>	<p>Apply formulas; know and apply facts and definitions.</p> <p>In his first 4 basketball games, John scored 22, 19, 19, and 24 points. In his fifth game, he left the game because of an injury and didn't score any points. If he had not been injured, John believes that he would have scored 40 points. What did John average for the first 5 games? Which of the following data measures is least affected by John's performance in game 5 – range, median, mode, or average?</p>	<p>Generate examples and counter-examples.</p> <p>This term, your grade on your report card will be based solely upon your performance on four unit tests, and you will determine which measure of central tendency should be used. When should you use the mode, median, or mean? Provide examples to illustrate each of the three choices. Under what conditions would all three choices result in the same outcome?</p>	<p>Integrate text and graphics; adapt problem-solving strategies.</p> <p>Paul will earn a \$1000 performance bonus if he sells an average of 160 cars per month in 2007. As an added incentive, if Paul is able to surpass this goal by 50%, he will earn an additional bonus of \$5000. His monthly sales chart is as follows:</p> <table border="1"> <tr> <td>158</td> <td>152</td> <td>168</td> <td>83</td> <td>172</td> <td>200</td> </tr> <tr> <td>200</td> <td>154</td> <td>201</td> <td>X</td> <td>X</td> <td>X</td> </tr> </table> <p>How many cars must Paul sell in the last quarter to earn the second bonus?</p>	158	152	168	83	172	200	200	154	201	X	X	X
158	152	168	83	172	200										
200	154	201	X	X	X										
<p>Algebra, Functions, and Patterns</p> <p>4.10 Analyze and use functional relationships to explain how a change in one quantity results in change in the other quantity, including linear, quadratic, and exponential functions.</p>	<p>Apply function.</p> <p>John is planting two gardens. Each one is a square, but the sides of the second garden are three times as large as the sides of the first garden. How many times greater is the area of the second garden than the first garden? Hint: review formula sheet.</p>	<p>Identify, apply, and illustrate concepts.</p> <p>John is deciding where to buy pizza.</p> <table border="1"> <thead> <tr> <th>Mr. Pizza</th> <th>Pizzarama</th> </tr> </thead> <tbody> <tr> <td>10 inch pie \$12.00</td> <td>Two 5 inch pies \$6.00 each</td> </tr> </tbody> </table> <p>Assuming that Mr. Pizza and Pizzarama are of equal quality, which is the better buy? Describe and illustrate the underlying concept.</p>	Mr. Pizza	Pizzarama	10 inch pie \$12.00	Two 5 inch pies \$6.00 each	<p>Evaluate and synthesize.</p> <p>Wilson Rental charges \$80/day and \$2/mile.</p> <p>Stanford Rental charges \$60/day and \$5/mile.</p> <p>All Day Car Rental charges a flat charge of \$110/day.</p> <p>Evaluate the pricing plans of each company using graphs, functions, and other strategies. Create 5 sample questions based upon your graphs.</p>								
Mr. Pizza	Pizzarama														
10 inch pie \$12.00	Two 5 inch pies \$6.00 each														

Additional Resources: Math

Print Resources

Teaching for Depth: Where Math Meets the Humanities, Dale Worsley (ed): conversations among colleagues

Get It Together by Tim Erickson: collaborative problem solving

Math On Call, Great Source Education Group, a handbook and reference guide

Algebra To Go, Great Source Education Group, a handbook for GED plus

GED Connections Mathematics and Pre-GED Connection Mathematics (Kentucky Educational Television workbooks to accompany TV series/videos, and website)

GED Access Point: Mathematics, National Council on Education and the Economy Course promotes mathematical reasoning skills – GED level

GED Mathematics, Steck-Vaughn program book focuses on skills and test prep

Ancillary Texts

The following books emphasize higher-order thinking and integration of skills:

Contemporary's *Top 50 Math Skills for GED Success* (emphasizes critical thinking)

Contemporary's *Number Power 7: Problem Solving and test-taking strategies* – pre-GED level; critical thinking

Pamphlets

The following are consumables available through New Readers Press:

Pass the GED Math -designed for GED boot camp; highlights essential strategies

Whole Numbers, Decimals, Fractions, and Percents – summary review

Measurement and Data Analysis – emphasizes graphics

Algebra and Geometry – higher levels, emphasizes connections and critical thinking

Visual Literacy and Graphs – designed for literacy and pre-GED level

Visual Literacy Charts and Diagrams – designed for literacy and pre-GED levels

Steck Vaughn: GED Skill Books

Interpreting Visual Information – color graphics, all disciplines

Higher Order Thinking Skills – applies to all disciplines, all Bloom, all the way

Math: Calculator – applicable to all levels; useful as reference guide

Web-based Resources and Software of Special Interest to Students

<http://pbs.org/literacylink> – online GED portfolio and practice for all subjects. May be used with workbooks and videos, or used independently

<http://www.gedmath.com> – GED Math Topic Outline with summaries, practice questions, quizzes, and additional web links; highly recommended for teachers as well (from Contemporary)

<http://www.algebrahelp.com> – lessons and worksheets

<http://www.mathforum.org> – links, lessons, puzzles, and more

<http://www.hostos.cuny.edu/oaa/compass/index.asp> – preparation for Compass Test in Mathematics, the CUNY Placement Test

Access 21st Century – skill-building software program for pre-GED students

Math Appendix

Working with Different Grid Formats

There are two types of grid formats on the GED Mathematics Test. Students are required to complete eight **standard grids** and two **coordinate plane grids**. The following is a review of some basic information about each of these types of grids.

Whole Number and Decimal Answers

The standard grid has five columns and thirteen rows. It can be used to record whole number and decimal answers. After students write in their answer, be sure they remember to bubble in the digit or symbol in the column directly below the digit or symbol written in the top row. A decimal point (.) is provided on the standard grid. The following are examples of grids using whole number and decimal answers.

2	8	9		
/	/	/		
.
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
0	0	0	0	0

2	8	.	9	
/	/	/		
.
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
0	0	0	0	0

When working with decimal answers, students must include the decimal point as a part of the answer. It is very important that students place the decimal point in the correct position.

Working with Standard Grids

Fraction Answers

The following are examples of fraction answers that have been recorded on the standard grid.

1	/	2		
				
.
	1	1	1	1
2	2		2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
0	0	0	0	0

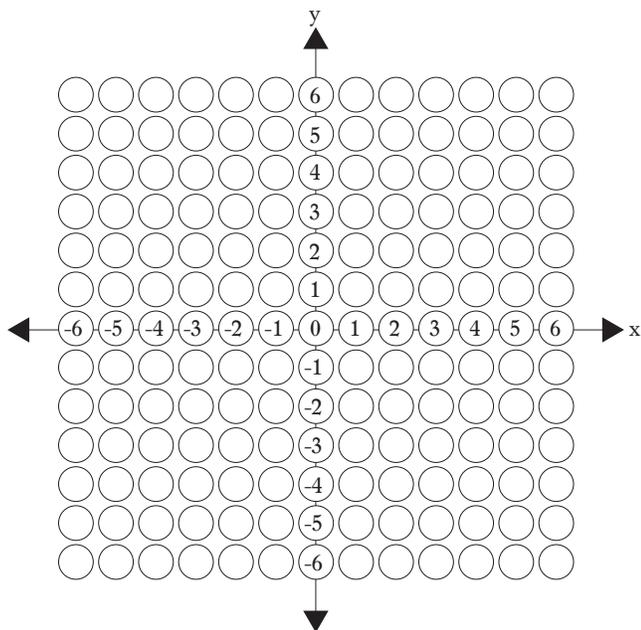
3	/	2		
				
.
1	1	1	1	1
2	2		2	2
	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
0	0	0	0	0

Provide students with plenty of practice in recording both proper and improper fractions on the standard grid. This will help reinforce the fact that a mixed number must be written as an improper fraction or mixed decimal when entered on the standard grid.

Working with Coordinate Plane Grids

The GED Mathematics Test also includes another type of grid—the coordinate plane grid. There will be two coordinate plane grids, one on each part of the GED Mathematics Test. To be able to solve problems using coordinate plane grids, students must understand the basic components of the grid, as well as have an understanding of positive and negative integers.

The **coordinate plane grid** consists of thirteen rows and thirteen columns. The center row is the **x-axis**. It runs horizontally through the grid. The center column is the **y-axis**. It runs vertically through the grid. The y-axis and x-axis intersect at the origin (shown here by the middle circle).



X-Axis

The numbers to the right of 0 on the x-axis are positive. The numbers to the left of 0 on the x-axis are negative.

Y-Axis

The numbers above 0 on the y-axis are positive. The numbers below 0 on the y-axis are negative.

Mathematic Formulas⁹

AREA of a:

Square	Area = side ²
Rectangle	Area = length x width
Parallelogram	Area = base x height
Triangle	Area = ½ x base x height
Trapezoid	Area = ½ x (base ₁ x base ₂) x height
Circle	Area = π x radius ² ; π is approximately equal to 3.14

PERIMETER of a:

Square	Perimeter = 4 x side
Rectangle	Perimeter = (2 x length) + (2 x width)
Triangle	Perimeter = side ₁ + side ₂ + side ₃

CIRCUMFERENCE of a circle:

Circumference = π x diameter; π is approximately equal to 3.14

VOLUME of a:

Cube	Volume = edge ³
Rectangular solid	Volume = length x width x height
Square pyramid	Volume = 1/3 (base edge) ² x height
Cylinder	Volume = π x radius ² x height; π is approximately equal to 3.14
Cone	Volume = 1/3 x π x radius ² x height; π is approximately equal to 3.14

COORDINATE GEOMETRY

Distance between points = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$;
(x_1, y_1) and (x_2, y_2) are two points in a plane

Slope of a line = $\frac{(y_2 - y_1)}{(x_2 - x_1)}$;
(x_1, y_1) and (x_2, y_2) are two points on the line

PYTHAGOREAN RELATIONSHIP

$a^2 + b^2 = c^2$; a and b are legs and c is the hypotenuse of a right triangle

MEASURES OF CENTRAL TENDENCY

Mean = $\frac{(x_1 + x_2 + \dots + x_n)}{n}$;
 x s are the values for which a mean is desired, and n is the total number of values for x

Median = the middle value of an odd number of *ordered* scores, and halfway between the two middle values of an even number of *ordered* score

SIMPLE INTEREST DISTANCE TOTAL COST

Interest = principal x rate x time

Distance = rate x time

Total cost = (number of units) x (price per unit)

⁹ Available at www.acenet.edu.

Calculator Directions for Casio fx-260¹⁰

To prepare the calculator for use the **first** time, press the **ON** (upper rightmost) key. "DEG" will appear at the top center of the screen and "0." at the right. This indicates the calculator is in the proper format for all your calculations.

To prepare the calculator for **another** question, press the **ON** or the red **AC** key. This clears any entries made previously.

To do any arithmetic, enter the expression as it is written. Press **=** (equals sign) when finished.

EXAMPLE A: $8 - 3 + 9$

First press **ON** or **AC**.

Enter the following:

8 **-** **3** **+** **9** **=**

The correct answer is 14.

If an expression in parentheses is to be multiplied by a number, press **x** (multiplication sign) between the number and the parenthesis sign.

EXAMPLE B: $6(8 + 4)$

First press **ON** or **AC**.

Enter the following:

6 **x** **(** **8** **+** **4** **)** **=**

The correct answer is 72.

To find the square root of a number

- enter the number;
 - press the **SHIFT** (upper leftmost) key ("SHIFT" appears at top-left of the screen);
 - press **x²** (third from the left on top row) to access its second function: square root.
- DO NOT press and **SHIFT** and **x²** at the same time.

EXAMPLE C: $\sqrt{64}$

First press **ON** or **AC**.

Enter the following:

6 **4** **SHIFT** **x²**

The correct answer is 8.

To enter a negative number such as -8

- enter the number without the negative sign (enter 8);
 - press the "change sign" (**+/-**) key which is directly above the **7** key.
- All arithmetic can be done with positive and/or negative numbers.

EXAMPLE D: $-8 - -4$

First press **ON** or **AC**.

Enter the following:

8 **+/-** **-** **4** **+/-** **=**

The correct answer is -4.

¹⁰Available at www.acenet.edu.

Calculator Warm-Up

1. Choose a number from 1-10. Multiply by 5. Add 6 to the product. Multiply the result by 4. Add 9 to the product. Multiply the sum by 5. The last two digits will be 65. Delete the 6 and 5 and subtract 1 from what is left. The result is what?
2. Multiply your age by 6. Multiply your answer by 1683.5. You will be reminded of your age over and over again.
3. Enter the month that you were born in numerical form. Multiply by 100. Add the day of the month that you were born. Multiply by 2; add 8; multiply by 5; add 4; multiply by 10; add 4. Add the last two digits of the year you were born. Subtract 3,333; add 2,889. Now press =. Do you recognize this number combination?
4. Enter your age in the calculator. Double it. Now, add 5 and multiply by 50. Add the amount of change in your pocket, up to a dollar (don't forget the decimal point). Subtract the number of days in a year; add 115; divide by 100.

Four Steps for Problem Solving¹¹

STEP	QUESTIONS
Find Out	Look at the problem and ask: <ul style="list-style-type: none">• What is the question asking me to find?• Is this similar to problems that I have worked on before?• What facts do I have?• Do I have all of the facts I need?• What do I know that is not stated in the problem?
Choose a Strategy	Mentally review possible methods for solving the problem and ask: <ul style="list-style-type: none">• How have I solved similar problems in the past?• What strategies do I know that might work for this problem?• Try one strategy that may work. If it doesn't, does it lead to another strategy that may solve the problem?
Solve It	Use the strategy and work on the problem.
Look Back	Reread the problem and ask: <ul style="list-style-type: none">• Did I answer the question that was asked?• Is the answer in the correct form?• Does the answer make sense?

¹¹Adapted from the 2006-2007 MATHCOUNTS School Handbook. ©2007 MATHCOUNTS Foundation. For more information, please visit www.mathcounts.org.

Core Vocabulary

The following list contains key vocabulary terms for GED Mathematics. It is not meant to be all-inclusive.

NUMBER OPERATIONS AND NUMBER SENSE	MEASUREMENT AND GEOMETRY	DATA ANALYSIS	ALGEBRA, FUNCTIONS, AND PATTERNS
Total	Formula***	Data	Formula***
Sum	Parallel	Trend *	Equation***
Difference	Perpendicular	Mean	Function
Product	Transversal	Median	Constant
Quotient	Angle	Mode	Variable
Associative property**	Complementary	Range	Term
Commutative property**	Supplementary	Standard deviation	Evaluate*
Distributive property **	Right angle	Probability	
What part of	Right triangle	How much more	
Per*	Isosceles triangle	How many times more *	
Rate	Equilateral triangle	Infer	
Ratio	Similar triangle	Predict	
Unit rate/unit price*	Congruent triangle	Line of best fit	
Percent	Perimeter	Bias	
Percent of increase	Circumference	Infer	
Percent of decrease	Area	Interpolate**	
Interest	Volume	Extrapolate**	
Interest rate	Base		
Principal	Height		
Proportion	Length		
Power	Width		
Exponent	Radius		
Square root	Diameter		
Equivalent	Pi		
Ascending order	Pythagorean theorem		
Descending order	Hypotenuse		
Operation	Leg		
Inverse operation	Coordinate plane		
Order of operation	Axis		
Estimate	Intercept		
Round	Intersect		
Approximate	Origin		
Scientific notation	Rotate		
Equation***	Reflect		
	Slope		

* Key vocabulary word for the GED test.

** While the GED generally does not explicitly use this type of language, it may test understanding and ability to apply these concepts.

*** Word may be repeated in different domains, especially science.

Equivalencies

Using a table similar to the one below will help students understand how parts of a whole are related, illustrate the importance of benchmarks, and facilitate the development of mental math.

FRACTION	DECIMAL	PERCENT
$1/10$.10	
	.20	20
$3/10$		30
$4/10$		
	.50	
		60
$7/10$.70	
	.80	
		90
$1/5$		20
	.40	40
$3/5$		
$5/5$		
$6/5$		
$1/4$		
		50
	.75	
$4/4$		
$8/4$		
$1/3$		
$2/3$		

You may wish to build upon this by teaching students how to mentally calculate percents of a number using 1%, 10%, and 50% benchmarks.

*Teaching and Learning
in the Content Areas:*

Science

... and all the science I don't understand, it's just my job five days a week.

– Lyrics by Bernie Taupin, "Rocket Man"

In a world filled with the products of scientific inquiry, scientific literacy has become a necessity for everyone. Everyone needs to use scientific information to make choices that arise every day.

– National Science Education Standards: An Overview, National Academy of Sciences

The whole of science is nothing more than a refinement of everyday thinking.

– Albert Einstein

The logo for the NYC Department of Education, featuring the letters "NYC" in a large, bold, white, sans-serif font with a small trademark symbol (TM) to the upper right. The letters are set against a dark background within a white-bordered box. A vertical green bar is positioned to the left of the box.

NYCTM

**Department of
Education**

A vertical green bar containing the word "Science" in white, sans-serif font, oriented vertically.

Science

TEACHING AND LEARNING IN THE CONTENT AREAS: SCIENCE

Introduction

Many of our students have not had positive experiences with science and may initially bring that negativity into the science classroom. A foundation of the test is that we live science in all facets of our lives. Simple demonstrations and experiments conducted with household items provide opportunities for students to enact the scientific method and lead to “aha!” moments that change students’ concepts of science from dry, bookish, and test-necessary to “oh, that’s why!”

Classroom Strategies and Recommendations

- 1) Read about or listen to science news everyday.** Include current reading assignments in each class. All newspapers highlight science on a specific day. Tuesday’s “Science Times” is available online, as are most others. The articles need not be long and may segue into the lesson at hand. Excerpts from National Public Radio’s numerous downloadable stories and Podcasts are often accompanied by transcripts (available at www.npr.org). The reading-listening connection is important for English Language Learners, but often overlooked by teachers when working with students whose first language is English. Listening is an essential skill for note-taking and academic success, as well as workplace and occupational success. Students may use their iPods to advance their content knowledge and write brief responses to the stories they select.
- 2) Augment textbooks and periodicals with realia.** Large drugstore chains and supermarkets provide a plethora of consumer information for health, nutrition, first aid, and skin care that may be used in lessons. Dosage information, nutritional breakdowns, and recommended daily values may be compared and examined. Students may examine and evaluate advertisements for foods, household cleaners, and other products for facts and unstated assertions. Lastly, students may compare the labels of brand name and generic over-the-counter medications and beauty aids (shampoo, skin lotions) for an understanding of ingredients and their properties.
- 3) Stress interdisciplinary connections whenever possible.** Movements – the Industrial Revolution, the move from cities to suburbs, and the Cold War – are three major ideas on the GED Social Studies Test that would not have occurred without the scientific discoveries that yielded engines, automobiles, and atomic weaponry.

Science is often interwoven with the content areas of math and social studies:

- scientists must carefully measure and record data; they must know and apply formulas, and they must know fractions, decimals, and scientific notation.
- common strands between social studies and science include technological advances and their effects upon civilizations; natural resources and the quests to obtain them; the environment and the legislation to protect it; chemical substances and government regulations; and population growth and public health throughout the world.
- charts, diagrams, maps, and tables may simultaneously draw from science, social studies, and mathematics.

4) Emphasize the dynamic nature of science as a discipline. Many students believe that science is a static subject. Most scientific discoveries and proclamations have been met with ridicule and ostracism. Galileo's life was threatened and he was excommunicated from the Catholic Church when he broke with conventional wisdom as he replaced the geocentric model with a heliocentric one. In *Ideology and Curriculum*, Michael Apple underscores the necessity for conflict in science; if not for one scientist refuting another's theory, advancement would not occur.

5) Incorporate core vocabulary into all facets of the classroom. Many students become intimidated by science vocabulary and answer questions incorrectly when faced with one or more unfamiliar words. Lessons and conversations should highlight science-specific vocabulary and concepts as we connect science to other content areas and everyday life, as students rarely learn vocabulary in isolation. Word lists in the science appendices are excerpted from each of the content areas. The words are used on the test and should be included on word walls and in students' vocabulary journals.

6) Provide ample practice with and discussion of essential visuals. Up to 60% of all science questions incorporate visual text in the form of graphs, tables, charts, and diagrams, so be sure to incorporate and have students create their own diagrams, maps, charts, and graphs in response to content explored in class and for homework. Among the diagrams, students are likely to be presented with graphics illustrating adaptation of a physical feature, the water cycle, a food web, a wave cycle, a circuit, and the relationship between electronic charges, to name a few. Most GED textbooks include the Periodic Table of the Elements.

- **Understanding tables** – students must consider the title, column headings, and row headings of each table in order to find information, draw conclusions, and make inferences.
- **Diagrams** – students must consider the title, the subject (Does the diagram represent object, concept, or process?), the legend, and any directional symbols such as arrows, double arrows, or equal signs.
- **Bar graphs and line graphs** – compare data across vertical or horizontal axes. Students must be aware of titles, units measured, labeling of axes, and legends. Data may be compared in either type of graph.

- **Circle graphs** – circles are divided into sections representing the parts that comprise a whole. Emphasize that the entire circle represents 100%. Titles, legends, and labels are important components of circle graphs, or pie charts.
- **Maps** – world maps and US maps are used as the basis of weather or natural resource questions.

7) Emphasize critical thinking skills. The content and composition of the science test requires students to examine data and visuals according to various skills. Students who demonstrate strengths in reasoning and reading will have greater success than those who struggle in those areas. As you structure lessons and activities, include the following:

- **Understand and apply the scientific method** – the scientific method includes a series of logical steps used to investigate and solve problems. Questions involving the scientific method require students to identify hypotheses, observations, variables, controls, and conclusions.
- **Restate and summarize information** – students paraphrase and condense information.
- **Explain sequence of events** – when applied to science, students consider the order of occurrence in conducting experiments, explaining weather patterns, and photosynthesis, among other applications.
- **Understand cause-and-effect relationships** – students assess contributing factors and their results, especially in examples of chemical reactions, adaptations, and environmental changes.
- **Compare and contrast** – students examine similarities and differences among species, among elements, and among results of a scientific inquiry or experiment. Classification of species or elements requires the scientist to compare many specimens.
- **Determine adequacy of data** – some questions will require students to determine whether sufficient information is provided to support a conclusion or statement; students will also consider whether irrelevant information is included in a data set.
- **Apply information to new contexts** – students are often required to examine visuals and answer text-based questions, or examine a process and apply it to a different situation.
- **Draw conclusions** – questions provide students with a set of facts and require them to identify a statement that flows logically from the facts. In many such questions, the distracters may include opinions, rather than facts.

GED Test Content and Composition:

The GED Science Test questions are based on three of eight broad content standards for grades 9–12 outlined by the National Science Education Standards (NSES). The content areas targeted by the test questions are:

CONTENT AREA	PERCENT	TOPICS THAT MAY BE COVERED
Life science	45%	<ul style="list-style-type: none">■ The cell.■ Molecular basis of heredity.■ Interdependence of organisms.■ Matter, energy, and organization in living systems.■ Behavior of organisms.
Earth and space science	20%	<ul style="list-style-type: none">■ Energy in the Earth system.■ Geochemical cycles.■ Origin and evolution of the Earth system.■ Origin and evolution of the universe.
Physical science	35%	<ul style="list-style-type: none">■ Structure of atoms.■ Structure and properties of matter.■ Chemical reactions.■ Motion and forces.■ Conservation of energy and increase in disorder.■ Interactions of energy and matter.

As students explore the three larger domains of science – life science, earth and space science, and physical science – they will experience the natural interdisciplinary nature of the subject: medication that cures illnesses is part of life science, but the medication that acts upon the body’s systems was created by chemists and physicians who study biochemistry.

Although the science content is delineated as discrete topics, 60% of the GED Science Test is interdisciplinary in nature and incorporates the National Science Education Standards, namely:

- Science as Inquiry – scientific methods, reasoning, and processes.
- Science and Technology – knowledge gained through scientific inquiry often leads to advances in technology; conversely, technological developments such as the development of the microscope lead to the advancement of scientific inquiry.

- Science in Personal and Social Perspectives – science and technology affect individuals, nations, and the world; in turn, social, political, and governmental forces influence the directions science and technology take. These influences range from the creation and use of atomic weaponry to the collaboration that led to the creation of the International Space Station. Personal perspectives include individuals’ awareness of personal health and nutrition.
- History and Nature of Science – famous individuals such as Charles Darwin made observations and formulated theories. Hundreds of individuals work together in organizations like NASA to plan a single space exploration.
- Unifying Concepts and Processes – all science content areas are organized according to specific frameworks. The concept of cycles is found in life science (the carbon-oxygen cycle); earth and space science (the water cycle); chemistry (the fuel cycle); and physics (the wave cycle). The most common example of a unifying process is the scientific method.

The following are graphics and concepts with which every student should be familiar before taking the GED¹²:

THE SCIENTIFIC METHOD

State the problem - What do you want to know?

Research the problem - Gather information from books, classmates, and others.

Form a hypothesis - Identify a possible solution to, or explanation, of the problem.

Test the hypothesis - Perform an experiment to see if your hypothesis works.

Draw conclusions from the data - The results of the experiment are the data. The conclusion may be correct and prove the hypothesis, or incorrect and require additional research.

COMMON METRIC PREFIXES

milli-	1/1000
centi-	1/100
deci-	1/10
hecto-	x 100
kilo-	x 1000

COMMON UNITS OF MEASUREMENT AND THEIR ATTRIBUTES

Quantity	Metric Unit	US Unit
Length, distance	Meter (m)	Inch, foot, yard, mile
Capacity, volume	Liter (L)	Cup, pint, quart, gallon
Mass	Gram (g)	Ounce, pound, ton

METRIC-US CONVERSIONS

To change	Multiply by	To change	Multiply by
Centimeter (cm) to inch (in)	0.40	Inch (in) to centimeter (cm)	2.54
Meter (m) to yard (yd)	1.09	Yard (yd) to meter (m)	0.91
Kilometer (km) to mile (mi)	0.62	Mile (mi) to kilometer (km)	1.61
Gram (g) to ounce (oz)	0.04	Ounce (oz) to gram (g)	28.35
Kilogram (kg) to pound (lb)	2.21	Pound (lb) to kilogram (kg)	0.45

¹²Duran, Elva, Jo Gusman, and John Shefelbine. *Science: Access: Building Literacy Through Learning*. Great Source Education Group, 2000.

Test-Taking Tips and Strategies

- **Read the questions carefully.** Watch out for the information that is directly stated as well as the information that is implied or assumed.
- **Determine the main idea.** Be sure to read all titles, legends, and labels on diagrams, maps, graphs, and tables for information about the main idea.
- **Pay attention to all the detail on graphs.** Be sure you understand the scales of a graph because some show relationships rather than specific amounts.

Performance Standards: Science

APPLICABLE TO ALL SCIENCE DOMAINS	LIFE SCIENCE	EARTH AND SPACE SCIENCE	PHYSICAL SCIENCE
<p>Interpret and apply science information through the use of advanced reading comprehension and visual processing skills.</p> <p>Apply general scientific knowledge to a variety of situations.</p> <p>Analyze scientific information and use that analysis to explore relationships among ideas.</p> <p>Analyze and evaluate scientific data and make judgments related to that information.</p> <p>Assess and analyze environmental, health, and safety issues in the workplace and the community such as recycling, heredity, disease prevention, pollution, and climate.</p> <p>Understand, interpret, analyze, evaluate, and critique visual stimuli such as diagrams, photographs, drawings, maps, graphs, charts, and tables from a variety of sources.</p> <p>Apply basic scientific rules from the reading of materials and the interpretation of visual graphics, and predict possible outcomes using the scientific method.</p>	<p>Understand the properties and functions of cells.</p> <p>Examine the processes by which genetics determines heredity.</p> <p>Create diagrams that illustrate the functions and processes of human body systems; identify advertised prescription and over-the-counter medications that are intended for each human body system.</p> <p>Explore the correlations between the nervous system and behavior.</p> <p>Analyze factors that contribute to the evolution and adaptation of species.</p> <p>Explain causes and effects of global climate change upon ecosystems and the environment.</p>	<p>Understand and identify the components of the Earth's structure.</p> <p>Analyze the factors that influence the changing Earth.</p> <p>Assess and analyze weather and climate patterns.</p> <p>Compare and contrast Earth's renewable and nonrenewable resources; identify a plan of action to conserve one nonrenewable resource.</p> <p>Identify and explain five ways people affect the environment; determine which are helpful and which are harmful.</p> <p>Identify and explain the components of the solar system and the universe.</p>	<p>Analyze and classify the properties of matter in its three states.</p> <p>Compare and contrast the properties of elements, compounds, and mixtures.</p> <p>Identify the causes and effects of chemical reactions.</p> <p>Restate and summarize the laws of motion and forces; provide examples of each in everyday life.</p> <p>Create a diagram to illustrate the relationship between work and energy.</p> <p>Describe the relationship between magnetism and electricity.</p> <p>Demonstrate how light and sound travel in waves.</p>

Differentiated Instruction: Science

SCIENCE CONTENT	BASIC	COMPLICATED	COMPLEX
<p>Life Science</p> <ul style="list-style-type: none"> ■ Cells ■ Genetics ■ Human body systems ■ The nervous system and behavior ■ Evolution ■ Ecosystems and the environment <p>Aim: Analyze factors that contribute to the evolution and adaptation of species.</p>	<p>What causes different species to adapt different characteristics? Provide examples of three species, three distinct characteristics, and how each characteristic developed.</p> <p>Recommended Resources: <i>Access</i>: “Change over Time” and “Evidence of Change”</p>	<p>How might the practice of hunting tusked elephants eventually lead to the extinction of elephants with this trait?</p> <p>Recommended Resources: <i>Life Science Daybook</i>: Chapter 7, “Most Likely to Survive”</p>	<p>Antibiotics are drugs that fight harmful bacteria. Write an essay in which you explain the factors that lead a strain (or version) of bacteria to become resistant to antibiotic drugs.</p> <p>Recommended Resources: Excerpt of Charles Darwin’s <i>Theory of Natural Selection</i></p>
<p>Earth and Space Science</p> <ul style="list-style-type: none"> ■ The structure of the earth ■ The changing earth ■ Weather and climate ■ Earth’s resources ■ People and the environment ■ The solar system and the universe <p>Aim: Assess and analyze weather and climate patterns.</p>	<p>Explain the terms <i>precipitation</i>, <i>evaporation</i>, and <i>condensation</i>. Use them in an illustration of the water cycle.</p> <p>Recommended Resources: <i>GED Connection</i>: water cycle explanation and activity</p>	<p>Draw and label a diagram of the water cycle. Identify ways water is removed from the cycle, and write an essay in which you propose three strategies for water conservation.</p> <p>Recommended Resources: <i>Earth Science Daybook</i>: water cycle text and activity Steck Vaughn Science GED</p>	<p>Read “The Life of a Drop of Water” and illustrate the text with images from the water cycle diagram in your textbook. What might humans do to ensure that our water supply is not depleted?</p> <p>Recommended Resources: <i>The Life of a Drop of Water</i> http://www.catskillcenter.org/programs/edu/csp/H20/Lesson1/daylife.htm</p>
<p>Physical Science</p> <ul style="list-style-type: none"> ■ Matter ■ Elements, compounds, and mixtures ■ Chemical reactions ■ Motion and forces ■ Work and energy ■ Magnetism and electricity ■ Waves <p>Aim: Analyze and classify the properties of matter in its three states. Restate and summarize the laws of motion and forces; provide examples of each in everyday life.</p>	<p>Identify states of matter by describing characteristics of objects and items provided by teacher.</p> <ul style="list-style-type: none"> ■ Solid: keeps shape; particles move slowly; particles stay close together ■ Liquid: takes shape of its container; particles move faster; particles begin to move apart ■ Gas: fills its container; particles move very fast; particles move farther apart <p>Explain the result of each of the following:</p> <ul style="list-style-type: none"> ■ Throwing a ball ■ Crumpling a sheet of paper ■ Dropping a pencil ■ Pushing a chair ■ Pulling a drawer 	<p>Describe ways a substance may be different according to its states of matter. Explain the chemical reactions that cause rusting, rotting, and burning. List and explain each of Newton’s three laws. Give an example of each based upon your daily routine.</p> <p>Recommended Resources: <i>Standard Deviants School Chemistry: the Basics</i>, available at www.thirteen.org/edonline/itv</p>	<p>Explain chemical reactions that bring about changes in states of matter. List three undesirable chemical reactions, explain how they are caused, and provide strategies to prevent their occurrence. Describe an amusement park ride you have seen or experienced. Discuss applications of Newton’s Laws of Motion that make the ride operate.</p> <p>Recommended Resources: http://www.powermediaplus.com/furtherLearning/pdfs/CL1257-CV-DG-TG.pdf</p>

Additional Resources: Science

Electronic Resources

<http://www.amnh.org> – The American Museum of Natural History details exhibits and programs currently available and archives general resources for teachers, students, and parents.

http://www.exploratorium.edu/science_explorer/index.html – San Francisco’s Exploratorium offers multiple approaches to single topics and its archive of webcasts (especially the Iron Science Teacher series) and provides easily replicable hands-on activities.

<http://www.howstuffworks.com> – This site is a great reference for students who want to know about anything.

<http://www.nap.edu/html/nses/html> – The National Science Education Standards are explained in detail.

<http://www.npr.org> – National Public Radio provides audio and transcripts for many of its health and science stories.

<http://www.populationeducation.org> – A series of activities and simulations connect science, mathematics, social studies, and language arts as they encourage students to examine the issues of resource distribution, world hunger, and population growth.

<https://www.sciencebuddies.com> – Resources for science projects include sections for students, parents, and teachers.

<http://school.discovery.com> – Discovery Channel’s online component links many free resources such as science project guide, homework help, and a puzzle-generating program. The site includes the most popular science topics taught in upper elementary and middle school.

<http://personal.cfw.com/~rollinso/SciFood.html> – Hands-on science resources compiled and referenced. The site includes complete directions for experiments and demonstrations that require commonly available materials.

<http://scifun.chem.wisc.edu/HomeExpts/homeexpts.html> – Includes home experiments that are fun and easy to replicate.

Print Resources

ACCESS

This series by Great Source Education Group is intended to strengthen concept and vocabulary development for English Language Learners in each content area, and it provides support for struggling readers of all backgrounds. The text includes extensive photographs and science diagrams; partner and practice activities; connections among science, technology, and society; and an extensive list of morphemes (prefixes, roots, and suffixes) essential to science.

Science Daybooks

This series by Great Source Education Group includes separate volumes for life science, earth science, and physical science. Each lesson includes key vocabulary, reading and writing activities, photographs, and graphics. The teacher's edition includes directions for enrichment, hands-on investigations to employ the scientific method, and extensions via Internet resources.

Sciencesaurus

This single volume resource by Great Source Education Group illustrates key topics, ideas, and vocabulary. It is eminently user-friendly and visually engaging.

Kentucky Educational Television (KET)

Two volumes, *GED Connection* and *Pre-GED Connection*, correlate with the *GED Connection* DVD and broadcast series as well as the www.pbs.org/literacylink interactive website. *GED Connection: Science and Social Studies* contains lists of core science vocabulary.

New Readers Press

GED Scoreboost, these skill-sharpening guides for students who are about to take the test include *Critical Thinking for Reading, Social Studies, and Science* and *Graphic Skills for Social Studies and Science*. *Pass the GED Science* offers a five-step study plan for students who need to work on specific subjects or who may have failed a subtest.

Steck Vaughn

GED Science and *Pre-GED Science* text and exercise books integrate content with specific skills such as applying ideas in new contexts or identifying faulty logic, then provide timed mini-tests to reinforce concepts. Full-length tests are included in the texts and exercise books.

Skills Books – provide targeted practice for Life Science, Earth and Space Science, Physical Science, and Interpreting Visual Information.

Access: Critical Thinking delineates appropriate skills for science learners.

The New York Times

The Science Times section is published every Tuesday. An electronic resource center is available at www.nytimes.com/learning. Teachers may access lesson plans and a library of crosswords written to address content areas.

Science World

Available from Scholastic, this magazine is especially useful for pre-GED classes.

Suggested Activities: Science

Introductory Activity:

Students encounter science hundreds of times each day. A valuable introductory activity is to ask students to list 10 ways science influences their lives. Students may share their responses in pairs, decide which content area each response represents, and record the response on a color-coded post-it note:

- Life science-pink
- Earth and space science-green
- Physical science-blue

Pairs will then post their responses on a chart, creating a bar graph for each content area.

Pairs will tally their results, compute the percentage of responses for each content area, and create circle graphs. If computers are available, this is an excellent introduction to Microsoft Excel or Access. The entire class will compare the breakdown of pairs' responses with the GED Science Test content breakdown.

*Teaching and Learning
in the Content Areas:*

Social Studies

Social Studies is the integrated study of the social sciences and humanities to promote civic competence.

The primary purpose of the social studies is to help young people develop the ability to make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world.

Social Studies is most powerful when it is meaningful, integrative, value-based, challenging, and active.

*– The National Council for the Social Studies,
A Vision of Powerful Teaching and Learning in the Social Studies:
Building Social Understanding and Civic Efficacy*



NYCTM

**Department of
Education**

TEACHING AND LEARNING IN THE CONTENT AREAS: SOCIAL STUDIES

Introduction

The overall goal of our work is to make social studies more accessible to our students, who will be more successful on the GED Exam and beyond if they develop their critical thinking skills and are able to analyze and evaluate information from a range of perspectives and disciplines. To accomplish this, students must become critical readers and writers. Incorporating the following teaching strategies and recommendations into your classroom will help students cultivate their critical thinking skills.

Teaching Strategies and Recommendations

1) Know your audience. All students enter GED programs with varied degrees of background knowledge and prior experiences in social studies. For example, a student who has completed 9th grade or even part of 10th grade will have been exposed only to World History and therefore has never studied U.S. History at the high school level. In most schools, students traditionally study Economics and Government courses in the 11th and 12th grades. You may also encounter some GED students who have already completed their entire high school education outside of the United States.

