

9.3 Module Overview

Building and Communicating Knowledge through Research: The Inquiry and Writing Processes

<p>Texts</p>	<p>Unit 1: Grandin, Temple, and Catherine Johnson. <i>Animals in Translation: Using the Mysteries of Autism to Decode Animal Behavior</i></p> <p>Unit 2: Student research sources will vary</p> <p>Students choose texts for research based on their individual research question/problem. Model Research Sources:</p> <ul style="list-style-type: none"> • “The Brains of the Animal Kingdom” <i>The Wall Street Journal</i> • “Minds of Their Own: Animals Are Smarter Than You Think” <i>National Geographic</i> • “Think You’re Smarter Than Animals? Maybe Not” <i>The New York Times</i> • “Monkeys Can Perform Mental Addition” <i>ScienceDaily</i> • “Animal Intelligence: How We Discover How Smart Animals Really Are” <i>Encyclopedia Britannica Blog</i> <p>Unit 3: Student research sources will vary*</p> <p>*By Unit 3, students have chosen texts for research based on their individual research question/problem.</p>
<p>Number of Days in Module</p>	<p>35 (including Module Performance Assessment)</p>

Introduction

In Module 9.3, students engage in an inquiry-based, iterative process for research. Building on work with evidence-based analysis in Modules 9.1 and 9.2, students explore topics of interest, gather research, and generate an evidence-based perspective to ultimately write an informative/explanatory research paper that synthesizes and articulates their findings. Students use textual analysis to surface potential topics for research, and develop and strengthen their writing by revising and editing.

In Unit 9.3.1, students closely read a nonfiction text, focusing on the development and emergence of a central idea. Additionally, the text serves as a springboard to research, with students surfacing and tracking potential research topics as they emerge from the text.

In Unit 9.3.2, students continue the research process begun in Unit 1. Students begin to learn and deeply engage in this iterative, non-linear process by pursuing areas of interest and deepening their understanding using guiding inquiry questions. Students use this inquiry-based process to gather, assess, read, and analyze sources. In the latter half of the unit, students then take those sources and begin to organize and synthesize research findings to make claims about a specific research question or problem. In Unit 9.3.3, students engage in the writing process with the goal of synthesizing and articulating their evidence-based research perspective in writing. The end product of this unit is a final draft of an informative/explanatory research paper that articulates the conclusions gleaned from research throughout Module 9.3. The writing cycle — in which students self-edit, peer review and continually revise their work — serves as the primary framework for this unit.

Literacy Skills & Habits

- Read closely for textual details
- Annotate texts to support comprehension and analysis
- Engage in productive evidence-based conversations about text
- Conduct independent searches and assess sources for credibility, relevance, and accessibility
- Develop, refine, and select inquiry questions for independent research
- Collect and organize evidence from research to support analysis in writing
- Generate an evidence-based perspective from research
- Revise writing
- Utilize rubrics for self-assessment and peer review of writing
- Use technology to publish and enhance research findings

English Language Arts Outcomes

Yearlong Target Standards

These standards embody the pedagogical shifts required by the Common Core Standards and will be a strong focus in every ELA module and unit in grades 9–12.

CCS Standards: Reading – Literature	
RL.9-10.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

RL.9-10.4	Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone.
RL.9-10.10	By the end of grade 9, read and comprehend literature, including stories, dramas, and poems, and literary nonfiction, in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.
CCS Standards: Reading – Informational Text	
RI.9-10.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
RI.9-10.4	Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone.
RI.9-10.10	By the end of grade 9, read and comprehend literature, including stories, dramas, and poems, and literary nonfiction, in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.
CCS Standards: Writing	
W.9-10.9	Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grades 9–10 Reading standards to literature b. Apply grades 9–10 Reading standards to literary nonfiction
W.9-10.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of purposes, tasks, and audiences.
CCS Standards: Speaking & Listening	
SL.9-10.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.
CCS Standards: Language	
L.9-10.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies. a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase. b. Identify and correctly use patterns of word changes that indicate different meanings

	<p>or parts of speech (e.g., analyze, analysis, analytical; advocate, advocacy).</p> <p>c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology.</p> <p>d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).</p>
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Module-Specific Standards

These standards will be the specific focus of instruction and assessment, based on the texts studied and proficiencies developed in this module.

