

High School Science Research & The Common Core



Facilitator: Denise McNamara, PhD
Director of Research Pathways
dmcnama@schools.nyc.gov

Research on Research

The most important skills expected of incoming college freshmen are:

- articulating a clear thesis
- identifying, evaluating, and using evidence to support or challenge the thesis
- considering and incorporating counter-arguments into their writing
- “develop[ing] ideas by using some specific reasons, details, and examples”
- “take[ing] and maintain[ing] a position on an issue”
- “support[ing] claims with multiple and appropriate sources of evidence”¹

¹ From a 2002 survey of instructors of freshman composition and other introductory courses across the curriculum at California’s community colleges, California State University campuses, and University of California campuses, the California State University and the University of California, 2002

Research Writing and the Common Core

“Because of the centrality of writing to most forms of inquiry, research standards are prominently included in this strand, though skills important to research are infused throughout the document.”

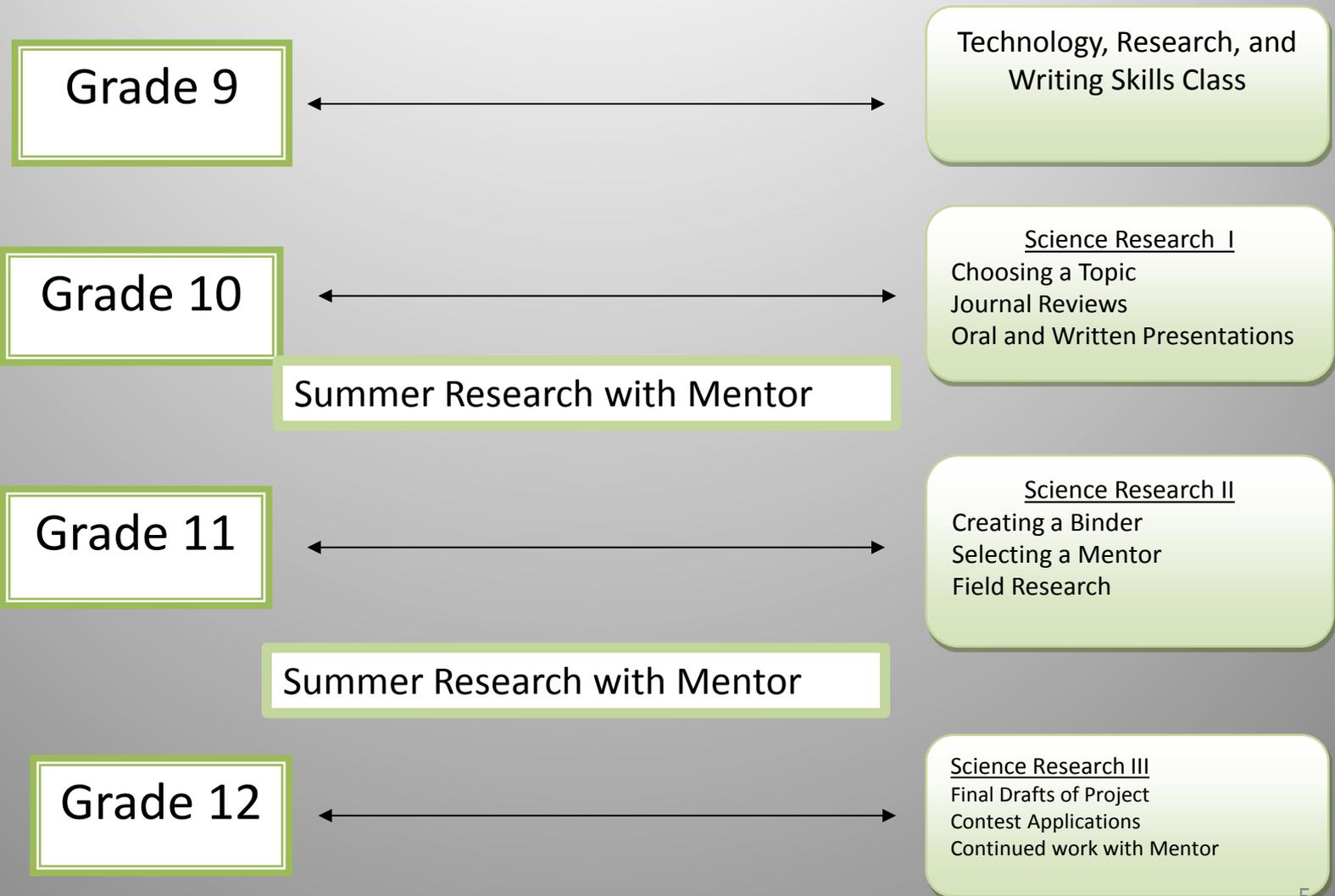
Common Core for ELA & Literacy, p. 6

PLEASE LOOK AT THE COMMON CORE LEARNING STANDARDS HANDOUT
HOW DO YOU BELIEVE THEY ALIGN TO THE CHANCELLOR’S INSTRUCTIONAL
EXPECTATIONS?