2) Emphasize reading. As mentioned above, students will enter your GED class with wide-ranging levels of background knowledge and different types of gaps in their learning of social studies. Using the idea of a Readers' Workshop (more commonly found in an ELA class), social studies teachers are encouraged to incorporate a reading schedule into the social studies period. If possible, create a humanities block and teach ELA and social studies together.

To conduct a Reader's Workshop in your social studies class, provide materials for your students to read current events articles from daily newspapers or weekly news magazines. Begin with 10 minutes of silent reading and increase by 5 minute increments to build students' stamina, a necessity for all subjects. Incorporating a journal entry or writer's notebook in which students can paraphrase or respond to what they have read can help them retain content and demonstrate understanding. The best teaching approach (across the curriculum) would include embracing the *Habits of Good Readers* (elaborated in detail in this manual's Reading section) and using the metacognitive strategies on a daily basis.

3) Close the gaps. Students who lack prior knowledge in specific areas can be provided with targeted resources to fill the gaps in their knowledge. Reading and/or watching movies, such as documentaries, can help students develop content knowledge. Films that accurately portray an event, era, or individual in history can be particularly useful. A brief list of recommended films is provided on the resources pages at the end of this section.

4) Allow students to make choices. Ask your students to keep a list of specific topics in social studies that they would like to study further. During classroom work periods, allot time for students to pursue their areas of interest, either independently or in small groups. Allowing students to choose their own areas of study encourages them to take responsibility for their learning, challenge themselves at the appropriate academic level, work at their own pace, commit, and understand the value of learning.

5) Use a theme-based approach. Thematic teaching provides a framework for covering concepts, skills, and topics that are intrinsic to the curriculum. By giving students a lens through which to view discrete events and ideas, themes can help students develop their factual knowledge throughout each of the content areas and across the curriculum. Keep in mind, however, that creating an overly broad perspective or attempting to cover an area in its entirety can result in superficial teaching. Real learning involves spending more time on details and developing an in-depth understanding.

The following themes, which have been identified by the National Council for Social Studies, can serve as useful frameworks:

- Time, continuity, and change
- Places, people, and environment
- Civic ideals and practice
- Culture
- Individuals, groups, and institutions
- Power, authority, and governance
- Production, distribution, and consumption
- Science, technology, and society
- Global connections

Teaching students about the Cold War, for example, is an opportunity to connect with Science and learn about nuclear energy. Geography is a rich topic that can allow you to explore the phenomena of global warming or the depletion of natural resources.

6) Emphasize the importance of using the social science approach to prepare for the exam. The GED exam is based on the many fields of social studies and their sub-topics. That is, the test is informed by the disciplines of history, geography, civics and government, economics, and sociology, and the way these disciplines interact at places along the historical continuum.

7) Promote an interdisciplinary understanding of events of the past and present. For example, engage students in the study of current events by discussing topical issues, such as minimum wage, health care, crime, immigration, abortion, and school segregation, to show the interaction between government, society, geography, and the economy. Extend their skills by studying these issues in other time periods. Compare and contrast.

8) Examine history through a variety of perspectives. It is important that students explore a variety of perspectives and debate “what ifs.” For example, examine the reasons or results of the Civil War from the perspective of the North, the South, or both. Enhance perspectives through point-of-view writing. Create opportunities for students to design or collect political cartoons, maps, and other representations to support their perspectives.

9) Use primary and secondary sources. Again, begin by using daily newspapers and other publications to illustrate how these documents reflect current times. Then, interpret historical artifacts and documents. Promote the use and reading of electronic and print resources to study events and develop media literacy.

10) Highlight key documents. As per GEDTS, the exam will include an excerpt from one of the following documents: Declaration of Independence, U.S. Constitution, Federalist papers, or landmark court decisions. In general, primary sources have the power to draw the reader into a moment in history. Stress the relevance of these documents and their relation to the basic principles of United States democracy. Embedded in these documents are the core concepts of due process, freedom of expression, equal protection, and civic participation. Familiarity and basic understanding of these documents will boost confidence and enhance test scores.

11) Emphasize visual literacy. 30 out of 50 questions on the social studies exam are based on graphics or graphics and text together. Practice examining each element of a graph, political cartoon, map, and photograph carefully. Scrutinize titles, captions, facial expressions, and background. When emphasizing visual literacy, the following guidelines should be considered:

- **Cartoons:** Editorial cartoons comment on current events, such as, corruption, war, the electoral process, and people in the news. The artist uses minimal words and hopes to influence public opinion through a reader’s visual interpretation. *Note: With respect to political cartoons, there are also some popular stock symbols your students should be able to recognize and know, including: elephant; donkey; Uncle Sam; dove; dollar sign (\$); the Statue of Liberty; Justice Statue (holding scales of justice and wearing a blindfold); the American flag; olive branch, etc.
- **Maps:** Start off locally with a map of the city or a bus/subway map from the MTA. Ask your students to map out their trip from school to home or work. Create a virtual field trip to a NYC landmark, like Yankee Stadium. Practice reading maps in a practical, relevant way, then connect to the larger context of the nation and the world. Internet technology can play a vital role as most students are familiar with Mapquest or Google Earth (3D view). Also, some of your students may have traveled – label some of the places your students have visited or where everyone is from. Every map has a legend or key that provides the information needed for the map to make sense. Some maps show boundaries of nations or geographic physical features. Remind your students

that some maps may be from a different historical period or represent two distinct changes in history. Practice with maps of the Electoral College, the thirteen colonies, or Eastern Europe.

- **Graphs and Tables:** Organizational charts, graphs, tables, and timelines can present the same information in different formats. Remind your students to read the main heading/title along the vertical and horizontal titles. Questions regarding visual literacy often ask students to find relationships, identify patterns/trends, make inferences, or draw conclusions based on the facts presented. Some illustrations contain double bars or lines to examine. Bar graphs show and compare quantities, and line graphs show changes over time.

12) Word walls, timelines, clusters, and flow charts are great visual aids that can provide essential background information. Graphic organizers help students to organize information: facts and details about countries, religions, government structures, etc. Other activity handouts can focus on cause and effect relationships, point of view, drawing conclusions, or distinguishing facts and opinions. Students can create their own devices to organize their thinking or use some of the suggestions found in the Reading section of this manual. Rich, visually stimulating environments engage learners.

13) Encourage students to take an active interest in civic and economic affairs. Students should be exposed to a variety of historical and functional documents that underlie the American political and economic system. Many students only have a cursory understanding of the US Constitution and the many ways the document frames the society in which we live. Expose students to the federal system at work by integrating functional documents, such as: driver's license applications, voter registration cards, income tax forms, Immigration and Naturalization paperwork, and Social Security card applications.

14) Make connections to real-life contexts. Show your students how close and relevant social studies is to their daily lives. Involve your students in active participation in the classroom, their local community, and the global community through projects like Model United Nations. Many of the concepts of sociology, economics, and politics are part of the school community. If your school partners with a Community Based Organization, you have another party to learn from and with. For instance, you can compare the school rules with the laws of society. What is the balance of personal freedom vs. the health and safety of the students in your school? What governance is in place? What checks and balances are in place? Where does the overall authority extend from and who is responsible for decision-making and/or setting policy? What are some sub-governance committees that are part of the school? Students have the opportunity to be a part of School Leadership Teams at the school level. Identify local groups that meet in their neighborhood to effect change.

15) Integrate national and international news as part of your regularly scheduled class. News and information is accessible on the internet or through one of the many cable news channels. Collect free daily newspapers distributed in high traffic areas of the city, or have a class set of newspapers delivered to your site. Ask your students which sources they rely on for a majority of news: television, radio, newspapers, magazines, or websites. Immigration, health care, education, and housing are just a few examples of issues that always are in the news.

GED Test Content and Composition: Social Studies

According to the American Council on Education (ACE), the Social Studies exam is based on written and visual text drawn from a variety of sources, including academic texts, workplace texts, and primary/secondary sources. The materials and questions address the experiences of citizens, consumers, and workers nationally and internationally.

Test Format

Candidates will be presented with information in one of the following three types of source materials:

- **Prose (40%):** Includes narratives, high school textbooks and resources, editorials, speeches, newspapers, newsmagazines, and historical documents. Prose sources are no longer than 200 words, and text for a single question is 50-60 words.
- **Visual text (40%):** Includes maps, graphs, charts, diagrams, political cartoons, photographs, lithographs, and works of art.
- **Written and visual text (20%):** Includes a combination such as a map and narrative, a photograph and editorial, etc.

Test Content

The Social Studies Exam consists of 50 multiple choice questions; students will have 70 minutes to complete this exam. The chart below provides a brief overview of the major content areas and sub-topics.

CONTENT AREA	PERCENT	TOPICS COVERED
US History	25%	<ul style="list-style-type: none"> ■ Beginnings to 1820: Native Peoples, Colonization, Settlement, Revolution, the New Nation ■ 1801 to 1890: Expansion, Reform, Civil War, Reconstruction, Industrial Development ■ 1890 to Present: Emergence of Modern American, Great Depression, World War II, Postwar United States, Contemporary United States
World History	15%	<ul style="list-style-type: none"> ■ Beginnings to 1000 BC: Beginnings and early civilization ■ 1000 BC to 300 BC: Classical traditions, Empires, and Religions ■ 300 BC to 1770 AD: Growing trade, Hemispheric interactions, First Global Age, 1750-1914 Age of Revolutions ■ 1900 to Present: Urbanization, World Wars, Global Depression, Advances in Science and Technology, New Democracies of Africa, Asia, and South America; The Cold War; “Global Culture”
Civics and Government	25%	<ul style="list-style-type: none"> ■ Civic life, politics, government ■ Foundations of the American Political System ■ American Government ■ Relationship of the United States to other Nations ■ Roles of the Citizen in American Democracy
Geography	15%	<ul style="list-style-type: none"> ■ World in Spatial Terms ■ Places, Regions, and Physical Systems ■ Human Systems, Environment, and the Society ■ Uses of Geography
Economics	20%	<ul style="list-style-type: none"> ■ Economic Reasoning and Choice ■ Comparison of Economic Systems ■ Business in a Free Enterprise System ■ Production and Consumers ■ Financial Institutions ■ Government’s Role in the Economy, Labor and the Economy, Global Markets, and Foreign Trade

Question Types and Cognitive Levels:

The GED Social Studies Test requires that candidates use gradations of higher-level thinking, which often require prior knowledge of important social studies concepts, principles, events, and skills.

Comprehension questions (20%) measure the candidate's understanding of the meaning and intent of text and/or visual material. These questions may require the test takers to:

- Understand and restate information.
- Summarize ideas.
- Identify implications.
- Make inferences.
- Draw conclusions.

Application questions (20%) measure the candidate's ability to use information and ideas in a situation different from that provided by the question stimulus. These questions may require the test takers to:

- Identify an illustration of a generalization, principle, or strategy.
- Use information in a new context.
- Apply the appropriate abstraction to a new problem without prompting or instruction.

Analysis questions (40%) measure the candidate's ability to break down information and explore the candidate's understanding of the relationship between component ideas. These questions include the ability to:

- Distinguish facts from opinions and hypotheses.
- Distinguish conclusions from supporting statements.
- Recognize information that is designed to persuade an audience.
- Recognize unstated assumptions.
- Recognize fallacies in logic in arguments or conclusions.
- Identify cause and effect relationships and distinguish them from other sequential relationships.

- Recognize the point of view of a writer in a historical account.
- Recognize the historical context of the text, avoiding “present-mindedness.”
- Identify comparisons and contrasts among points of view and interpretations of issues.
- Determine implications, effects, and value of presenting visual data in different ways.

Evaluation questions (20%) measure the candidate’s ability to use provided criteria to make judgments about the validity or accuracy of information. These questions may require test takers to:

- Assess the appropriateness of information to substantiate conclusions, hypotheses, and generalizations (using such criteria as source, objectivity, technical correctness, currency).
- Assess the accuracy of facts.
- Compare and contrast differing accounts of the same event.
- Recognize the role that values, beliefs, and convictions play in decision making.

Special Features of the Social Studies GED Test

National or International Context:

Approximately 60% of the GED Social Studies Test questions relate to concepts and issues taken from a global or international perspective, and the other 40% relate specifically to the United States.¹³

Historical Documents:

Each form of the GED Social Studies Test includes an excerpt from at least one of the following fundamental historical documents of the United States:

- Declaration of Independence
- U.S. Constitution and Bill of Rights
- Supreme Court Cases
- Federalist Papers

¹³ Adapted from the American Council on Education. Reprinted with permission.

Practical Documents:

Each test form includes one practical document (a source of information used by most adults in their roles as citizens, consumers, and workers), such as:

- Consumer information
- Voters' guides
- Atlases
- Tax forms
- Budget graphs
- Political speeches
- Statistical abstracts

Test-Taking Tips and Strategies

- **Read carefully.** Since students often skim the text and go directly to the questions, they may be missing important details in the passage. Check each answer by reviewing the reading and illustrations. Notice that the questions often follow the same order as the passage.
- **Determine the main idea.** The main idea in a passage may be very clear, or explicit. You can often find it in the first or last section, but it may be found anywhere. Other times the main idea is harder to find. It may not be stated, but implied. In order to find the main idea, you may need to work backwards or find the connections between elements in the passage.
- **Understand the question.** Before answering a question, understand what the question is asking. Read the question carefully to determine if you need to read between the lines (make inferences) or draw only from the material that is presented.
- **Know the GED test-taking strategies.** If you know the correct answer, bubble in the response. Provide an answer for every question since there is no penalty for a wrong answer. For questions that you are unsure of, use the process of elimination, until you choose the best answer possible. Remember, all questions have the same point value.
- **Distinguish between fact and opinion.** Facts can be proven, while opinions are judgments that may or may not be true. Writers may present their personal beliefs as if they were facts, so you must be able to read critically in order to detect biases. When a sentence contains the following verbs, it is usually a clue that it is an opinion statement: *believe, think, claim, consider*.

Performance Standards: Social Studies

ACROSS ALL DOMAINS	US HISTORY
<p>Interpret and apply social studies information through the use of advanced reading comprehension and visual processing skills.</p>	<p>Determine the causes and effects of exploration and colonization of the New World.</p>
<p>Apply general social studies knowledge to a wide range of situations.</p>	<p>Describe the factors that led to the American Revolution and challenges of founding a new nation.</p>
<p>Apply general social studies data and use that analysis to explore relationships among ideas.</p>	<p>Examine the challenges that arose as a result of the Westward Expansion.</p>
<p>Analyze and evaluate information for validity and make judgments based on that evaluation.</p>	<p>Describe the impact of slavery.</p>
<p>Understand, interpret, analyze, evaluate, and critique visual stimuli or graphics such as political cartoons, advertisements, diagrams, photographs, drawings, timelines, maps, graphs, charts, and tables.</p>	<p>Explain how issues unresolved by the Civil War influenced the events of the Reconstruction Era.</p>
<p>Distinguish facts from opinions and recognize a writer's point of view in a historical account.</p>	<p>Describe the changes in the US landscape and economy as a result of industrialization and urbanization.</p>
<p>Determine the implications, effects, and the value of a historic document.</p>	<p>Describe developments of the Progressive Era and their influences upon 20th century America.</p>
<p>Determine the implications, effects, and value of technological breakthroughs.</p>	<p>Examine three policy changes enacted by the US government as a result of the Great Depression.</p>
<p>Compare and contrast points of view and different interpretations of historical issues.</p>	<p>Explain the rationale for US involvement in World Wars I and II.</p>
<p>Understand, evaluate, and use practical documents related to consumer, citizenship, and legal contexts.</p>	<p>Explain social, environmental, and technological challenges of the 21st century.</p>

WORLD HISTORY	ECONOMICS	CIVICS AND GOVERNMENT
<p>Summarize the ideals and technologies that caused early civilizations to flourish.</p> <p>In what ways did the characteristics of feudalism influence its growth?</p> <p>Compare the Renaissance to the feudal era: what conditions were necessary for the spread of ideas?</p> <p>Examine the conditions that led to the emergence of nation states and monarchies in Europe.</p> <p>Examine the causes of the political, social, and economic revolutions of the 19th century.</p> <p>Explain the causes of World War I, its resolution, and the issues that led to World War II.</p> <p>Explain contemporary global issues that do not include the US.</p>	<p>Create a diagram to illustrate the relationships among production, consumption, supply, and demand.</p> <p>Examine the basic components of our economic system: which factors cause growth in the economy? Which lead to recession or depression?</p> <p>Identify ways the US government influences the economy (budget, taxes, regulation, and consumer protection).</p> <p>Examine labor and consumer issues. Give examples of the government's role in each.</p>	<p>Summarize the adoption of Federalism as a foundation of US government. Do you agree or disagree with its existence?</p> <p>Explain the functions of each of the three branches of government.</p> <p>Understand checks and balances.</p> <p>Explain the relationship between the US Constitution and the Bill of Rights.</p> <p>Political parties influence the major candidates and policies in US elections: summarize the major platforms of the Democratic and Republican Parties.</p> <p>Explain the rights and responsibilities of US citizens.</p>

Performance Standards: Social Studies

SOCIAL STUDIES CONTENT	BASIC	COMPLICATED	COMPLEX
<p>US HISTORY Topic Areas¹⁴: Native peoples, colonization, settlement, revolution, the new nation, expansion, reform, Civil War, Reconstruction, industrialization, emergence of modern America, the Great Depression, World War II, postwar America, contemporary US</p> <p>Aim: Describe the impact of slavery.</p>	<p>Students will be able to describe the impact of slavery on the emerging nation.</p>	<p>Students will be able to demonstrate their knowledge of slavery upon the emerging nation by creating a minimum of two character sketches of persons with differing viewpoints on slavery.</p> <p>Visual and print materials available at: http://www.pbs.org/wnet/slavery</p>	<p>Using a runaway slave ad and the Dred Scott Decision, students will write an essay that describes the impact of slavery upon the new nation.</p> <p>Materials available at: http://education.ucdavis.edu/new/stc/lesson/socstud/railroad/images/reward.gif http://library.wustl.edu/vlib/dredscott</p>
<p>US HISTORY Topic Areas: Early civilizations; classical traditions, empires, and religions; growing trade; hemispheric interactions; the Age of Revolutions; urbanization; World Wars; Global Depression; advances in science and technology; new democracies of Africa, Asia, and South America; the Cold War; “Global Culture”</p> <p>Aim: Determine the implications, effects, and value of technological breakthroughs.</p>	<p>Students will examine the impact of each of the following three technological developments upon world history:</p> <ul style="list-style-type: none"> ■ the printing press ■ atomic weaponry ■ the Internet 	<p>Students will analyze the ways in which three different technological developments (the printing press, atomic weaponry, and the Internet) each had an impact during the time period in which it was developed.</p>	<p>Students will create advertisements that promote the printing press, atomic weaponry, and the Internet to citizens during the time period in which they were developed.</p>

¹⁴ Topic areas from the American Council on Education. Reprinted with permission.

SOCIAL STUDIES CONTENT	BASIC	COMPLICATED	COMPLEX
<p>CIVICS AND GOVERNMENT Topic Areas: Civic life, politics, government; foundations of the US political system; American government; relationship of US to other nations; roles of citizens in US democracy</p> <p>Aim: Explain the rights and responsibilities of US citizens.</p>	<p>Students will examine the Bill of Rights and explain each of the rights guaranteed within the first ten amendments.</p>	<p>Students will review the experience of colonists under British rule and explain the reasons that led to each of the first ten amendments.</p>	<p>Students will examine the Bill of Rights through the lens of modern court cases and write an essay in which they substantiate threats to any right guaranteed by the first ten amendments.</p>
<p>GEOGRAPHY Topic Areas: The world in spatial terms; places, regions, and physical systems; human systems, environment, and society; uses of geography</p> <p>Aim: Understand population trends around the world.</p>	<p>Students will examine population density around the world and explain why individuals live where they do.</p>	<p>Students will compare and contrast living conditions in developed and developing nations.</p>	<p>Students will compare the populations and resource consumption rates of world regions.</p>
<p>ECONOMICS Topic Areas: Economic reasoning and choice; comparison of economic systems; business in a free enterprise system; production; consumers; financial institutions; government's role in the economy; labor unions; labor and the economy; global markets; foreign trade</p> <p>Aim: Develop an understanding of labor and consumer issues.</p>	<p>Students will discuss the roles of the Occupational Safety and Health Administration, the Department of Labor, and the Equal Employment Opportunity Commission.</p>	<p>Students will examine the events that led to the establishment of labor unions and discuss the current climate for labor unions in the US.</p>	<p>Students will examine the labor practices of Western European nations, the United States, and China, and conclude which are more favorable for workers and consumers.</p>

SOCIAL STUDIES CONTENT	BASIC	COMPLICATED	COMPLEX
<p>VISUAL LITERACY (ACROSS ALL SOCIAL STUDIES DOMAINS)</p> <p>Aim: Understand, interpret, analyze, evaluate, and critique visual stimuli or graphics, such as political cartoons, advertisements, diagrams, photographs, drawings, timelines, maps, graphs, charts, and tables.</p>	<p>Students will discuss political cartoons that are straightforward and employ common symbols.</p>	<p>Students will examine political cartoons with symbols that presuppose students' background knowledge.</p>	<p>Students will analyze political cartoons with symbolism that calls for deeper understanding of metaphor and more breadth of knowledge.</p>
	<p>Examples of symbols at this level:</p> <ul style="list-style-type: none"> ■ US = Uncle Sam or eagle ■ Overweight male in suit = rich 	<p>Examples of symbols at this level:</p> <ul style="list-style-type: none"> ■ Donkey = Democrat ■ Elephant = Republican 	<p>Examples of symbols at this level:</p> <ul style="list-style-type: none"> ■ Monarch = imperial ruler ■ Stereotypes of ethnic groups, occupations
	<p>Examples of data presentation at this level:</p> <ul style="list-style-type: none"> ■ Single line graph; single bar graph ■ Simple map that illustrates a single trait or trend 	<p>Examples of data presentation at this level:</p> <ul style="list-style-type: none"> ■ Double line graph; double bar graph ■ Map that illustrates two or more traits or trends 	<p>Examples of data presentation at this level:</p> <ul style="list-style-type: none"> ■ Three or more sources of data compared in line or bar graph ■ Map that illustrates multiple traits or trends

Additional Resources: Social Studies

Internet Resources

American Memory Timeline

<http://memory.loc.gov/ammem/ndlpedu/features/timeline/index.html>

Lets visitors navigate primary source materials in the Library of Congress collection.

American Social History Project

<http://www.ashp.cuny.edu/index.html>

Provides print, visual, and multimedia materials about the men and women whose actions and beliefs shaped US history.

The Ancient Greek World

http://www.museum.upenn.edu/Greek_World/Index.html

Provides Greek history resources.

Black History Hotlist

http://www.kn.att.com/wired/BHM/bh_hotlist.html

Contains a broad collection of Black History resources.

Daryl Cagle's Cartoon Index

<http://www.cagle.com>

Catalogues political cartoons by topic.

History Central

<http://www.historycentral.com>

Provides reading selections about events and trends from 5500 BC to the present.

The History Channel

<http://www.historychannel.com>

Provides access to a myriad of history resources.

Herblock's History

<http://www.loc.gov/rr/print/swann/herblock>

Features political cartoons from the depression to the present.

History Matters

<http://www.historymatters.gmu.edu>

Serves as a gateway to Web resources and useful materials for teaching US history.

Today in History

<http://memory.loc.gov/ammem/today/today.html>

Offers profiles and resource links for influential people and events in US history (developed by the Library of Congress).

The National Archives and Records Administration Digital Classroom

<http://www.archives.gov/education>

Includes links to historical documents, chronologically listed lesson plans, and Analysis worksheets for documents, cartoons, film clips, audio clips, photographs, and maps.

Kids in the House

http://clerkkids.house.gov/laws/bill_propose.html

Contains lesson plans, an animated depiction of “How a Bill becomes a Law,” and information for students to contact their Congressional representatives.

National Geographic

<http://www.nationalgeographic.com>

Offers resources for history, geography, and map study.

Smithsonian Institution American History Timeline

http://www.si.edu/Encyclopedia_SI/nmah/timeline.html

Includes artifacts and primary documents.

On This Day in History Websites

<http://www.on-this-day.com> and <http://www.history.com/tdih.do>

Dateline NBC: US Citizenship Test

<http://www.msnbc.com/onair/nbc/dateline/citizenship/default.asp>

Suggested Movie Titles

As discussed in the Teaching Strategies and Recommendations section of this handbook, movies (or movie clips) can be effective in highlighting specific events or giving students a feel for a time period, country, or event. It can put history in perspective and aid in the visualization of people, places, and events. Post the following list of suggested movies so that students can choose to watch a few on their own or reflect upon those with which they are already familiar.

Born on the Fourth of July, Casualties of War, Platoon, JFK, Schindler's List, Saving Private Ryan, Gettysburg, Amistad, Roots, The Scarlett Letter, Glory, Gone with the Wind, The Ox-Bow Incident, Inherit the Wind, The Autobiography of Miss Jane Pittman, To Kill a Mockingbird, Something the Lord Made, The Grapes of Wrath, The Tuskegee Airmen, Patton, Truman, Ghosts of Mississippi, The Long Walk Home (the Montgomery Bus Boycott), Thirteen Days (the Cuban Missile Crisis), Courage Under Fire (1991 Desert Storm), Hotel Rwanda, Force More Powerful (examples of non-violence), October Sky, Apollo 13, The Right Stuff, Blood Diamond, An Inconvenient Truth, Gangs of New York, Letters from Iwo Jima, All Quiet on the Western Front, The Killing Fields, Malcolm X, Nixon, Gandhi.

*Teaching and Learning
in the Content Areas:*

Sample GED Test Questions by Subject

Sample questions and answers used with permission of American Council on Education are available at <http://www.acenet.edu>.



NYC
Department of
Education

GED SAMPLE TEST QUESTIONS:

Language Arts, Writing (Part I):

Directions: Choose the *one best answer* to each question.

Questions 1 through 6 refer to the following letter of application:

June 24, 2002

Jonathan Quinn
Employment Director
Capital City Gardening Services
4120 Wisconsin Ave., NW
Washington, DC 20016

Dear Mr. Quinn:

(A)

(1) I would like to apply for the landscape supervisor position advertised in the Sunday, June 23rd edition of the *Washington Post*. (2) My work experience and education combined with your need for an experienced landscape supervisor have resulted in a relationship that would profit both parties. (3) In May, I graduated from Prince William Community College. (4) Graduating with an associate of arts degree in horticulture. (5) My concentration within the program was designing gardens and choosing the appropriate plants for particular soils and regions. (6) I have also had considerable supervising experience. (7) For several years, I have worked with a local company, Burke Nursery and Garden Center, and have been responsible for supervising the four members of the planting staff.

(B)

(8) Our community knows that Capital City Gardening Services is a company that does excellent work and strives hard to meet the demands of its clients. (9) As my references will attest, I am a diligent worker and have the respect of both my coworkers and my customers. (10) I will be, as a landscape supervisor at your firm, able to put to use the skills and knowledge that I have obtained from my professional career and education. (11) I have included a copy of my resume, which details my principal interests education, and past work experience. (12) I have also included photographs of the landscape projects I have supervised as well as drawings of proposed projects.

(C)

(13) I am excited about the opportunities and many challenges that this position would provide. (14) Thank you for your consideration, and I look forward to hearing from you.

Sincerely,



Patrick Jones
1219 Cedar Lane
Manassas, VA 20109

1. **Sentence 2:** My work experience and education combined with your need for an experienced landscape supervisor have resulted in a relationship that would profit both parties.

Which correction should be made to sentence 2?

1. insert a comma after *education*
2. change *combined* to *combine*
3. change *have resulted* to *would result*
4. replace *profit* with *prophet*
5. replace *parties* with *party's*

2. **Sentences 3 and 4:** In May, I graduated from Prince William Community *College. Graduating with* an associate of arts degree in horticulture.

Which is the best way to write the italicized portion of these sentences? If the original is the best way, choose option (1).

1. College. Graduating with
2. College, I graduated with
3. College. A graduation with
4. College. Having graduated with
5. College with

3. **Sentence 10:** I will be, as a landscape supervisor at your firm, able to put to use the skills and knowledge that I have obtained from my professional career and education.

If you rewrote sentence 10 beginning with

As a landscape supervisor at your firm,

the next words should be

1. and able I will be
2. I will be able
3. putting and using with ability
4. obtaining my professional career and education
5. able to put to use I will be

4. Which sentence below would be most effective at the beginning of paragraph B?
1. There are many companies in this community, and Capital City Gardening Services is one of them.
 2. A company such as yours is known for a lot of things, especially the beautiful fountain, great billboard, and large parking area.
 3. Like carpet-cleaning services, gardening services range in cost.
 4. A company is only as good as its reputation.
 5. Gosh, I don't know where to begin when saying good things about your company.
5. **Sentence 11:** I have included a copy of my resume, which details my principal interests education, and past work experience.

Which correction should be made to sentence 11?

1. remove the comma after *resume*
 2. replace *principal* with *principle*
 3. insert a comma after *interests*
 4. replace *past* with *passed*
 5. no correction is necessary
6. Which revision would improve the effectiveness of this letter?

Begin a new paragraph with

1. sentence 3
2. sentence 5
3. sentence 7
4. sentence 9
5. sentence 12

Language Arts, Writing (Part 2):

In the second part of the Language Arts, Writing Test, you will write an essay about an issue or subject of general interest. This section assess your ability to write an essay about a familiar topic. The essay topic will require you to present your opinion or explain your views about the assigned topic.

You will have 45 minutes in which to plan, write, and revise your essay. You will be given scratch paper on which you may jot notes, an outline, and a first draft. The answer booklet has two pages of lined paper on which you will write your final essay.

SAMPLE ESSAY TOPIC

What is one important goal you would like to achieve in the next few years?

In your essay, identify that one goal and explain how you plan to achieve it. Use your personal observations, experience, and knowledge to support your essay.

Scoring

Two trained readers will score your essay on the basis of the following features:

- well-focused main points
- clear organization
- specific development of your ideas
- control of sentence structure, punctuation, grammar, word choice, and spelling

Each reader will score your essay on a 4-point scale, and the scores will be averaged to find your final score. If you earn a final score of less than 2 on the essay, you must retake both Parts I and II of the *Language Arts, Writing Test*. Also, you must write only on the assigned topic; if you don't, your essay will not receive a score, and you will have to retake both parts of the test.

All writers make mistakes when they write quickly. Good writers take the time to go over what is written and correct mistakes. Your writing will show your best skills if you take the time to plan what you want to say and review it to make any needed corrections.

Language Arts, Reading:

SAMPLE QUESTIONS

Directions: Choose the *one best answer* to each question.

Questions 1 through 8 refer to the following document:

**How Shall Employees Conduct Themselves?
Guidelines for Conducting Business with Those outside Our Company**

Our employees are the most effective advertisement of our values, beliefs, and abilities. Always keep in mind that when you are acting in your capacity as our employee, you are contributing materially to the public image and the ultimate success of this company.

(5) Gifts for Influence

No payment or gift of money, goods, or services should be given or received to influence government or business decisions. Accurate and complete records for all accounts will be strictly monitored for everyone's protection.

If it becomes apparent to you in the course of the performance of your business responsibilities that a

- (10)** payment of some kind is expected by your business associate, please contact your division president.

Conflict of Interest

A conflict of interest can be described as a situation where a person has a vested interest in two areas of the business world that may give him or her an unfair advantage in business dealings.

Our employees should be sensitive to any relationship that creates such a relationship—or even

- (15)** creates the appearance of such a relationship.

Keep these rules in mind:

- Throughout your employment period, be vigilant about potential conflicts of interest between this company's interests and your personal or immediate family's interests.

- Don't use your position with this company to obtain a personal benefit of any kind.

- (20)** • Avoid any action or relationship that creates, or even creates the appearance of, a conflict of interest. For example, having an interest in a nonpublic company that competes or does business with our company or any of its affiliates might create the appearance of a conflict of interest and might prompt accusations and/or an investigation.

Disclosure

- (25)** This company respects your privacy, as well as your right to conduct your personal affairs without interference; however, you must make prompt, complete, and continuing disclosure of all facts relating to any factual or potential conflict of interest.

Investigations

Inquiries or investigations may be undertaken at this company's direction by its attorneys,

- (30)** investigators, internal auditors, or independent public accountants. Employees should regard this vigilance as the company's commitment not only to fair competition but also to the protection of its employees. Your cooperation is needed for your protection as well as that of this company, and it is a condition of your employment.

This excerpt is a composite of information from several business documents.

1. Based on the information in this excerpt, what would be the company's policy about accepting gifts or entertainment from people representing your competitors?

Accepting gifts or entertainment from people representing competitors would be considered

1. dangerous
 2. practical
 3. reasonable
 4. unacceptable
 5. good business
2. Based on the information in this excerpt, when is it permissible to give money that might be considered a bribe or a tip to a government official in order to facilitate business?
 1. It is never permissible to give a gift or other payment to influence government or business decisions.
 2. It may be necessary in certain foreign countries where it is expected.
 3. Payments to government officials can be made at any time with prior approval of the division president.
 4. Modest gratuities can be offered at any time.
 5. All payments or gratuities must be worth their fair trade value.
 3. What is the meaning of the phrase "or even creates the appearance of" (lines 14–15)?
 1. an actual conflict of interest
 2. a conflict between the company's interests and your personal or immediate family's interest
 3. a situation that is not truly a conflict of interest but may appear to be
 4. the company's high standards for employee personal appearance and behavior
 5. a situation that is within your personal affairs

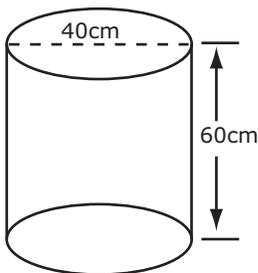
4. What is an example of a conflict of interest?
 1. Your cousin works for the same company.
 2. You have given gratuities to foreign government officials.
 3. You often meet with the employee's union representative.
 4. You have cheated on your income tax.
 5. Your spouse owns stock in one of the company's competitors.
5. While this excerpt is discussing a very serious topic, it tries to maintain a feeling of sincere interest in the employee. Which of the statements below most clearly reflects that feeling?
 1. "No payment or gift of money, goods, or services should be given or received to influence government or business decisions" (line 6-7).
 2. "...records for all accounts will be strictly monitored..." (lines 7-8).
 3. "Don't use your position with this company to obtain a personal benefit or any kind" (line 19).
 4. "This company respects your privacy, as well as your right to conduct your personal affairs without interference" (lines 25-26).
 5. "Your cooperation...is a condition of your employment" (lines 32-33).
6. How is this excerpt organized?
 1. statements of fact supported by personal stories
 2. specific topics followed by explanations
 3. rules for behavior supported by warnings of consequences
 4. general policy statement without specific performance standards
 5. debate of public versus personal philosophies

7. Earlier in this document, the company describes how employees of this company are to behave toward each other. It includes a statement about complete and enforced intolerance for discrimination in any form. Based on this information and the information in this excerpt, why might a potential employee want to read all this company's rules and regulations for employee behavior carefully?
1. One mistake with this company could cost an employee his or her job.
 2. Competitors have several options for securing their rights.
 3. Employees and their managers must interact carefully.
 4. Unfair labor practices will not be tolerated.
 5. This company has high expectations for employee behavior.
8. If you were running this company and you wanted to hire someone to enforce these rules, what primary characteristic would you want in this potential employee?
1. knowledge about the company's product
 2. honesty and integrity
 3. communication skills
 4. human relations skills
 5. familiarity with your employees

Mathematics:

Directions: Choose the *one best answer* to each question.

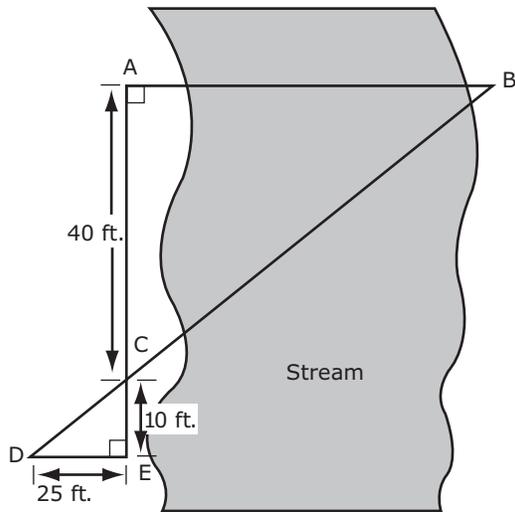
1. A painter mixes gallons of paint in a large cylindrical bucket so that there will be no difference in color among individual gallons.



If one gallon of paint has a volume of approximately 4000 cm^3 , what is the maximum number of whole gallons of paint that can be poured into the bucket?

1. 6
2. 14
3. 18
4. 22
5. 74

2. A surveyor made the measurements shown in the diagram below.



What is the measure, in feet, of AB , the straight-line distance across the stream?

1. 50
2. 75
3. 80
4. 100
5. 150

3. Shane is working with a spreadsheet on his computer. The spreadsheet will calculate the cost of the wood trim around rectangular windows based on the dimensions of the window and the price of the wood. The following entries have been made.

Length of window in feet	Width of window in feet	Price per foot of wood trim	Cost of trim for window
A7	B7	B7	

Shane wants to enter a formula in the last column so that the spreadsheet will calculate the final cost of the job. Which of the following formulas should he enter?

1. $A7 \times B7 \times C7$
2. $(2 \times A7 + 2 \times B7) \times C7$
3. $A7 + B7 + C7$
4. $(A7 + B7) \times C7$
5. $A7 \times B7 + C7$

Note: The following question is a specific example of a question likely to be found on the Mathematics Test, Part I, which allows the use of a calculator.

4. Last month, the balance in Tisha's checkbook was \$1219.17. Since then she has deposited her latest paycheck of \$2425.66 and written checks for \$850.00 (rent), \$235.89 (car payment), and \$418.37 (credit card payment).

What is the current balance in Tisha's checking account?

1. \$921.40
2. \$2140.57
3. \$3215.27
4. \$3929.92
5. \$5149.09

5. Byron purchased a \$5000 certificate of deposit (CD) at his local bank. The CD will pay him 7% simple interest at the end of 2 years.

