Great Expectations

Partnering for your child's future

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NYC™
Department of Education
Joel I. Klein, Chancellor

Great Schools Start with Great Expectations

Learning standards describe the foundation of what students should know and be able to do in each grade. These standards ensure that all children are prepared to move forward to the next grade and, later, to succeed in college, earn a living, and become productive members of their communities. Children need to develop a love of learning that will serve them well in a world where crucial information changes and grows rapidly.

To find work in the competitive global economy and function in a quickly changing world, our children will need to know more than ever before. This is true for graduates who plan to enroll in four-year colleges; it is equally true for students who want to start careers right out of high school.

The New York State standards we use are designed to provide our students with rigorous curricula to ensure that they develop the creativity, critical thinking skills, and ability to problem solve that they will need to meet the challenges of the modern world. But standards are a starting point, not a destination. By meeting and building on a solid foundation of knowledge, our students will get the most from their education.

Here you will find examples of what eighth grade students should know and be able to do by the end of the school year in language arts, mathematics, social studies, and science. You also will find ways you can support learning as a family, including things you can do at home, in your neighborhood, and around our great City.

This guide provides only a small sample of the standards for eighth grade. What about the other standards? What should your child have learned before starting eighth grade? What will he or she be learning in ninth grade and beyond? You can find answers to all these questions from your child's teacher or on our Web site at www.nyc.gov/schools/academics.

Good Study Habits

To help your children develop good study habits:

- ❑ Set up a comfortable location at home for doing homework with simple supplies, such as pens, pencils, paper, scissors, and tape, near at hand.
- ❑ Have them write down and organize assignments each day. They need to learn how to manage their time and work toward long-range goals.
- ❑ Encourage them to do the most difficult homework first, not last.
- ❑ Check to see that assignments are complete and on time. Be more concerned with the process they use to complete work than with getting a right answer.

For other ideas, visit www.nyc.gov/schools/academics.

Students with Disabilities

Unless otherwise stated on the student's Individualized Education Program (IEP), students with disabilities will participate in the general education curriculum, which can be adapted for different instructional levels and different settings (such as Collaborative Team Teaching classes or self-contained special education classes). Adaptations may include using instructional aids such as calculators and visual aids, providing additional time to learn new skills, and reducing the length of assignments to help students with disabilities meet the standards.

Ask Your Child's Teacher

Learning standards provide a great opportunity for you to talk with teachers about what your child is learning in school and how you can support this learning at home. Here are some questions you may want to ask.

To learn more about a standard:

- ❑ Can you show me examples of student work that meets this standard?
- ❑ May I look at some of my child's work related to this standard?
- ❑ When will my child work on this standard during the school year?
- ❑ What activities and materials are you using in school to help my child meet and exceed this standard? What classwork and homework do you expect to assign?
- ❑ What are some exercises I can do with my child to help him or her with this standard?
- ❑ Besides the standards covered in this guide, what else is my child expected to learn this year?

To learn how your child is doing in school:

- ❑ Is my child working on grade level? Are there any areas that need improvement?
- ❑ Is my child reading at grade level? Can you show me some books that my child can read?
- ❑ How much time each day does my child spend working on each subject?
- ❑ How do you assess my child on these subjects during the year?

To learn how to support your child:

- ❑ Besides report cards, what are the best ways to keep up to date on how my child is doing?
- ❑ If your child is not on grade level: What support is the school able to offer my child? What can I do at home to help my child do better in school?
- ❑ If your child is on grade level or above: What extra enrichment and support do you suggest for my child? How can I help at home?

8 Language Arts

By the end of the school year, all students should be able to:

- Question a writer's beliefs, intentions, assumptions, and biases to decide whether information is valid and accurate.
- Recognize different types of language that friends and associates use to communicate. For example, they should recognize jargon (technical terms, teen slang, or other kinds of words that mean something to a specific group or profession but not to outsiders) and colloquialisms (informal, everyday language).
- Know and use the conventions of debate, panel discussion, mock trial, and other formats for presenting information.
- Write essays of three or more pages that compare and contrast elements, such as characters, setting, mood, and voice, in two or more literary texts (novels, plays, etc.).
- Read and understand at least 25 books, including at least four books about one subject or by the same author or in one genre of literature.
- Ask and respond to questions to clarify an interpretation of a literary text or performance.
- Recognize persuasive techniques in presentations, such as emotional and ethical appeals.
- Demonstrate comprehension of a topic by exploring it through different literary activities, such as writing, drama, oral presentation, and mixed-media performance.
- Recognize at sight a large body of high-frequency words and words related to specific content. For example, recognize words related to science, economics, sports, or computer games.
- Read silently and aloud from a variety of genres.

Learning at Home

The following strategies can be done in the families' native languages as well as in English.