CCS Standards: Reading – Literature	
None.	
CCS Standards: Reading – Informational Text	
RI.9-10.1a	<p>Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</p> <p>a. Develop factual, interpretive, and evaluative questions for further exploration of the topic(s).</p>
RI.9-10.2	Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
RI.9-10.3	Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.
RI.9-10.5	Analyze in detail how an author’s ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter).
RI.9-10.7	Analyze various accounts of a subject told in different mediums (e.g., a person’s life story in both print and multimedia), determining which details are emphasized in each account.

CCS Standards: Writing	
W.9-10.2.a-f	<p>Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.</p> <ol style="list-style-type: none"> a. Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic. c. Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d. Use precise language and domain-specific vocabulary to manage the complexity of the topic. e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).
W.9-10.4	<p>Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3.)</p>
W.9-10.5	<p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grades 9–10.)</p>
W.9-10.7	<p>Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</p>
W.9-10.8	<p>Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.</p>

W.9-10.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
CCS Standards: Speaking & Listening	
None.	
CCS Standards: Language	
L.9-10.2.a-c	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. <ul style="list-style-type: none"> a. Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses. b. Use a colon to introduce a list or quotation. c. Spell correctly.
L.9-10.3.a	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening. <ul style="list-style-type: none"> a. Write and edit work so that it conforms to the guidelines in a style manual (e.g., <i>MLA Handbook</i>, <i>Turabian’s Manual for Writers</i>) appropriate for the discipline and writing type.

Addressed Standards

These standards will be addressed at the unit or module level, and may be considered in assessment, but will not be the focus of extended instruction in this module.

CCS Standards: Reading – Literature	
None.	
CCS Standards: Reading – Informational Text	
RI. 9-10.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).
RI.9-10.7	Analyze various accounts of a subject told in different mediums (e.g., a person’s life story in both print and multimedia), determining which details are emphasized in each account.

CCS Standards: Writing	
W.9-10.2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
CCS Standards: Speaking & Listening	
SL.9-10.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.
CCS Standards: Language	
L.9-10.4.a,c,d	<p>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies.</p> <ul style="list-style-type: none"> a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase. c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology. d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
L.9-10.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Module Performance Assessment

In this five-lesson performance assessment, students use a class blog to publish and enhance their research from the module. Each student publish one post to this blog. Students will not simply reproduce, but enrich and enhance their research paper through the use of technology (hyperlinks, images, graphics, animation, charts, graphs, video, and audio clips, etc.).

Prompt
Over the course of this module, you have analyzed information presented in both print and multimedia formats. You have deepened your understanding of a topic through research, and have presented your

analysis in a formal research paper. Now you will work to enhance that analysis, and subsequently publish it online in a class blog. You should organize the information by making effective use of the available multimedia components (hyperlinks, images, graphics, animation, charts, graphs, video and audio clips, etc.), so that readers can follow the line of reasoning.

- Publish a version of your research paper on the class blog, using various multimedia components to enhance the reader’s understanding of your findings. Take advantage of technology’s capacity to link to other information and display it flexibly and dynamically.

Though this performance assessment assumes a class blog, other forms of self-publication are equally as valid. Depending on the resources available, consider having students create a multimedia document within Microsoft Word; a voiceover presentation using VoiceThread; a multimedia PDF; or a multimedia document in Google Drive.

Process

The module performance assessment will require students to revise and edit their research paper based on teacher feedback; review the claims they made in their research paper; reassess sources connected to claims for usable multimedia (e.g., video, pictures, graphs) to support claim(s); search for other multimedia to support claim(s); and/or create their own multimedia publication components (e.g., graphs, pictures, voiceover recordings). Students synthesize all of these multimedia components into a final published blog post. The final product should not simply reproduce their research paper visually; it should update and enhance their analysis, leveraging the flexibility of digital media to offer a dynamic lens through which to understand their research.

Lesson 1

Students review their research papers based on teacher feedback and make any necessary revisions. Additionally, students may begin to identify evidence and claims made prior to this lesson that can be enhanced by technology.