How much **INTEREST**, in dollars, will Byron have earned from his CD at the end of the 2-year period?

Select which of the following alternate-format answers is correct.

1. A
2. B
3. C
4. D
5. E

A

B

C

D

E

		.	7	0	.	1	4					7	0	0	3	5	0					3	7	9
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2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
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4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

6. One ingredient in the sauce Kyle is preparing for tonight's dinner is half a teaspoon of red pepper. If the recipe he is using is designed to make enough sauce for 8 servings, but Kyle is only making 4 servings, what fraction of a teaspoon of red pepper should he use?

Select which of the following alternate-format answers is correct.

1. A
2. B
3. C
4. D
5. E

A

B

C

D

E

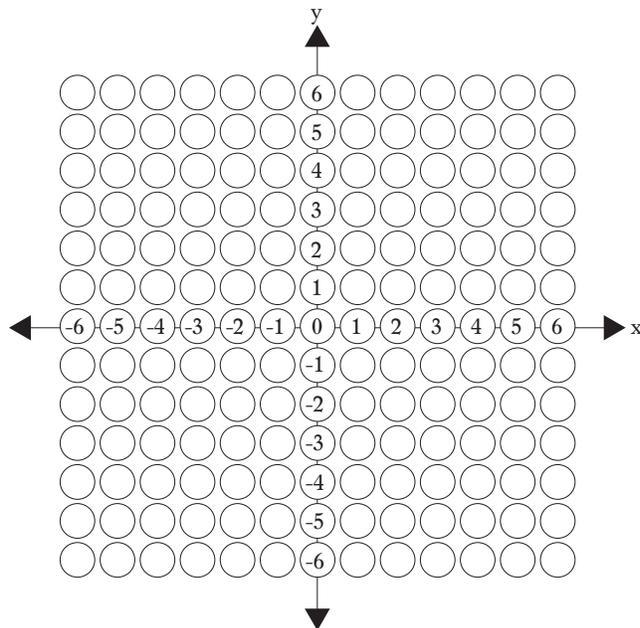
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3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: In the last two responses, a decimal answer and a fraction were gridded. Mixed numbers such as $3 \frac{1}{2}$ cannot be gridded. They must be changed to a decimal or fraction form. In the case of $3 \frac{1}{2}$, the answer could be gridded as 3.5 or as $\frac{7}{2}$.

The answer for an alternate-format question using the standard grid shown in the previous two examples will NEVER be a negative number, such as -8 , since the grid does not accommodate negative numbers.

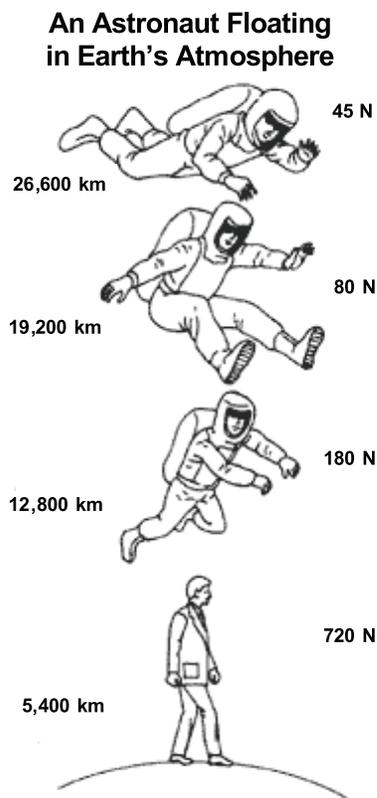
Both of the points mentioned above are included in the directions for alternate-format questions found in the actual GED Tests.

7. Show the location of a point whose coordinates are (3, -4) by using the below coordinate plane grid to get your answer.



Science:

Question 1 refers to the following cartoon:



Source: Tracy et al., *Modern Physical Science* (Holt, Rinehart, and Winston 1974), 285.

The closer we get to Earth's surface, the stronger the force of Earth's gravity becomes. This force of gravity (measured in Newtons, or N) has a much stronger effect on an individual on Earth's surface than on someone who is thousands of kilometers above Earth's atmosphere. (Note: One kilometer equals 0.6 mile.)

Which of the following statements best describes the force of gravity's effect on an astronaut floating more than 30,000 kilometers above Earth's surface?

Gravity's effect

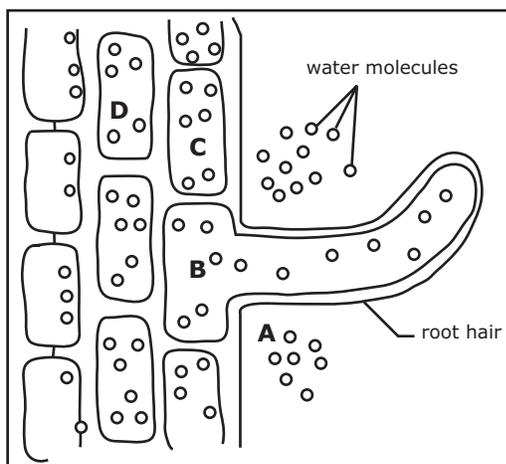
1. is the same as on Earth
2. is much less than on Earth's surface
3. is significantly affected by weather conditions
4. varies with the astronaut's age, diet, and physical condition
5. would be less on an astronaut than on people in other occupations

2. Clay soil forms a fairly effective barrier against the movements of water. It also swells and shrinks significantly as its water content changes. Sandy soil, in contrast, allows water to move freely and does not change shape as the water content varies.

In which statement is the appropriate soil selected for its intended site?

1. Sandy soil would make a good lining for a toxic waste site.
 2. Clay soil would work well in a drain field.
 3. Clay soil would be a good foundation for a large building.
 4. Clay soil would form a good liner if a person built a pond.
 5. A sandy lake bottom would prevent water from seeping out of the lake.
3. The root hair of a plant, shown in the diagram below, is the most efficient way for the plant to absorb water from surrounding soil.

**Root Hair Growing
among a
Plant's Root Cells**

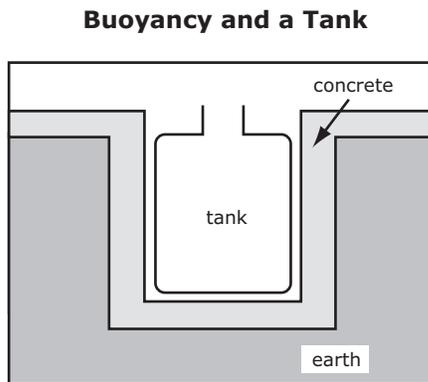


At what point is the flow of water the **GREATEST**?

1. C to B
2. C to A
3. D to B
4. A to B
5. D to C

4. A cook decides to recover some table salt that has been completely dissolved in water. Which of the following processes would be the most effective method of extracting salt from the solution?
1. spinning the solution in a mixer
 2. boiling away the water
 3. pouring the solution through cloth
 4. dripping the solution through a paper filter
 5. bubbling oxygen through the solution
5. **Question 5** refers to the following chart:

A large fiberglass tank was placed in a pit, as shown below. Before pipes could be attached and the tank filled with gasoline, however, the workers were asked to move the heavy tank to another location.

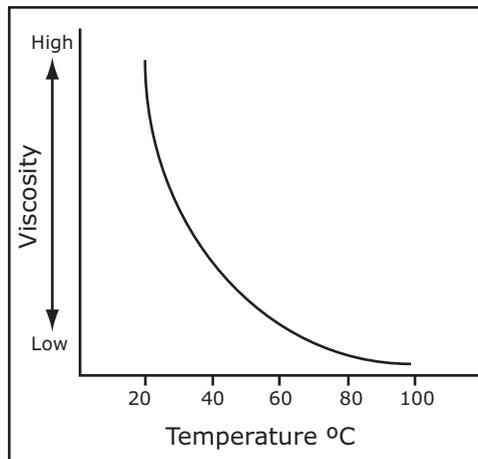


Which of the following methods would be the best way to raise the tank off the bottom of the pit so that cables could be placed under the tank?

1. Fill the tank with gasoline.
2. Fill the tank with water.
3. Fill the pit with water.
4. Fill the pit with water and fill the tank with gasoline.
5. Fill both the pit and the tank with water.

6. Viscosity is a measure of the internal resistance of a fluid to flow. For example, motor oil is more viscous than water. The viscosity of a fluid will change with temperature. The graph below illustrates how the viscosity of oil changes with temperature.

Effect of Temperature on Viscosity



Under which situation will the viscosity of the oil increase?

1. as temperature decreases
2. when mixed with water
3. as its volume decreases
4. as its flow increases
5. if its resistance stabilizes

Social Studies:

Directions: Choose the *one best answer* to each question.

Questions 1 and 2 are based on the following information.

The history of the world is filled with stories of people migrating. Migration is the movement of people from one place to another as they seek a new home. Famine, overpopulation, limited resources, war, and religious and political persecution “push” immigrants to move to another country. Hopes for employment and a better life “pull” immigrants to new places.

Millions have migrated to North America since the 1600s. Spanish, French, English, and Dutch immigrants were the first European settlers to establish permanent colonies. They settled in lands originally populated by people from Asia. Many people from Africa were driven from their homes at this time to be enslaved to work in colonies in the Americas.

Throughout the 1800s, immigrants looking for employment came to North America from Japan, China, and southeastern Europe. In the 1970s and 1980s, Southeast Asians, Latin Americans, and Caribbeans migrated to North America. Many of these immigrants fled from war-torn countries, political persecution, and economic difficulties.

1. The government of a country may restrict the number of immigrants allowed to enter that country.

These restrictions on immigration are most likely based on what belief?

1. An economy can support unlimited numbers of people.
 2. The “push” factors justify most immigration.
 3. Immigrants enrich the culture of a country.
 4. A country has a limited number of jobs and services.
 5. A government should not interfere with the migration of people.
2. Based on the information, which is an opinion rather than a fact about immigrants to North America?

Immigrants

1. traveled long distances to find a better life.
2. migrated to find employment.
3. learned to live in a foreign culture.
4. escaped from political persecution.
5. found a better life.

Questions 3 refer to the following chart:

Computer Stores: Customer Satisfaction Report				
PERCENTAGE OF SATISFIED CUSTOMERS				
Computer Store	Type Computer Sold	Variety of Products	Service Promptness	Reliable Advice
AAA Business	Brand A Brand B Brand C Brand D	100%	96%	71%
Operating Systems	Brand E Brand F Brand G	83%	69%	78%
Programs 'N Stuff	Brand A Brand C Brand D	92%	79%	80%
Technodazzle	Brand G	67%	100%	95%
Compu-Wonder	Brand B Brand C Brand F	100%	89%	76%

Source: Adapted from Washington Consumers' Checkbook, 1990.

3. Some people think that stores that sell fewer brands of computers provide faster service than stores that sell a wider variety of brands.

What information from the chart supports this idea?

1. AAA Business - 96% service promptness
2. Operating Systems - 69% service promptness
3. Programs 'N Stuff - 79% service promptness
4. Technodazzle - 100% service promptness
5. Compu-Wonder - 89% promptness

4. “We hold these Truths to be self-evident, that all Men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these rights are Life, Liberty, and the pursuit of Happiness.”

Which of the following political actions violated the principle of “unalienable Rights” of liberty that evolved from the above excerpt of the U.S. Declaration of Independence?

1. In 1857, a U.S. Supreme Court ruling promoted the expansion of slavery in U.S. territories.
2. In 1870, the Fifteenth Amendment to the Constitution outlawed the practice of denying the right to vote because of race, color, or previous condition of servitude.
3. In 1920, the Nineteenth Amendment to the Constitution granted women the right to vote nationwide.
4. In 1964, the Civil Rights Act outlawed racial discrimination in employment and public accommodations.
5. In 1971, the Twenty-sixth Amendment to the Constitution extended the right to vote to 18-year-old citizens.

Answers to Sample Questions

Language Arts, Writing

1. Answer 3: The use of the original verb form, “have resulted,” implies that the applicant and the employer have already been working together. However, because the applicant is actually seeking employment, it is clear that he has not worked with this company before. The verb form “would result” effectively conveys the possibility for a profitable future relationship for both if the applicant were to be hired.

2. Answer 5: This question requires you to identify the sentence fragment and revise it so that the resulting sentence (which combines the first sentence and the fragment) is structured more effectively.

3. Answer 2: In the original sentence, the words between the commas separate main sentence parts, thereby interrupting the clear flow of ideas. By moving the distracting words to the beginning of the sentence and following with “I will be able...,” the relationship of holding the position and being able to put skills and knowledge into practice is clarified.

4. Answer 4: This question requires you to recognize that paragraph B needs a topic sentence. You must refer to the entire paragraph to select the most effective topic sentence. In organizational questions of this type, all five alternatives are grammatically correct, but because of problems in tone or content, only one alternative is appropriate.

5. Answer 3: In this list of three categories that appear on the applicant’s resume, a comma must be used to separate the first and second items.

6. Answer 1: This organizational question requires you to study the entire document to determine where an effective paragraph break should occur. A paragraph starting with sentence 3 would clearly summarize and highlight the applicant’s educational and professional qualifications.

Language Arts, Reading

1. Answer 4: The clear statement in this section of the excerpt – “Gifts for Influence” – is that this kind of business dealing is unacceptable to this company.

2. Answer 1: This level of comprehension question is slightly more difficult than the previous question because the answer is implied but not stated. Alternatives (2) and (3) are distracters requiring that you read the passage with accuracy and precision.

3. Answer 3: This analysis question requires you to closely read a specific line in the text integrated with the content.

4. Answer 5: This question requires you to analyze the rules about conflict of interest to conclude that alternative (5) would be an example of this issue.

5. Answer 4: With the exception of alternative (4), all of the other alternatives use a similar instructional tone as in most of the excerpt. Alternative (4) is the only example of the milder language that appears occasionally in the excerpt to soften the strong tone.

6. Answer 2: The strongest distracter for this question is alternative (3) because it references “rules for

behavior,” which is an attractive choice. However, the excerpt does not contain any warnings or consequences, which the second half of this distracter mentions.

7. Answer 5: This is another example of a synthesis question. As described in Question 7, the stem of the question gives an additional piece of information that you must consider with the information from the passage. In this case, the new information covers a completely different area of employee behavior. The conclusion must be drawn that the company is very strict about employee behavior in at least these two discrete areas. The clear implication is that employees are probably held to high expectations in all areas, and a prudent prospective employee might want to be forearmed with this information.

8. Answer 2: The stem for this question casts the excerpt in a completely new light. Now you must consider the rules from the point of view of the owner who wishes to enforce them, rather than the employee who wishes to obey them. Furthermore, the employer wants to identify a person to enforce the rules and is considering the characteristics that person must possess.

Mathematics

1. Answer: 3. The Math formulas page will be helpful for this question. You must use the appropriate formula for the volume of a cylinder and recognize that its radius is half of the diameter shown. Once the volume is computed that answer is divided by 4000. Since only whole gallons are to be poured into the bucket the quotient is rounded **down**. The concept of rounding up or down (as appropriate to a particular situation) to produce a whole-number answer is an important one for you to understand.

$$\text{Volume of bucket: } (3.14) \times (20)^2 \times (60) = 75,360 \text{ cm}^3$$

$$75,360 \div 4000 = 18.84 \text{ gallons}$$

*The answer is rounded **down** because 19 whole gallons would not fit. Final answer: 18 gallons.*

2. Answer: 4. You must recognize similar triangles in the diagram and set up the correct proportion, which could be expressed as

$$\frac{AC}{EC} = \frac{AB}{ED}$$

Letting AB be represented by x and substituting the other measures from the diagram, the proportion is then solved for the unknown measure:

$$\frac{40}{10} = \frac{x}{25}$$

Cross-multiplying: $10x = 1000$

Dividing by 10: $x = 100$

The final answer is 100 feet.

3. Answer: 2. You must recognize that the perimeter of the rectangle must be found and multiplied by the cost per foot of the trim used. The cell locations become the variables in the formula.

(perimeter of rectangular window) times (price per foot of wood trim)

$(2 \times \text{length} + 2 \times \text{width}) \times \text{price per foot}$

$(2 \times A7 + 2 \times B7) \times C7$

4. Answer: 2. The paycheck would be added to the existing balance, and the checks written would be subtracted. The realistic amounts in the question would require considerable time for the arithmetic to be done by hand, but the values can be entered into the calculator in one continuous string as they are presented in the expression.

$\text{New balance} = \text{Old balance} + \text{paycheck deposited} - \text{checks written}$

$\text{New balance} = 1219.17 + 2425.66 - 850.00$

$- 235.89 - 418.37$

$\text{New balance} = \$2140.57$

5. Answer: 700. The formula for simple interest is found on the Formulas page. This page is also available in the front of the Mathematics Test.

simple interest = principal \times rate \times time

simple interest = $\$10000 \times 0.07 \times 1$

simple interest = $\$700$

Alternate-format responses can be right-, left-, or center-justified, as shown in the examples below.

Note that mixed numbers such as $3 \frac{1}{2}$ cannot be gridded. They must be changed to a decimal or fraction form.

7	0	0		
/	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

	7	0	0	
/	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

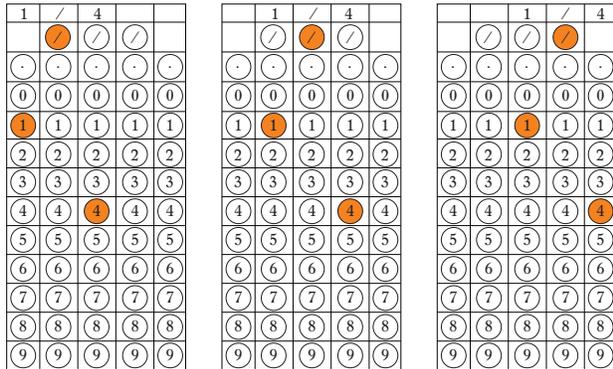
		7	0	0
/	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

6. Answer: 1/4, 0.25, or .25. Since Kyle is serving four from a recipe designed for eight, he needs $\frac{4}{8}$, or $\frac{1}{2}$ the amount of each ingredient. One half of $\frac{1}{2}$ teaspoon is found by multiplying:

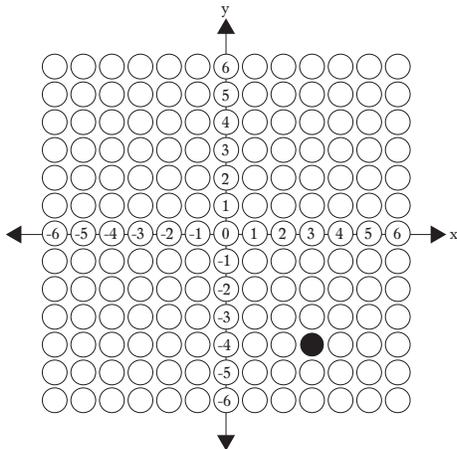
$(\frac{1}{2}) \times (\frac{1}{2}) = \frac{1}{4}$

This answer could be gridded using the decimal equivalent of $1/4$, namely 0.25, or .25, but, in this example, the fraction is gridded to illustrate the use of the fraction bar.

Note that mixed numbers such as $3\ 1/2$ cannot be gridded. They must be changed to a decimal or fraction form. In the case of $3\ 1/2$, the answer could be gridded as 3.5 or as $7/2$.



7. Answer: See coordinate plane grid. The coordinates in the ordered pair are listed with the x-coordinate (horizontal) first and the y-coordinate (vertical) second. The point (3, -4) is located in the lower-right, or fourth, quadrant of the graph.



Science

1. Answer 2: The force of Earth’s gravity lessens rapidly as an object (for example, an astronaut) gets farther from Earth’s center. This force of gravity is not affected significantly by weather conditions or the astronaut’s physical characteristics or occupation.

2. Answer 4: Clay soil absorbs and holds more water than sandy soil. Its ability to swell or shrink as the water content changes should help to maintain the pond by retaining more water. Because of its shifting characteristics, clay soil would not be a good choice for building a stable foundation.

3. Answer 4: In osmosis, water flows through a cell membrane in the direction of a higher concentration of water molecules to a lower concentration. In this example, the highest initial concentration of water molecules is located in area A, the soil, and the lowest concentration of water molecules is found in area B—the large root hair. The process of osmosis will continue from area A to B until the concentration of water molecules is balanced between the root hair and the soil.

4. Answer 2: In a salt solution, microscopic particles of salt will pass through either a cloth or paper filter and will be unaffected by bubbling or spinning in a mixer, making (1), (3), (4), and (5) incorrect. Only (2) – boiling the water – will leave a salty residue on the original container.

5. Answer 3: To be buoyant, an object must displace an amount of liquid at least equal to its weight. Any action that makes the tank heavier than the weight of the liquid it displaces will prevent the tank from floating. All the alternatives except (3) will make the tank heavier than the weight of the liquid displaced. Therefore, only (3) will allow the tank to float off the bottom of the pit.

6. Answer 1: The viscosity of a liquid – its internal resistance to flow – is closely related to its temperature. As a liquid’s temperature decreases, and it gets colder, the viscosity of that liquid will increase. Only alternative (1) mentions temperature as a factor.

Social Studies

1. Answer 4: This application question requires you to focus on a universal immigration issue that is related to the information but newly introduced by the question. It is a general case of a concrete situation that faces all countries – that is, the regulation of immigration to a country. The concept of scarcity (4) is the only logical reason for restrictions among the alternatives offered.

2. Answer 5: (1), (2), (3), and (4) are all facts stated or implied in the passage. (5) is what many immigrants have hoped for, but whether they have found a better life is unknown.

3. Answer 4: This evaluation question requires you to understand how to read the results of a customer survey. You must also recognize information that supports the correct generalization that customers tend to perceive that they receive faster service from businesses that sell fewer brands of a certain product (in this case, computers). Technodazzle satisfied 100% of its customers for service promptness – more than any other – and it sold only one brand of computer (4). All of the other companies (1), (2), (3), and (5) scored lower in service promptness and sold more brands of computers than Technodazzle. Technodazzle shoppers also rated the company higher in the “reliable advice” category than did the other shoppers in their experiences at other stores.

4. Answer 1: This application question requires the candidate to read and understand a short excerpt from the U.S. Declaration of Independence. The candidate must understand the meaning of “unalienable Rights” in the document and determine which, among several political actions taken by the U.S. government, have elements that deny the right to “Life, Liberty, and the pursuit of happiness.” Slavery, though legal at the time and upheld by the U.S. Supreme Court, denied liberty and political rights to many blacks in the United States and its territories in 1857 (1). The Fifteenth (2), the Nineteenth (3), and the Twenty-sixth (5) Amendments to the U.S. Constitution, and the 1964 Civil Rights Act (4) actually extended political rights to more and more people in the United States.

Section Two:

TEACHING AND LEARNING
ACROSS THE CURRICULUM

INTRODUCTION

Section One of this Resource Manual provides GED teachers with a set of performance standards and methods for differentiating instruction and assessment across the content areas. Section Two supports teachers in the development of lessons that address the particular academic challenges faced by GED students.

Section Two includes the following:

- An overview of the **Framework for Effective Instruction** (FEI).¹⁵ The FEI is a framework for teaching and learning that supports the following:
 - The use of literacy strategies with struggling adolescent readers¹⁶;
 - The building of students’ metacognitive skills¹⁷;
 - The use of strong classroom pedagogy, particularly that of The Workshop Model.¹⁸
- Two **templates** to support the use of the FEI in the development and implementation of strong lessons.
- A set of creative **FEI-aligned lesson plans** that provides GED teachers with a practical resource that reveals how to plan exciting *and* useful activities for students preparing for the GED Test.

¹⁵ Developed by The Center for Urban Education and Rudenstine & Associates, 2007.

¹⁶ Harvey & Goudvis, **Strategies that Work**. 2000.

¹⁷ Vockell, E.L. Educational Psychology: A Practical Approach (Online Ed.), 2001: <http://education.calumet.purdue.edu/vockell/EdPsyBook>.

¹⁸ C. Ferina & L. Calkins: <http://rwproject.tc.columbia.edu/default.aspx?pageid=1076>.



*Teaching and Learning
Across the Curriculum:*

Framework (FEI)

Framework (FEI)

The logo for the NYC Department of Education. It features a red vertical bar on the left side of a white rectangular box. To the right of the bar, the letters "NYC" are written in a large, bold, white, sans-serif font. Below "NYC", the words "Department of Education" are written in a smaller, white, sans-serif font. The background of the entire page is a grayscale photograph of a young Black man looking to the right, with a blurred image of a woman in the background.

NYCTM

Department of
Education

THE FRAMEWORK FOR EFFECTIVE INSTRUCTION (FEI)

An Overview of the FEI

GED students, more often than not, arrive at our programs after years of frustration from experiencing a system that fails to actively engage students in their own learning and development. As a result, they enroll lacking sufficient background knowledge and personal experience to provide themselves with the context clues needed to achieve success in an academic environment. The FEI is a teaching and learning model that integrates a broad and deep body of research¹⁹ into a single framework designed to support practitioners in the work of empowering GED students to become independent problem-solvers and critical thinkers thriving in academically challenging classrooms.

The FEI is comprised of five core components, three of which are grounded in the workshop model (as connoted by a *):

- **Lesson Preparation** (prior to teaching): The teacher articulates her/his learning goals for the lesson, and the content and skills that the lesson will address. The teacher articulates one or two key learning strategies (making connections, predicting, questioning, determining importance, inferring, visualizing, and synthesizing) which will be used to support students in becoming independent learners. Finally, necessary resources are identified, and the steps of the lesson are detailed.
- **The Mini-Lesson*** (the first 20% of the lesson): The teacher presents and models a specific concept, skill, or learning strategy. In the process, s/he helps students draw on their prior knowledge and experience, and responds to any clarifying questions they have. Mini-lessons need to be very carefully crafted so that they are focused and concise. Near the end of the mini-lesson, the teacher explains what students are expected to do during the practice and application work time.
- **The Practice and Application Period*** (the middle 60% of the lesson): Students listen, speak, read, and write as they practice and apply new learning. The focus of this work period is on the content and skills presented in the mini-lesson. The teacher will provide students with clear (preferably written) directions and steps for the completion of the practice and application work so that they are not dependent on the teacher to move forward with this aspect of their learning.
- **The Wrap-Up Session*** (the final 20% of the lesson): The teacher facilitates a review of, and reflection on, new learning. The teacher also assesses the level of student understanding. Students explain how they applied the concept(s) from the mini-lesson, what they learned, and the thinking that led them to understand the content.

¹⁹ The key research fields used in the model are:

- High-impact literacy strategies (see footnote 16);
- The sheltered instruction observation protocol (<http://www.siopinstitute.net>);
- Higher-order thinking skill-development (see footnote 17);
- Metacognitive skill-building (see footnote 17);
- The Workshop Model (see footnote 18).

Though this document does not explicitly teach practitioners to differentiate instruction, use cooperative learning techniques, plan backwards, or create authentic performance assessments, these additional fields of practice are very much in alignment with the model.

- Teacher Reflection** (after teaching): The teacher begins by reviewing the lesson plan, identifying areas where instruction was effective, and identifying areas where it might be improved if the lesson were to be taught again. In the process, it may be helpful to infer and note the variables at play in the delivery of the lesson. Finally, the teacher looks at the class roster and notes each student's level of mastery of the material, identifying those students who may need further instruction in the next lesson. This reflection informs the preparation of the next lesson.

Figure 1, below, displays an overview of an FEI lesson plan, organized according to the first four components described above.

Figure 1: Anatomy of the FEI Lesson Plan²⁰

The lesson's **Goal** encompasses all of the skills, content, and learning strategies (see sections below) that students will work on during a lesson. It completes the sentence: "After this lesson students will be able to ____."

The **Content** needs to be very specific, achievable, and measurable.

Skills are addressed within a discipline, such as writing a lab report; hypothesizing; grammar usage; using the internet for research; or using a ruler, calculator, or protractor.

(**Note:** For further information on these sections, see *GED Performance Standards* in Section One of the GED Educational Resource Manual).

The **Mini-Lesson** is designed to do some of the following for each category of goals (content, skills, and strategy):

- Activate students' prior knowledge and experience;
- Provide students with the critical background information that they will need in order to understand the new material;
- Teach students to make connections between, and apply, prior knowledge to, new material;
- Introduce new material.

LESSON PREPARATION FOR THE DAY'S LESSON	
Goal(s) of the Lesson:	Resources:
Content/Skill(s) Addressed in this Lesson:	Learning Strategies Addressed in this Lesson:
MINI-LESSON: BUILDING BACKGROUND & ACTIVATING PRIOR KNOWLEDGE 20% OF THE LESSON	
Objective of the Mini-Lesson:	
Vocabulary for Building Background:	
Instructional Steps for Building Background:	<div style="border: 1px solid black; padding: 5px;"> <p>Some Techniques:</p> <ul style="list-style-type: none"> • Read-Aloud/Think-Aloud • Simulation/Demo • Mini-Lecture • Model • Think-Pair-Share </div>

There are seven key **Learning Strategies**: making connections, predicting, determining importance, questioning, inferring, visualizing, and synthesizing. Here, identify one or more that are at the heart of the lesson.

The **Objective** of the Mini-Lesson is to build background for students. It is not the same as the goal for the full lesson, as the Mini-Lesson's objective generally addresses a piece of the lesson's goal that needs to be explicitly taught.

Vocabulary includes academic words that are important for understanding the material being presented, practiced, and applied today. There should only be a few words and they need to be explicitly taught in some form.

²⁰ Developed by Rudenstine & Associates, 2007. ©

This section of the lesson provides students with significant time to **Practice and Apply** their new knowledge and skills. During this time, the lesson is designed to maximize student opportunities to interact via collaboration in pairs and small groups, presenting and listening to each other, and working 1:1 with the teacher. This is where teachers can appropriately differentiate instruction.

This part of the lesson is devoted to **Reviewing and Assessing** student learning of *all* of the articulated goals, content/skills, and learning strategies. It is critical to track student progress around each set of goals.

STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE 60% OF THE LESSON	
Steps for Independent Work to Practice and Apply New Learning:	<p>Some Techniques:</p> <ul style="list-style-type: none"> • Group-Work (small, flexible, hetero- and homogenous) • Teacher: Student Conferences • Independent Work • Paired Work • Creation of a Product: model, video, newspaper, analytic essay, resume • Rehearsal for a Presentation • Debate • Discussion • Reading Groups
REVIEW AND ASSESS STUDENT LEARNING 20% OF THE LESSON	
Review of New Learning:	<p>Some Techniques:</p> <ul style="list-style-type: none"> • Ticket-to-Leave/Exit-Ticket • Written Reflection • Whole Group Sharing • Think-Pair-Share • Listing • Quiz • Sharing of Work (completed by Students during Practice/Application) • Student-generated Q/A and Lists • Student Descriptions of Strategies They Used and Why
Assessment of New Learning:	
Student Reflection on New Learning:	

Design *activities and projects* that provide opportunities for students to read, write, speak, and listen every day; clarify confusion; explore their own questions/interests; think at high levels; make their own meaning of new information and; use new information and knowledge in new ways.

The **Review** process helps students begin to embed new learning in their long-term memories. Provide opportunities for students to review and then show understanding of:

- The goal(s)
- Content and skills
- Learning strategies

Assessments can be summative or formative tools, and should be very tightly linked to the articulated content, skill, and strategy goals.

Reflection provides students with an opportunity to strengthen their metacognitive skills such as planning, monitoring one's understanding, employing fix-it – strategies,* and reflecting on one's learning.

*Fix-it strategies involve metacognitive skills as students figure out how well they are doing on a task and consciously make decisions to “fix” their approach if they need to make changes. Some of the cues for employing fix-it strategies are: one’s mind wanders, one can not remember what was just read, one becomes anxious or frustrated, one is completing an activity ‘incorrectly,’ or one is not sure what to do next during an activity. When students become aware of these cues as they work, they can employ different learning strategies (e.g., visualizing, prediction, questioning, inferring, etc.) to try to “fix” the situation.

While the above description of the five core components of the FEI provides practitioners with an understanding of the skeleton of the model, Figure 2, displayed on the following pages, provides additional depth by describing the characteristics of each component, alongside a set of instructional examples. This description is designed to aid GED teachers as they begin to create FEI-driven lessons.

Figure 2: Components of the Framework for Effective Instruction with Instructional Examples²¹

	COMPONENTS OF THE FEI	INSTRUCTIONAL EXAMPLES
1. PREPARE THE LESSON WELL		
a.	Articulate a <i>goal</i> for the day.	<ul style="list-style-type: none"> The <i>goal</i> must encompass the learning for the whole day. It is the composite of the content, skills, and learning objectives described in 1b and 1c, below. It completes the sentence “By the end of the day students will be able to ____.” Ex: “Complete a lab report on DNA.” (The skill is lab report writing, the content is DNA, and the learning strategy might be analysis or synthesis.) Ex: “Design a 1,000 sq. foot apartment. Provide the sq. footage for each room, as well as the perimeter measurements.” (The skill is geometric, scaled drawing; the content is perimeter and area measuring; and the learning strategies might be visualizing and synthesizing.)
b.	Identify clear <i>content</i> and <i>skills</i> for the day.	<ul style="list-style-type: none"> <i>Content/Skill</i>: See GED performance standards in Section One of the GED Education Resource Manual.
c.	Identify one or two <i>learning strategies</i> that are at the heart of the lesson (see 2c below).	<ul style="list-style-type: none"> <i>Learning Strategies</i> (see box on p. 140 or 2c, below) Ex: “Students will be able to make a prediction,” “Students will be able to explain the difference between an inference and a prediction,” or “Students will be able to establish criteria to evaluate the quality of an essay or presentation.”
d.	Select the <i>resources</i> that will best support students in reaching the articulated goals.	<ul style="list-style-type: none"> Ideally, these should be a mix of print, visual, and aural materials. The print materials should be of different reading levels. Ex: Nonfiction texts, short stories, poems, music, videotapes, books on tape, pod casts, internet simulations, charts, graphs, art, cartoons, textbooks, or GED practice questions.
e.	<i>Assessment</i> : Decide how students will show what they learned during the lesson regarding the content, skill, and learning strategy goals.	<ul style="list-style-type: none"> Ex: An “exit-ticket,” a list of all that was learned, a quiz, a presentation, or a timed writing assignment.

²¹ Created by Rudensine & Associates. © 2007.

	COMPONENTS OF THE FEI	INSTRUCTIONAL EXAMPLES
2. MINI-LESSON (THE FIRST 20% OF THE LESSON)		
a.	<p><i>Build background:</i></p> <ul style="list-style-type: none"> • Connect instruction to what students already know about the topic; • Connect students' previous knowledge to new information; • Introduce critical information/vocabulary that will help students explore important questions. 	<ul style="list-style-type: none"> • Ask what students remember or know about a topic. Ask how new information relates to previous learning. Refer to previously constructed word banks, outlines, charts, maps, etc. • Introduce important concepts and words by writing, speaking, repeating, and highlighting them. Have students create personal thesauruses/dictionaries, concept/word walls, word sorts, concept/word study books, etc. • Read-aloud/think-aloud, mini-lecture, simulation/demo, model, etc.
b.	<p><i>Ensure student understanding:</i></p> <ul style="list-style-type: none"> • Clearly explain academic tasks; • Regularly check for comprehension and recall; • Anticipate and prepare to clarify confusions and misconceptions. 	<ul style="list-style-type: none"> • Model activities, write directions on the board, teach classroom routines that are used consistently, provide visual cues, use analogies, explain idioms, etc. • Prepare multiple ways of explaining/teaching difficult concepts • Provide enough wait-time to allow students to process new knowledge
c.	<p><i>Teach students to use two or more of the learning strategies:</i></p> <ul style="list-style-type: none"> • Visualize; • Determine importance; • Predict; • Question; • Infer; • Make connections; • Synthesize. 	<ul style="list-style-type: none"> • Ex: Visualize the plot, setting, and action of a text while reading (see also "Coordinate Geometry," p. 160, and "Graph Analysis," on p. 181); identify the important messages in a story (see also "Read-Aloud/Think-Aloud," p. 207 and "Text Rendering," p. 218); predict the ending of a story based on the beginning (see also "Interviewing a Text," p. 196 and "Diaper Dissection," p. 238); raise questions about a scientific hypothesis (see also "Image Analysis," p. 189 and "Japanese Internment Camps," p. 221); infer an author's intent (see also "Point of View Writing," p. 201); make connections between a new text and one that was read previously (see also "Interviewing and Text," p. 196); synthesize a set of facts from multiple texts, in order to form one's own opinion (see also "Speed Dialogue," p. 215 and "Life Expectancy and World Population," p. 229)

	COMPONENTS OF THE FEI	INSTRUCTIONAL EXAMPLES
3.	PRACTICE AND APPLY NEW KNOWLEDGE & SKILLS (THE MIDDLE 60% OF THE LESSON)	
a.	<p>Design <i>activities and projects</i> that provide opportunities for students to:</p> <ul style="list-style-type: none"> • Read, write, speak, and listen every day; • Clarify confusion; • Explore their own questions/interests; • Think at high levels; • Make their own meaning of new information; • Use new information and knowledge in new ways. 	<ul style="list-style-type: none"> • Reading using the learning strategies to make meaning: questioning a text; visualizing; identifying important ideas, messages, and events; etc. • Writing narratives and analytic essays about one's reading • Reading and writing for the workplace: business letters and reports, instructional manuals, etc. • Ex: Internet research, computer simulations, designing models, labs
b.	<p>Ensure that students have an opportunity to <i>interact</i> with each other, as well as have one-on-one time with the teacher in different configurations:</p> <ul style="list-style-type: none"> • small, flexible, hetero- and homogeneous groups; • teacher:student conferences; • student:student paired work; • independent work. 	<ul style="list-style-type: none"> • Ex: reading groups, investigation and experiments, learning journals, discussion, role-plays, interviews, teacher-student “conferences”, presentations, small group work, partnered work, think-pair-share

	COMPONENTS OF THE FEI	INSTRUCTIONAL EXAMPLES
4.	(STUDENTS) REVIEW, ASSESS, AND REFLECT ON THE LESSON (THE FINAL 20% OF THE LESSON)	
a.	Provide opportunities for students to review and then show understanding of: <ul style="list-style-type: none"> • <i>The goal(s)</i>; • <i>Content and skills</i>; • <i>Learning strategies</i>. 	<ul style="list-style-type: none"> • Written reflections • Whole-group sharing • Student sharing of work they completed during the practice and application time
b.	Develop <i>assessment tools</i> that provide students with consistent feedback on their learning of content and skills, as well as the learning strategies.	<ul style="list-style-type: none"> • Student-generated questions and responses • Student-generated lists • Student descriptions of the strategies they used, and why • Quizzes • Ticket-to-Leave/Exit-Ticket²²
c.	Ask students to use <i>metacognitive skills</i> to reflect on their learning: matching thinking and problem-solving strategies to particular situations, clarifying purposes for learning, monitoring one's comprehension, and taking corrective action if understanding fails.	<ul style="list-style-type: none"> • Ex: “Notice how you figured out a difficult math problem (i.e., which strategies you used),” “Notice patterns in difficulties you had when reading (e.g., your mind wandered, there were too many words you did not know, you had difficulty determining importance),” “Describe the plan you made to write your essay,” “Notice, and ask questions about, any confusion you had when reading the story,” “Explain how you used research tools (e.g., dictionary, internet, thesaurus, classroom materials) to fill in gaps you noticed you had.”