Research and the Shifts

Shifts in ELA/Literacy	Description	How this is reflected in the Regents Research Requirement
Balancing Informational & Literary Text	Students read a true balance of informational and literacy text	<ul style="list-style-type: none"> - Reliable print and authentic sources - Non-ELA content areas
Knowledge in the Disciplines	Students build knowledge about the world (domains/content areas) through TEXT rather than a teacher or activities	<ul style="list-style-type: none"> - Knowledge built from reliable print and authentic sources - Research questions that are centered around non-ELA content areas
Staircase of Complexity	Students read the central	<ul style="list-style-type: none"> - Exposure to complex texts requiring close reading
Text-based Answers	Students engage in rich and rigorous evidence based conversations about text	<ul style="list-style-type: none"> - Emphasis on reliable print and authentic sources and informational sources, discourse with peers and teachers about content found in text
Writing from Sources	Writing emphasizes use of evidence from sources to inform or make an argument	<ul style="list-style-type: none"> - Write, inform or make an argument based in evidence from reliable sources
Academic Vocabulary	Students constantly build the transferable vocabulary they need to access grade level complex texts. Done by spiraling like content in increasingly complex texts.	<ul style="list-style-type: none"> - Domain specific vocabulary in the complex texts students read closely that are related to their topic or thesis

The High School Research Program



What are the advantages of HS Science Research?

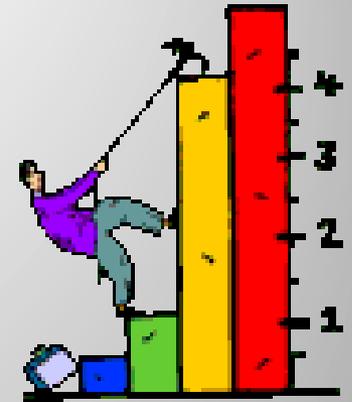
- For the School?
- For the Teachers?
- For the Students?

Turn and Talk for 3 minutes

**Science Research develops
students college and career
readiness skills in literacy and
mathematics through journal
research and interpretation, data
analysis, written communication
and oral presentations**

With a self-initiated research project, students gain:

- An in-depth understanding of a topic
- An appreciation of science
- The ability to participate in an expanded scientific community
- The ability to think independently
- Research skills that are transferable to all areas of post-secondary education
- Opportunities to apply for viable internships in state-of-the-art research facilities
- Increased character development, poise and confidence levels through scientific discourse



Silent Reading

- Please read the journal article, “More Efficient Helicopter Blades Based on Whale Tubercles” or “The effect of font type on a school’s ink cost” for the next 8 minutes

Responses

- Chart the responses to the following:
 1. What do you notice?
 2. What would teaching need to look like to produce this type of research? writing?
 3. What skills would the students need to learn to be successful at this type of research?

Journal of Emerging Investigators Website

<http://www.emerginginvestigators.org/>

The screenshot shows the homepage of the Journal of Emerging Investigators website. The browser address bar displays the URL <http://www.emerginginvestigators.org/>. The page features a dark blue header with the journal's logo, a search bar, and a navigation menu with links for Home, About, Articles, Guidelines, Submit, Resources, Support, and Contact. A Facebook social media widget indicates that 1,128 people like the page. The main content area includes a large banner for "Dive into Science" with the text "JEI is a scientific journal for middle and high school scientists." and "Now accepting submissions!". To the right, a "Featured Scientist" section highlights a student named Samelly Alejo, with a photo of her and the text "MSE?". Below this, there are sections for "Science News & Events" and "Latest JEI Research Papers". The "Latest JEI Research Papers" section features a paper titled "What Can You See in the Dark? The Effects of Contrast, Light, and Age on Contrast Sensitivity in Low Light" by Kathryn Virostek and Brittany Frankowiak, with a focus on Light and Vision. The paper abstract discusses the ability of people of different ages to read progressively fainter letters in dark light. A second paper title, "Is Cloud Cover One of the Effects of Climate Change?", is partially visible at the bottom.

Journal of Emerging Investigators
...where students become scientists.

Home About Articles Guidelines Submit Resources Support Contact

Dive into Science.
JEI is a scientific journal for middle and high school scientists.
Now accepting submissions!
Check out our [submissions guide](#) for info.