Lesson 2

Students identify evidence and claims made in their research that can be enhanced by technology. Students evaluate, gather, and/or create relevant multimedia based on the evidence and claims they identified in their research paper. Rather than make new claims, students should use technology to present their evidence in a new and relevant way.

Lesson 3

Students begin work on their blog post, incorporating all relevant multimedia found in research sources, and developing additional multimedia, where relevant, to enhance their research findings.

① Students may require the majority of this lesson to be devoted to learning how to create blog posts (e.g., how to log in, format text, insert hyperlinks and images, and embed video as needed).

Lesson 4

Students continue to work on developing and refining their blog post, incorporating and creating relevant multimedia where needed. Students focus on organizing material effectively, formatting the title of their post, and tagging with relevant search keywords. Students prepare their blog posts for publication and assessment.

Lesson 5

Students finalize their blog post. Students edit the post and ensure it is “live” and accessible via the internet.

Standards assessed: W.9-10.2, W.9-10.5, W.9-10.6

Texts

Unit 1:

Grandin, Temple, and Catherine Johnson. *Animals in Translation: Using the Mysteries of Autism to Decode Animal Behavior*

Unit 2:

Students choose texts for research based on their individual research question/problem.

Model research sources:

Waal, F. “The Brains of the Animal Kingdom.” *The Wall Street Journal*, Mar. 22, 2013.

Morell, V. “Minds of Their Own: Animals Are Smarter Than You Think.” *National Geographic*, Mar. 2008.

Horowitz, A. and Shae, A. “Think You’re Smarter Than Animals? Maybe Not.” *The New York Times*, Aug. 20, 2011.

Duke University Medical Center. “Monkeys Can Perform Mental Addition.” *ScienceDaily*, Dec. 20, 2007.

Castro, L. and Wasserman, E. “Animal Intelligence: How We Discover How Smart Animals Really Are.”

<i>Encyclopedia Britannica Blog. Encyclopedia Britannica, Oct. 19, 2012.</i>
Unit 3:
<p>Student research sources will vary*</p> <p>*By Unit 3, students will have chosen texts for research based on their individual research question/problem.</p>

9.1 Module-at-a-Glance Calendar

Text	Days in the Unit	Literacy Skills and Habits	Assessed and Addressed CCSS	Assessments
Unit 1:				
<i>Animals in Translation</i> (Temple Grandin and Catherine Johnson)	10	<ul style="list-style-type: none"> Read closely for textual details. Annotate texts to support comprehension and analysis. Engage in productive evidence-based discussions about text. Collect and organize evidence from texts to support analysis in writing. Analyze text and multimedia. Make claims about the development and refinement of central ideas in a text. Use vocabulary strategies to define unknown words. Identify potential topics for research within a 	<p>RI.9-10.1a</p> <p>RI.9-10.2</p> <p>RI.9-10.3</p> <p>RI.9-10.5</p> <p>RI.9-10.7</p> <p>W.9-10.4</p> <p>W.9-10.9</p> <p>RI.9-10.4</p> <p>W.9-10.7</p> <p>W.9-10.8</p> <p>SL.9-10.1.c</p> <p>L.9-10.4.a, c, d</p>	<p>End-of-Unit:</p> <p>Students complete a two-part short writing assessment.</p> <p>Part 1: Students synthesize and compose a multi-paragraph response tracing the development and refinement of a central idea from chapter 1 of <i>Animals in Translation</i>.</p> <p>Part 2: Students articulate in writing two or three areas of investigation and describe how and where each area emerged from <i>Animals in Translation</i>.</p>