²² These refer to the practice of asking students to show (briefly, on the space of a “ticket”/index card) what they learned that day.

	COMPONENTS OF THE FEI	INSTRUCTIONAL EXAMPLES
5. (TEACHER) REFLECTION ON LESSON		
a.	Throughout the process of designing and teaching units and lessons, teachers should engage in a reflective practice designed to aggressively improve their instruction.	<p><i>Questions for Reflection:</i></p> <ul style="list-style-type: none"> • Did my goal encompass content and skills, and require the explicit use of learning strategies? • Did I introduce learning strategies? • Did I activate prior knowledge? • Did I provide new information? • Did I link new learning with what they already know? • Did I introduce difficult vocabulary in a way so that students were not frustrated when they came across it? • Did I scaffold the activities to prepare for independent work? • Did students interact with one another? • Did I give students an opportunity to apply the strategies they just learned? • Did I provide activities that integrated reading, writing, listening, and speaking? • Did I ask students to discuss their metacognition? • Did I provide ample time at the end of the lesson to review everything we learned? • Did I talk with students 1:1 to check on their understanding of the material? • In my 1:1 talks with students, was I able to focus on asking questions about what they were learning, and how? (Or was I more focused on their behavior, level of attention, and ability to follow directions?) • Did I make the opportunity to speak with students who were comfortable with the material, as well as those who were struggling? • Did I link my assessment to the goals? • How well did each student learn the material? • What additional instruction does each student need in order to master the material? • How will I undertake this instruction over the course of the next few lessons?

While the above pages lay out the full FEI, the following pages provide a more detailed description of two of the key elements of the model: the learning strategies (2c of Figure 2), and metacognitive skills (4c of Figure 2). While each element of the FEI is important, these two receive particular attention in this document because of the critical role they play in teaching students to become independent learners, capable of transferring their skills and knowledge to new academic tasks.

An Overview of the Seven Key Learning Strategies²³

The seven key learning strategies are the following:

1. Making connections
2. Questioning
3. Visualizing
4. Making inferences
5. Making predictions
6. Determining importance
7. Synthesizing

These strategies provide students with a strong set of tools to use in preparing for, and taking, the GED Test. These are not test-taking strategies (though these are also clearly important), but rather strategies for making meaning of texts, data, and visuals. These are strategies that “skilled” learners have learned to use automatically, without awareness. Explicitly teaching these skills greatly supports our students in their efforts to garner a GED (in addition to achieving their goals for future work and education).

1. Making Connections: Making connections is one of the best ways to build background for new topics of study. There are three kinds of connections that skillful learners make:

- **Text-to-Self:** Connections students make between new material and their prior knowledge and experience. For example, they might say:
 - “This reminds me of when I studied...” or “I had something similar happen to me when...”
- **Text-to-Text:** Connections between new material and previous areas of study. For example, they might say:
 - “Now that we are learning percentages, I can see how it is just another way of talking about fractions.”
- **Text-to-World:** Connections between new material and important concerns and issues in society, or the world at large. For example, they might say:
 - “Studying the history of immigration has made me want to learn more about contemporary immigration policies for Iraqi refugees in the US versus in other countries.”

²³ Excerpt modified from *A Professional Learning Path to Rigorous and Relevant Instruction: Key Lessons from the Transfer School Institute*. Authored by Antonia Rudenstine, in collaboration with Lew Gitelman, 2007.

As students learn to make connections – and/or become more aware of the connections they are already making – they engage in the process of “activating” and extending their schema²⁴ which, in turn, will support them as they learn new material.

2. Questioning: In many respects, questioning is the door to understanding. Young children are filled with questions about the world around them, and are willing to unabashedly give voice to their curiosity. Unfortunately, as children progress through school, the role of questioning in their lives seems to change. They begin to view their questions as a sign of their ignorance; they ask them only in order to clarify confusion, not to explore new ideas. In many learning environments, it is the teacher who has the power to ask questions to see if students understand, and students are expected to provide answers to prove their understanding (Harvey & Goudvis, 2000: p. 81).

The questioning strategy rekindles students’ curiosity, explicitly encouraging them to wonder and to use these “wonderings”²⁵ to make meaning of new material. In order to teach this strategy, practitioners need to begin by making students aware of the following:

- (1) The range of reasons why skillful learners ask questions:
 - a. to explore new avenues of thinking
 - b. to clarify or resolve confusions
 - c. to expand their working schema

- (2) The different kinds of questions that skillful learners ask:
 - a. “thin” questions such as who, what, where, and when
 - b. “thick” questions such as how and why, as well as “What do you think about...?”, “What do you believe about...?”, “How did you come to believe/think this...?”

- (3) Where skillful learners look for answers to their questions:
 - a. in the text—either in passages to come, or those already read
 - b. in their experience and related previous knowledge (their schema)
 - c. in other texts (e.g., dictionaries, thesauruses, the internet, film, articles, and books)

From here, it is possible to work with students to explore any topic on the GED Test.

While there are more “thick” questions than “thin” on the GED (and all are multiple choice), each section of the GED Test does ask students to respond to both “thin” and “thick” questions, so it is critical

²⁴ A schema is an organized bit of built background: a constellation of information, thoughts, questions, and experiences about a topic or idea that one can draw on to support the learning of new material.

²⁵ “Wonderings”: the noun of the verb to wonder. A newly coined term that refers to things people are wondering about (CUE and Rudenstine & Associates, 2006. ©).

that they learn to explore both. In addition, the test asks students to look for the answers to questions in a number of different places: sometimes within a provided passage, word problem, graph, or cartoon; sometimes in students' personal experience (the essay, for example); and sometimes in other parts of the text (such as the formula sheet in the math section). Helping students learn to determine where to look for the answers to their questions is critically important to their success on the test.

3. Visualizing: Skillful learners often create mental images while engaged in complex tasks. These images can spring from any of the five senses, are sometimes purposeful and at other times spontaneous, and provide learners with an extension to their schema to aid them in their work. The process of visualizing requires interpretation, the drawing of inferences, and the compiling of details to create a rich tableau. This, in turn, serves as a springboard for adapting and creating new interpretations and drawing conclusions.

Experienced learners often use visual images to enhance their understanding without an awareness of the act. For example, they may read a wonderful novel and visualize the setting, characters, and action in their mind's eye. If they later see a film version of the novel they suddenly realize that they had already created their own rich set of images to accompany their reading (and frequently feel disappointed by the movie's interpretation, which pales in comparison to their own). Textbook companies – well aware of the help that visualization can provide – pack each page with graphs, charts, pictures, timelines, and diagrams designed to evoke images that might “stick” with readers. Students need to develop the skills to notice and create their own images as well, or to use the ones provided to deepen their understanding of the material. Defining visualization as a strategy – rather than an automatic process, or an innate learning “style” – renders it a tool that can be learned and used by anyone, at their discretion, to explore ideas.

The GED Test relies on the visualization strategy in the following two ways:

- Many of the questions in each section of the test display information in visual ways. (For math, science, and social studies, students encounter cartoons, graphs, and charts.)
- For many of the math and science questions, the ability to visualize material – such as the addition of one-half and three-eighths – will significantly enhance students' chances of determining the proper response to a question.

4. Drawing Inferences: Inferring is about interpreting the world around us. With regard to text, it is “reading between the lines”: using the explicit to draw conclusions about implicit messages (the plot of a short story is explicit, its themes implicit). Ultimately, inferences are assumptions based on “facts.” They rely on our ability to use the schema we have developed, through prior learning and experience, to make meaning of a current situation or text. The beauty of inferences is that they are inherently open-ended and open for interpretation: we will never know if there is “evil” in human nature, or if it is inevitable for groups to feud; and, at the moment, there is much to be discovered in order to protect the ozone layer. This is all territory to be legitimately explored by students without being bound by the need for a single “correct” interpretation.

Teaching students to infer is a complex process, but critical in all disciplines. In Humanities classes, archetypical text study depends on the capacity to infer, as students are expected to ponder the “big ideas”

embedded in their texts: *Are feuds between groups—such as Shakespeare’s Montagues and Capulets—inevitable? Is the Holocaust evidence that evil is an inherent part of human nature?* In the sciences, the mastery of the scientific method hinges on students’ capacity to hypothesize (infer, and then test, the causes of a specific phenomenon based on prior knowledge and experience): *How did life begin on earth? How can we stop the ozone layer from disappearing?* Across the disciplines, practitioners can begin to teach inference by working with students to distinguish between “facts” – explicit text – and interpretation. The following process has proven very effective with students preparing for the social studies and reading sections of the GED. A slight modification of the activity also works well with word problems in math and science:

- a. *Students should read a chunk of text (a chapter or sub-chapter), with a natural beginning and end.*
- b. *Ask students to identify the subject or topic.*
- c. *Ask students to identify the main idea or thesis, with a supporting quote and page number.*
- d. *Students should then explain the quotation in their own words.*
- e. *Next, they should find supporting evidence in the text (three to six examples, with page numbers).*
- f. *At this point, ask them to write a succinct paragraph summarizing the text.*
- g. *Finally, students should use the summary and supporting evidence to make a list of inferences about the answers to the big questions embedded in the text (such as those listed above).*

–Boke, 2007: p. 68-71–

Experienced learners are constantly engaged in a lightening-fast version of this process, allowing them to quickly expand and deepen the range of their schema, while also drawing increasingly nuanced inferences. GED students need support in learning this skill, as portions of the GED Test require students to draw inferences (cartoons are a great example of this). One important note to stress with students is that, although students may draw a number of legitimate inferences from a text, the GED Test will ask them to choose the “best” one (i.e., the inference that uses the most data points to inform it).

5. Making Predictions: Prediction and inference are closely linked. However, there are some critical distinctions between them, making it useful to think of them as separate strategies. As suggested earlier, inference is implicit, focusing on major ideas and themes that may never be overtly stated. Prediction, on the other hand, is firmly grounded in the central subject or plot of a text. It is explicitly about “outcomes”:

- *What do you believe the relationship between Montagues and Capulets will be at the end of Romeo and Juliet?*
- *Where did people in Concentration Camps go after WWII ended?*
- *Which way will the slope of a line move if we change a sign from negative to positive?*

In addition, while inferences are assumptions based on facts about current or past circumstances, predictions are inferences that use present or past facts to envision the future.

The art of teaching students to make accurate predictions requires teaching them to reflect on their thinking. They might engage in an activity similar to the one described in the section above (drawing inferences), but rather than complete the final step, they could substitute the following:

g. Make a prediction about the outcome of the text, drawing on the information described in your summary and supporting evidence. Make certain that the prediction addresses the central ideas of the text.

In order to carry out this task, students will need to notice evidence in the text that they are relying on for their predictions. They will need to consider the evidence that they might be ignoring or overlooking. And they will need to ask themselves if there are multiple ways to arrange the evidence, resulting in different, but equally plausible, predictions.

The GED Test does not include large numbers of questions that require the skill of prediction. However, prediction is a critical strategy to teach, as it is the gateway to teaching students to make inferences. For GED students, who generally struggle with reading texts, learning to predict allows them to work at a literal level of understanding, and to think in complex ways about the text they are reading. The inferring strategy builds on this, pushing students to think more abstractly about texts and visual displays of information.

6. Determining Importance: In order to support learners in determining what is important in a text, practitioners must begin by exploring what is interesting to students (i.e., What do they want to remember most vividly about the text, and why?). Students generally begin this process by articulating the connections they have made to the text (to themselves, the world, or their own experience). However, it is not necessarily enough for students to remain focused on connections. Part of the teacher's work is to help students determine the alignment between their own responses and what is actually important to the understanding of the text. Sometimes these may be in alignment, but at other times, students' interest and attention may be caught by a sub-plot, minor detail, or supporting idea, and it is critical for teachers to help students begin to notice this and learn strategies to leverage their understanding of these smaller text segments into a deeper understanding of the meaning of the text as a whole.

With GED students, misalignment often happens when students have little background knowledge of, or experience with, the text. In the process of making-meaning, one of two problems can occur:

- First, there is so little in the text that makes sense to students that they do not have the tools to make accurate determinations about importance; everything and nothing may seem particularly important.
- Or, second, they are able to draw on a tiny piece of prior knowledge to make meaning of part of the text, and they therefore assume that this part is the most important idea in the text as a whole. (This is human nature: most people focus on that which they understand, and in so doing, render it important regardless of the larger context to be considered.)

The task of GED teachers is to help students notice the extent to which they have replaced the existing context (the actual text) with their own experience, and to begin to disentangle them. This is a complex process that first requires learners to identify their own purpose in reading a particular text, and then to reflect on questions such as the following:

- *Content schema*: Do they have any direct experience with this content? What have they heard or read about this material in the past?²⁶
- *Beliefs and opinions about the content*: Is it a subject that is important to them? Do they have strong feelings or judgments about it?
- *Schema for the format of the content*: Do they have schema for the scientific process used during labs? Do they have schema for textbook lay-outs, mathematical word problems, or sonnets?
- *Memory of related concepts mentioned prior to, or during, the introduction of new materials*: Did another learner describe his connection to the material? Did he/she conduct an internet search on the author of the text in order to understand the main ideas that the author is concerned with?²⁷

This reflective work will allow students to begin the process of understanding the ways in which their existing schema are (and potentially are not) useful in understanding the text as a whole. In the process, they should be able to identify areas for further building-background work.

The fact that the GED Test is a multiple-choice test, where there is only one answer that is deemed correct, means that it is critical for students to see beyond their own experience and beliefs and really focus on what is presented in the test. For example, one of the GED test questions asks students to read a set of “Guidelines for Conducting Business with Those Outside Our Company” (p. 117), and one of the follow-up questions asks students “Why might a potential employee want to read this company’s rules and regulations carefully?” Students are then provided five potential answers to this question. Within a classroom discussion, this might be a question where students can make connections to their own experience; but on the GED, students will, instead, need to reread the text to determine the important messages for employees and see which of the responses are the most relevant. The correct answer may not be the answer that individual students may initially select based on their own personal experience in a workplace; therefore, it is critical that we teach students to untangle their own beliefs from what can be gathered directly from the GED Test text (not to diminish their beliefs, but rather to broaden their capacity to analyze texts).

7. Synthesizing: At the highest level, synthesis is the process of combining new ideas and material with existing schema in order to create a new (and more complex) integration of an important concept. However, synthesis is not a single action, but consists of integrating many data points along a continuum. Early in the process it involves “taking stock of meaning while [reading, and using] it to help [one’s] thinking evolve, perhaps leading to new insight, perhaps not, but enhancing understanding in the process.”²⁸ The work of synthesizing requires learners to interact with texts on a personal level. They begin by identifying what is

²⁶ One important piece of information for GED teachers and students is that none of the content on the GED is drawn from events or ideas prior to 1920.

²⁷ Adapted from Keene and Zimmerman, 1997: p. 94.

²⁸ Harvey & Goudivis, 2000: p. 145.

interesting and important to them—regardless of the meaning of the text as a whole—making connections to their prior knowledge and experience to see what new understanding and thinking develops.

Many of the questions on the GED Test require students to synthesize information in order to respond correctly. (In fact, 20% of the GED social studies test requires students to synthesize data from both text and graphics.) The essay portion of the test is the clearest example of this strategy in action, but there are others as well. For instance, in the above example on “Guidelines for Conducting Business with Those Outside Our Company,” one of the questions asks students *“If you were running this company and you wanted to hire someone to enforce these rules, what primary characteristic would you want in this potential employee?”* In order to respond to this question, students need to use the Guidelines to determine which qualities the company may deem the most important (a skill that requires inference in addition to making connections to their background knowledge/schema of the work environment). Lastly, students need to match their own responses to those presented in multiple-choice form on the test, to see which are most closely aligned.

The following explains how the use of metacognitive skills will help students effectively respond to questions such as the one presented in the paragraph above (in italics).

Metacognitive Skills

The term metacognition is defined as “the individual’s own awareness and consideration of his or her cognitive processes and strategies” (Flavell, 1979). Experienced learners have three well-developed metacognitive assets:

- the capacity to plan, organize, and monitor their learning (self-regulation);
- an awareness of their working schema;
- the willingness and confidence to engage in mental exploration of their own thoughts and knowledge.²⁹

“Novice learners” tend to have less-developed metacognitive awareness and, as a result, they are more likely to “fail to utilize the knowledge and skills they have. They tend not to plan, have no strategy in attempting tasks, [overestimate the capacity of their memory], and do not monitor their progress.”³⁰ A critical part of the work of educators in GED programs is to teach students to develop effective metacognitive capabilities, because it is through the process of thinking about their thinking that students begin to take control over their learning, becoming able to do the following:

- plan how to carry out academic (and other) tasks;
- monitor their progress;
- make decisions about which strategy to use at a particular moment;

²⁹ Brown, et al, 1983.

³⁰ Fischer, 1998: p. 8.

- choose to change strategies if one or another is not helping them progress effectively;
- reflect on their learning in order to expand the quantity and quality of the schema available to them.

The FEI is specifically designed to support students' development of these critical skills, both by making the teaching and learning strategies an explicit part of instruction, and by including a reflective period at the close of each FEI lesson. Both of these practices aid students in the work of thinking about how they can best approach various academic tasks.

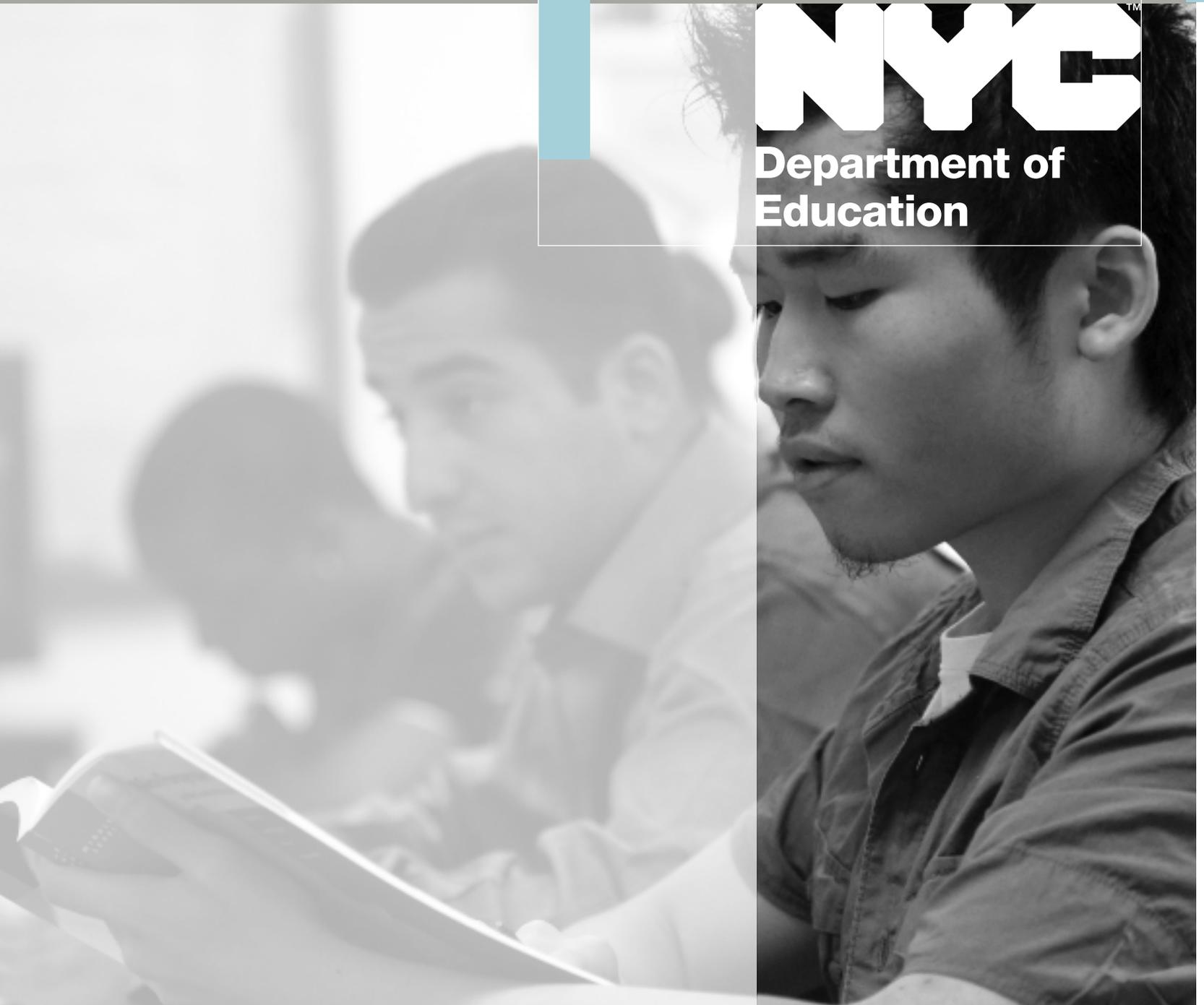
The usefulness of metacognitive skills for GED students can be seen in the above example of a sample GED question about the characteristics of good employees: here, the ability to “appropriately match one’s thinking to a particular situation and modify one’s approach” and the capacity to “plan how to determine the best answer to the question” would help students mediate between their own responses and those presented by the test-makers in a multiple-choice question. For example, students might begin by brainstorming a few qualities based on their own work experience: bossy, strict, someone who can “force it.” Then, they might look at the responses provided by the test makers: honesty, responsibility, firmness, loyalty. Without the use of metacognitive skills, they might guess and choose “firmness” because it most closely matches their brainstorm. But, if they were able to reflect on the thinking process they used during their brainstorm, they might realize that they are actually referring to “responsibility” or “loyalty”: either someone who is committed to the organization, and therefore believes in its rules; or someone who feels responsible for their job, regardless of their personal loyalty. From here, they could begin to infer which of these two responses the test-makers are most likely to care most about, based on the students’ overall understanding of the text.

As an additional aid to this short description of metacognition, the last part of this section provides teachers with a set of model lesson plans, each of which concludes with a different “reflection” activity, illustrating a number of avenues for building students’ metacognitive skills. For many GED students, this will be a new experience, and one that they may not be fully comfortable with. But it is important for teachers to persevere with this part of the lesson so that their students have the appropriate tools to tackle the GED Test, as well as other complex tasks in school and work.

*Teaching and Learning
Across the Curriculum:*

Templates

Templates



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TEMPLATES FOR FEI LESSON PLANNING

This part of Section Two consists of two tools to help GED educators use the FEI to inform their lesson planning:

- A blank copy of the FEI Lesson Plan Template (Figure 3, below) that can be photocopied/downloaded and used by teachers to create their own lesson plans
- An FEI Observation Protocol (Figure 4, below) that can be used in the following ways:
 - By educators visiting each others' classrooms to provide supportive feedback
 - By a supervisor mentoring practitioners
 - By a teacher reflecting on her/his lesson at the end of the day

Figure 3: FEI Lesson Plan Template

FEI LESSON PLAN TEMPLATE³¹	
Lesson:	Time:
LESSON PREPARATION FOR THE DAY'S LESSON:	
Goal(s) of the Lesson:	Resources Needed for the Lesson:
Skill(s) Addressed in this Lesson:	Learning Strategies Addressed in this Lesson:
MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON	
Objective of the Mini-Lesson:	
Vocabulary for Building Background:	
Instructional Steps for Building Background:	
STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE: 60% OF THE LESSON	
Steps for Independent Work to Practice and Apply New Learning:	
REVIEW AND ASSESS STUDENT LEARNING: 20% OF THE LESSON	
Review of New Learning:	
Assessment of New Learning:	
Student Reflection on New Learning:	

³¹ Created by CUE and Rudenstine & Associates. © 2007.

Figure 4: FEI Classroom Observation Template

FEI CLASSROOM OBSERVATION PROTOCOL³²

Teacher Observed: _____ **Date:** _____

Observation By: _____ **Class:** _____ **Period:** _____

Lesson Preparation:

Posted in the room:

- The title of the lesson
- The day's content and skill objectives
- The plan for the day (agenda)

Easily available to students:

- The resources that will be used during the lesson
- Instructions for independent/small group work

Observations and Suggestions:

Mini-Lesson (20% of the Lesson):

- A model is presented that sets students up for the practice and application work they will undertake
- The teacher checks students' understanding of the new material
- The plan for the practice/application session is communicated to students in at least two modes (e.g., spoken, written, visual, etc.)

Observations and Suggestions:

³² Created by Rudenstine & Associates and CUE. © 2008.

Practice and Application (60% of the Lesson):

- Students interact (e.g., 1:1, small group, paired, whole class, etc.)
- Teacher conferences with all students to monitor progress and understanding
- There are opportunities for students to both practice and apply new skills, content, and strategies learned in the mini-lesson
- Students are engaged in reading, writing, speaking, and listening

Observations and Suggestions:

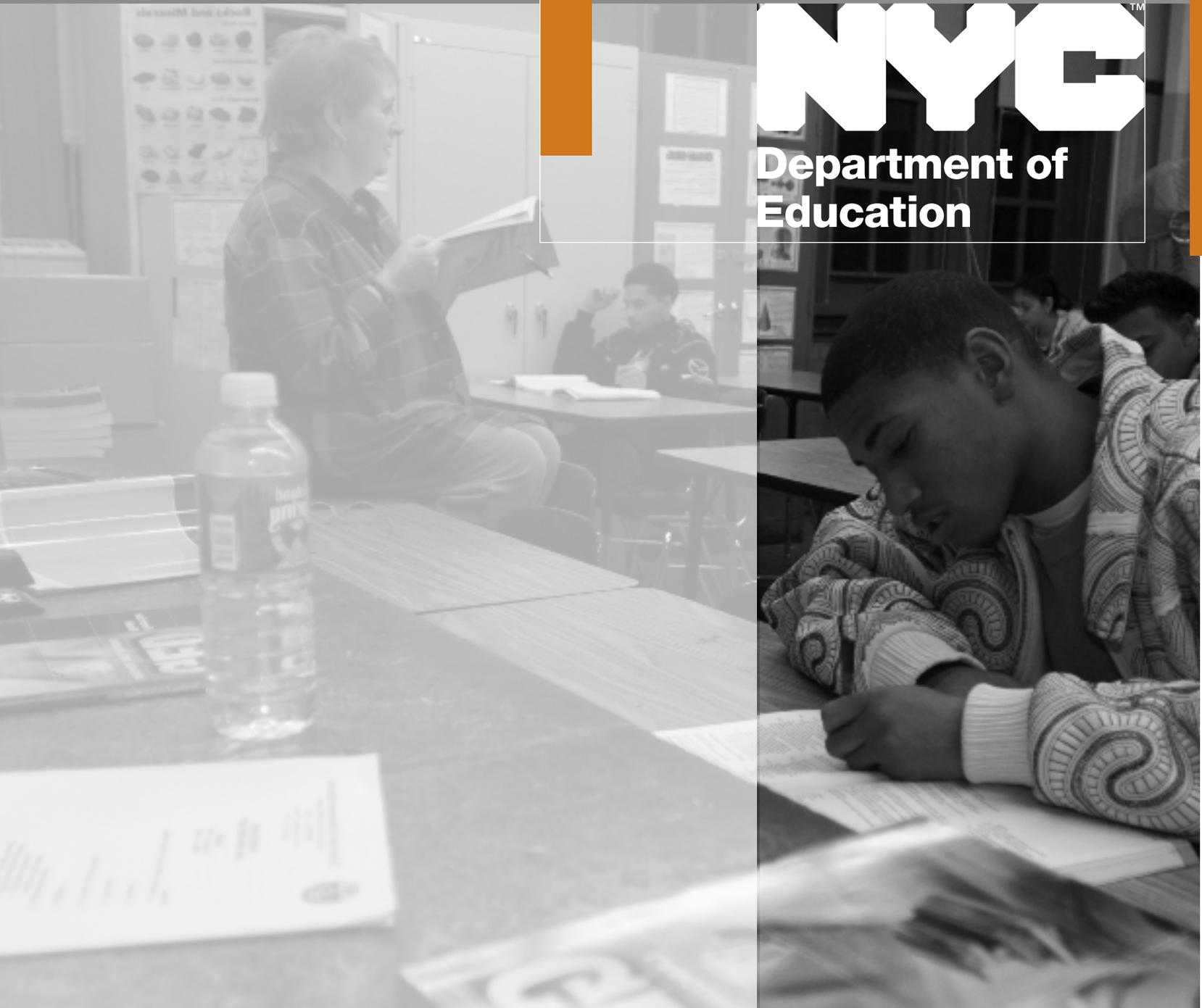
Review, Assessment, and Reflection (20% of the Lesson):

- Teacher and students have ample time to thoroughly review the day's new learning
- Students reflect on their learning, describing why they made the decisions they did
- The assessment is tightly linked to the day's content, skill, and learning strategy objectives
- Students are asked to reflect on their application of learning strategies, and their plans for similar future work

Observations and Suggestions:

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SAMPLE GED LESSONS AND ACTIVITIES ACROSS THE CURRICULUM

This final portion of the manual provides GED teachers with model lesson plans, most of which can be adapted to fit a number of different topics across the disciplines. The plans have the following characteristics:

- Each plan establishes a tight link between the goals, the objectives, and the assessment measures.
- Each plan uses learning strategies and metacognitive skill-building to support students in becoming independent and adaptable learners, with an ever-expanding set of schema to ground their academic work.
- Each plan is designed so that students have the opportunity to both see effective models and to practice and apply their learning.
- Most of the plans are content-neutral (i.e., they will work across several disciplines, depending on the specific content). Math is somewhat of an exception to this, only because the plans are primarily text-based and GED math is more numbers-based than text-based. Despite this exception, the plans will provide teachers across *all* disciplines with examples of review, assessment, and reflection activities, as well as ideas for how to structure mini-lessons and create opportunities for students to practice and apply new learning. Two of the lessons are specific to math content, and one to science lab, but the review, assessment, and reflection activities can be useful in any discipline.
- Three of the lessons are more technically advanced, requiring greater comfort with the learning strategies. These are identified with a (*) below.

Model Lesson Plans (listed alphabetically)

The first portion of this manual provides baseline information on the GED Test and resources for teaching and learning in GED Programs, including the following:

Coordinate Geometry: Parts A and B	p. 160
Fact/Question/Response (FQR)	p. 175
Graph Analysis	p. 181
Image Analysis	p. 189
Interviewing a Text*	p. 196
Point of View (POV) Writing	p. 201
Read-Aloud/Think-Aloud: Chemical Reactions*	p. 207
Speed Dialogue	p. 215
Text Rendering*	p. 218
Text Set Analysis (1): Japanese Internment Camps	p. 221
Text Set Analysis (2): Life Expectancy and World Population	p. 229
Text Set Analysis (3) and Lab: Diaper Dissection	p. 238
Theme or Topic/Detail/Response (TDR)	p. 251
Write Around	p. 257

TEACHER LESSON PLAN

**Lesson: Coordinate
Geometry: Part A**

Time: 75 minutes

Use of this Lesson:

This lesson is an introductory lesson and should be taught at the beginning of a set of lessons on plotting points and using a coordinate grid.

LESSON PREPARATION FOR THE DAY'S LESSON:

Goals of the Lesson:

- To introduce the components of the coordinate grid
- To learn to plot points

Resources Needed for the Lesson:

- Copies of five different maps (enough for student pairs to have copies of all five) including the New York University Campus (p. 168) and NYC Marathon Route (p. 167). Other possibilities include the state of NY, the US, the western hemisphere, or the world.
- Enough chart/easel paper for each student pair to have one sheet. This is the large format paper that is typically approximately 25" x 30". (*Note: Chart paper with light graphing is optimal.*)
- Photocopied blank number lines (i.e. they have evenly spaced markings, but no numbers) that are as long and wide as the chart paper, with a hole punched in the center of the line (to represent 0). So, one number line would be 2" wide and as long as the **width** of the easel paper, with lines marking each ½" or so. The second number line would be 2" wide and as long as the **length** of the easel paper, again with lines marking each ½" or so. Make enough copies for each student to have one set of each.
- Student Instructions (p. 165)
- Map Worksheet (p. 174)
- Index cards

Skills Addressed in this Lesson:

Mapping
Graphing

Learning Strategy Addressed in this Lesson:

Using fix-it strategies to manage/modify one's learning
Visualizing

**MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE:
20% OF THE LESSON**

Objective of the Mini-Lesson:	Introduce the idea of the “coordinate plane” Review map navigation
Vocabulary for Building Background:	Coordinate, coordinate plane, axis/axes (x-axis, y-axis), quadrant, ordered pair <i>Related vocabulary:</i> clockwise, counterclockwise, horizontal, intersect, vertical
Instructional Steps for Building Background:	<p>Part A:</p> <ol style="list-style-type: none"> 1. Divide students into pairs. 2. Distribute the map and legend of New York University. Ask students to look at the legend and mark four points of interest on the sheet. 3. Ask students to look at the legend and come up with an explanation of how it works. Ask them to explain to their partner how the legend can help them identify the location of their four points of interest. 4. While students are working, walk around the room to track the explanations they come up with. Identify two or three student pairs that have interesting explanations. 5. Ask these pairs to share their explanations with the group, and have the group respond to the following: Which of these explanations make sense, in terms of being able to locate places on a map? Why?

steps continued on next page

MINI-LESSON CONTINUED

Objective of the Mini-Lesson:

Part B: *You should be prepared to model these steps for students as you go through them*

6. Pass out one number line to each student (so each pair of students will have two number lines).
7. Help students make sense of the number line. Explain that the hole represents “0,” with negative numbers decreasing to the left and positive numbers increasing to the right. Have them number the number line.
8. Pass a piece of chart paper to each pair and ask students to place the number lines so that they intersect in the middle of the chart paper (creating four, equal-sized quadrants).
9. After they have done this, explain that each of these sections is called a quadrant.
10. Have each pair come up with a definition for the word quadrant to share with the class.
11. Share definitions and fine-tune them so they are accurate.
12. Students should then label the x- and y- axes, and the teacher should explain that axis/axes, x-axis, and y-axis are number lines that become a way to organize visual/spatial information so that it can be easily identified and labeled. (*Note: Do not connect this information to the NYU map yet.*)
13. Ask students to place the NYU map on the chart paper so that the two positive number lines run along the left side and the bottom of the map.
14. Explain that they are going to go back to their original four points of interest and replace the legend references with the numbers from the number line.
15. You are essentially asking students to provide “ordered pairs” for various locations on the map. Some of the students may have the ordering backwards: (y,x) instead of the reverse. Explain that the mathematical protocol is always the same so that it remains universally understood (x,y).
16. Explain to students that they have just used coordinate geometry to locate places on a map and to document their locations. Explain that the number pairings they used are called ordered pairs. Ask them to figure out why this is a useful name for the numbered pairings.
17. Ask them to give this quadrant a number (they should have a rationale in mind for the number they selected). They should then figure out a rationale for numbering the other three quadrants.
18. Have each pair draw a version of the four quadrants on the board with the numbers they selected. Then, ask the class to ask questions of the pairs, in order to discover everyone’s rationale. You should draw your own model, explaining the rationale (moving clockwise around the plane, remind students of the meaning of the word clockwise). Make the connection to the ordering of the axes (alphabetically - first x, then y). For quadrants: clockwise (first 2am, then 4am, then 8am, then 10am). The rationale is always as simple as possible!
19. Explain that the four quadrants make up the coordinate plane. The points along the x- and y- axes are the coordinates (the ordered pairs), and the four quadrants are the plane (or, in simple language, a place where specific locations can be determined by using a common a numbering system).
20. Pass out the student instructions for practicing and applying these skills, and make sure everyone understands and is ready to participate.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

**Steps for
Independent
Work to Practice
and Apply New
Learning:**

Part A: Practice

1. Pass out the Student Instruction sheet, Map Worksheet, and three additional maps to each pair (hold on to the map covering the largest geographic territory at this point).
2. Ask each pair to physically place one map in each remaining quadrant of the large easel paper, in order to practice numbering pairs within each quadrant.
3. Ask each pair to mark one location on each map, so they should have three locations: A, B, and C. They should write the names of the three locations at the bottom of the chart paper, along with their own names.
4. Ask students to complete section “1” of the Map Worksheet, where they will write the ordered pairs’ (x, y) coordinate locations of the three locations they selected on their maps.
5. After each pair has completed this, they should stand at their table. When everyone is standing, have each pair take the Map Worksheet and move to the table to their right (leaving their chart paper behind) so that they are now standing by someone else’s chart paper.
6. They complete section “2” of their Map Worksheet using the map and chart paper at this table (essentially a repeat of the first process, using a different table’s map and the locations the first pair chose).
7. Repeat the process two more times, so that students locate four points in each quadrant of the chart paper.
8. Have each pair put the ordered pairs for their original locations on the board, along with their names.
9. Have each pair match their responses from the Map Worksheet with those on the board.
10. Discussion: What do you notice? What confusions do you have?
11. Teach students the terms “Coordinate Plane” and “Grid,” which have the same meaning.