Encourage your child to submit original poems or short stories for publication in WordSmiths, an anthology of teen writing on the New York Public Library's Teenlink Web site, teenlink.nypl.org/WordSmiths-Current.cfm.

Encourage your child to spell words correctly—on paper as well as in e-mail communications. Keep a dictionary at home or check spelling online at www.m-w.com.

Choose a current local story or issue and challenge your child to compare its treatment by different New York publications, such as *The New York Times*, www.nytimes.com; the *New York Daily News*, www.nydailynews.com; and *New York Magazine*, nymag.com.

Make family discussions a priority. Even if you're always on the go, dedicate a time, like Sunday dinner, when you all sit down together and have a real conversation. Encourage everyone to contribute.

Mathematics

Learning at Home

Help your child make smart money choices. Talk about budgeting, planning how to spend limited resources, earning money, and strategies for saving for future wants and needs. Talk about the cost of credit and how tools like a checking account and a credit card can be both helpful and costly.

Mathworld Classroom offers clear definitions and demonstrations of concepts in pre-algebra, algebra, geometry, and other math disciplines on the Web at mathworld.wolfram.com/classroom.

Remind your child of all the jobs that involve mathematics—including more obvious careers, such as accountant and rocket scientist, as well as not-so-obvious choices, such as psychologist and racehorse trainer. Help your child find opportunities to explore those interests.

"On-Lion" for Kids, the New York Public Library's Web site for young people, has great math and science games and explorations at kids.nypl.org/science/math.cfm, including homework help and Q&As on middle school math concepts and problems.

By the end of the school year, all students should be able to:

- Read, write, and identify percents less than 1 percent (such as $\frac{1}{2}$ of a percent, or 0.005) and more than 100 percent (such as 230 percent, or 2.30).
- Solve problems that involve percents. For example, compute sales tax, simple interest, sale price, commissions, or tips.
- Identify different pairs of angles: vertical angles (angles that are opposite each other where two lines intersect), supplementary angles (two angles that total 180 degrees), and complementary angles (two angles that total 90 degrees or a right angle).
- Identify the angle pairs that occur when two parallel lines are intersected by a third line.
- Determine the slope of a line—the steepness of a line on a graph, defined by the ratio of changes in vertical and horizontal distances between two points.
- Solve equations and proportions to convert customary measurements to their metric equivalents. For example, 2 miles x 1.6 kilometers/mile = 3.2 kilometers.
- Convert temperatures from Fahrenheit to Celsius and vice versa, $C = \frac{5}{9}(F - 32)$.
- Add and subtract polynomials (expressions that contain one or more variables, such as x and y, and constants, such as whole numbers) and use only addition, subtraction, multiplication, and constant positive whole number exponents. For example, $2x^2 + 3x + 4$ is a polynomial.
- Factor algebraic expressions. For example: $x^2+3x+2 = (x+2)(x+1)$.
- Use mathematics to show and understand physical phenomena (such as constructing a scale model of your home), social phenomena (such as creating a budget for a summer vacation), and mathematical phenomena (such as graphing algebraic equations and then describing and contrasting the graph lines).

Science

Science in eighth grade explores reproduction, heredity, and evolution; humans in their environment; the earth, sun, and moon system; and forces and motion on earth.

By the end of the school year, all students should be able to:

- Understand that in all organisms, genetic traits are passed on from generation to generation.
- Compare and contrast sexual reproduction (reproduction with two parents) and asexual reproduction (which requires only one parent).
- Understand the elements of heredity, including DNA (the material in a cell that carries genetic instructions), genes (pieces of DNA with instructions for a specific trait, such as red hair), and mutations (changes in traits that occur when DNA is damaged or altered).
- Understand natural resources and energy, including the energy needs of a nation, region, or family; renewable sources of energy, such as solar energy; and nonrenewable energy sources, such as coal or oil.
- Understand environmental concerns, such as how to dispose of trash and other waste; how best to use land in our growing cities; air and water pollution; and global warming.
- Understand the connection between nutrition and health, including the effects of environmental toxins, such as chemicals that get into the food chain; food-borne illness, such as salmonella; and system failures, such as heart disease or diabetes.
- Classify celestial objects, such as stars, planets, comets, moons, and asteroids.
- Understand Newton's Second and Third Laws: An object acted on by a net force will accelerate in the direction of this force; and for every action there is an equal and opposite reaction.
- Determine an object's speed and acceleration (rate at which it gains speed).
- Identify cause-and-effect relationships.

Learning at Home

Talk regularly about science news covered in the media. How might a new breakthrough affect your lives? What can your child do to benefit or learn from this breakthrough?

Encourage your child to get involved in conservation in your neighborhood. Visit the New York State Department of Conservation's Web site, www.dec.ny.gov/index.html, for a comprehensive guide to events all over the State, including resources and programs for teachers and students.