Photo by Caroline Davis 2010

Featured Scientist

Samelly Alejo: Finding clues through science
A middle school student in Massachusetts studies the effects of different chemicals on plant growth.
[READ MORE](#)

Science News & Events

Keep up-to-date with important findings and events in the scientific community!

[A Scientist Emerges - on an early start to research](#)

[Information Packet with Sample Paper](#)

[Make Your Mark - Boston: A great opportunity to get funding for your science project!](#)

Latest JEI Research Papers

What Can You See in the Dark? The Effects of Contrast, Light, and Age on Contrast Sensitivity in Low Light
Author: Kathryn Virostek and Brittany Frankowiak | **Focus:** Light, Vision
Many of us take our vision for granted, but rarely do we measure how well we can see. In this study, the authors investigate the ability of people of different ages to read progressively fainter letters in dark light. They find that the ability to see in dim light drops drastically after age 30. The ability to read fainter letters worsens after age 30 as well. These findings should help inform lighting decisions everywhere from restaurants to road signs.

Is Cloud Cover One of the Effects of Climate Change?

NEWSELA Website

<http://www.newsela.com>

The screenshot shows a web browser window displaying the Newsela website. The address bar shows the URL <https://www.newsela.com/articles/bighorn-sheep/id/3707/>. The page features a blue navigation bar with the Newsela logo and various subject categories: War & Peace, Science, Kids, Money, Law, Health, and Arts. Below the navigation bar, there are options to assign the article to a binder (PRO) and to specific classes (Grade 8 Thursday Class, Grade 12 Tuesday Class). The article title is "California's bighorn sheep brought back from the brink of extinction", written by Fresno Bee, adapted by Newsela staff, dated May 02, 2014, with a grade level of 8. The article includes a photograph of a herd of Sierra Nevada bighorn sheep grazing near Wheeler Crest in California. On the right side of the article, there is a vertical blue sidebar with a list of reading levels (MAX, 1110L, 1020L, 930L, 700L) and icons for a quiz and a printer.

Newsela | Nonfiction Literacy

Hi Denise! [Sign Out] Binder PRO Feedback & Support About PRO

NEWSELA War & Peace Science Kids Money Law Health Arts

Assign To Binder PRO

Grade 8 Thursday Class Grade 12 Tuesday Class Hide From

SCIENCE

California's bighorn sheep brought back from the brink of extinction

By Fresno Bee, adapted by Newsela staff
May 02, 2014
Grade level: 8



A Sierra Nevada bighorn sheep herd of ewes and rams grazes near Wheeler Crest in California. Photo: California Department of Fish and Game