Part B: Application

12. Pass out the last map.
13. Ask pairs to identify three locations on this map.
14. Pairs should then turn over their chart paper, taping down the new map anywhere on the sheet.
15. Then, ask them to take their x- and y-axes (the number lines) from the previous activity and recreate them on this new map. The axes need to intersect at their origins (“0”), but the origin does not have to be located in the middle of the map, or even in the middle of the chart paper. *(Note: Encourage students to be creative in their placement, as this will help them understand the potentially infinite nature of coordinate grids/planes.)*
16. Ask students to complete page two of the Map Worksheet using the same process that they completed on page one (moving from station to station).
17. Discussion: Noticings: What did you notice about the ordered pairs at the different stations? What is something you noticed about the coordinate grid/plane by doing this activity? *(Note: This portion of the activity shows students how flexible and changeable the coordinate plane is. It also provides them with the cognitive building blocks for thinking about why the x- and y-axes need to start with “0” in the middle, rather than at one end of the number line: the quadrants might go on forever, and there needs to be a numbering system that accommodates this.)*

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:	<ol style="list-style-type: none"> 1. Ask everyone to stand up. Explain that if they do not know the answer to one of your questions, they should sit down. When you move to the next question, they should stand up if they know the answer to it. 2. Ask the following questions, calling on various students who are standing up. If a student is sitting down for all of the questions ask him/her to write down three questions s/he has for you about the material that was just covered. <ul style="list-style-type: none"> • What is a quadrant? • Why is it helpful to number quadrants on something like a map? • Why are the number lines labeled as the x- and y- axes? Why might this be helpful? • What is a numbered pair? What does the pair of numbers refer to? • What purpose do the x- and y- axes serve on a map? • Why are the quadrants numbered one through four? • How can you remember the correct number order of the quadrants? • How can you remember the correct order of the numbers in a numbered pair? • What is a coordinate? • What is the coordinate plane? • Can you think of any applications for the coordinate plane other than maps?
Assessment of New Learning:	<p>Write on an index card:</p> <ol style="list-style-type: none"> 1. Why might negative and positive numbers be helpful on the x- and y- axes? 2. Why do you have more flexibility if you put 0 in the center of the quadrants? What would happen if you started with a 1 at the top of the y-axis and the left of the x-axis? 3. List three things you learned today, or something you remembered today from past learning.
Student Reflection on New Learning:	<p>Sharing with the whole group:</p> <ol style="list-style-type: none"> 1. Describe one moment in the lesson when you were confused. How did you realize you were confused? (<i>Hints: I couldn't figure out what to do, there were words I didn't understand, I kept disagreeing with my partner, my responses were different from everyone else's, etc.</i>) 2. How/did you resolve your confusion? What fix-it strategies did you use? How effective were your strategies?

STUDENT INSTRUCTIONS	
Lesson: Coordinate Geometry: Part A	Time: 75 minutes
PREPARATION FOR TODAY'S LESSON:	
Goal of this Lesson: Learn about the “coordinate grid,” study its components, and plot points on it.	
Skills Addressed in this Lesson: Mapping Graphing	Learning Strategies Addressed in this Lesson: Using fix-it strategies to manage/modify your learning Visualizing
MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON	
Objective of the Mini-Lesson:	Learn about “coordinate planes” and review map navigation
Vocabulary for Building Background:	Coordinate, coordinate plane, axis/axes (x-axis, y-axis), quadrant, ordered pair <i>Related vocabulary:</i> clockwise, counterclockwise, horizontal, intersect, vertical
Instructional Steps for Building Background:	<p>Part A</p> <ol style="list-style-type: none"> 1. Look at the legend of the map your teacher passed out, and mark four points of interest on the sheet. 2. Come up with an explanation of how the legend works. Explain to a partner how the legend can help you to identify the location of your four points of interest. 3. Some students (including you, possibly) may be asked to share their explanations with the class. 4. As a class, respond to the following: Which of these explanations make sense, in terms of being able to locate places on a map? Why? <p>Part B</p> <ol style="list-style-type: none"> 5. You and your partner each receive one “number line,” and each of you number your number line. 6. Place both of your number lines so that they intersect in the middle of the chart paper (creating four, equal-sized quadrants). 7. Each of these sections is called a quadrant – define the word “quadrant” with your partner. 8. Share your definition with the class, and fine-tune your definition to make it more accurate, if needed. 9. Label the x- and y- axes. (<i>Note: axis/axes, x-axis, and y-axis are number lines that become a way to organize visual/spatial information so that it can be easily identified and labeled.</i>) 10. Place the NYU map on the chart paper so that the two positive number lines run along the left side and the bottom of the map. 11. Using the four points of interest you selected at the beginning of the mini-lesson, replace the legend references with the numbers from the number line. 12. These numbers are referred to as “ordered pairs” (x,y). Why is this a useful name for the numbered pairings? 13. Give this quadrant a number. Think about why you selected this number, and then use that reasoning for numbering the other three quadrants. 14. With your partners, draw a version of the four quadrants on the board with the numbers you selected. Then, each pair will be questioned by the class as to why they selected those numbers.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

Steps for Independent Work to Practice and Apply New Learning:	<p>Part A: Practice</p> <ol style="list-style-type: none"> 1. With a partner, physically place one map your teacher gives you in each remaining quadrant on your sheet. 2. Mark one location on each map so you have a total of three locations (“A,” “B,” and “C”) marked. Write the names of the three locations at the bottom of the chart paper, along with your first and last names. 3. Complete section “1” of the Map Worksheet handout. When you are done, stand at your table. 4. When everyone is standing, you and your partner move to the table to your right (leave your chart paper behind) so that you are standing by someone else’s chart paper. 5. Complete section “2” of your Map Worksheet using the map and chart paper at this new table. Look at the three locations already marked on the sheet, and record the “x,y” coordinate locations on your Map Worksheet. 6. Repeat the process two more times at two different tables. 7. Write the ordered pairs for your original locations on the board, along with your names. Match your responses from the Map Worksheet with those on the board. <p>Part B: Application</p> <ol style="list-style-type: none"> 8. Identify three locations on the map. 9. Turn over your chart paper, taping down the new map anywhere on the sheet. 10. Take your x- and y-axes (the number lines) from the previous activity and recreate them on this new map. The axes need to intersect at their origins (“0”), but the origin does not have to be located in the middle of the map, or even in the middle of the chart paper! 11. Complete page two of the Map Worksheet using the same process you completed on page one (moving from station to station).
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**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:	<ol style="list-style-type: none"> 1. Stand up. Sit down as soon as you hear a question from your teacher that you do not know the answer to. Stand up when you hear a question that you do know the answer to. 2. You may be asked to write down three questions you have about the material that was just covered.
Assessment of New Learning:	<p>Write on an index card:</p> <ol style="list-style-type: none"> 1. Why might negative and positive numbers be helpful on the x- and y- axes? 2. Why do you have more flexibility if you put “0” in the center of the quadrants? What would happen if you started with a “1” at the top of the y-axis and the left of the x-axis? 3. List three things you learned today, or something you remembered today from past learning.

steps continued on next page

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Student Reflection on New Learning:

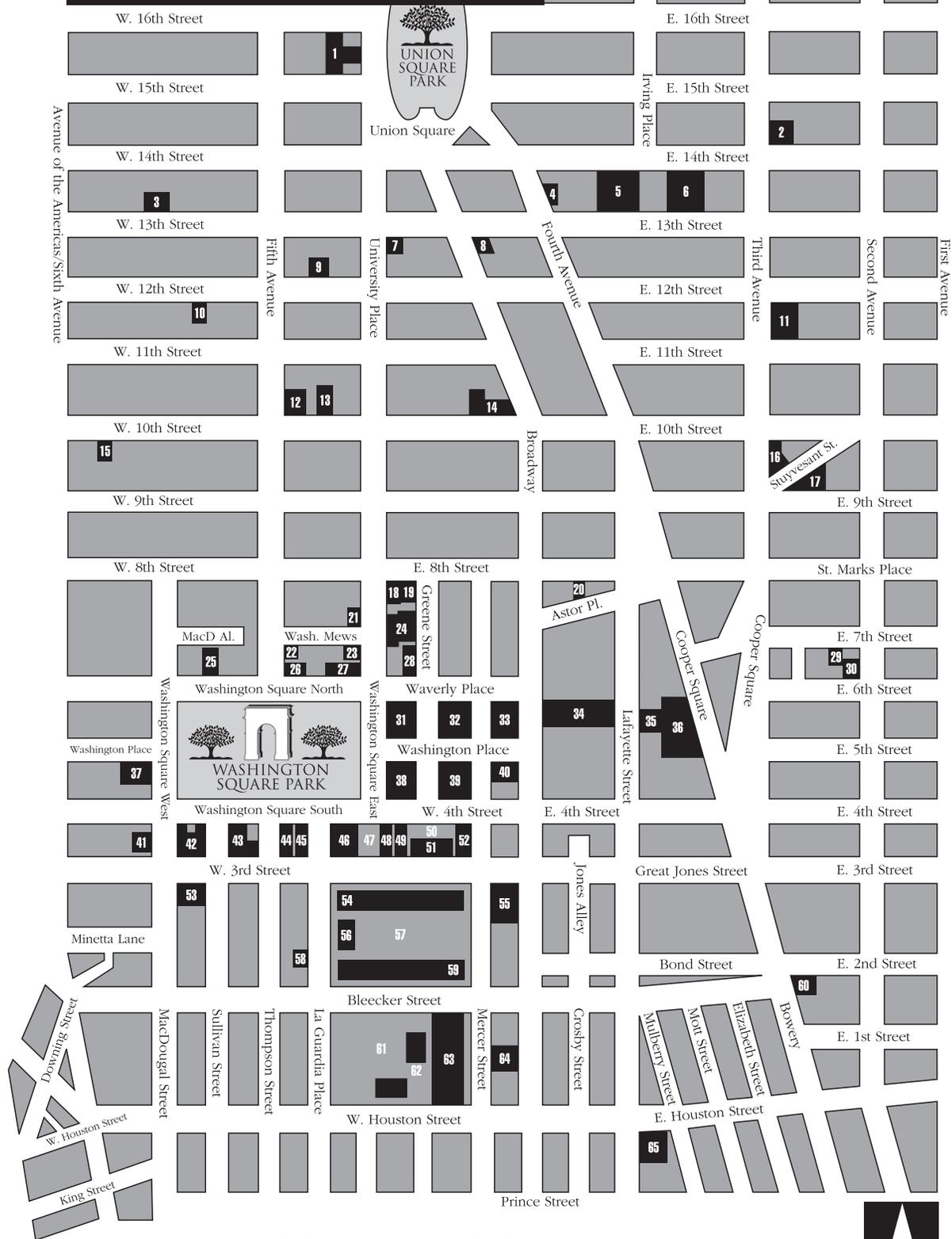
Share with the whole group:

1. Describe one moment in the lesson when you were confused. How did you realize you were confused? *(Hints: I couldn't figure out what to do, there were words I didn't understand, I kept disagreeing with my partner, my responses were different from everyone else's, etc.)*
2. How/did you resolve your confusion? What fix-it strategies did you use? How effective were your strategies?



Courtesy of New York Road Runners©

WASHINGTON SQUARE CAMPUS



Map is accurate as of May 2008, courtesy of New York University.



Key to Buildings

- 1 Carlyle Court**
25 Union Square West
- 2 Coral Towers**
131 Third Avenue
- 3 Thirteenth Street Residence Hall**
47 West 13th Street
- 4 145 Fourth Avenue**
- 5 University Hall**
110 East 14th Street
- 6 Palladium Hall**
140 East 14th Street
- 7 113 University Place**
- 8 838 Broadway**
- 9 7 East 12th Street**
- 10 Casa Italiana Zerilli-Marimò**
24 West 12th Street
- 11 Third Avenue North Residence Hall**
75 Third Avenue
- 12 Rubin Residence Hall**
35 Fifth Avenue
- 13 Bronfman Center**
7 East 10th Street
- 14 Brittany Residence Hall**
55 East 10th Street
- 15 Lillian Vernon Center for International Affairs**
58 West 10th Street
- 16 Alumni Hall**
33 Third Avenue
- 17 Barney Building**
34 Stuyvesant Street
- 18 19 University Place**
- 19 Cantor Film Center**
36 East Eighth Street
- 20 10 Astor Place**
- 21 Deutsches Haus**
42 Washington Mews
- 22 Glucksman Ireland House**
1 Washington Mews
- 23 a Institute of French Studies**
15 Washington Mews
b La Maison Française
16 Washington Mews
- 24 Weinstein Center for Student Living**
5 University Place
- 25 Undergraduate Admissions**
22 Washington Square North
- 26 One-half Fifth Avenue**
- 27 1-6 Washington Square North**
a School of Social Work
1 Washington Square North
b Graduate School of Arts and Science
6 Washington Square North
- 28 Rufus D. Smith Hall**
25 Waverly Place
- 29 Seventh Street Residence**
40 East Seventh Street
- 30 111, 113A Second Avenue**
- 31 Silver Center Block**
a Silver Center for Arts and Science
100 Washington Square East/
33 Washington Place
b Waverly Building
24 Waverly Place
c Brown Building
29 Washington Place/
245 Greene Street
- 32 Kimball Block**
a Kimball Hall
246 Greene Street
b Torch Club
18 Waverly Place
c Reprographic Services
14 Waverly Place
d 285 Mercer Street
- 33 Broadway Block**
a 715 Broadway
b 719 Broadway
c 721 Broadway
d 1 Washington Place
e 3 Washington Place
f 5 Washington Place
- 34 NYU Health Center**
726 Broadway
- 35 411 Lafayette Street**
- 36 48 Cooper Square**
- 37 Hayden Residence Hall**
33 Washington Square West
- 38 Education Block**
a Pless Hall
82 Washington Square East
b Pless Annex
82 Washington Square East
(26 Washington Place)
c NYU Bookstore
18 Washington Place
d East Building
239 Greene Street
e Education Building
35 West Fourth Street
f Faye's @ the Square
45 West Fourth Street
g Goddard Hall
79 Washington Square East
- 39 Student Services Block**
a 25 West Fourth Street
b Moses Center for Students with Disabilities
34 Greene Street
c 242 Greene Street
d 14, 14A Washington Place
e Carter Hall
10 Washington Place
f 8 Washington Place
g 269 Mercer Street
- 40 Meyer Block**
a Meyer Hall
4 Washington Place
b Psychology Building
6 Washington Place
- 41 a Provincetown Playhouse**
133 MacDougal Street
b Lawyering Program
137 MacDougal Street
- 42 Vanderbilt Hall**
40 Washington Square South
- 43 Judson Block**
a Kevorkian Center
50 Washington Square South
b Skirball Department
53 Washington Square South
c King Juan Carlos I Center
53 Washington Square South
d Furman Hall
245 Sullivan Street
- 44 Catholic Center at NYU**
58 Washington Square South
(non-University building)
- 45 Kimmel Center for University Life**
60 Washington Square South
a Skirball Center for the Performing Arts
- 46 Bobst Library**
70 Washington Square South
- 47 Schwartz Plaza**
- 48 Shimkin Hall**
50 West Fourth Street
- 49 Kaufman Management Center**
44 West Fourth Street
- 50 Gould Plaza**
- 51 Tisch Hall**
40 West Fourth Street
- 52 Courant Institute**
251 Mercer Street
- 53 D'Agostino Hall**
110 West Third Street
- 54 561 La Guardia Place**
- 55 Mercer Street Residence**
240 Mercer Street
- 56 a Wolfe Center**
551 La Guardia Place
b Mail Services
547 La Guardia Place
- 57 Washington Square Village**
- 58 530 La Guardia Place**
- 59 Off-Campus Housing**
4 Washington Square Village
- 60 Second Street Residence Hall**
1 East Second Street
- 61 University Plaza**
- 62 Silver Towers**
110 Bleecker Street
- 63 Coles Sports and Recreation Center**
181 Mercer Street
- 64 194 Mercer Street**
- 65 Puck Building**
295 Lafayette Street
a Wagner Graduate School of Public Service
- NOT SHOWN**
- Broome Street Residence**
400 Broome Street
- Butterick Building**
161 Sixth Avenue
- Cliff Street Residence**
15 Cliff Street
- Lafayette Street Residence**
80 Lafayette Street
- Twenty-sixth Street Residence**
240 East 26th Street
- University Court**
334 East 25th Street
- Water Street Residence**
200 Water Street
- Woolworth Building**
15 Barclay Street
- Alphabetical List**
(Numbers in parentheses correspond to the Key to Buildings and map)
- BY BUILDING NAME**
- Alumni Hall**
33 Third Avenue (16)
- Barney Building**
34 Stuyvesant Street (17)
- Bobst Library**
70 Washington Square South (46)
- Brittany Residence Hall**
55 East 10th Street (14)
- Bronfman Center**
7 East 10th Street (13)
- Broome Street Residence**
400 Broome Street (not shown)
- Brown Building**
29 Washington Place/
245 Greene Street (31c)
- Butterick Building**
161 Sixth Avenue (not shown)
- Cantor Film Center**
36 East Eighth Street (19)
- Carlyle Court**
25 Union Square West (1)
- Carter Hall**
10 Washington Place (39e)
- Casa Italiana Zerilli-Marimò**
24 West 12th Street (10)
- Catholic Center at NYU**
58 Washington Square South (44)
(non-University building)
- Cliff Street Residence**
15 Cliff Street (not shown)
- Coles Sports and Recreation Center**
181 Mercer Street (63)
- Coral Towers**
131 Third Avenue (2)
- Courant Institute**
251 Mercer Street (52)
- D'Agostino Hall**
110 West Third Street (53)
- D'Agostino Hall**
110 West Third Street (53)
- Deutsches Haus**
42 Washington Mews (21)
- East Building**
239 Greene Street (38d)
- Education Building**
35 West Fourth Street (38e)
- Faye's @ the Square**
45 West Fourth Street (38f)
- Furman Hall**
245 Sullivan Street (43d)
- Glucksman Ireland House**
1 Washington Mews (22)
- Goddard Hall**
79 Washington Square East (38g)
- Gould Plaza (50)**
- Graduate School of Arts and Science**
6 Washington Square North (27b)
- Hayden Residence Hall**
33 Washington Square West (37)
- Institute of French Studies**
15 Washington Mews (23a)
- Kaufman Management Center**
44 West Fourth Street (49)
- Kevorkian Center**
50 Washington Square South (43a)
- Kimball Hall**
246 Greene Street (32a)
- Kimmel Center for University Life**
60 Washington Square South (45)
- King Juan Carlos I Center**
53 Washington Square South (43c)
- La Maison Française**
16 Washington Mews (23b)
- Lafayette Street Residence**
80 Lafayette Street (not shown)
- Lawyering Program**
137 MacDougal Street (41b)
- Lillian Vernon Center for International Affairs**
58 West 10th Street (15)
- Mail Services**
547 La Guardia Place (56b)
- Mercer Street Residence**
240 Mercer Street (55)
- Meyer Hall**
4 Washington Place (40a)
- Moses Center for Students with Disabilities**
240 Greene Street (39b)
- NYU Bookstore**
18 Washington Place (38c)
- NYU Health Center**
726 Broadway (34)
- NYU Information Center**
50 West Fourth Street (48a)
- Off-Campus Housing**
4 Washington Square Village (59)
- One-half Fifth Avenue (26)**
- Palladium Hall**
140 East 14th Street (6)
- Pless Annex**
82 Washington Square East
(26 Washington Place) (38b)
- Pless Hall**
82 Washington Square East (38a)
- Provincetown Playhouse**
133 MacDougal Street (41a)
- Psychology Building**
6 Washington Place (40b)
- Puck Building**
295 Lafayette Street (65)
- Reprographic Services**
14 Waverly Place (32c)
- Rubin Residence Hall**
35 Fifth Avenue (12)
- Rufus D. Smith Hall**
25 Waverly Place (28)
- School of Social Work**
1 Washington Square North (27a)
- Schwartz Plaza (47)**
- Second Street Residence Hall**
1 East Second Street (60)
- Seventh Street Residence**
40 East Seventh Street (29)
- Shimkin Hall**
50 West Fourth Street (48)
- Silver Center for Arts and Science**
100 Washington Square East/
33 Washington Place (31a)
- Silver Towers**
110 Bleecker Street (62)
- Skirball Department**
53 Washington Square South (43b)
- Student Employment and Internship Center**
5 Washington Place (33f)
- Student Services Center**
25 West Fourth Street (39a)
- Third Avenue North Residence Hall**
75 Third Avenue (11)
- Thirteenth Street Residence Hall**
47 West 13th Street (3)
- Tisch Hall**
40 West Fourth Street (51)
- Torch Club**
18 Waverly Place (32b)
- Twenty-sixth Street Residence**
334 East 26th Street (not shown)
- Undergraduate Admissions**
22 Washington Square North (25)
- University Court**
334 East 25th Street (not shown)
- University Hall**
110 East 14th Street (5)
- University Plaza (61)**
- Vanderbilt Hall**
40 Washington Square South (42)
- Washington Square Village, 1-4 (57)**
- Water Street Residence**
200 Water Street (not shown)
- Waverly Building**
24 Waverly Place (31b)
- Weinstein Center for Student Living**
5 University Place (24)
- Wolfe Center**
551 La Guardia Place (56a)
- Woolworth Building**
15 Barclay Street (not shown)
- BY STREET**
- 10 Astor Place (20)**
- 715 Broadway (33a)**
- 719 Broadway (33b)**
- 721 Broadway (33c)**
- 838 Broadway (8)**
- 48 Cooper Square (36)**
- 7 East 12th Street (9)**
- One-half Fifth Avenue (26)**
- 145 Fourth Avenue (4)**
- 242 Greene Street (39c)**
- 411 Lafayette Street (35)**
- 530 La Guardia Place (58)**
- 561 La Guardia Place (54)**
- 194 Mercer Street (64)**
- 269 Mercer Street (39g)**
- 285 Mercer Street (32d)**
- 111, 113A Second Avenue (30)**
- 19 University Place (18)**
- 113 University Place (7)**
- 1 Washington Place (33d)**
- 3 Washington Place (33e)**
- 5 Washington Place (33f)**
- 8 Washington Place (39f)**
- 14, 14A Washington Place (39d)**
- 1-6 Washington Square North (27)**
- 25 West Fourth Street (39a)**

TEACHER LESSON PLAN

**Lesson: Coordinate
Geometry: Part B**

Time: 50 minutes

Use of this Lesson:

This lesson is an introductory lesson, and should be taught at the beginning of a set of lessons on plotting points and using a coordinate grid. It is a natural follow-up to Part A and works best if taught sequentially, following Part A.

LESSON PREPARATION FOR THE DAY'S LESSON:

<p>Goal of the Lesson:</p> <ul style="list-style-type: none">• To understand spatial relationships among points	<p>Resources Needed for the Lesson:</p> <ul style="list-style-type: none">• Grid paper (can be photocopied): http://incompetech.com/graphpaper/plain• Coordinate grid template: http://www.csun.edu/science/ref/measurement/data/graphpaper/linear_1.pdf• Post-it notes• Student Instructions (p. 173)
<p>Skill Addressed in this Lesson:</p> <p>Graphing</p>	<p>Learning Strategies Addressed in this Lesson:</p> <p>Visualizing Synthesis</p>

**MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE:
20% OF THE LESSON**

Objective of the Mini-Lesson:	<ul style="list-style-type: none"> • To review terms/concepts learned in Part A of this lesson • To learn to apply the graphing of points on a map to the graphing of geometric shapes on a coordinate plane/grid
Vocabulary for Building Background:	<p>Coordinate, coordinate plane, axis/axes (x-axis, y-axis), quadrant, ordered pair</p> <p><i>Related vocabulary:</i> clockwise, counterclockwise, horizontal, intersect, vertical</p>
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Display on a wall the maps/coordinate grids students completed during Part A of this lesson (this was probably completed on the previous day). 2. Ask students to get some post-it notes and go up to one of the maps (not their own) and label the following terms on the map, putting their initials on each post-it: an ordered pair, the x- and y-axes, the coordinate plane/grid, quadrant III, the intersection of the x- and y-axes, the origin of the x- and y-axes. 3. After students sit down, they should each pose a question regarding a term they had trouble remembering and have members of the class respond/clarify. 4. Pass out grid paper and ask students to draw and label an x-axis and y-axis whose origin meets in the center of the page. Ask them to label the origin and to number both of the axes. <i>(Note: This is part of the review, so do not model it for them. Let them try to figure it out. Ask students who were absent to come over to you with their pages, and you can model this for them as a small group.)</i> 5. Model for students the process of (a) using ordered pairs to create a geometric shape, OR (b) using a geometric shape for identifying ordered pairs: <ol style="list-style-type: none"> a. Make a list of three ordered pairs, then map them onto a sheet of graph paper. Then, make a list of six ordered pairs, map them onto a sheet of graph paper, and “connect the dots.” Ask students what they notice about the role of the ordered pairs in creating these geometric shapes. b. Take a new piece of graph paper and create a four-sided geometric shape. Next, show students how to identify the ordered pairs at the “corners.” Then, create a seven- or eight-sided shape and do the same. 6. Explain to students that they will create shapes and ordered pairs for their fellow students to work with. 7. Pass out the student instructions as well as the coordinate grid paper (enough for each student to have a few sheets each). 8. Make sure everyone understands the activity and is prepared to participate.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

<p>Steps for Independent Work to Practice and Apply New Learning:</p>	<ol style="list-style-type: none"> 1. Students each take a piece of coordinate grid graph paper and draw a geometric design. It should be interesting, a little complex (not a triangle or square), and only have straight lines. 2. On a separate sheet of paper, they write down the ordered pairs at each point of intersection. 3. They trade their ordered pair sheet with a fellow student. 4. Students each use their ordered pair sheet to create a geometric shape on a new piece of coordinate grid graph paper. 5. Students look at each others' geometric designs to check for accuracy. If there is a mistake on one or both of the designs, they work together to resolve them. 6. Next, each student should go back to her/his design and figure out how to replicate it in a different place on the coordinate grid. 7. Then, each student should go back to her/his design and replicate it as either small or bigger, <i>and</i> in a different place on the grid.
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**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

<p>Review of New Learning:</p>	<p>You can scaffold through all three versions of the “graph mole” at http://funbasedlearning.com/algebra/graphing/default.htm for review.</p>
<p>Assessment of New Learning:</p>	<ol style="list-style-type: none"> 1. Write a set of directions to teach someone how to replicate your geometric design in a different place on the coordinate grid, either smaller or larger. 2. List two to three ways the coordinate grid might be used outside of math lessons (and cartography).
<p>Student Reflection on New Learning:</p>	<p>Discussion:</p> <ul style="list-style-type: none"> • How did you figure out how to do these steps? What strategies did you use? • What did you notice about your learning as you attempted this activity? What did you notice about your creativity, confidence, level-of comfort, problem-solving skills, confusion, anxiety, frustration, and other emotions?

STUDENT INSTRUCTIONS	
Lesson: Coordinate Geometry: Part B	Time: 50 minutes
PREPARATION FOR TODAY'S LESSON:	
Goal of this Lesson: Understand spatial relationships among points	
Skill Addressed in this Lesson: Graphing	Learning Strategies Addressed in this Lesson: Visualizing Synthesis
MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON	
Objective of the Mini-Lesson:	Review terms/concepts learned in Part A of this lesson and apply the graphing of points on a map to the graphing of geometric shapes on a coordinate plane/grid
Vocabulary for Building Background:	Coordinate, coordinate plane, axis/axes (x-axis, y-axis), quadrant, ordered pair <i>Related vocabulary:</i> clockwise, counterclockwise, horizontal, intersect, vertical
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Go up to one of the maps posted on the wall (not your own) and use post-its (labeled with your initials) to label the following terms on the map: an ordered pair, the x- and y-axes, the coordinate plane/grid, quadrant III, the intersection of the x- and y-axes, the origin of the x- and y-axes. 2. On grid paper, draw and label an x-axis and y-axis whose origin meets in the center of the page. Label the origin, and number both of the axes. 3. Teacher will model various activities and explain how the lesson will proceed.
STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE: 60% OF THE LESSON	
Steps for Independent Work to Practice and Apply New Learning:	<ol style="list-style-type: none"> 1. On a piece of coordinate grid graph paper, draw a geometric design. It can only have straight lines, but should be interesting and a little bit complex (i.e., not a triangle or square). 2. On a separate sheet of paper, write down the ordered pairs (x,y) at each point of intersection. 3. Trade your ordered pair sheet with that of a fellow student. 4. Use their ordered pair sheet to create their geometric shape on a new piece of coordinate grid graph paper. Look at each others' geometric designs to check for accuracy. If there is a mistake on one or both of the designs, work together to resolve it. 5. Both you and your partner should go back to your own designs and figure out how to replicate them in a different place on the coordinate grid. 6. Now replicate it as either small or bigger, <i>and</i> in a different place on the grid.

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:	Use “graph mole” at http://funbasedlearning.com/algebra/graphing/default.htm for review.
Assessment of New Learning:	<ol style="list-style-type: none"> Write a set of directions to teach someone how to replicate your geometric design in a different place on the coordinate grid, either smaller or larger. List two to three ways the coordinate grid might be used outside of math lessons (and cartography).
Student Reflection on New Learning:	<p>Discussion:</p> <ul style="list-style-type: none"> How did you figure out how to do these steps? What strategies did you use? What did you notice about your learning as you attempted this activity? What did you notice about your creativity, confidence, level-of comfort, problem-solving skills, confusion, anxiety, frustration, and other emotions?

Map Worksheet

Name: _____

Part A: Practice

With your partner, move around to four stations in the room, noting the ordered pairs for the locations listed on each map.

1.	x	y	2.	x	y	3.	x	y	4.	x	y
A.			A.			A.			A.		
B.			B.			B.			B.		
C.			C.			C.			C.		

Part B: Application

With your partner, move around to four stations in the room, noting the ordered pairs for the locations listed on each map.

1.	x	y	2.	x	y	3.	x	y	4.	x	y
A.			A.			A.			A.		
B.			B.			B.			B.		
C.			C.			C.			C.		

TEACHER LESSON PLAN

**Lesson: Fact/Question/
Response³³ (FQR)**

Time: 70 minutes

Use of the Lesson:

The FQR is particularly useful with textbooks. It can also be used with word problems in math classes. Its “sister” lesson, the TDR (Topic-Theme/Detail/Response), is more appropriate for analysis of fiction and non-fiction in the Humanities, Social Sciences, and Sciences. Both lessons can be used at any point in the study of a text, and they can also be used more than once in one’s work with a text.

LESSON PREPARATION FOR THE DAY’S LESSON:

Goal of the Lesson:

To learn to determine what is important in a text.

Resources Needed for the Lesson:

- Copies of a fictional text, a complex poem, or a conceptual nonfiction text, each about four to five pages long
- Highlighters or post-it notes
- Student Instructions (p. 178)
- FQR handout (p. 180)

Skill Addressed in this Lesson:

Analytic reading reflection

Learning Strategies Addressed in this Lesson:

Determining importance
Questioning

³³ Activity developed by Antonia Rudenstine © 2008.

**MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE:
20% OF THE LESSON**

Objective of the Mini-Lesson:	To use questioning to identify the important ideas in a text.
Vocabulary for Building Background:	<i>Vocabulary from the selected text.</i>
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Pass out the text, as well as the FQR handout. 2. Read the first page of the text aloud. 3. Stop as you go, and “think-aloud” about a selection of the text that strikes you as factually important. Explain to students the criteria you are using to determine importance (i.e., something that you have a strong reaction to, something that confuses you, something that reminds you of something else, or something that seems like the main idea of the text). If one idea continues to surface, continue to mark it. If an idea comes to you that is not explicitly written in the text, add this to the column as well. 4. Model for students how to “mark” the text with either a post-it or highlighter. 5. Complete information on the text in the first column of the “Fact/Question/Response” handout. 6. If an idea comes to you that is not explicitly written in the text, add this to the column as well. 7. Go back over the text and identify questions about the topics and list them in the center column of the handout. 8. Reflection: Model what it is like to respond to the topic and questions in the right-hand column. Some potential questions to respond to might include the following: Why is this fact important? How does this relate to the other facts in this text? Is this fact a distracter or is it central? What do these make you think of? What do you think about these ideas personally? What message do you think the author is sending with regard to these ideas? Do you think these are the most important ideas in the text, or are they of more personal interest to you? Why do you think these particular topics jumped out at you? 9. Explain that students will continue this exercise on their own with the rest of the text. 10. Make sure that everyone understands the activity and is prepared to complete it.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

Steps for Independent Work to Practice and Apply New Learning:

1. Students read the rest of the selected text.
2. Students mark sections of the text they find to be important.
3. Complete information on the text in the first column of the “Fact/Question/Response” handout.
4. Students go back over the text and identify supporting details for their selections. They add these to the middle column.
5. For each text and detail, they write a response.
6. Response column: Why is each fact important? How does each fact relate to the other facts in the text? Is this fact a distracter or is it central? What does each selection make you think of? What do you think about these ideas personally? What message do you think the author is sending with regard to these ideas? Do you think these are the most important ideas in the text, or are they of more personal interest to you? Why do you think these particular topics jumped out at you?

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:

- With a partner:
1. Students discuss the extent to which this was a useful activity (i.e., did it help them figure out what the text was about?).
 2. Pairs identify three new thoughts, ideas, or facts they learned while working on this activity.
 3. Each pair writes their three thoughts, ideas, or facts on the board (at the same time).
- Whole class:
4. Ask class what they notice about the items each pair put on the board. What are the similarities? Differences? What is surprising?

Assessment of New Learning:

1. Ask students to write for 10-15 minutes:
 - Write a summary of the text. Then, provide your perspective on the text: describe what you think about the author’s meaning, the thoughts and feelings it evokes in you, and whether or not you think it is a useful text.
2. As a group: Ask for volunteers to share their writing or to summarize their thoughts.

Student Reflection on New Learning:

- Ask students to reflect in a journal:
- Describe how you selected the excerpts that you did.
 - How many of your selections seemed to capture the “main idea?” How do you know?
 - What do you think of the strategies you, personally, use to determine importance in a text: are they effective *for you* (they do not have to be used to identify the “main” idea, but rather can be used to help you feel connected to the text in some way)?

STUDENT INSTRUCTIONS

**Lesson: Fact/Question/
Response (FQR)**

Time: 70 minutes

PREPARATION FOR TODAY'S LESSON:

Goal of this Lesson:

Determine what is important in a text.

Skill Addressed in this Lesson:

Analytic reading reflection

Learning Strategies Addressed in this Lesson:

Determining importance

Questioning

MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

**Objective of the
Mini-Lesson:**

Use questioning to identify the important ideas in a text.

**Vocabulary
for Building
Background:**

Vocabulary from the selected text.

**Steps for
Building
Background**

1. Make sure you have a copy of the text and the FQR Handout.
2. Observe the teacher carefully as s/he models the FQR activity.
3. Make sure to ask any questions you might have, so that you are prepared to continue reading the text and completing the activity.

STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE: 60% OF THE LESSON

**Steps for
Independent
Work to Practice
and Apply New
Learning:**

1. Read the rest of the selected text, marking sections that you find to be important.
2. Complete information on the text in the first column of the "Fact/Question/Response" handout.
3. Go back over the text and identify supporting details for your selections. Add these to the middle column.
4. For each text and detail, write a response in the response column (e.g., Why is each fact important? How does each fact relate to the other facts in the text? Is this fact a distracter or is it central? What does each selection make you think of? What do you think about these ideas personally? What message do you think the author is sending with regard to these ideas? Do you think these are the most important ideas in the text, or are they of more personal interest to you? Why do you think these particular topics jumped out at you?).

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

<p>Review of New Learning:</p>	<p>With a partner:</p> <ol style="list-style-type: none"> 1. Discuss the extent to which this was a useful activity (i.e., did it help you figure out what the text was about?). 2. Identify three new thoughts, ideas, or facts you learned while working on this activity. 3. Write your three thoughts, ideas, or facts on the board. <p>The class discusses similarities and differences among the items on the board.</p>
<p>Assessment of New Learning:</p>	<p>For 10-15 minutes, write a summary of the text. Then, provide your perspective on the text. Describe what you think about the author’s meaning, the thoughts and feelings it evokes in you, and whether or not you think it is a useful text. You may be asked to share your writing or thoughts.</p>
<p>Student Reflection on New Learning:</p>	<ul style="list-style-type: none"> • Describe how you selected the excerpts that you did. • How many of your selections seemed to capture the “main idea?” How do you know? • What do you think of the strategies you, personally, use to determine importance in a text. Are they effective <i>for you</i>?

Name: _____

Fact/Question/Response

1. Read the text.
2. If you are able to write on the text, underline an idea that strikes you as interesting and important. Continue reading and if a particular idea continues to surface, continue to underline it. If new important ideas arise, mark these as well. (If you are not able to write on the text, take a post-it note and identify the page number and the beginning and end of each important idea.)
3. Place these topics in the “Topic” column below. If an idea comes to you that is not explicitly written in the text, add it to the column as well.
4. In the center column, list any questions you have about the critical facts. Some questions to consider might include the following: Why is this important? How does this relate to the other facts in this problem/text? Is this fact a distracter or is it central?
5. In the final column, respond to the facts and questions. Questions to consider might include the following: Do you think these are the most important ideas in the text, or are they of more personal interest to you? Why do you think these particular topics jumped out at you?

FACT	QUESTION	RESPONSE

TEACHER LESSON PLAN

Lesson: Graph Analysis³⁴

Time: 90 minutes

Use of this Lesson:

This lesson should be used after students have been introduced to some of the basic concepts and logic of graphs (listed in the vocabulary section of the mini-lesson). This lesson will serve well as a consolidation activity, where students can solidify what they learned in the introductory lessons, and expand their understanding to include the skills necessary for the GED Test.

LESSON PREPARATION FOR THE DAY'S LESSON:

Goals of the Lesson:

To review and apply recently learned material about graphs.
To be able to read and interpret graphs.