With your child, visit the Hayden Planetarium at the Rose Center for Earth and Space at the American Museum of Natural History, www.amnh.org/rose, on the Upper West Side; locate images of space at www.nasa.gov; or find books on astronomy at the New York Public Library, kids.nypl.org.

Learning at Home

Talk with your child about the career opportunities that are open to young people today. How are they different from what was available when you were their age? Talk with your child about the skills needed to get a good job today.

Together, investigate the New York Public Library's Web site for New York City history at kids.nypl.org/newyork/newyorkhistory.cfm. Talk about how each borough grew and changed in the industrial age.

Explore the development of New York City's famous subway system at www.nycsubway.org. Together, consider how a subway or other rapid transit system contributes to the economic growth of a city. Also use the site to learn about the art in our stations.

Encourage your child to talk with a great-grandparent or other relative who participated in World War II. Record the conversation and submit it to the Library of Congress' Veterans History Project, www.loc.gov/vets.

Social Studies

In eighth grade social studies, students explore the history of the United States and New York State from the Industrial Era to the present.

By the end of the school year, all students should be able to:

- Analyze the causes and effects of the various waves of immigration to the United States, public policies regarding immigration, and the contributions of immigrants.
- Use diverse sources to seek multiple perspectives. For example, did all residents believe the United States should enter World War I or II?
- Examine and debate the advantages and disadvantages of the Industrial Revolution.
- Understand the changes to America's workforce as the nation became more industrialized. For example, explain the changes in the number of farm workers during the early years of the 20th century compared to the number of factory workers.
- Explain the reasons for African-American migration from the southern to the northern United States in the first half of the 20th century.
- Investigate the factors that helped the United States become a world economic power between World War I and World War II.
- Compare the different economic climates that existed in the United States during the 1920s and the 1930s, for example, the end of the wartime economy of World War I, the growth of the industrial economy and factories, and the development of science and technology.
- Discuss how scarce resources during the Great Depression, World War II, and other periods affected life in the United States.
- Know and appreciate the contributions of famous leaders of the Civil Rights movement, such as Martin Luther King, Jr.; Rosa Parks; and Malcolm X.

More Essential Knowledge and Skills

Our eighth grade students are learning much more than to read, write, do math, and understand key concepts in science and social studies.

- **Arts:** Eighth grade students complete one semester each of two art forms, such as visual arts, dance, music, and theater. They build skills and techniques in the art form; create original works; master the vocabulary and related literature; research the history; and use arts institutions as resources for learning, potential careers, and advanced learning in these fields. For more details, visit www.nyc.gov/schools/artseducation.
- **Fitness and Health:** Students continue to improve their personal health and well-being, the health of their families and friends, and the health of their schools and communities. For instance, across all content areas, students learn how to analyze the influence of family, peers, and media on health behaviors and how to practice healthy behaviors and avoid dangerous behaviors, such as smoking and drugs. For more details, visit www.nyc.gov/schools/academics/fitnessandhealth.
- **Library and Research:** By the end of the year, eighth grade students can revise a question to arrive at a topic that can be researched; do advanced searching using a variety of search engines; seek information from different sources for a balanced point of view; draw conclusions supported by evidence; use information to create original works; read a variety of genres independently and share responses; show understanding of intellectual freedom and intellectual property rights; and use the Internet ethically and appropriately. For more details, visit www.nyc.gov/schools/academics/libraryservices.
- **Technology:** Students in the eighth grade continue to practice, discuss, and share safe and acceptable uses of technology and information. Students know how to use a variety of media and formats to design, develop, publish, and present products (for example, presentations, newsletters, and Web pages) that effectively communicate information and ideas about the curriculum to multiple audiences. Students examine issues related to computer etiquette and discuss means for encouraging more effective use of technology to support effective communication, collaboration, personal productivity, and lifelong learning. For more details, visit www.nyc.gov/schools/studentsupport/instructionaltechnology.

Learn More

This guide provides only an overview of the many standards your child will be learning this year. You can view and download copies of these guides for grades K–8 as well as the complete standards for all subjects and all grades on our Web site at www.nyc.gov/schools/academics.

The Division of Teaching and Learning and the Office for Family Engagement and Advocacy (OFEA) offer additional information about your child's education and ideas on how you can support it, both at home and at your child's school. For more information, visit both the Teaching and Learning Web site, www.nyc.gov/schools/offices/teachlearn, and the OFEA Web site, www.nyc.gov/schools/offices/OFEA. You also can contact your school's parent coordinator or OFEA at (212) 374-2323 or ofea@schools.nyc.gov. Plus, you can call 311 for additional cultural and historical institutions in the City to visit with your children.

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