		<p>text.</p> <ul style="list-style-type: none"> • Use questioning to guide research. • Conduct pre-searches to validate sufficiency of information for exploring potential topics. 		
Unit 2:				
<p><i>Student research sources will vary</i></p> <p>Students choose texts for research based on their individual research question or problem.</p> <p>Model research sources:</p> <p>“The Brains of the Animal Kingdom” (Frans de Waal)</p> <p>“Minds of Their Own: Animals Are Smarter Than You Think” (Virginia Morrell)</p>	12	<ul style="list-style-type: none"> • Assess sources for credibility, relevance, and accessibility. • Conduct independent searches using research processes including planning for searches, assessing sources, and annotating and recording notes. • Develop, refine, and select inquiry questions for research. • Develop and continually assess a research frame to guide independent searches. • Collect and organize evidence from research to support analysis in writing. 	<p>RI.9-10.1.a</p> <p>W.9-10.4</p> <p>W.9-10.7</p> <p>W.9-10.8</p> <p>W.9-10.9</p> <p>W.9-10.2</p> <p>RI.9-10.7</p> <p>SL.9-10.1</p> <p>L.9-10.4.a, c, d</p>	<p>End-of-Unit:</p> <p>Students turn in a completed Research Portfolio including their Research and Vocabulary Journals.</p> <p>Evidence-Based Perspective:</p> <p>Additionally, students compose a one-page synthesis of their personal conclusions and perspective derived from their research. Students draw on the research outcomes, as developed in the Organizing Evidence-Based Claims Tools to express their perspective on their respective research question/problem.</p>

<p>“Think You’re Smarter Than Animals? Maybe Not” (Alexandra Horowitz and Ammon Shea)</p> <p>“Monkeys Can Perform Mental Addition” (<i>ScienceDaily</i>)</p> <p>“Animal Intelligence: How We Discover How Smart Animals Really Are” (Edward Wasserman and Leyre Castro)</p>		<ul style="list-style-type: none"> • Make claims about inquiry questions, inquiry paths, and a research question/ problem using specific textual evidence from the research. 		
Unit 3:				
<p><i>Student texts (research sources) will vary*</i></p> <p>*By Unit 3, students have chosen texts for research based on their individual research question/ problem.</p>	8	<ul style="list-style-type: none"> • Collect and organize evidence from research to support analysis in writing. • Analyze, synthesize, and organize evidence-based claims. • Write effective introduction, body, and conclusion paragraphs for an informational/ explanatory research paper. • Use proper citation methods in writing. 	<p>W.9-10.2.a-f</p> <p>W.9-10.4</p> <p>W.9-10.5</p> <p>W.9-10.8</p> <p>W.9-10.9</p> <p>W.9-10.7</p> <p>W.9-10.9</p> <p>L.9-10.2.a-c</p> <p>L.9-10.3.a</p> <p>L.9-10.6</p> <p>SL.9-10.1</p>	<p>End-of-Unit:</p> <p>Part 1: Students shall be assessed on the final draft of their research paper, and its alignment to the criteria of an informative/explanatory text (W.9-10.2). The final draft should examine and convey complex ideas and clearly incorporate students’ evidence-based claims as well as appropriately cite sources. The final draft</p>

		<ul style="list-style-type: none"> • Edit for a variety of purposes including using semicolons, colons, and correct spelling. • Use formal style and objective tone in writing. • Write coherently and cohesively. 		<p>should accurately organize and demonstrate thoughtful analysis of the evidence gathered through research.</p>
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DEFINITION OF TERMS

USED IN RESEARCHING TO DEEPEN UNDERSTANDING

A DEVELOPING CORE PROFICIENCIES

ENGLISH LANGUAGE ARTS / LITERACY UNIT

Research Question/Problem (Area of Investigation):

A particular theme, question, problem, or more focused sub-topic within the general topic that warrants investigation.

Inquiry Question:

Questions posed by researchers about their research question/problem to be answered through inquiry.

Inquiry Path:

Groups of Inquiry Questions developed to guide investigation. Each Inquiry Path has a name or title that is the theme of the group of questions. It can also be a more general question that summarizes the specific questions within the group.

Research Frame:

A written document comprised of the topic, the research question/problem, the Inquiry Paths and all the Inquiry Questions within each Inquiry Path. It is the tool that will guide the student throughout the research process.

Research Portfolio:

The binder or electronic folder where students physically or electronically store and organize all the material related to their personal research.

Research Plan:

A document presenting the strategic process students follow to guide them through the various stages of inquiry.

Topic:

The topic from which the research question/problem will be derived.