Resources Needed for the Lesson:

- Five simple graphs from any publication (we recommend USA Today because of the content, layout, and reading level); Teacher adds these to the first page of the Student Handout (p. 184)
- Student Instructions (p. 183)
- Charting Activity (p. 186)
- GED Study Book Graphing Example (graph and multiple-choice questions); Teacher adds these to the assessment sheet of the Student Handout (p. 187)

Skill Addressed in this Lesson:

Graph analysis

Learning Strategies Addressed in this Lesson:

Analysis
Determining importance

MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

Objective of the Mini-Lesson:

Review of recently learned material: graphs and graphic analysis

Vocabulary for Building Background:

Review: x- and y-axes, a “unit” of measurement, legend/key, names of graphs (pie chart, bar graph, column chart, and trend line graph)

Instructional Steps for Building Background:

1. Provide students with a sheet with samples of each type of graph, the student lesson plan, and the charting activity.
2. Using sample graph (A), model how to identify the x- and y-axes, units of measurement, and the name of one of the graphs.
3. Model determining importance for students by “thinking-aloud” your impressions of the data presented in one of the graphs: “I notice the title of the first graph is __, and that the x-axis is measured in __. So, I guess I’m trying to figure out ____. The y-axis is measured in ____, which means that this graph represents ____.”
4. As you think-aloud, complete the top line of the charting activity (A) in Part 2.
5. Take students through the Student Handout to ensure they understand how to use it.

³⁴ Activity developed by Linda Correnti for the NYC DOE.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

<p>Steps for Independent Work to Practice and Apply New Learning:</p>	<p>Part 1: Ensuring Understanding:</p> <ol style="list-style-type: none"> 1. Ask everyone to look at graphs (B) through (E) and identify one question they have, either something that does not make sense or something they are wondering about. They should write their questions in Part 1 of the student handout. 2. As the students work, move around the room to get a sense of their level of understanding. Are they confused about the graphic terms such as “unit of measurement” or “y-axis”? Are they wondering about more conceptual issues, such as why someone would use a line graph versus a column graph? 3. As you move around the room, identify a few students whose questions will be instructive for the whole group, and ask them if they will share these. 4. Bring the group back together, have selected volunteers ask their questions, and have the group respond. <p>Part 2: Practice:</p> <ol style="list-style-type: none"> 5. Ask students to complete Part 2 of the charting activity, beginning with (B). 6. Ask students to share the final column of the activity with a partner, and to identify places where they disagreed about the meaning of the graph. Have them discuss whether they think their differences are due to the fact that there is more than one interpretation of the data in the graph, or if they are due to a misunderstanding. <p>Part 3: Application:</p> <ol style="list-style-type: none"> 7. Have students work in pairs to complete Parts 3 and 4 of the charting activity with a partner who is using a different colored pen/pencil.
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**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

<p>Review of New Learning:</p>	<p>Ask each pair to put their chart on the board, and then have each pair complete the charting activity for these new charts.</p>
<p>Assessment of New Learning:</p>	<ol style="list-style-type: none"> 1. Provide students with photocopied pages that include a graph and practice questions from a GED practice book. 2. While they work, move around the room and see how students are doing. Identify a few students who seem to be on the right track and ask them to write one of their responses on the board. 3. After everyone has finished, have them trade writing implements with their partner so that they have a different color to “evaluate” their responses. 4. Have them look at the responses on the board to see how well they did. For anything that confuses them, have them ask a question.
<p>Student Reflection on New Learning:</p>	<p>At the bottom of the Assessment Sheet, ask students to respond to the reflection questions.</p>

STUDENT INSTRUCTIONS	
Lesson: Graph Analysis	Time: 90 minutes
PREPARATION FOR TODAY'S LESSON:	
Goal of this Lesson: Review and apply recently learned material about graphs, and then read and interpret graphs.	
Skill Addressed in this Lesson: Graph analysis	Learning Strategies Addressed in this Lesson: Analysis Determining importance
MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON	
Objective of the Mini-Lesson:	Review recently learned material on graphs and graphic analysis
Vocabulary for Building Background:	Review: x- and y-axes, a "unit" of measurement, legend/key, names of graphs (pie chart, bar graph, column chart, and trend line graph)
Steps for Building Background	<ol style="list-style-type: none"> 1. Make sure you have a copy of the handout. 2. Observe the teacher carefully as s/he models the activity. 3. Make sure to ask any questions you might have, so that you are prepared to continue reading the text and complete the activity.
STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE: 60% OF THE LESSON	
Follow the instructions on the Student Handout.	

STUDENT HANDOUT

Charting Activity:

A.

B.

D.

C.

E.

Name: _____

Part 1: Ensuring Understanding

Look at the graphs and identify one question or wondering you have:

Part 2: Practice: Graphic Analysis

Identify places where you disagree about the meaning of the graph. Discuss whether you think their differences are due to the fact that there is more than one interpretation of the data in the graph, or due to a misunderstanding.

GRAPH	TITLE OF GRAPH	TYPE OF GRAPH	UNITS MEASURED	SUMMARIZE THE MAIN IDEA OF THE GRAPH IN ONE SENTENCE
A.				
B.				
C.				
D.				
E.				

Part 3: Application: Creation of Graphs

Work with your partner:

1. Make up a set of data about a topic. For example: In your GED program, there were 78 students who earned their GED credential in 2000, 64 in 2003, and 81 in 2007.
2. Then, figure out how to portray this data on a chart. First, choose the most appropriate chart. Then figure out how to arrange the data on the chart.
3. Ask the teacher to assess your chart.
4. Write your chart on the board.

Part 4: Review

Complete the Charting Activity for each of the graphs your classmates have written on the board.

GRAPH	TITLE OF GRAPH	TYPE OF GRAPH	UNITS MEASURED	SUMMARIZE THE MAIN IDEA OF THE GRAPH IN ONE SENTENCE
A.				
B.				
C.				
D.				
E.				

Name: _____

Assessment:

(Teacher inserts graph and accompanying questions from a GED Study Book here.)

When you are instructed, turn over this sheet to complete the reflection question.

Reflection:

- How many questions were confusing when you first read them (even if you ultimately chose the “correct” response)?

- Of these questions, how did you work through them? How did you come to select the response you did? (i.e., what strategies did you use to tackle the problems?)

- Were your strategies effective: How many of these questions did you choose correctly?

- What did you learn about how to read a graph? Did you learn how to create a graph?

- What will you continue to do? What do you plan to do differently?

TEACHER LESSON PLAN

Lesson: Image Analysis

Time: 45-60 minutes

Use of the Lesson:

This lesson can be used both in an effort to strengthen students' description skills, and/or as a way to provide them with insight into a topic through another medium.

LESSON PREPARATION FOR THE DAY'S LESSON:

Goals of the Lesson:

To closely examine an image for two purposes:

- To understand and describe it
- To deepen understanding of a particular topic of study

Resources Needed for the Lesson:

- Two images related to the topic being studied (see p. 192 for an example)
- Student Instructions (p. 194)
- Two copies of the Photo Analysis Worksheet for each student (p. 193)
- Index cards

Skills Addressed in this Lesson:

Description
Learning to describe an image

Learning Strategies Addressed in this Lesson:

Inferring
Questioning

**MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE:
20% OF THE LESSON**

Objective of the Mini-Lesson:	To model visual analysis, questioning, and inference
Vocabulary for Building Background:	Not applicable
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Pass out copies of one of the images. 2. Ask students to fold the paper into quadrants. 3. Then, model the worksheet activity: <ol style="list-style-type: none"> a. Describe several things you see b. Fold the paper into quadrants and identify new noticings. c. Think-aloud for the students: Make two inferences about the image (make sure to relate them to the topic you are studying). d. Think-aloud for the students: Ask two questions/wonderings about the image. e. Think-aloud for the students by answering these questions: How did I figure out these inferences? (What evidence did I use? Was the evidence from the photo or was I making a connection from my previous knowledge and experience?) f. Think-aloud for the students by answering these questions: Where did these questions come from? (Was I making a potential connection to previously studied materials or experiences? Was I trying to clarify a confusion? Did I want to understand something new?) g. Think-aloud: Were my questions primarily “thin” (who, what, where, when) or “thick” (why, how, I wonder)? h. Think-aloud: Where/how might I find responses to my questions? Where/how might I check the accuracy of my inferences? (e.g., in the photo, in the content we are studying, in a description about the image, etc.) i. Pass out one of the Photo Analysis Worksheets. j. Explain that you are going to keep working on this image together, and then the students will work in pairs or alone on another image that you will pass out later. k. Make sure everyone understands the activity and is prepared to participate.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

Steps for Independent Work to Practice and Apply New Learning:

Part A: Practice

1. As a group, add to the description of the image, either by looking at the image as a whole, or by looking at the individual quadrants (ask each student to make two observations, and have them write the observations on the board).
2. Work together to make some inferences about the image. Use the questions from the mini-lesson to figure out if the inferences are potentially accurate.
3. Work together to articulate some questions about the images. Make sure some of the questions are “thick” and specifically classify each question as either “thick” or “thin.”
4. Think together about where students might look to test the accuracy of their inferences and discover responses to their questions.

Part B: Application

5. Pass out the second image and second image worksheet.
6. Ask students to work alone or in pairs to analyze the image and complete the worksheet.
7. Bring students into small groups of three or four to share their observations, questions, and inferences. Help make them more accurate, detailed, and connected to the material that is being taught. Ask groups to look at the images specifically for both responses to students’ questions and evidence to back-up the inferences or to challenge the inferences. List these on the back of the page.

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:

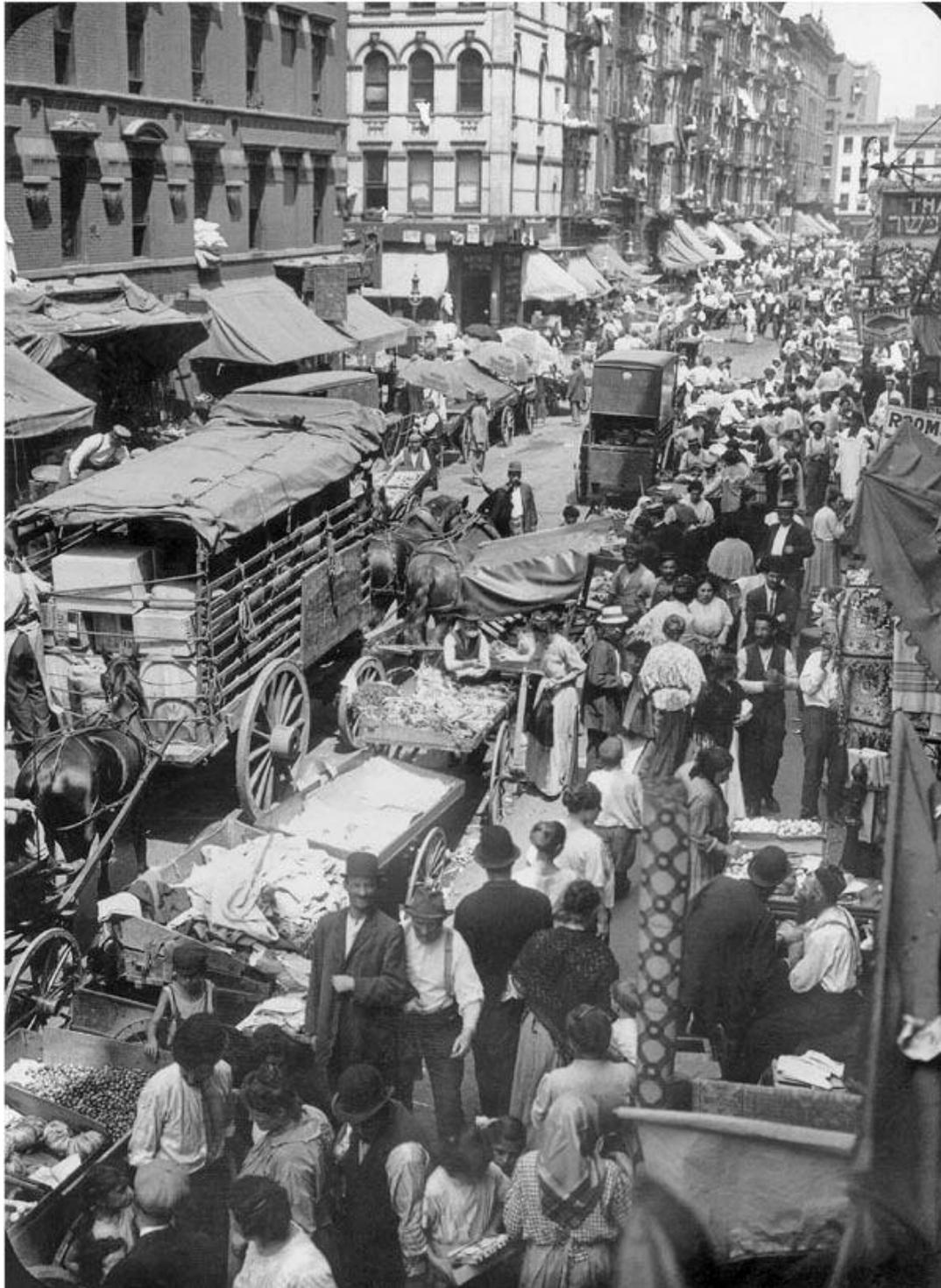
1. Bring the group together and ask everyone to share one of their questions. They should say the question, explain why they chose to share it, and explain what this question is “trying to do” (e.g., clarify a confusion, extend knowledge, or make a connection to previously learned material or experiences).
2. As a group, talk about the questions that everyone asked: What trends were there? What were most of the questions “trying to do”? Were the questions mostly “thin” or “thick”? Why do you think this is?
3. Ask everyone to share one of their inferences, explain why they chose to share it, and explain why they feel that it is accurate.
4. As a group, discuss the quality of the inferences: How accurate were they? How do they know?

Assessment of New Learning:

On a 5" x 7" index card: Have students describe what these two images communicate about the content/topic that is being studied. What do they teach us about this topic? How do they deepen our understanding?

Student Reflection on New Learning:

- On the back of the index card, have students answer the following questions:
- What did I learn today about how to ask questions and make inferences?
 - What do I need to pay attention to when making inferences?
 - What kinds of questions do I usually ask: “Thin” (who, what, where, when) or “Thick” (how, why, I wonder)?
 - How can practicing to infer and question help me with the GED Test?



“Hester Street, New York City”

By an unknown photographer, ca. 1903

National Archives and Records Administration, Records of the Public Housing Administration

(196-GS-369) [VENDOR # 12]

(<http://www.archives.gov/nae/education/lesson-plans.html>)

Photo Analysis Worksheet³⁵

Step 1. Observation

A. Study the photograph for two minutes. Form an overall impression of the photograph and then examine individual items. Next, divide the photo into quadrants and study each section to see what new details become visible.

B. Use the chart below to list people, objects, and activities in the photograph.

PEOPLE	OBJECTS	ACTIVITIES

Step 2. Inference

Based on what you have observed above, list three things you might infer from this photograph.

Step 3. Questions

A. What questions does this photograph raise in your mind?

B. Where could you find answers to them?

³⁵ Courtesy of the Education Staff of the National Archives and Records Administration (<http://www.archives.gov/nae/education/lesson-plans.html>).

STUDENT INSTRUCTIONS

Lesson: Image Analysis

Time: 45-60 minutes

PREPARATION FOR TODAY'S LESSON:

Goals of this Lesson:

Closely examine an image for two purposes:

- To understand and describe it
- To deepen your understanding of a particular topic of study

Skills Addressed in this Lesson:

Description

Learning to describe an image

Learning Strategies Addressed in this Lesson:

Inferring

Questioning

MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

**Objective of the
Mini-Lesson:**

Carefully observe the teacher model the skill of visual analysis, the questioning learning strategy, and the inferring learning strategies so that you can effectively use these skills during this lesson

**Vocabulary
for Building
Background:**

Not applicable

**Steps for
Building
Background**

1. Receive a copy of an image related to the current topic of study.
2. Listen to the teacher's observations.
3. Fold the paper into quadrants, and listen to the teacher "Think-Aloud."
4. If you have any questions while the teacher is "thinking-aloud," be sure to ask him/her, as you will be completing this activity alone or with a partner in a few minutes.
5. After the "Think-Aloud," make sure you receive a copy of the Photo Analysis Worksheet.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

Steps for Independent Work to Practice and Apply New Learning:

Part A: Practice

1. Make two observations about the image, and write the observations on the board to share with the class.
2. As a class, work together to make some inferences about the image.
3. Use the following questions to figure out if the inferences are potentially accurate:
 - How did I figure out these inferences?
 - What evidence did I use?
 - Did I get the evidence from the photo, or was I using information I already had?
4. As a class, come up with some questions about the images.
5. As a class, think about where you might look to test the accuracy of your inferences and discover responses to your questions.

Part B: Application

6. Make sure you receive the second image and Photo Analysis Worksheet.
7. Working with a partner, or alone, analyze the second image in the same way that we did the first (fold the image into quadrants, etc.) and complete the analysis worksheet.
8. In small groups share your observations, questions, and inferences. On the back of the page, provide evidence from the image or background knowledge of the topic to back-up or challenge the inferences.

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:

1. Share one of your questions with the whole class (everyone does this): Say the question, explain why you chose to share it, and explain what this question is “trying to do” (e.g., clarify a confusion, extend knowledge, make a connection to previously learned material or experience, etc.).
2. As people share, think about trends: What were most of the questions trying to do? Were the questions mostly “thick” or “thin”? Why do you think this is?
3. Share your noticings about trends with the group.
4. Share one of your inferences, explain why you chose to share it, and explain why you feel that it is accurate.

Assessment of New Learning:

On an index card: Describe what these two images communicate about the content/topic that is being studied. What do they teach us about this topic? How do they deepen our understanding?

Student Reflection on New Learning:

- On the back of the index card, answer the following questions:
- What did I learn today about how to ask questions and make inferences?
 - What do I need to pay attention to when making inferences?
 - What kinds of questions do I usually ask: “Thin” (who, what, where, when) or “Thick” (how, why, I wonder)?
 - How can practicing to infer and question help me with the GED Test?

TEACHER LESSON PLAN

Lesson: Interviewing a Text³⁶

Time: 2 hours

Use of the Lesson:

This lesson is best used as a way to introduce students to a text they will be working with for some time. At the same time, it works well as an introduction to several of the learning strategies.

LESSON PREPARATION FOR THE DAY'S LESSON:

Goal of the Lesson:

To use the learning strategies to deepen understanding of the text

Resources Needed for the Lesson:

- Teacher-selected text in a book (you should have at least one copy of the entire book, but it would be better to have a copy of the book for each student)
- Post-it notes
- Student instructions (p. 199)

Skill Addressed in this Lesson:

Analytic reading

Learning Strategies Addressed in this Lesson:

- Predicting
- Making connections
- Questioning
- Determining importance

MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

Objective of the Mini-Lesson:

To introduce students to the learning strategies within the context of their existing background knowledge

Vocabulary for Building Background:

Prediction, Making connections, Questioning, Determining importance, “Thick” questions, “Thin” questions

Instructional Steps for Building Background:

- Instruct students to work with a partner and write the following on a piece of paper (*Note: for each question, students look at their prior experience or knowledge, but the questions are not related to each other*):
1. Make a prediction about the weather tomorrow, and give some evidence to explain why your prediction makes sense.
 2. Make a connection between something the class recently read and something from your previous experience or knowledge.
 3. Write down two questions you wonder about. Are they “thick” questions (Why? How?) or “thin” questions (Who? What? Where? When?)?
 4. Think of something that recently happened to you or someone you know.
 - What was the most important part of the event? Why?
 - Would someone else agree? If so, why? If not, what might they say was the most important event?

³⁶ Activity developed by Antonia Rudenstine © 2008.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

**Steps for
Independent
Work to Practice
and Apply New
Learning:**

Predicting/Making Connections:

1. Journal: Ask students how many of them have ever heard the expression “You can’t judge a book by its cover.” Ask students to look at the cover of the book and *make a prediction* about the book’s subject. Then, they should explain how they made the prediction. *(Note: Predictions are generally informed by making connections between the text and their background knowledge and experience. For example, if the title of a book is “Monster” and there is a picture of a young, male on the cover, with prison bars in the background, students are likely to connect these three noticings with something else they know about men, prison, and the word monster: It is a book about a boy who is a monster and has to go to prison, or a boy who acts like a monster in jail, or a boy who becomes a monster when he goes to prison.)*
2. Ask students to describe what they noticed about themselves as learners when they were asked to make a prediction.
3. Have someone read the description on the back of the book aloud.
4. Ask: Were their predictions anything like the description on the back? Does reading the back make them want to read the book more or less?
5. Read the “reviews”/“blurbs” aloud.
6. Ask students what effect the reviews have on their interest in the book. Do they know the work of any of the reviewers? Are they interested in hearing about other, similar books the reviewer may have reviewed?
7. Have students describe the thoughts that are going through their minds as we “interview” this text?

Questioning:

8. Read the first two paragraphs of the text aloud. Stop and model possible questions one might have. Some will be related to comprehension and vocabulary; some will be “wonderings.” Reflect aloud on why you asked yourself these questions.
9. Have students read a page or two. Pass out post-it notes. As they read, have them write down their questions with the line, page number, and an explanation of how/why they settled on these particular questions.
10. Journal: Have students look at their questions. What do they tell them about themselves as a reader, specifically in terms of the issues and ideas they notice and care about?
11. In small groups, talk through the assignment:
 - a. What are students’ questions?
 - b. How/why did they come to these questions?

steps continued on next page

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

<p>Steps for Independent Work to Practice and Apply New Learning:</p>	<p>Determining Importance</p> <p>12. Ask students to read a few more pages of the text and identify an idea or passage they feel is important (to them). Write the line/page down, and explain the importance.</p> <p>13. Ask a volunteer to share with the class.</p> <p>14. Ask if anyone else selected the same idea or passage? If so, ask them to explain why they selected this passage.</p> <ul style="list-style-type: none"> • If several selected the same idea or passage (this frequently happens), ask them to “infer” what this might mean about the value of the passage in relation to the text as a whole. <i>(Note: It might mean students have identified the message/meaning of the text, or it might mean they have similar previous knowledge and experience that shapes their reading. Unpack this with them so that they can become better at determining importance.)</i> • If only one person selected a passage, ask students to “infer” what this might mean about the value of a passage in relation to the text as a whole. <i>(Note: it might mean they only understood a small portion of the text, and that is what they identified as important, or it might mean they are connecting a piece of the text to a very individualized piece of background knowledge and experience. Unpack this with them so that they can become better at determining importance.)</i> <p>15. Repeat steps 13 and 14, moving into a text-based discussion.</p>
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**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

<p>Review of New Learning:</p>	<p>Ask:</p> <ol style="list-style-type: none"> 1. What are three things you learned today? 2. What was the purpose of today’s lesson? Did we accomplish this purpose?
<p>Assessment of New Learning:</p>	<p>Ask students to read two to four more pages of the text (or an excerpted text from a GED practice book) and continue using post-it notes to predict, question, make connections, and determine importance. After they have read the pages, they should take a piece of paper, write their names in the left-hand corner, and post all of their post-it notes on the page.</p> <p>Collect these student pages to get a sense of what types of things students are noticing and writing about.</p>
<p>Student Reflection on New Learning:</p>	<p>Much of the reflection on this lesson occurs with students as they interview the text. This is an alternative way to include reflection in the lesson. You might also close with a couple of additional reflection questions:</p> <ul style="list-style-type: none"> • What did you notice about the types of comments you wrote on post-it notes? Were they confusions? Wonderings? Predictions? Noticings of ideas and passages that caught your attention? • What was challenging about this activity? • How did you respond to the challenge? • How might these learning strategies help you with the GED Test?

STUDENT INSTRUCTIONS	
Lesson: Interviewing a Text	Time: 2 hours
PREPARATION FOR TODAY'S LESSON:	
Goal of this Lesson: Use the learning strategies to deepen your understanding of a specific text.	
Skill Addressed in this Lesson: Analytic reading	Learning Strategies Addressed in this Lesson: Predicting Making connections Questioning Determining importance
MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON	
Objective of the Mini-Lesson:	Get an overview of the learning strategies
Vocabulary for Building Background:	Predicting, Making Connections, Questioning, Determining Importance, "Thick" questions, "Thin" questions
Instructional Steps for Building Background:	<p>Work with a partner and write the following on a piece of paper:</p> <ol style="list-style-type: none"> 1. Make a prediction about the weather tomorrow, and give some evidence to explain why your prediction makes sense. 2. Make a connection between something your class recently read and something from your previous experience or knowledge. 3. Write down two questions you wonder about. Are they "thick" questions (Why? How?) or "thin" questions (Who? What? Where? When?)? 4. Think of something that recently happened to you or someone you know. <ul style="list-style-type: none"> • What was the most important part of the event? Why? • Would someone else agree? If so, why? If not, what might they say was the most important event?

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

Steps for Independent Work to Practice and Apply New Learning:	<p>Predicting/Making Connections:</p> <ol style="list-style-type: none"> 1. Look at the cover of the book and <i>make a prediction</i> about the book’s subject. 2. Someone in your class reads aloud the description of the book. The teacher asks the class questions in response. 3. Someone in your class reads aloud the reviews of the book. The teacher asks the class questions in response. 4. Describe what thoughts went through your mind about yourself and the text as the class “interviewed” this text. <p>Questioning:</p> <ol style="list-style-type: none"> 5. In response to the text your teacher gives you to read, write down questions you have about the text with the line, page number, and an explanation of how/why you settled on these particular questions. 6. In your journal, write what your text questions reveal to you about the issues and ideas you notice and care about when you are reading. 7. In small groups, talk through the assignment: <ul style="list-style-type: none"> • What questions did the students in your group have? • How/why did you come to these questions? <p>Determining Importance:</p> <ol style="list-style-type: none"> 7. <i>Identify an idea or passage you feel is important</i> from the next few pages/passages of text. 8. For each idea of the passage you feel is important, write down the line/page numbers and explain the importance. 9. Respond to a variety of questions from the teacher, and repeat steps 7 and 8 several times.
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**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:	<ol style="list-style-type: none"> 1. What are three things you learned today? 2. What was the purpose of today’s lesson? Did we accomplish this purpose?
Assessment of New Learning:	<ul style="list-style-type: none"> • Read two to four more pages of the text and continue using post-it notes to predict, question, make connections, and determine importance. • After you have read the pages, take a piece of paper, write your name in the left-hand corner, and post all of your post-it notes on the page.
Student Reflection on New Learning:	<ul style="list-style-type: none"> • What did you notice about the types of comments you wrote on post-it notes? Were they confusions? Wonderings? Predictions? Noticings of ideas and passages that caught your attention? • What was challenging about this activity? • How did you respond to the challenge? • How might these learning strategies help you with the GED Test?

TEACHER LESSON PLAN

Lesson: Point of View (POV) Writing³⁷

Time: 90 minutes

Use of the Lesson:

This lesson can be used to introduce students to the process of writing from a particular point of view. In addition, it can be used at any time during a topic of study to help students identify various points of view.

LESSON PREPARATION FOR THE DAY'S LESSON:

<p>Goal of the Lesson: To think and write about ideas from different perspectives</p>	<p>Resources Needed for the Lesson:</p> <ul style="list-style-type: none"> • Copies of two short texts: an excerpt from a chapter or an article; both texts should focus on an event or a set of circumstances (i.e., something that clearly allows students to identify different Points of View, such as Kurt Vonnegut's "Long Walk to Forever") • Student Instructions (p. 205)
<p>Skills Addressed in this Lesson: Draft-writing in response to a prompt Discussion</p>	<p>Learning Strategies Addressed in this Lesson: Inferring Synthesizing Information</p>

³⁷ Permission to reprint and modify granted by © The New York City Writing Project, Lehman College CUNY. All Rights Reserved. 2006. Original source material © Moffett, James. Active Voice. Portsmouth, NH: Boyton/Cook Publishers 2nd ed, 1992.

**MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE:
20% OF THE LESSON**

Objective of the Mini-Lesson:	<ol style="list-style-type: none"> 1. Ensure everyone understands the concept of “point of view” 2. Provide students with a set of guideposts to help them get started on writing from different perspectives
Vocabulary for Building Background:	Point-of View (POV)
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Write the words “Point-of view” on the board and ask students to work with a partner to come up with a definition, as well as an example of a situation where there could be several perspectives. If pairs are struggling, this can be done as a full-class activity. Or show an image or video that could be interpreted in different ways depending on a person’s point of view: a ball on a foul line that two teams view in different ways; a subway map where students have to make a case for the Empire State Building being uptown or downtown on the subway; etc. 2. Ask pairs to share their responses. 3. Explain how POV works with a text: The author and the reader always have perspectives. The author’s perspective is often uncovered by examining the various characters in a fictional text, or the way that an event is described in either fiction or nonfiction. 4. Distribute the first text and read the first few paragraphs aloud. 5. Return to the definition of POV again, and ask students to brainstorm a list of possible POVs from the reading selection. 6. Ask students to return to their pairs and imagine what one of the characters might say from their POV. (For this activity, they do not have to write, but they will during the practice and application section of the lesson.) To set them up for the activity, provide them with some options: <ol style="list-style-type: none"> a. Retelling a specific incident or event from a different point of view. b. Expanding an incident or event, keeping the same point of view or switching it. c. Manipulating time in some way (e.g., writing a scene that takes place either before or after the events in the text, keeping the same point of view or switching it, etc.). d. Exploring a theme or concept implicit in the text in a completely original piece. e. Other possibilities students think of. 7. Ask pairs to share what they come up with.

steps continued on next page

MINI-LESSON: CONTINUED

<p>Instructional Steps for Building Background:</p>	<p>8. Explain to students that they are going to be using the next block of time to practice and apply their new knowledge of POV, but they will be doing it through writing rather than by working in pairs.</p> <p>9. As a group, brainstorm a list of different formats students might use for their writing:</p> <table style="margin-left: 40px; border: none;"> <tr> <td style="padding-right: 20px;">A speech or sermon</td> <td>A first-person narration</td> </tr> <tr> <td>A diary entry</td> <td>A letter</td> </tr> <tr> <td>A dialogue</td> <td>An essay</td> </tr> <tr> <td>A poem</td> <td>A story</td> </tr> <tr> <td>A newspaper article</td> <td>A dream</td> </tr> <tr> <td>An interior monologue</td> <td>An e-mail</td> </tr> <tr> <td>An editorial</td> <td>Other</td> </tr> </table> <p>10. Distribute the second text and the Student Instructions.</p> <p>11. Make sure everyone understands the activity and is ready to begin.</p>	A speech or sermon	A first-person narration	A diary entry	A letter	A dialogue	An essay	A poem	A story	A newspaper article	A dream	An interior monologue	An e-mail	An editorial	Other
A speech or sermon	A first-person narration														
A diary entry	A letter														
A dialogue	An essay														
A poem	A story														
A newspaper article	A dream														
An interior monologue	An e-mail														
An editorial	Other														

STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE: 60% OF THE LESSON

<p>Steps for Independent Work to Practice and Apply New Learning:</p>	<ol style="list-style-type: none"> 1. Instruct students to read the text. 2. On a piece of paper, students should brainstorm a list of possible POVs related to the text. 3. Students choose one of these perspectives to be the focus of their writing. 4. Students take notes on the main ideas, opinions, beliefs, and values of this perspective. 5. They choose an appropriate format for expressing their ideas. 6. Each student writes from the perspective s/he has adopted, in the format s/he has chosen. 7. Each student trades papers with a fellow student, and reads what s/he has written. Each writes a short response to his/her writing, explaining how their POVs differ.
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**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

<p>Review of New Learning:</p>	<p>In groups of three to four, have students share their writing and ask each other the following questions:</p> <ul style="list-style-type: none"> a. (to the writer) Why did you choose that particular point of view and format? b. (to the group) What do you think is the writer's focus in the piece? c. (to the group) Which facts were important to the writer? Why? How do we know? d. (to the writer) What insights/arguments developed from the original text? e. (to the group) What are some of the inferences the writer made? f. (to the writer) What questions do you have about the material covered in the text after hearing the piece? <p>Each group should select one student to share with the full class. Volunteers share their work.</p>
<p>Assessment of New Learning:</p>	<p>On an index card:</p> <ul style="list-style-type: none"> 1. What is point of view? 2. Why is it helpful to be able to identify someone's POV? 3. How can the process of identifying POV in a text help you understand it?
<p>Student Reflection on New Learning:</p>	<p>Class Discussion:</p> <ul style="list-style-type: none"> • How might an activity like this be useful for your efforts to pass the GED Test? • What happened in your small groups? • What did you learn from members of your group?

STUDENT INSTRUCTIONS	
Lesson: Point of View (POV) Writing	Time: 90 minutes
PREPARATION FOR TODAY'S LESSON:	
Goal of this Lesson: Think and write about ideas from different perspectives.	
Skill Addressed in this Lesson: Draft-writing in response to a prompt Discussion	Learning Strategies Addressed in this Lesson: Inferring Synthesizing information
MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON	
Objective of the Mini-Lesson:	Develop an understanding of the concept of “point of view” and start writing from different perspectives
Vocabulary for Building Background:	Point of View (POV)
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Work with a partner to come up with a definition of “point of view” and an example of a situation where there could be several perspectives. 2. Share your response with the class. 3. Brainstorm a list of possible POVs from the selection the teacher reads. 4. Return to your pairs and imagine what one of the characters might say from their POV (in fiction). Or, imagine how someone else might look at the same event or circumstances (in fiction or non-fiction). For example: <ol style="list-style-type: none"> a. Retelling a specific incident or event from a different point of view. b. Expanding an incident or event, keeping the same point of view or switching it. c. Manipulating time in some way (e.g., writing a scene that takes place either before or after the events in the text, keeping the same point of view or switching it, etc.). d. Exploring a theme or concept implicit in the text in a completely original piece. e. Other possibilities students think of. 5. Share your ideas with the class.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

1. Read the text you have been given.
2. Brainstorm a list of possible points of view (POVs) related to the text.
3. Choose one of these perspectives to be the focus of your writing.
4. Take notes on the main ideas, opinions, beliefs, and values of this perspective.
5. Choose an appropriate medium for expressing these ideas.

A speech or sermon	A first-person narration
A diary entry	A letter
A dialogue	An essay
A poem	A story
A newspaper article	A dream
An interior monologue	An e-mail
An editorial	Other
6. Write from the perspective you have adopted, in the medium you have chosen.
7. Trade papers with a fellow student, and read what s/he has written. Write a short response to his/her writing, explaining how your POV differs.

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:	<p>In small groups, share your writing and ask your group-mates the following questions:</p> <ul style="list-style-type: none"> • (to the writer) Why did you choose that particular point of view and form? • (to the group) What do you think is the writer's focus in the piece? • (to the group) Which facts were important to the writer? Why? How do we know? • (to the writer) What insights/arguments developed from the original text? • (to the group) What are some of the inferences the writer made? • (to the writer) What questions do you have about the material covered in the text after hearing the piece? <p>Each group selects one student to share some big ideas or trends with the full class.</p>
Assessment of New Learning:	<p>On an index card, respond to the following prompts:</p> <ol style="list-style-type: none"> 1. What is point of view? 2. Why is it helpful to be able to identify someone's POV? 3. How can the process of identifying POV in a text help you understand it?
Student Reflection on New Learning:	<p>Class Discussion:</p> <ul style="list-style-type: none"> • How might an activity like this be useful for your efforts to pass the GED Test? • What happened in your small groups? • What did you learn from members of your group?

TEACHER LESSON PLAN

Lesson: Read-Aloud/Think-Aloud: Chemical Reactions³⁸

Time: 90 minutes

Use of the Lesson:

This lesson is best-suited for introducing students (who have already been introduced to the seven learning strategies at least once) to analytic reading of a text because it breaks the text into small segments, and guides students through the process of understanding each one.

LESSON PREPARATION FOR THE DAY'S LESSON:

Goals of the Lesson:

- Use the Learning Strategies to analyze a text
- Become aware of one's own metacognition
- Understand where/how the learning strategies help in understanding academic texts

Resources Needed for the Lesson:

- Teacher-created list of the seven learning strategies
- Copies of one short article for each student (it can be any article of appropriate reading level that fits the topic you are currently teaching)
- Transparency of first short article
- A copy of the first article broken-down into two tables for each student (Table 1 is a sample, with a portion of the mini-lesson steps filled in for teacher: p. 212. Table 2 is a sample, with blanks left for students to complete. Teacher can also create his/her own table if using a different article.)
- Teacher-created transparencies of the first article broken-down into two tables, above
- Copies of a second short article for each student (again, any article of appropriate reading level that fits the topic you are currently teaching)
- An overhead projector
- Student Instructions (p. 210)
- Index cards

Skill Addressed in this Lesson:
Analytic reading

Learning Strategies Addressed in this Lesson:

Determining importance
Synthesizing information

³⁸Activity developed by Antonia Rudenstine © 2008.

**MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE:
20% OF THE LESSON**

Objective of the Mini-Lesson:	To model the use of the learning strategies to understand a text
Vocabulary for Building Background:	Metacognition, making connections, predicting, questioning, determining importance, inferring, visualizing, synthesizing
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Pass out copies of the first article, in table format (for the sample, this would include information in both Tables 1 and 2). 2. Place the original article on the overhead projector so that you can write on the transparency and students can see what you are doing. 3. Model Read-Aloud/Think-Aloud: Read one paragraph of the article. Share your thinking aloud: say what you are thinking about, any problems you encounter in reading the text, what you think about the text; state wonderings, ask questions, make inferences; and identify facts/topics you think are important. Explain that this is referred to as “talking” to the text. Repeat the process for a few more paragraphs (see Table 1 for examples). 4. Read another two segments aloud and ask students to write their thinking directly onto their copy of the text. 5. Ask each student to share some of their thinking aloud. As they share, document their thoughts on the transparency. 6. Have students reflect on the following: What did you notice about my thinking process during this activity? What did you think about this process? What do you think the most important ideas are in the text we have read so far? What makes you think these are critical? What is your evidence of this from the text? 7. From this activity, what do you think metacognition means, and why might someone need to develop metacognitive skills?