FRESNO, Calif. — Fifteen years ago, things

Sierra bighorn

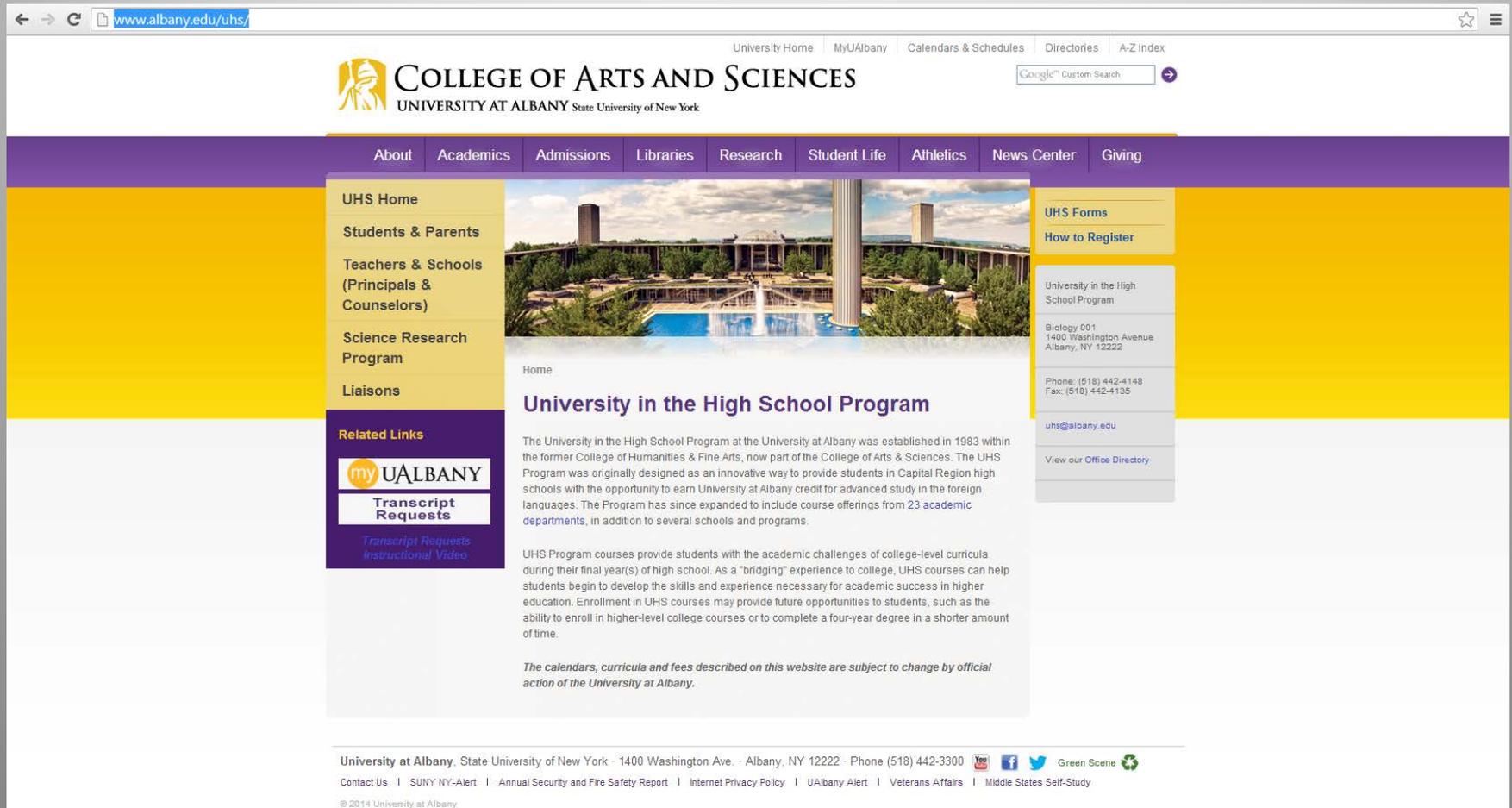
University in the High School Program

SUNY Albany

- The three-year research program lets students earn **12** college credits from the University of Albany and is a great addition to a transcript.
- This course helps students learn good researching skills, time management and goal setting, become more confident in public speaking, and offers many other avenues for personal growth.

University in the High School

<http://www.albany.edu/uhs/>



The screenshot shows a web browser displaying the website for the University in the High School (UHS) program at the University at Albany. The browser's address bar shows the URL www.albany.edu/uhs/. The website header includes the University at Albany logo and the text "COLLEGE OF ARTS AND SCIENCES UNIVERSITY AT ALBANY State University of New York". A navigation menu lists various university departments and services. The main content area features a large image of a university building and a swimming pool. Below the image, the text describes the UHS program, its history, and its benefits for high school students. A sidebar on the left provides navigation options for UHS Home, Students & Parents, Teachers & Schools, Science Research Program, and Liaisons. A sidebar on the right contains contact information for the UHS program, including a phone number, fax number, and email address. The footer of the website provides contact information for the University at Albany and links to various university services.

← → ↻ www.albany.edu/uhs/ ☆ ☰

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 **COLLEGE OF ARTS AND SCIENCES**
UNIVERSITY AT ALBANY State University of New York

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UHS Home
Students & Parents
Teachers & Schools (Principals & Counselors)
Science Research Program
Liaisons

UHS Forms
How to Register

University in the High School Program

Biology 001
1400 Washington Avenue
Albany, NY 12222

Phone: (518) 442-4148
Fax: (518) 442-4135

uhs@albany.edu

View our Office Directory

Home

University in the High School Program

The University in the High School Program at the University at Albany was established in 1983 within the former College of Humanities & Fine Arts, now part of the College of Arts & Sciences. The UHS Program was originally designed as an innovative way to provide students in Capital Region high schools with the opportunity to earn University at Albany credit for advanced study in the foreign languages. The Program has since expanded to include course offerings from 23 academic departments, in addition to several schools and programs.

UHS Program courses provide students with the academic challenges of college-level curricula during their final year(s) of high school. As a "bridging" experience to college, UHS courses can help students begin to develop the skills and experience necessary for academic success in higher education. Enrollment in UHS courses may provide future opportunities to students, such as the ability to enroll in higher-level college courses or to complete a four-year degree in a shorter amount of time.

The calendars, curricula and fees described on this website are subject to change by official action of the University at Albany.

Related Links

 **my UALBANY**

Transcript Requests

[Transcript Requests Instructional Video](#)

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Contact Us | SUNY NY-Alert | Annual Security and Fire Safety Report | Internet Privacy Policy | UAlbany Alert | Veterans Affairs | Middle States Self-Study

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SUMMATION



- The intention of this Program is to:
 - Have students develop skills in research that will transfer to all areas of education.
 - Provide the students with the skills to think independently and make informed decisions.
 - Help the students develop good interpersonal and scholastic skills that will transfer to post-secondary education and beyond.