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

<p>Steps for Independent Work to Practice and Apply New Learning:</p>	<p>Part A: Practice</p> <ol style="list-style-type: none"> 1. Have students work in pairs to continue reading the article (Table 2 is a sample) and “talking to” the text. 2. Students should write their “talking” onto their copy of the table. 3. As students work, move around the room checking for understanding and asking questions. 4. Ask a few students to share their “talking” with the group. Teacher should put Table 2 on the overhead. Write in the “thinking” that students share. <p>Part B: Application</p> <ol style="list-style-type: none"> 5. Pass out the second article and ask students to read the first page or two on their own, writing their comments in the margins. While students are reading, move around the room and talk to students about their thinking. Ask a few students to share what they have written. 6. Bring the class back together and ask one student to share what s/he wrote. 7. Ask the group if any other students wrote something similar. If so, ask them to explain why this passage caught their attention (Was it the most important? The most surprising? The most provocative?). 8. Repeat this process with one more student. 9. Have the class complete the article, and repeat the process.
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**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

<p>Review of New Learning:</p>	<p>Text-based discussion:</p> <ul style="list-style-type: none"> • What is the message of this text? How do you know? • What struck you as interesting? Why? • What would you like to learn more about? • How do you know something is important? What are the cues in the text that help you identify what is important? <i>(Note: Students might need help identifying these: background experience and knowledge; placement in the text; font size and formatting; degree of supporting evidence in the text; an accompanying illustration, chart, or graph; etc.)</i>
<p>Assessment of New Learning:</p>	<p>On an index card, have each student describe and categorize the kinds of comments s/he wrote on his/her texts:</p> <ul style="list-style-type: none"> • What do you notice? • What kinds of questions do you ask - “thick” or “thin”? • What do you tend to identify as important?
<p>Student Reflection on New Learning:</p>	<p>Discussion:</p> <ul style="list-style-type: none"> • What did you notice about your thoughts and reactions during this process? • What do you need to work on in using these strategies? • How can you then use this to prepare for the GED? • What are the challenges of this sort of reading?

STUDENT INSTRUCTIONS

Lesson: Read-Aloud/Think-Aloud: Chemical Reactions

Time: 90 minutes

PREPARATION FOR TODAY'S LESSON:

Goals of this Lesson:

Use the Learning Strategies to understand a text. Comprehend where/how they help you to understand texts. Become aware of how you think about your own thinking (i.e., metacognition).

Skill Addressed in this Lesson:

Analytic reading

Learning Strategies Addressed in this Lesson:

Determining importance

Synthesizing information

MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

Objective of the Mini-Lesson:

Experience how the learning strategies deepen your understanding of a text

Vocabulary for Building Background:

Metacognition, making connections, predicting, questioning, determining importance, inferring, visualizing, synthesizing

Instructional Steps for Building Background:

1. Share your thinking about the work that the teacher has done on the transparency and the writing you have done on the text ("talking to the text").
2. Reflect on the following:
 - What did you notice about the teacher's thinking process during this activity?
 - What did you think about this process?
 - What do you think the most important ideas are in the text we have read so far?
 - What makes you think these are critical?
 - What is your evidence of this from the text?
 - From this activity, what do you think metacognition means? Why would someone need to develop metacognitive skills?

STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE: 60% OF THE LESSON	
Steps for Independent Work to practice and apply new learning:	<p>Part A: Practice</p> <ol style="list-style-type: none"> 1. With a partner, continue to read the first article and “talk to” the text. 2. Write your “talking” on your copy of the table. 3. You may be asked to share some of your “talking” with the group. <p>Part B: Application</p> <ol style="list-style-type: none"> 4. Read the first page or two of the second article on your own and write your comments in the margin of the text. 5. You may be asked to share what you wrote, or share your thinking with the class. 6. Continue to read the remainder of the article, writing your comments in the margin of the text.
REVIEW AND ASSESS STUDENT LEARNING: 20% OF THE LESSON	
Review of New Learning	<p>Text-based discussion:</p> <ul style="list-style-type: none"> • What is the message of this text? How do you know? • What struck you as interesting? Why? • What would you like to learn more about? • How do you know something is important? What are the cues in the text that help you identify important ideas?
Assessment of New Learning:	<p>On an index card, categorize the kinds of comments you wrote on your texts:</p> <ul style="list-style-type: none"> • What do you notice? • What kinds of questions do you ask – “thick” or “thin”? • What do you tend to identify as important?
Student Reflection on New Learning:	<p>Discussion:</p> <ul style="list-style-type: none"> • What did you notice about your thinking and reactions during this process? • What do you need to work on in using these strategies? • How can you then use this to prepare for the GED? • What are the challenges of this sort of reading?

Table 1: Modeling a Read-Aloud/Think Aloud³⁹

TEXT	TEACHER COMMENTARY DURING THE THINK-ALoud	STRATEGIES MODELED/PRACTICED
<i>Chemical Reactions-Going Through Changes</i> (Photo of pancakes)	“I see a photo of pancakes cooking on a griddle. Some are golden brown and others are still a beige batter color. The title of this reading is <i>Going Through Changes</i> . I wonder what sorts of changes are represented by the pancakes?”	<i>Predicting</i> pushes the reader to look for details in the text to focus on a potentially important idea. <i>Wondering/questioning</i> is a way to begin making one’s own meaning of the text.
At a dinner table, a cook is making pancakes. He mixes together an egg, milk, and flour into a batter. When the batter is placed on the griddle, it becomes solid and golden brown. The batter has had a chemical change. All the atoms of the original ingredients are still in the batter. But the griddle’s heat has arranged those atoms in a different pattern. Like the pancake batter, many substances go through chemical changes. These changes can break down complex substances into simpler parts. Or they can join simple parts into complex substances.	“I see from reading these paragraphs that chemical changes involve substances breaking down and substances joining together. I wonder how this happens? Maybe the next section will talk about molecules being broken down or atoms being joined together.”	

³⁹ Reprinted courtesy of Copyright.com and the Journal of Adolescent and Adult Literacy 51: 5 February 2008, 383 “You can read this text—I’ll show you how”: Interactive comprehension instruction Dianne Lapp, Douglas Fisher, Maria Grant.

TEXT	TEACHER COMMENTARY DURING THE THINK-ALoud	STRATEGIES MODELED/PRACTICED
It usually takes energy to combine substances in a chemical reaction. This kind of reaction is called an <i>endothermic</i> reaction.	“An <i>endothermic</i> reaction. I’m not sure what that means, but I do know that <i>thermic</i> sounds like a word part from <i>thermometer</i> or <i>thermal</i> and both of those terms relate to heat. Maybe <i>endothermic</i> also relates to heat in some way.”	Segmenting words into word parts brings attention to root words or affixes that might offer clues to meaning. In addition, understanding that clarification might come from context or from continued reading.
For example, heat was needed to turn the batter into a pancake.	“I guess I was right – <i>endothermic</i> does relate to heat.”	Confirmation of a prediction, in this case of a word’s meaning, may be confirmed or refuted by reading upcoming text.
If iron and powdered sulfur were mixed together, nothing would happen. But apply heat to those combined substances and you would form iron sulfide. This is an entirely new substance.	“So heat added to a mixture can cause a new substance to form. Interesting. Maybe <i>endothermic</i> means that heat is added.”	Synthesizes and restates – examples offered in the text can help the reader to infer word meaning.

Table 2: Participants Practice: Reading/Thinking Aloud

TEXT	TEACHER COMMENTARY DURING THE THINK-ALoud	STRATEGIES MODELED/PRACTICED
<p>When a substance breaks down into smaller parts, it usually releases energy. This is called an <i>exothermic</i> reaction.</p> <p>This happens in the flame of your gas stove. Oxygen from the air reacts with methane gas, giving off light and heat.</p> <p>At the same time, the methane breaks down into carbon and hydrogen atoms, which form carbon dioxide and water.</p>		
<p>There are signs that a substance had gone through a chemical change. These reactions might produce light, sound, bubbles or smoke. (Photo of fireworks)</p> <p>Often a new substance has a new color.</p> <p>Remember that pancake batter? It went from white batter to golden flapjack.</p>		

TEXT	TEACHER COMMENTARY DURING THE THINK-ALOUD	STRATEGIES MODELED/PRACTICED
<p>Metals combine with oxygen. This can happen very slowly, as when iron rusts.</p> <p>Some metals tarnish. For example, when copper oxidizes it turns green, forming copper sulfate or copper chloride.</p> <p>Fireworks are an example of very fast oxidation.</p>		
<p>Inside a firework is gunpowder, a combination of potassium nitrate, sulfur, and charcoal. When gunpowder is heated, the nitrate releases oxygen, making the sulfur and carbon burn fast. The gases they produce send the fireworks high into the sky.</p>		

TEACHER LESSON PLAN

Lesson: Speed Dialogue⁴⁰

Time: 45 minutes

Use of the Lesson:

This lesson is best used as a way to help students think about big ideas, concepts, themes, and topics (rather than details and factual recall). It can be used to introduce a new topic, to review a previously studied topic, or to explore students' background knowledge in new ways.

LESSON PREPARATION FOR THE DAY'S LESSON:

Goal of the Lesson:

To practice and apply Determining Importance and Synthesis strategies during a discussion.

Resources Needed for the Lesson:

- Chart Paper and Markers OR Transparency and Markers
- Student Instructions (p. 217)
- A set of topics (enough topics for groups of four students to each work on one, and one for you to model; topics should be familiar enough to students for them to be able to discuss them at some length—either be general or have been covered in class)
- Timer and Signal (optional)

Skills Addressed in this Lesson:

Discussion
Reflection writing

Learning Strategies Addressed in this Lesson:

Determining importance
Synthesizing information

MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

Objective of the Mini-Lesson:

1. To demonstrate the learning strategies determining importance and synthesis
2. To ensure that everyone understands how to do the activity, understands its purpose, and is prepared to participate

Vocabulary Building Background:

Any vocabulary words related to the selected topics.

Instructional Steps for Building Background:

1. Model the activity for students, taking them through the Student Instructions. As part of the modeling, read the “model” topic aloud (*Note: this should be something short, like a quote*) and then say aloud some of the things you might talk about if you were in a group (e.g., thoughts, questions, wonderings, connections to other learning, reactions, feelings, inferences, etc.). Make sure to emphasize places where you determine importance and synthesize ideas. Review the Assessment and Reflection so that students understand what they should be noticing while engaged in the activity.
2. Check to make sure everyone understands what they will be doing and what the key learning will be.

⁴⁰ Activity developed by Linda Correnti and Steve Gleicher for the NYC DOE.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

<p>Steps for Independent Work to Practice and Apply New Learning:</p>	<ol style="list-style-type: none"> 1. Post the chart paper (or transparency) with topics around the room, with a marker by each sheet. 2. Divide the group randomly into small groups of four or six (it must be an even number; groups of four are ideal). Have students count off. Pass out groups of colored paper or a deck of cards, etc. 3. Move the students into their groups, one group for each topic. 4. Ask students within each group to pair up. 5. Give students three minutes to discuss the topic they have been assigned. 6. Then, students pick a new partner and continue the discussion for three minutes. 7. Repeat one more time. 8. Give the whole group five minutes to chart their questions, comments, and ideas. 9. Have each group present their thinking to the class.
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**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

<p>Review of New Learning:</p>	<p>Ask each student to call out new learnings/insights/ideas they now have about the topic(s), as a result of the lesson. (“Popcorn” technique)</p>
<p>Assessment of New Learning:</p>	<p>Ask students to write about how their new learnings/insights/ideas may be useful to them in the future.</p>
<p>Student Reflection on New Learning:</p>	<p>Ask students to write a reflection:</p> <ul style="list-style-type: none"> • Describe how your group decided what to chart and what to present to the rest of the class • Did someone take on a leadership role in your group? • What was/were your strength(s) in the group? • How do you know it was your strength(s)? • What was/were the challenge(s) you faced? • How did you deal with the challenge(s)? • How effective were you? • How much would the group agree with your assessment of your strength and your solution to your challenge? <p>Ask two to four students to share their reflections, and have students in their groups respond.</p>

STUDENT INSTRUCTIONS	
Lesson: Speed Dialogue	Time: 45 minutes
PREPARATION FOR TODAY'S LESSON:	
Goal of this Lesson: Practice and apply two learning strategies during a class discussion: Determining Importance and Synthesis.	
Skills Addressed in this Lesson: Discussion Reflection writing	Learning Strategies Addressed in this Lesson: Determining importance Synthesizing information
MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON	
Objective of the Mini-Lesson:	Understand how to use the learning strategies determining importance and synthesis to strengthen discussion skills
Vocabulary Building Background:	<i>Any vocabulary words related to the selected topics.</i>
STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE: 60% OF THE LESSON	
Steps for Independent Work to Practice and Apply New Learning:	<ol style="list-style-type: none"> 1. Move into a group, and read over the discussion topic. 2. Select a partner in your group. You and your partner have three minutes to discuss your topic. 3. Switch to another partner in your group. 4. After three minutes, move on to a third partner. 5. When the teacher calls time, your whole group has five minutes to document your thoughts, ideas, and questions on the chart paper. 6. Class discussion: Share the documentation of your group's thinking with the class.
REVIEW AND ASSESS STUDENT LEARNING: 20% OF THE LESSON	
Review of New Learning:	Call out new learnings/insights/ideas you now have about the topic.
Assessment of New Learning:	Write about how your new learnings/insights/ideas may be useful to you in the future.
Student Reflection on New Learning:	<ul style="list-style-type: none"> • Describe how your group decided what to chart and what to present to the rest of the class. • Did someone take on a leadership role in your group? • What was/were your strength(s) in the group? • How do you know it/they was/were your strength(s)? • What was/were the challenge(s) you faced? • How did you deal with the challenge(s)? • How effective were you? • How much would the group agree with your assessment of your strength and your solution to your challenge? <p>You may be asked to share your reflections and/or respond to others' questions in your group.</p>

TEACHER LESSON PLAN

Lesson: Text Rendering⁴¹

Time: 60 minutes

Use of the Lesson:

This lesson is best-suited for introducing students to analytic reading of a text because it breaks the text down into very small chunks, and guides students through the process of understanding each chunk.

LESSON PREPARATION FOR THE DAY'S LESSON:

Goal of the Lesson:

To teach students to identify the criteria they use to determine what is important in a text.

Resources Needed for the Lesson:

- Copies of a text that is four or five pages long, or a complex poem
- Highlighters or post-it notes
- Student instructions (p. 220)

Skill Addressed in this Lesson:

Analytic reading

Learning Strategies Addressed in this Lesson:

Determining importance

MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

Objective of the Mini-Lesson:

1. To introduce students to the idea of text rendering
2. To teach students how to determine important ideas in a text

Vocabulary Building Background:

Vocabulary from the selected text.

Instructional Steps for Building Background:

1. Pass out the text, as well as the Student Handout.
2. Read the first page of the text aloud.
3. Stop as you go, and “think-aloud” about a selection of the text that strikes you as important. Explain to students the criteria you are using to determine importance (i.e., something that you have a strong reaction to, something that confuses you, something that reminds you of something else, or something that seems like the main idea of the text).
4. Model for students how to “mark” the text with either a post-it or highlighter.
5. Explain that they will continue this exercise on their own with the rest of the text.
6. Make sure that everyone understands the activity and is prepared to complete it.

⁴¹ Activity originally used by the Pennsylvania Department of Education (http://www.able.state.pa.us/reading_writing/cwp/view.asp?a=196&q=98164&tx=0).

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

Steps for Independent Work to Practice and Apply New Learning:	<ol style="list-style-type: none"> 1. Students read the rest of the selected text. 2. Students select and highlight three passages each. Length may vary from a phrase to a sentence that the student has strong feelings about. Students should be prepared to read them aloud. 3. Instruct students to prioritize their selections with a 1, 2, and 3 (1 being the most important). 4. Students share selections aloud without any additional discussion—they let the texts speak for themselves. If multiple students choose the same excerpts, each student should still read his/her selections without comment—there will be discussion time later. 5. Class will read all of the #3 selections, then #2 selections, then #1 selections, going around the room from back to front.
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**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:	<p>Discussion:</p> <ul style="list-style-type: none"> • What did you notice about the #3, #2, and #1 selections that other students made? • Which selections captured the “main idea” of the text? How do you know? • What inferences can you make about why other selections were made? • Which selections surprised you? Why did they surprise you?
Assessment of New Learning:	<p>Write for two to four minutes:</p> <ul style="list-style-type: none"> • What have you learned about the topic?
Student Reflection on New Learning:	<p>Ask students to reflect in a journal:</p> <ul style="list-style-type: none"> • Describe how you selected the excerpts that you did. • How did you decide how to prioritize your selections? • Why do you think others chose the same selections or different ones? What does this say to you about the selections you made? • How many of your selections seemed to capture the “main idea?” • What do you think of the strategies you personally use to determine importance in a text: are they effective <i>for you</i> (<i>Note: explain to students that the learning strategies they list will not necessarily have been used to identify the “main idea” but may have been used by the student for some other purpose</i>)?

STUDENT INSTRUCTIONS

Lesson: Text Rendering **Time: 60 minutes**

PREPARATION FOR TODAY'S LESSON:

Goal of this Lesson:

Identify the criteria you would use to determine what is important in a text.

Skill Addressed in this Lesson: Analytic reading	Learning Strategy Addressed in this Lesson: Determining importance
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MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

Objective of the Mini-Lesson: Learn how to determine important ideas in a text

Vocabulary Building Background: *Vocabulary from the selected text.*

Steps for Building Background:

1. Make sure you have a copy of the text and other related materials.
2. Carefully observe as the teacher models the process you will use during this lesson. If you have any questions, make sure to ask them so that you are prepared to participate in the activity.

STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE: 60% OF THE LESSON

Steps for Independent Work to Practice and Apply New Learning:

1. Read the rest of the selected text independently.
2. Select and highlight three passages. Length may vary from a phrase to a sentence that you have strong feelings about. Prepare to read them aloud.
3. Prioritize your selections as 1, 2, and 3 (1 being the most important).
4. Discussion: Share your selections aloud, beginning with all of the #3 selections.

REVIEW AND ASSESS STUDENT LEARNING: 20% OF THE LESSON

Review of New Learning: Discuss the following:

- What did you notice about the #3, #2, and #1 selections that other students made?
- Which selections captured the “main idea” of the text? How do you know?
- What inferences can you make about why other selections were made?
- Which selections surprised you? Why did they surprise you?

Assessment of New Learning: Write for two to four minutes:

- What have you learned about the topic?

Student Reflection on New Learning: Respond to the following questions in your journal:

- Describe how you selected the excerpts that you did.
- How did you decide how to prioritize your selections?
- Why do you think others chose the same selections or different ones? What does this say to you about the selections you made?
- How many of your selections seemed to capture the “main idea?”
- What do you think of the strategies you personally use to determine importance in a text: are they effective *for you* and what did they help you identify as important?

TEACHER LESSON PLAN

**Lesson: Text-Set Analysis:
Japanese Internment Camps⁴²**

Time: Two 90-minute sessions

Use of the Lesson:

A text-set analysis is designed to teach students to gather ideas and information from a number of sources. It is particularly useful for the study of complex ideas, and even more appropriate if the ideas are controversial in some way.

LESSON PREPARATION FOR THE DAY'S LESSON:

Goals of the Lesson:

- Understand and analyze different historical perspectives
- Learn about the Japanese Internment Camps

Resources Needed for the Lesson:

- Student Instructions (p. 227)
- An article on different perspectives about the Japanese Internment camps (p. 226)
- Photos of the camps (<http://images.google.com/images?q=Japanese+Internment+Camp+Photos&ie=UTF-8&oe=utf-8&rls=org.mozilla:en-US:official&client=firefox-a&um=1>)
(<http://www.lib.utah.edu/spc/photo/9066/tule.htm>)
- A text about the Executive Order that created the camps (<http://www.strike-the-root.com/4/powers/powers1.html>)
- Executive Order 9066
(<http://bss.sfsu.edu/internment/executiorder9066.html>)
- The Bill of Rights (this should already be familiar to students)
(http://www.constitution.org/billofr_.htm)

Skill Addressed in this Lesson:

Recognize point of view (POV) in print and visual materials

Learning Strategy Addressed in this Lesson:

Asking questions

⁴² Activity developed by Antonia Rudenstine © 2008.

**MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE:
20% OF THE LESSON**

Objective of the Mini-Lesson:	To introduce students to the Japanese Internment camps, how they came to be, and how people reacted to them
Vocabulary Building Background:	Fifth column, saboteurs, Amendments, key words from the Article on Japanese Internment camps
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Ask students to write a response to the prompt, “Imagine your family was forcibly removed from your home and was placed in a prison camp. What thoughts and feelings would go through your mind? How would you react?” As students write, move around the room to get a sense of what they are thinking about. Choose one student to begin the discussion. 2. Ask students to share their writing with the group. 3. Show students the pictures of the Internment Camps, and ask them to work with a partner to make a list of their noticings. 4. Create a collective list of the classes’ noticings. 5. Pass out the article, as well as the Student Handout. 6. Read the first page of the text aloud. 7. Stop as you go, and “think-aloud” about a selection of the text that strikes you as important. Explain to students the criteria you are using to determine importance (i.e., something that you have a strong reaction to, confuses you, reminds you of something else, or seems like the main idea of the text, etc.). 8. Model for students how to “mark” the text with either a post-it or highlighter. 9. Explain that they will continue this exercise on their own with the rest of the text. 10. Make sure that everyone understands the activity and is prepared to complete it.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

**Steps for
Independent
Work to Practice
and Apply New
Learning:**

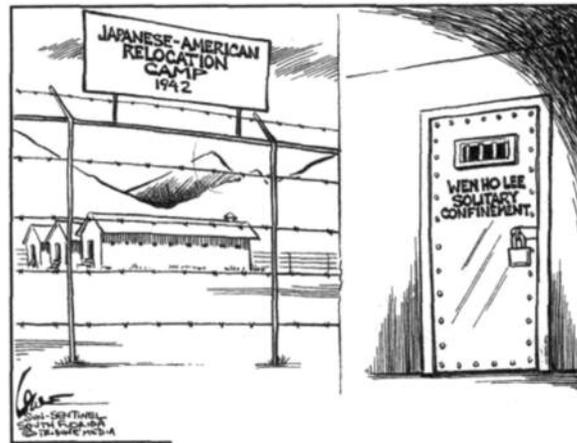
1. Students will work in pairs with the Bill of Rights and the “Executive Order” documents:
 - Identify the Rights that might provide the Executive Branch with the rationale that they have the right to create the Internment Camps (Quote directly from Bill of Rights).
 - Identify the Rights that might provide Korematsu (a Japanese-American who sued the government about the Internment Camps) with the rationale that the government does not have the right to intern Japanese-Americans.
2. As students work, move around the room to ensure that everyone understands the Executive Order, and can make a connection between it and the Bill of Rights. Keep track of student progress and identify students who have made particularly strong connections. They can begin the following activity if they are willing.
3. Students will prepare for “The Hot Seat” activity: One student sits in a chair at the front of the room, representing the point of view of a government official. Peers ask probing questions of the student on the Hot Seat. Students take turns being on the Hot Seat representing different perspectives. (see http://www.readwritethink.org/lessons/lesson_view.asp?id=247 for further ideas)
4. Assign students roles: a representative of the US government (the President, a member of the Supreme Court, members of Congress); Japanese-Americans (collaborators with the US government and residents in camps); etc. Additional possible perspectives to represent include a Japanese-American citizen who refuses to swear loyalty to the US; an African-American grandson of a slave, living in New York; a white woman living in San Francisco; Korematsu; etc.
5. Ask one student to volunteer to sit on the “Hot Seat” while others ask questions. After a few minutes, ask another student to volunteer. Go through this process a few times in order to ensure that several perspectives are represented both on the “Hot Seat” and by the questioners.

(Note: Make sure that everyone gets to speak more than once: some on the “Hot Seat,” others asking questions. As students ask questions, have them categorize their questions as who/what/where/when questions [“thin”] or why/how [“thick”].)

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:	<ol style="list-style-type: none"> 1. Ask students to work in pairs to create a strong (i.e., useful, not tricky) review question. 2. Have each pair write the question on the board. 3. Pairs will move to their desks and work together to answer every question on the board, and to evaluate its usefulness as a review question.
Assessment of New Learning:	<p>Drawing on all of the resources and activities of the day:</p> <ol style="list-style-type: none"> 1. Students will write some quick notes to themselves on the factors that shape individuals' points of view - particularly the influence of societal position and power. <i>(Note: See POV writing on page 201.)</i> 2. Students will discuss their views on the development of point of view. 3. Students who do not participate in the discussion should write a paragraph on this topic to be turned in so that you have a sense of their level of understanding. 4. Students will complete the GED Practice Assessment (p. 225)
Student Reflection on New Learning:	<p>Exit ticket: Write: How did you come to have your own point of view about the internment camps:</p> <ul style="list-style-type: none"> • What factors in our work today shaped your perspective? • What factors had the most influence over you? • What influence does your societal position have on your perspective?

Assessment: Complete the three questions that refer to the cartoon below.



43

1. During 2001 Wen Ho Lee, a scientist of Chinese decent who worked at the Los Alamos National Laboratory, was arrested and held for almost a year due to allegations that he had copied classified documents. What does the cartoonist assume readers understand about the subject of the cartoon?
 - (1) During World War II, many Japanese-American citizens were detained in interment camps
 - (2) Wen Ho Lee was detained in the same relocation camp used during World War II for Japanese-Americans
 - (3) Japanese-Americans were detained in relocation camps for copying classified documents
 - (4) Wen Ho Lee's First Amendment rights were violated
 - (5) During wartime, the right to a fair and speedy trial is abolished
2. What does the padlocked door in the cartoon represent?
 - (1) Protection against terrorism
 - (2) Implementation of states' rights as enumerated in the Tenth Amendment
 - (3) Institution of excessive bail as defined by the Eight Amendment
 - (4) Violation of Fifth Amendment rights of life, liberty, and due process
 - (5) The isolation of Wen Ho Lee from the relocation camp
3. What irony does the cartoonist imply by the drawing?
 - (1) The United States' treatment of Asian-Americans has not changed since World War II
 - (2) The United States no longer uses unlawful interment
 - (3) The Japanese-American relocation camps of the 1940s and the present day solitary confinement of Wen Ho Lee are not the same
 - (4) The United States does not accept foreign-born individuals
 - (5) Only Asian-Americans are held in violation of constitutional rights

⁴³ © Tribune Media Services, Inc. All Rights Reserved. Reprinted with permission.

Today and Tomorrow⁴⁴
Walter Lippmann “The Fifth Column”
New York Tribune, February 12, 1942

(Note: The term “fifth column” refers to people who engage in espionage or sabotage within their own country.)

SAN FRANCISCO—The enemy alien problem on the Pacific Coast, or much more accurately the Fifth Column problem, is very serious and it is very special. What makes it so serious and so special is that the Pacific Coast is in imminent danger of a combined attack from within and from without. The danger is not, as it would be in the inland centers or perhaps even for the present on the Atlantic Coast, from sabotage alone. The peculiar danger of the Pacific Coast is in a Japanese raid accompanied by enemy action inside American territory. This combination can be very formidable indeed. For while the striking power of Japan from the sea and air might not in itself be overwhelming at any one point just now, Japan could strike a blow which might do irreparable damage if it were accompanied by the kind of organized sabotage to which this part of the country is specially vulnerable. This is a sober statement of the situation, in fact a report, based not on speculation but on what is known to have taken place and to be taking place in this area of the war. It is a fact that the Japanese navy has been reconnoitering the Pacific Coast more or less continually and for a considerable length of time, testing and feeling out the American defenses. It is a fact that communication takes place between the enemy at sea and enemy agents on land. These are facts which we shall ignore or minimize at our peril. It is also a fact that since the outbreak of the Japanese war there has been no important sabotage on the Pacific Coast. From what we know about Hawaii and about the Fifth Column in Europe this is not, as some have liked to think, a sign that there is nothing to be feared. It is a sign that the blow is well-organized and that it is held back until it can be struck with maximum effect.

In preparing to repel the attack the Army and Navy have all the responsibility but they are facing it with one hand tied down in Washington. I am sure I understand fully the unwillingness of Washington to adopt a policy of mass evacuation and mass internment of all those who are technically enemy aliens.... There is the assumption that if the rights of a citizen are abridged anywhere, they have been abridged everywhere. Forget for a moment all about enemy aliens, dual citizenship, naturalized citizens, native citizens of enemy alien parentage, and consider a warship in San Francisco harbor, an airplane plant in Los Angeles, a general's headquarters at Oshkosh, and an admiral's at Podunk. Then think of the lineal descendant, if there happened to be such a person, of George Washington, the father of his country, and consider what happens to Mr. Washington if he would like to visit the warship, or take a walk in the airplane plant, or to drop in and photograph the general and the admiral in their quarters. He is stopped by the sentry. He has to prove who he is. He has to prove that he has a good reason for doing what he wishes to do. He has to register, sign papers, and wear an identification button. Then perhaps, if he proves his case, he is escorted by an armed guard while he does his errand, and until he has been checked out of his place and his papers and his button have been returned. Have Mr. Washington's constitutional rights been abridged?

⁴⁴ Reprinted courtesy of “Today And Tomorrow: The Fifth Column On The Coast” (denshopd-i67-00001), Densho, Commission on Wartime Relocation and Internment of Civilians collection. www.densho.org.

STUDENT INSTRUCTIONS	
Lesson: Text-Set Analysis: Japanese Internment Camps	Time: Two 90-minute sessions
PREPARATION FOR TODAY'S LESSON:	
Goal of this Lesson: Learn about the Japanese Internment Camps, and understand and analyze different historical perspectives.	
Skill Addressed in this Lesson: Recognize point of view in print and visual materials	Learning Strategy Addressed in this Lesson: Asking questions
MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON	
Objective of the Mini-Lesson:	Begin to learn about the Japanese Internment camps, how they came to be, their purpose, and how people reacted to them
Vocabulary Building Background:	Fifth column, saboteurs, Amendments, key words from the Article on Japanese Internment camps
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Write a response to the prompt, "Imagine your family was forcibly removed from your home and was placed in a prison camp. What thoughts and feelings would go through your mind? How would you react?" 2. Share your writing with the group. 3. Look at the images of the Internment Camps. Work with a partner to make a list of what you notice in the pictures of the Internment Camps. Also list your reactions to, and thoughts about, what you are seeing.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

1. Work with a partner with the Bill of Rights and the “Executive Order” documents:
 - Identify the Rights that might provide the Executive Branch with the rationale that you have the right to create the Internment Camps (quote directly from Bill of Rights).
 - Identify the Rights that might provide Korematsu (a Japanese-American who sued the government about the Internment Camps) with the rationale that the government does not have the right to intern Japanese-Americans.
2. Prepare for the “Hot Seat” Activity: Each student is assigned a role. Students take turns being on the Hot Seat representing different perspectives. Some students will be representatives of the US government (e.g., the President, a member of the Supreme Court, members of Congress); other students will be Japanese-Americans (collaborators with the US government and residents in camps). Additional possible perspectives include: a Japanese-American citizen that refuses to swear loyalty to the US; an African-American grandson of a slave, living in New York; a white woman living in San Francisco; and Korematsu.
3. Once you are assigned your role, make a list of the statements that support your view on the Internment Camps.
4. One student volunteers to be on the “Hot Seat.” Others ask questions. Several students will have the opportunity to be on the “Hot Seat.”

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:

1. Work in pairs to create a strong (i.e., useful, not tricky) review question.
2. Write the question on the board.
3. Work with your partner to answer every question on the board, and to evaluate its usefulness as a review question.

Assessment of New Learning:

1. Write some quick notes on the factors that shape individuals’ points of view - particularly the influence of societal position and power. (*Note: See POV writing on page 201.*)
2. Discuss your views on the development of point of view.
3. If you do not participate in the discussion, write a paragraph on this topic and turn it in to the teacher.
4. Complete the GED Practice Assessment (p. 225).

Student Reflection on New Learning:

- Exit ticket: Write: How did you come to have your own point of view about the internment camps:
- What factors in our work today shaped your perspective?
 - What factors had the most influence over you?
 - What influence does your societal position have on your perspective?

TEACHER LESSON PLAN

**Lesson: Text Set Analysis:
Life Expectancy and
World Population⁴⁵**

Time: 2 hours

Use of the Lesson:

This is a summative assessment activity designed to determine students' ability to use and make meaning of data from multiple sources. It should not be used to introduce text-set analysis. *(Note: Teachers should build student background on life expectancy and world population prior to giving them the assessment.)*

LESSON PREPARATION FOR THE DAY'S LESSON:

Goal of the Lesson:

To assess students' capacity to use data from multiple sources to deepen their understanding of a topic.

Resources Needed for the Lesson:

- Copies of a text set for each student (three or more different texts for students to work with). One example of a text set is:
http://www.signonsandiego.com/uniontrib/20070812/news_1n12life.html.
If you select a text set like the example, make sure students learn key vocabulary/concepts before they work with the text set. If you select your own text sets, you may have to modify some/all of the questions. Text Set Questions Handout (p. 236)
- Index cards
- Student Instructions (p. 232)
- Fact/Question/Response Handout (p. 234)

Skill Addressed in this Lesson:

Graph analysis

Learning Strategies Addressed in this Lesson:

An application of all of the strategies:
Questioning
Predicting
Inferring
Visualizing
Determining importance
Making connections
Synthesizing

⁴⁵ Activity developed by Linda Correnti and Steve Gleicher ©2008.

**MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE:
20% OF THE LESSON**

Objective of the Mini-Lesson:	To make sure students have a basic understanding of the important concepts and ideas embedded in the text set
Vocabulary Building Background:	Select potentially confusing words from the texts. Again, this should not be the students' first introduction to the key concepts of the selected topic.
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Pass out the student instructions and ask students to look them over. 2. Ask students if they need clarification on any of the instructions. 3. Review key concepts and vocabulary that they will find in the texts. <ol style="list-style-type: none"> a. Create a deck of cards of important concepts, words, and ideas related to life expectancy and world population on index cards. b. Make a list of categories for which the cards are subcategories. c. Ask students to categorize the cards, placing any cards that they are unfamiliar with in a separate category. d. Ask students to creatively find a way to understand and categorize the words they are unfamiliar with (remind them they are doing this activity to help them be successful on the assessment: i.e., if they “get help” from a peer, they should still make sure they both understand the concepts). e. As students work, walk around the room to provide support and guidance. 4. Pass out the various texts. 5. Make sure students understand the activity and are prepared to participate.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

<p>Steps for Independent Work to Practice and Apply New Learning:</p>	<p>Part A: Practice</p> <ol style="list-style-type: none"> 1. Writing on a piece of paper, students respond to the “Text Set Questions”. 2. Students complete FQR for the text set. (see FQR Handout). 3. Students write a journal response to the text set describing their opinions, reactions, wonderings, and questions. <p>Part B: Application</p> <ol style="list-style-type: none"> 4. Students take all of the material they compiled and use it to figure out a topic for an essay of five or more paragraphs. (The topic needs to be their decision: it can be based on their reactions to the texts, their beliefs about the topics, a summary of the texts, etc.) 5. Students write a draft of an essay of five or more paragraphs. (If it helps students to make an outline or use a graphic organizer, they should.) 6. Students revise their essays based on the writing process they have previously learned for writing a GED essay (i.e., organize, draft, revise/rewrite).
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**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

<p>Review of New Learning:</p>	<p>Not Applicable.</p>
<p>Assessment of New Learning:</p>	<p>Not Applicable.</p>
<p>Student Reflection on New Learning:</p>	<p>Discussion:</p> <ul style="list-style-type: none"> • Which parts of this assessment were confusing to you? • How did you work through your confusion? (i.e., what strategies did you use to tackle the problems?) • How effective were your strategies? • Which strategies will you continue to use? What do you plan to do differently?

STUDENT INSTRUCTIONS

Lesson: Text Set Analysis:
Life Expectancy and
World Population

Time: 2 hours

PREPARATION FOR TODAY'S LESSON:

Goal of this Lesson:

Use data from multiple sources to deepen your understanding of a topic.

Skills Addressed in this Lesson:
 Graph analysis

Learning Strategies Addressed in this Lesson:

An application of *all* of the strategies:

- Questioning
- Predicting
- Inferring
- Visualizing
- Determining importance
- Making connections
- Synthesizing

MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

Objective of the Mini-Lesson: Ensure that you have a basic understanding of the important concepts and ideas embedded in the text set

Vocabulary Building Background: *Teacher inserts*

- Steps for Building Background:**
1. Make sure you have a packet of concept cards to work with.
 2. Categorize the cards, placing any cards you are unfamiliar with in a separate category.
 3. Creatively find a way to understand and categorize the words you are unfamiliar with.

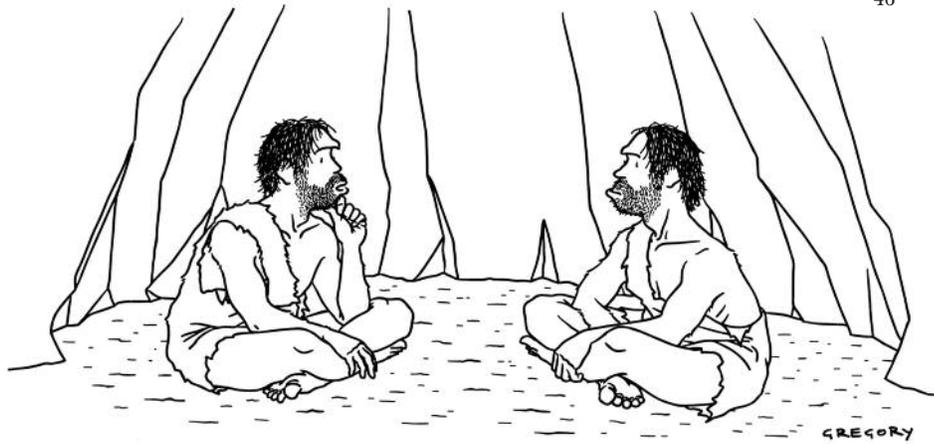
STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE: 60% OF THE LESSON	
Steps for Independent Work to Practice and Apply New Learning:	<p>Part A: Practice</p> <ol style="list-style-type: none"> 1. Respond to the questions on the “Text Set Questions” sheet for each text sample. 2. Complete the FQR chart on page 234. 3. Write a journal response to the text set describing your opinions, reactions, wonderings, and questions. <p>Part B: Application</p> <ol style="list-style-type: none"> 4. Take all of the material you have compiled and use it to figure out a topic for an essay of five or more paragraphs. You can base the topic of your essay on whatever you would like (e.g., your reaction to the texts, your belief about the topic of life expectancy, a summary of the texts, etc.). 5. Write a first draft of your essay of five or more paragraphs. 6. Revise your essay as needed.
REVIEW AND ASSESS STUDENT LEARNING: 20% OF THE LESSON	
Steps for Independent Work to Practice and Apply New Learning:	<p>Discussion:</p> <ul style="list-style-type: none"> • Which parts of this assessment were confusing to you? • How did you work through your confusion? (i.e., what strategies did you use to tackle the problems?) • How effective were your strategies? • Which strategies will you continue to use? What do you plan to do differently?

Name: _____

Fact/Question/Response

1. Read the text.
2. If you are able to write on the text, underline an idea that strikes you as interesting and important. Continue reading and if a particular idea continues to surface, continue to underline it. If new important ideas arise, mark these as well. (If you are not able to write on the text, take a post-it note and identify the page number and the beginning and end of each important idea.)
3. Place these topics in the “Fact” column below. If an idea comes to you that is not explicitly written in the text, add it to the column as well.
4. In the center column, list any questions you have about the critical facts. Some questions to consider might include the following: Why is this important? How does this relate to the other facts in this problem/text? Is this fact a distracter or is it central?
5. In the final column, respond to the facts and questions. Questions to consider might include the following: Do you think these are the most important ideas in the text, or are they of more personal interest to you? Why do you think these particular topics jumped out at you?

FACT	QUESTION	RESPONSE

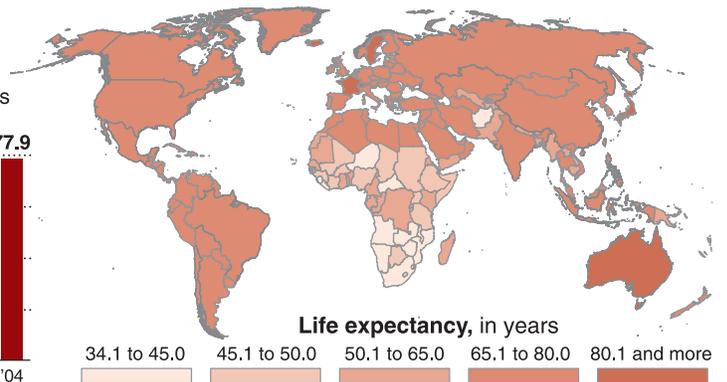
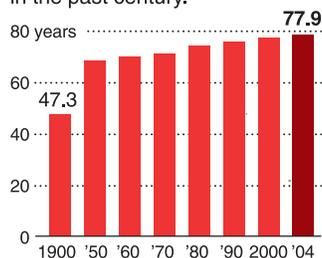


“Something’s just not right—our air is clean, our water is pure, we all get plenty of exercise, everything we eat is organic and free-range, and yet nobody lives past thirty.”

One-fifth of all countries exceed U.S. in life expectancy

Japan’s life expectancy was 82 years for babies born in 2004, leading the list of developed countries, while the U.S. is just above Mexico with 77.9 years.

U.S. life expectancy has been extended by 30 years in the past century.



SOURCES: Census Bureau; National Center for Health Statistics

AP

Text Set Questions

One-Fifth of All Countries Exceed U.S. in Life Expectancy

What is the main idea of the bar graph?

What is the purpose of the map?

Write a sentence about the relationship between the bar graph and the map:

What do you wonder about this topic as a result of this bar graph/map?

Caveman Cartoon

What is the main idea of this cartoon?

Draw an inference about the relationship between the message in this cartoon and US life expectancy:

What do you wonder about as a result of looking at this cartoon?

Make a connection between this cartoon and the bar graph/map of the previous page:

US Slipping in Life Expectancy Rankings

What are the ideas/facts that you found important/striking/interesting/notable in this text?

Are these the key ideas in the article, and/or are they important to you on a personal level?

Does the title of the article bring the reader's attention to the key ideas in the text?

What other title might be appropriate?

Now that you have read the article, why did the authors decide to include a bar graph and map of these particular statistics?

What is the message of this text? What does the author want you to remember and think about?
How do you know?

If you were going to tell this story, what sort of graph might you create to illustrate your key point?
Draw the graph.

What might you predict about US life expectancy over the next 30 years?

What might you predict about the US's ranking in comparison to the life expectancy of other countries (mention specific countries)?

TEACHER LESSON PLAN

Lesson: Text-Set Analysis and Lab: Diaper Dissection

Time: 3 hours

Use of the Lesson:

This lesson, or similar Text-Set Analyses and Labs, can be used at any point in a course of study. This particular lesson uses very short pieces of text taken from the internet to easily supplement the learning that occurs during a lab activity.

LESSON PREPARATION FOR THE DAY'S LESSON:

Goals of this Lesson:

- To hypothesize about, and then test for, the absorption capabilities of sodium polyacrylate.
- To learn about four practical applications of sodium polyacrylate.
- To develop a point of view on the value of sodium polyacrylate in contemporary life.

Resources Needed for the Lesson:

- Disposable diaper
- Garbage bag
- Scissors
- Large paper cup
- Stir sticks
- Scientific scale
- Graduated cylinder
- Disposable Diaper Dissection by NASA: Teacher and Student Sheets (p. 242)
- Text Set (p. 246)
- Student Instructions (p. 248)

Skill Addressed in this Lesson:

Lab processes

Learning Strategies Addressed in this Lesson:

Predicting
Synthesizing

**MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE:
20% OF THE LESSON**

Objective of the Mini-Lesson:	To introduce students to the chemical polymer sodium polyacrylate To ask students to predict the characteristics of sodium polyacrylate based on their knowledge of diapers
Vocabulary Building Background:	poly-/mono-, polymer, sodium
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Introduce students to the prefix poly, which means more than one, or many (and as a comparison the prefix mono, which signifies one). 2. Ask students to brainstorm some words that use this prefix. Some examples: polygraph, polygamous, polyester, polygon, polynomial. If students are having trouble brainstorming, give them these examples and ask them to guess what they might mean. You may have to provide them with additional hints. Conclude with the word polymer, “a large class of natural and synthetic materials with a variety of properties and purposes” (Wikipedia: http://en.wikipedia.org/wiki/Polymer). 3. Ask students to imagine the “singular” forms of the above words (i.e., monograph, monogamous, cotton/linen/silk, monomial, monomer). 4. Introduce students to the term sodium. Sodium quickly oxidizes in air and is violently reactive with water, so it must be stored in an inert medium, such as kerosene. Sodium is present in great quantities in the earth’s oceans as sodium chloride (common salt) (Wikipedia: http://en.wikipedia.org/wiki/Sodium). 5. Explain that this lesson has three distinct parts. First, we will conduct an experiment on a diaper. Second, we will read about four additional practical applications of the polymer sodium polyacrylate. Third, we will write a short essay explaining our individual points of view about the value of this polymer in contemporary life. 6. Pass out the Student Sheets of the NASA Diaper Dissection Lab Report (attached). 7. Read over the directions with students and make sure everyone understands the lab directions and is ready to participate.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

**Steps for
Independent
Work to Practice
and Apply New
Learning:**

Part A: Diaper Dissection Lab

1. Knowing what they now know about polymers, the prefix poly-, and sodium, ask students to work with a partner to hypothesize about what they might find when they dissect a diaper. What is the substance that makes diapers super-absorbent? Ask students to write their hypotheses on the board.
2. Ask students to share their hypotheses, explaining the basis for each element of their prediction.
3. Using the attached NASA Student Sheets, complete the lab.
4. Introduce students to the background on the super-absorbent material in disposable diapers. “Disposable diapers use a NASA spin-off to keep babies dry. A chemical absorbent called sodium polyacrylate is an amazing absorber that was first used to keep astronauts dry during space flights and space walks. Sodium polyacrylate is a polymer. This means it is made up of a chain of identical units called monomers. It can absorb up to 800 times its weight in distilled water and hold it in a gooey gel. This high ratio of water to sodium polyacrylate makes it a great component of diapers. It is also used to grow plants (gel soil) and clean up environmental hazards such as oil spills” (<http://www.nasaexplores.com>).
5. Ask student pairs to report on their findings, comparing their results.
6. Ask each student pair to look back at their original hypothesis and write a follow-up statement describing the accuracy of their predictions, making sure to explain places where their hypothesis was and was not accurate, and why. Again, have students write on the board.

Part B: Practical Applications of Sodium Polyacrylate

1. Ask each group to read one of the excerpts in the text set (p. 246). (*Note: These texts are at different reading levels, so make sure to make appropriate choices about which students read which texts. #1 and #4 are the easiest texts; #2 is the most difficult.*)
2. As students read, they should use the learning strategies to support their understanding of the text (e.g., they might write questions, responses, or reactions; they might underline important ideas; they might draw a picture to help them visualize the ideas, etc.).
3. After reading, students should work in pairs to identify three to five important points they want to teach the class about the text they read. These should be listed on a piece of chart paper or on the board. One or two of the points should reflect their opinions/points of view on what they read. To help students develop an opinion, you might ask them to think about the following questions:
 - Who might this product help?
 - In your mind, is this a good way to help them? Why?
 - What are the dangers of using this product for this practical application?
 - How do the benefits and risks compare?
 - What would you recommend for the use of this product?
4. Ask each pair to teach the class about the text they read, and to share their views on this particular practical application of sodium polyacrylate.

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

<p>Review of New Learning:</p>	<ol style="list-style-type: none"> 1. Ask students to write down a list of 10 things they learned about, thought about, and wondered about today. 2. Going around in a circle, ask each student to share one thing on their list. Anyone who wrote the same item should raise his/her hand. 3. Repeat a second time. 4. Ask if anyone wrote down something important that has not been mentioned yet. If so, let these students speak, and again have students raise hands if they have something similar on their page. 5. Collect these pages in order to see the types of things students learned.
<p>Assessment of New Learning:</p>	<p>An essay:</p> <p>Now that you have completed the lab and learned about practical applications of sodium polyacrylate, write a short essay describing your perspective on this innovation. Use evidence from the lab and the group presentations to support your perspective.</p> <p><i>(Note: Students should already know how to organize a multi-paragraph essay before undertaking this assessment. If they do not know how to do this, you can replace this activity with a journal entry on the same topic.)</i></p>
<p>Student Reflection on New Learning:</p>	<ul style="list-style-type: none"> • Why did we complete this lesson today? • Does this lesson have any practical application for your GED studies (i.e., what skills and knowledge did you learn or practice that may help you on the test)? • What elements of this lesson do you need to continue working on? (e.g., hypothesizing, documenting results, developing a perspective on a topic, organizing your ideas to write an essay, etc.)

Disposable Diaper Dissection by NASAexplores⁴⁷

(Teacher Sheet 1 of 2)

Objective:	To dissect a disposable diaper to determine the absorption capabilities of sodium polyacrylate.
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Grade Level: 5-8
Subject(s): Science, Mathematics
Prep Time: < 10 minutes
Duration: 50 minutes
Materials Category: Special

National Education Standards	
Science	2a, 2b, 3a, 7a
Mathematics	1d, 14b
Technology (ISTE)	
Technology (ITEA)	
Geography	

Materials:

(per group of three – four students)

- Disposable diaper
- Garbage bag
- Scissors
- Large paper cup
- Stir stick (pencils or Popsicle sticks can be used)
- Scientific scale
- Graduated cylinder

Related Links:

None

Supporting NASAexplores Article(s):

Don't Forget The Baby!

http://www.nasaexplores.com/show2_articlea.php?id=02-041

Pre-lesson Instructions

- The super absorbent material in disposable diapers (sodium polyacrylate) is nontoxic, but it should be handled with care. It can be harmful if ingested. **Avoid contact with eyes or nasal passages**, as it will cause drying and irritation. Discard dry and gelled sodium polyacrylate in the trash can, not in the sink.
- Students will be working in groups for this activity.

⁴⁷ Courtesy of National Aeronautics and Space Administration NASAexplores (www.nasaexplores.com).

Disposable Diaper Dissection by NASAexplores

(Teacher Sheet 2 of 2)

Background Information

Disposable diapers use a NASA spin-off to keep babies dry. A chemical absorbent called sodium polyacrylate is an amazing absorber that was first used to keep astronauts dry during space flights and space walks.

Sodium polyacrylate is a polymer. That means it is made up of a chain of identical units called monomers. It can absorb up to 800 times its weight in distilled water and hold it in a gooey gel. This high ratio makes it a great component of diapers. It is also used to grow plants (gel soil) and clean up environmental hazards (oil spills).

Guidelines

1. Read the NASAexplores article, “Don’t Forget The Baby!”
2. Explain that the class will be dissecting a disposable diaper and removing the absorbent polymer, sodium polyacrylate, to test it.
3. Divide the class into groups of two or three.
4. Distribute the materials and the Student Sheets to each group.
5. Allow the groups to complete the experiment.

Discussion / Wrap-up

- Have the groups compare their findings on the absorbency of the polymer.
- Discuss other possible uses for sodium polyacrylate.

Extensions

- Discuss the chemical structure of sodium polyacrylate, $-\text{CH}_2-\text{CH}(\text{COONa})$
- Test the absorbency of sodium polyacrylate with other liquids, such as salt water, tap water, and soda.

Disposable Diaper Dissection by NASAexplores

Materials

(per group of two – three)

- Disposable diaper
- Garbage bag
- Scissors
- Large paper cup
- Stir stick
- Scientific scale
- Graduated cylinder

Procedure

1. Holding the diaper inside a large garbage bag, peel back its outer lining.
2. While one group member is dissecting the diaper, have another group member weigh the empty paper cup. Record the data on the Data Sheet.
3. Carefully pull the filling out of the diaper, and put it into the bag. Discard the outer lining.
4. Tear the filling into small pieces.
5. Holding the bag shut, shake it vigorously. Allow each group member to shake the bag twice. Be sure to keep it tightly closed so no filling will escape.
6. Remove the cotton filling from the bag, and throw the filling away.
7. Shake the granules into a corner of the bag. This is the polymer, sodium polyacrylate, developed by NASA.
8. Cut off the corner of the bag, and empty the granules into the paper cup.
9. Carefully measure the paper cup and the sodium polyacrylate. Record the data on your Data Sheet.
10. Measure out 10 milliliters (mL) of water and add it to the granules. Stir it with a stir stick, and record your observations on a separate piece of paper.
11. Repeat step 10 until the sodium polyacrylate can absorb no more water. Be sure to keep a record of your observations after the addition of each 10 mL of water.
12. When the polymer is saturated (cannot hold anymore liquid), reweigh the cup. Record the weight on the Data Sheet.

Disposable Diaper Dissection by NASAexplores

13. Answer the questions at the bottom of the Data Sheet, and answer the following questions about your observations.

- a. How did the sodium polyacrylate change during the experiment?
- b. How did you know the sodium polyacrylate could not hold any more water?
- c. Do you think the amount of sodium polyacrylate is sufficient for this diaper? Should there be more or less? Why?
- d. What other uses can you think of for this material?

Data Table for Disposable Diaper Dissection

Weight of empty cup	
Weight of cup with dry sodium polyacrylate	
Weight of cup with saturated sodium polyacrylate	
Weight of dry sodium polyacrylate	
Weight of saturated sodium polyacrylate	

Using the information in your Data Table, answer the following questions.

1. Find the weight of the dry sodium polyacrylate by subtracting the weight of the cup from the weight of the cup with the dry sodium polyacrylate.
2. Find the weight of the saturated sodium polyacrylate by subtracting the weight of the cup from the weight of the cup with the saturated sodium polyacrylate.
3. Using your answers from questions 1 and 2, find the ratio of the weights by placing the saturated weight over the dry weight. How many times its weight did the sodium polyacrylate hold in water?

Text Set: Practical Applications of Sodium Polyacrylate

1. What Is the Crystalline Substance Found in Disposable Diapers?⁴⁸

The crystals are probably coming from the “super absorbent layer” found in most disposable diapers. This layer consists of paper fluff and a chemical absorbent called sodium polyacrylate. Sodium polyacrylate is an amazing water absorber – it can absorb 200 to 300 times its weight in tap water (even more if the water is distilled) and hold it in a gooey gel.

Sodium polyacrylate is a polymer, meaning that it consists of chains of identical units (monomers). The monomer for sodium polyacrylate is:



It is a pretty cool polymer – shake the crystals out of a new diaper (or buy the crystals at a garden center) and add water to them. Pretty amazing!

There is concern in certain circles about the use of sodium polyacrylate next to a child’s skin. The concern is often used as an argument against disposable diapers. This diaper page talks about the issue briefly and will give you a sense of what people are concerned about.

2. Plant Gel (Polyacrylamide Crystals Polyacrylamide “Spikes”)⁴⁹

A similar polymer, polyacrylamide (Soil Moist and Soil Moist Spikes), is sold in nurseries as a soil conditioner to hold water in the soil. Polyacrylamide is crosslinked with a bisacrylamide and this copolymer is not affected by salts in water or soil. A major difference between the sodium polyacrylate polymer and the polyacrylamide polymer is that polyacrylate has a sodium (Na^+) while the polyacrylamide has an amide (NH_2). The sodium ion works more efficiently and will absorb approximately 800 times its weight in distilled water while the amide ion is considerably less efficient in its water-absorbing ability and will only absorb around 40-200 times its weight in water. This lack of ionic strength in the polyacrylamide polymer greatly reduces its water-absorbing characteristics.

An interesting physics application created by polyacrylamide is its ability to effectively mimic the optical qualities of water. Because the crystals of the polyacrylamide when hydrated are made up almost entirely of water, they essentially “look” like water and light will pass from the surrounding water into the crystal without being refracted at all. These crystals are sometimes referred to as “ghost crystals” because when hydrated the crystal is almost invisible in a glass of water. A very common demo is for a teacher to grow some of the “ghost crystals” in water and then carefully insert a needle with thread through the hydrated crystal and lower the crystal into the water. A fully-grown hydrated crystal contains so much water that optically it behaves like water. Light does not bend or become distorted as it passes from water into the crystal...

Polyacrylamide “spikes” are used commercially in the horticulture industry to absorb and release water

⁴⁸ Reprinted courtesy of HowStuffWorks.com. <http://home.howstuffworks.com/question207.htm>.

⁴⁹ Reprinted courtesy of Wayne Goates, Emeritus Kansas Polymer Ambassador. <http://www.geocities.com/CapeCanaveral/Cockpit/8107/superabsorbe.html>

or fertilizer to individual plants and thus are a favorite of gardeners who do not have a green thumb. Much like the crystal, the spike has a limited ability to absorb vast quantities of water. Its value is that it can be hydrated and dehydrated a seemingly unlimited amount of times over the course of from two to three years according to the manufacturer....

3. Fire Protection from Super-Absorbent Polymer Gel

(<http://www.10news.com/news/13544634/detail.html>)

(Teacher should include text from the link above)

4. Toxic Shock Syndrome and Tampons⁵⁰

[The diaper page mentioned above talks about TSS and hints at a relation between TSS and sodium polyacrylate:]

What is Toxic Shock Syndrome (TSS)?

TSS is a rare bacteria-caused illness occurring mostly in menstruating women who use high absorbency tampons. Non-menstrual TSS risk is increased for women who use vaginal barrier contraceptive methods, although the incidence is much lower.

What Causes TSS?

The main cause of TSS is a strain of staph, the bacterium *Staphylococcus Aureus*. Hyperabsorbent tampons may facilitate the infection because their prolonged intra-vaginal use enhances the bacterial growth.

What are the Symptoms?

Symptoms of TSS occur suddenly: a high fever (102°F, 38.8°C or higher), vomiting, diarrhea, a sunburn-like rash, red eyes, dizziness, lightheadedness, muscle aches and drops in blood pressure, which may cause fainting. The infection can cause shock, [and] kidney and liver failure. These symptoms require prompt medical evaluation.

How is it Treated?

If TSS is suspected, hospitalization is recommended. Intravenous fluids and antibiotics will be administered.

Can it be Prevented?

You can reduce the risk of TSS by alternating your tampon or internally worn products with pads. Use a tampon with the minimum absorbency needed to control your flow. Review the information on absorbency of your tampon brand. Change the tampon or internally worn product as directed. If you have ever been diagnosed with TSS, you should not use tampons.

⁵⁰ Reprinted courtesy of McKinley Health Center, University of Illinois.
<http://www.howstuffworks.com/framed.htm?parent=question207.htm&url=http://www.mckinley.uiuc.edu/health-info/womenhlt/tox-shoc.html>.

STUDENT INSTRUCTIONS

Lesson: Text-Set Analysis and Lab: Diaper Dissection	Time: 3 hours
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PREPARATION FOR TODAY'S LESSON:

Goals of this Lesson:

Make and test a hypothesis. Learn about four practical uses of sodium polyacrylate and develop an opinion of the usefulness of sodium polyacrylate in our lives.

Skill Addressed in this Lesson:

Lab processes

Learning Strategies Addressed in this Lesson:

Predicting
Synthesizing

MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

Objective of the Mini-Lesson:	Learn about the chemical polymer sodium polyacrylate and predict its characteristics based on your knowledge of diapers
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Vocabulary Building Background:	poly-/mono-, polymer, sodium
----------------------------------------	------------------------------

Steps for Building Background:

1. Brainstorm some words that use the prefix “poly,” which means more than one, or many (and as a comparison the prefix mono, which signifies one).
2. Imagine the “singular” form of the words you brainstormed above.
3. Now think about the term sodium: sodium quickly oxidizes in air and is violently reactive with water, so it must be stored in an inert medium, such as kerosene. Sodium is present in great quantities in the earth's oceans as sodium chloride (common salt) (Wikipedia: <http://en.wikipedia.org/wiki/Sodium>).
4. Read over the activity directions: First, we will conduct an experiment on a diaper. Second, we will read about four additional practical applications of the polymer sodium polyacrylate. Third, we will write a short essay explaining our individual points of view about the value of this polymer in contemporary life.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

**Steps for
Independent
Work to Practice
and Apply New
Learning:**

Part A: Diaper Dissection Lab

1. With a partner, hypothesize what you might find when you dissect a diaper. Think, particularly, about what kind of substance might make diapers super-absorbent.
2. Write your hypotheses on the board, share them with the class, and explain how you came up with your prediction.
3. Use the attached NASA Student Sheets to complete the lab.
4. Report on your findings. Look back at your original hypotheses and write a follow-up statement describing the accuracy of your prediction(s). Make sure to explain places where your hypotheses were and were not accurate, and why. You may be asked to share your thoughts by writing on the board.

Part B: Practical Applications of Sodium Polyacrylate

5. Find out which text you have been assigned to read, and find the other students who are assigned the same text.
6. As you read one of the excerpts in the text set, use the learning strategies to support your understanding of the text (e.g., you might write questions, responses, or reactions; underline important ideas; draw a picture to help them visualize the ideas, etc.). After reading, work with a partner to identify three to five important points you want to teach the class about the text you read. One or two of the points should reflect your opinions/points of view on what you read. To help develop your opinion, you might think about the following questions:
 - Who might this product help?
 - In your mind, is this a good way to help them? Why?
 - What are the dangers of using this product for this practical application?
 - How do the benefits and risks compare?
 - What would you recommend for the use of this product?
7. List these points on a piece of chart paper or on the board.
8. With your partners, teach the class about the text you read and share your views on this particular practical application of sodium polyacrylate.

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:	<ol style="list-style-type: none">1. Write down a list of 10 things you learned about, thought about, and wondered about today.2. Going around the class in a circle, share one thing on your list. If anyone else mentions something on your list, raise your hand.3. Repeat a second time.
Assessment of New Learning:	<p>An essay:</p> <p>Now that you have completed the lab and learned about practical applications of sodium polyacrylate, write a short essay describing your perspective on this innovation. Use evidence from the lab and the group presentations to support your perspective.</p>
Student Reflection on New Learning:	<ul style="list-style-type: none">• Why did we complete this lesson today?• Does this lesson have any practical application for your GED studies (i.e., what skills and knowledge did you learn or practice that may help you on the test)?• What elements of this lesson are ones you need to continue working on? (e.g., hypothesizing, documenting results, developing a perspective on a topic, organizing your ideas to write an essay, etc.)

TEACHER LESSON PLAN

**Lesson: Theme or Topic/
Detail/Response (TDR)⁵¹**

Time: 40 minutes

Use of the Lesson:

The TDR is particularly useful in the study of fiction and non-fiction texts in the Humanities, Social Sciences, and Sciences. It's "sister" lesson, the FQR (Fact/Question/Response), is more appropriate for analysis of textbooks and Mathematics. Both lessons can be used at any point in the study of a text, and can also be used more than once in one's work with a text.

LESSON PREPARATION FOR THE DAY'S LESSON:

Goal of the Lesson:

- To learn to determine what is important in a text.

Resources Needed for the Lesson:

- Copies of a fictional text, a complex poem, or a conceptual nonfiction text that is four to five pages long
- Highlighters or post-it notes
- Student Instructions (p. 254)
- TDR handout (p. 256)

Skill Addressed in this Lesson:

Analytic reading reflection

Learning Strategy Addressed in this Lesson:

Determining importance

⁵¹ Activity developed by Antonia Rudenstine © 2008.

**MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE:
20% OF THE LESSON**

Objective of the Mini-Lesson:	To teach students a strategy to identify the important ideas in a text
Vocabulary Building Background:	<i>Vocabulary from the selected text.</i>
Instructional Steps for Building Background:	<ol style="list-style-type: none"> 1. Pass out the text, as well as the TDR handout. 2. Read the first page of the text aloud. 3. Stop as you go, and “think-aloud” about a selection of the text that strikes you as important. Explain to students the criteria you are using to determine importance (e.g., something that you have a strong reaction to, something that confuses you, something that reminds you of something else, or something that seems like the main idea of the text). If one idea continues to surface, continue to mark it. If an idea comes to you that is not explicitly written in the text, add this to the column as well. 4. Model for students how to “mark” the text with either a post-it or highlighter. 5. Complete information on the text in the first column of the “Topic/Detail/Response” handout. 6. Go back over the text, identify details that support the topics, and list them in the center column of the handout. 7. Reflection: Model what it is like to respond to the topic and detail in the right-hand column. Some potential questions to respond to: What do these make you think of? What do you think about these ideas personally? What message do you think the author is sending with regard to these ideas? Do you think these are the most important ideas in the text, or are they of more personal interest to you? Why do you think these particular topics jumped out at you? 8. Explain that they will continue this exercise on their own with the rest of the text. 9. Make sure that everyone understands the activity and is prepared to complete it.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

Steps for Independent Work to Practice and Apply New Learning:

1. Students read the rest of the selected text.
2. Students mark text selections they find to be important.
3. Complete information on the text in the first column of the “Topic/Detail/Response” handout.
4. Students go back over the text and identify supporting details for their selections. They add these to the middle column.
5. For each text and detail, they write a response.
6. Response column: What does each selection make you think of? What do you think about these ideas personally? What message do you think the author is sending with regard to these ideas? Do you think these are the most important ideas in the text, or are they of more personal interest to you? Why do you think these particular topics jumped out at you?

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:

- With a partner:
1. Students discuss the extent to which this was a useful activity. (i.e., did it help them figure out what the text was about?)
 2. Pairs identify three new thoughts, ideas, or facts they learned while working on this activity.
 3. Each pair writes their three thoughts, ideas, or facts on the board (at the same time).
- Whole class:
4. Ask the class what they notice about the items each pair put on the board. What are the similarities? Differences? What is surprising?

Assessment of New Learning:

1. Ask students to write for 10-15 minutes:
Describe what the text is about. Make references to the text, using supporting detail in order to make your case about its meaning. Then, provide your perspective on the text: describe what you think about the meaning of the text, the thoughts and feelings it evokes in you, and whether or not you think it is a meaningful text.
2. As a group: Ask for volunteers to share their writing or to summarize their thoughts.

Student Reflection on New Learning:

- Ask students to reflect in a journal:
- Describe how you selected the excerpts that you did.
 - How many of your selections seemed to capture the “main idea?” How do you know?
 - What do you think of the strategies you, personally, use to determine importance in a text: are they effective *for you* (they do not have to be used to identify the “main” idea, but rather can be used to help you feel connected to the text in some way)?

STUDENT INSTRUCTIONS

**Lesson: Theme or Topic/
Detail/Response (TDR)**

Time: 40 minutes

PREPARATION FOR TODAY'S LESSON:

Goal of this Lesson:

Determine what is important in a text.

Skill Addressed in this Lesson:

Analytic reading reflection

Learning Strategy Addressed in this Lesson:

Determining importance

MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

**Objective of the
Mini-Lesson:**

Learn a strategy to identify the important ideas in a text.

**Vocabulary
Building
Background:**

Vocabulary from the selected text.

**Steps for
Building
Background:**

1. Make sure you have a copy of the text and the TDR Handout.
2. Observe the teacher carefully as s/he models the TDR activity.
3. Make sure to ask any questions you might have, so that you are prepared to continue reading the text and completing the activity.

STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE: 60% OF THE LESSON

**Steps for
Independent
Work to Practice
and Apply New
Learning:**

1. Read the rest of the selected text, marking text selections you find to be important.
2. Complete information on the text in the first column of the "Topic/Detail/Response" handout.
3. Go back over the text, identify supporting details for your selections, and add these to the center column.
4. For each text and detail, write a response in the response column (e.g., What does each selection make you think of? What do you think about these ideas personally? What message do you think the author is sending with regard to these ideas? Do you think these are the most important ideas in the text, or are they of more personal interest to you? Why do you think these particular topics jumped out at you?)

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

<p>Review of New Learning:</p>	<p>With a partner:</p> <ol style="list-style-type: none"> 1. Discuss the extent to which this was a useful activity (i.e., did it help you figure out what the text was about?) 2. Identify three new thoughts, ideas, or facts you learned while working on this activity. 3. Write your three thoughts, ideas, or facts on the board to share with the class. 4. Discuss similarities and differences among the items on the board.
<p>Assessment of New Learning:</p>	<p>Write for 10-15 minutes:</p> <p>Describe what the text is about. Make references to the text, using supporting detail in order to make your case about its meaning. Then, provide your perspective on the text (i.e., describe what you think about the meaning of the text, the thoughts and feelings it evokes in you, and whether or not you think it is a meaningful text). You may be asked to share your writing and thoughts with the class.</p>
<p>Student Reflection on New Learning:</p>	<ul style="list-style-type: none"> • Describe how you selected the excerpts that you did. • How many of your selections seemed to capture the “main idea?” How do you know? • What do you think of the strategies you, personally, use to determine importance in a text: are they effective <i>for you?</i>

Name: _____

Topic/Detail/Response:

1. Read the text.
2. Mark the ideas that strike you as interesting and important. Continue reading and if a particular idea continues to surface, continue to underline it. If new important ideas arise, mark these as well. (If you are not able to write on the text, take a post-it note and identify the page number, the beginning, and the end of each important idea.)
3. Place these topics in the “Topic” column below. If an idea comes to you that is not explicitly written in the text, add it to the column as well.
4. Go back over the text and identify details that support the topics and list them in the center column.
5. Respond to the topic and detail in the right-hand column. Some questions to consider might include the following: What do these make you think of? What do you think about these ideas personally? What message do you think the author is sending with regard to these ideas? Do you think these are the most important ideas in the text, or are they of more personal interest to you? Why do you think these particular topics jumped out at you?

TOPIC	DETAIL	RESPONSE

TEACHER LESSON PLAN

Lesson: Write Around⁵²

Time: 15-45 minutes (depends on the selected text)

Use of the Lesson:

This lesson can be used in at least two different ways: first, to introduce or explore a topic or theme in writing. Second, to teach students how to synthesize ideas. It can be used at any point in a course of study.

LESSON PREPARATION FOR THE DAY'S LESSON:

Goal of the Lesson:

- To Practice/Apply or Review: Synthesis and Inference while Free-writing

Resources Needed for the Lesson:

- A short text (an excerpt of an article, quotation, graph, or image) photocopied at the top of a piece of paper (p. 261)
- Student Instructions (p. 259)
- Timer and signal (optional)

Skill Addressed in this Lesson:

Free-Writing (*Note: although free-writing is not normally considered a skill, often GED students have not had the opportunity to learn how to do it*)

Learning Strategies Addressed in this Lesson:

Synthesizing
 Inferring
(Note: All of the learning strategies are addressed in this lesson; however, the two strategies listed above are the highest-order learning strategies addressed. As an added reflection, the teacher can ask students to identify all of the strategies addressed in the activity during the wrap-up.)

MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON

Objective of the Mini-Lesson:

1. To demonstrate synthesis and inference
2. To remind students what free-writing is

Vocabulary Building Background:

Any vocabulary words related to the selected text.

Instructional Steps for Building Background:

Model the activity for students. As part of the modeling, read a different text aloud (something short, like a quote) and then say aloud some of the things you might write about if you were doing the writing (e.g., thoughts, questions, wonderings, connections to other learning, reactions, feelings, inferences, etc.). Make sure to identify places where you synthesize ideas. Take students through the Student Handout to ensure they understand what the key learning will be and that they are prepared to participate.

⁵² Permission to reprint and modify granted by Harvey Daniels, Content Area Writing: Every Teacher's Guide (Heinemann, 2007) <http://books.heinemann.com/products/E00972.aspx>.

**STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE:
60% OF THE LESSON**

**Steps for
Independent
Work to Practice
and Apply New
Learning:**

1. Give each student a copy of the selected text.
2. Divide the group randomly into small groups of four (i.e., have students count off, pass out groups of colored paper or a deck of cards, etc.).
3. Move the students into their groups.
4. Have students put their initials in the upper-left hand corner margin.
5. Give students one minute to write a response to the text. Explain they must write the whole time, without speaking.
6. When most students have filled 25% of the page, call time.
7. Ask them to pass their paper to the left, without speaking.
8. Ask them to read what the previous student has written, and then give them one minute (or slightly longer if they need more time to write a few lines) to respond.
9. Again, call time and ask students to pass their paper left.
10. Have them read the previous entries, and then give them a minute to respond.
11. Repeat the process one final time (if there are four people in the group).
12. Pass papers back to the originator. Everyone reads their full page and responds one final time on their own page.
13. In the groups, students should talk with each other for five minutes about their responses.
Model this by pretending to be a student:
 - “___, I liked your response to my comment about ___. It made me think about ___.”
 - “___, I disagreed with your comment about ___. What made you think about ___?”
 - “___, I’m not sure I understand your comment about ___. Can you explain what you meant?”
14. Bring the whole group back together and have at least one person from each group share key ideas, trends, points of contention, new insights, etc.

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

<p>Review of New Learning:</p>	<p>Ask students to underline inferences and synthesis they see in the comments on their paper. And/or Ask students to underline all of the learning strategies used by group members to make meaning of the text.</p>
<p>Assessment of New Learning:</p>	<p>Ask students to write a synthesizing, closing comment at the bottom of their paper, describing something they are left wondering about or pondering, or a new conclusion they have reached.</p>
<p>Student Reflection on New Learning:</p>	<p>Ask students to discuss:</p> <ul style="list-style-type: none"> • What was this process like for you? • What new ideas came to you? • Are there ways that this process might be improved?

STUDENT INSTRUCTIONS	
Lesson: Write Around	Time: ___ minutes (Teacher inserts from the Teacher's Version)
PREPARATION FOR TODAY'S LESSON:	
Goal of this Lesson: Practice, apply, or review the learning strategies of synthesis and inference while free-writing.	
Skill Addressed in this Lesson: Free-writing	Learning Strategies Addressed in this Lesson: Synthesizing Inferring
MINI-LESSON: BUILDING BACKGROUND/ACTIVATING PRIOR KNOWLEDGE: 20% OF THE LESSON	
Objective of the Mini-Lesson:	See what it looks like to use the learning strategies synthesis and inference, and review free-writing
Vocabulary Building Background:	<i>Any vocabulary words related to the selected text.</i>
Steps for Building Background:	<ol style="list-style-type: none"> 1. Make sure you have a copy of the Handout. 2. Observe the teacher carefully as s/he models the activity. 3. Make sure to ask any questions you might have, so that you are prepared to continue reading the text and completing the activity.
STUDENTS PRACTICE AND APPLY NEW KNOWLEDGE: 60% OF THE LESSON	
Steps for Independent Work to Practice and Apply New Learning:	<ol style="list-style-type: none"> 1. Put your initials in the upper-left hand corner margin of the Student Handout. 2. Write a response to the text for one minute. You must write the whole time, without speaking. 3. After one minute, pass your paper to the person on your left without speaking. 4. Read what the previous student has written, and then write a response in the next minute without speaking. 5. When time is called, pass your papers to the person on your left without speaking. 6. Repeat the process until your paper is back in front of you. 7. Read the full page and respond one final time on your own page. 8. In your groups, talk with each other for five minutes about the various responses. 9. At least one person from each group shares their group's key ideas, trends, points of contention, new insights, etc. with the class.

**REVIEW AND ASSESS STUDENT LEARNING:
20% OF THE LESSON**

Review of New Learning:	<i>Teacher inserts</i>
Assessment of New Learning:	You will be asked to write a synthesizing, closing comment at the bottom of your paper, describing something you are left wondering about or pondering, or a new conclusion you have reached.
Student Reflection on New Learning:	Discuss the following: <ul style="list-style-type: none">• What was this process like for you?• What new ideas came to you?• Are there ways that this process might be improved?

Student Handout

Student Initials: _____

Teacher inserts text here...

Student Responses:



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Office of Multiple Pathways to Graduation
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New York, NY 10007

OMPG@schools.nyc.gov

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