

9.3.2

Lesson 12

Introduction

In this final lesson of the unit, students complete the End-of-Unit Assessment by conducting a final review of the **Research Portfolio** and writing an **Evidence-Based Perspective** based on the research outcomes from the unit.


Students begin the lesson by finalizing the **Research Portfolio** for assessment purposes. Students review all of the **Organizing Evidence-Based Claims Tools** from the previous lesson and discuss their developing perspective of the research question/problem in small groups. Next, students write an **Evidence-Based Perspective** (one-page synthesis) using the **Organizing Evidence-Based Claims Tools** and supporting their perspective with relevant evidence from the research. Students submit the finalized **Research Portfolio** and the **Evidence-Based Perspective**. The **Evidence-Based Perspective** is assessed using a rubric based on the **Research Portfolio** content. For homework, students complete a vocabulary activity using the Vocabulary Journal work from the unit.

Standards

Assessed Standard(s)	
W.9-10.7	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.
W.9-10.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
Addressed Standard(s)	
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.
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 <i>grades 9–10 topics, texts, and issues</i> , building on others' ideas and expressing their own clearly and persuasively.
L.9-10.4.	Determine or clarify the meaning of unknown and multiple-meaning words and phrases

a,c,d	<p>based on <i>grades 9–10 reading and content</i>, choosing flexibly from a range of strategies.</p> <p>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.</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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Assessment

Assessment(s)
<p>The assessment in this lesson is the End-of-Unit Assessment and consists of the following:</p> <ul style="list-style-type: none"> Completed Research Portfolio: Students submit a completed Research Portfolio with the four sections organized including 1. Defining an Area of Investigation, 2. Gathering and Analyzing Information, 3. Drawing Conclusions, 4. Discarded Material. Evidence-Based Perspective: Students write 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. Research Journal: This item is located in the Research Portfolio. <p> This assessment will be evaluated using the Evidence-Based Perspective Rubric.</p>
High Performance Response(s)
<p>A high performance evidence-based perspective response may include the following:</p> <ul style="list-style-type: none"> I started out this research process thinking that humans were a lot smarter than animals and there was no way that animal intelligence could compare to human intelligence. When reading <i>Animals in Translation</i> during the first unit, I disagreed with Grandin that animals have “genius” qualities similar to autistic savants. I thought animals were too simple-minded to display thoughtful intelligence. So, I began the research journey wanting to know more about how animals display their intelligence and how it is possible for scientists and researchers to actually measure animal intelligence. I was interested in how scientists like Grandin create valid experiments to demonstrate animal intelligence. I found that there is historical basis for my point of view about animal intelligence in Waal’s article “The Brains of the Animal Kingdom.” He writes: “Aristotle’s idea of the <i>scala naturae</i>, the ladder of nature, put all life forms in rank order, from low to high...” I was surprised to learn that people had been thinking about animal intelligence so far back in history.

The research points out that animals can demonstrate a high capacity for intelligence if the experiments are designed correctly.

I discovered that animal intelligence can be measured by looking at the ways humans are intelligent, but experiments must be designed considering the animal's perspective to uncover their unique intelligence. I read on a blog by Edward A. Wasserman and Leyre Castro that “today’s researchers are proceeding to fashion shrewd behavioral tests that provide other ways for animals to disclose their intelligence to us. Although animals may not use human words, we may be able to provide other ways for animals to disclose their intelligence to us.” This article demonstrates how important it is to create animal intelligence experiments that take into account the way animals think.

Since the animal’s perspective is more important for experimental design, it makes it more difficult to compare human and animal intelligence directly. I did find several examples that proved animals’ intelligence is more advanced than humans: “A few recent research papers describe animal competence at social and cognitive tasks that humans often struggle with—mastering conversational etiquette...” I found this evidence from an article in *The New York Times* called “Think You’re Smarter Than Animals? Maybe Not” by Alexandra Horowitz and Ammon Shea. Overall, it seems like humans are smarter, but there are a lot of instances where animals display remarkable intelligence. For example, birds prove to be smarter than humans when figuring out how to get water from a cup by using the scientific concept of displacement.

A remarkable animal I read about is Alex the parrot. In Virginia Morell’s article “Animal Minds,” she wrote about a parrot that was so smart he was able to learn how to talk far more than most parrots: “Under Pepperberg’s patient tutelage, Alex learned how to use his vocal tract to imitate almost one hundred English words.” Alex is an example of an animal that I read about who was taught to think and learn like a human, demonstrating animals’ potential for higher order thinking and learning.

I learned that it is difficult to compare human and animal intelligence, but it is possible if humans design experiments from the animal’s point of view. I do not know if there will ever be animals that are smart in the same way as humans, but I did learn that animals can display their intelligence in a variety of ways, including ways shared by humans.

*The evidence in this high performance response comes from the sources: Source #1 “The Brains of the Animal Kingdom,” Source #2 “Animal Minds: Minds of their Own,” Source #3 “Think You’re Smarter Than Animals? Maybe Not,” Source #5 “Animal Intelligence: How We Discover How Smart Animals Really Are.”

Vocabulary

Vocabulary to provide directly (will not include extended instruction)
<ul style="list-style-type: none"> perspective (n.) – a way of regarding facts or situations and judging their importance
Vocabulary to teach (may include direct word work and/or questions)
<ul style="list-style-type: none"> None.*

*Because this is not a close reading or research lesson, there is no specified vocabulary. However, in the process of returning to the source texts, students may uncover unfamiliar words. Teachers can guide students to make meaning of these words by following the protocols described in 1E of this document http://www.engageny.org/sites/default/files/resource/attachments/9-12_ela_prefatory_material.pdf.

Lesson Agenda/Overview

Student-Facing Agenda	% of Lesson
Standards & Text: <ul style="list-style-type: none"> Standards: W.9-10.7, W.9-10.9, W.9-10.2, SL.9-10.1, L.9-10.4.a, c, d 	
Learning Sequence: <ol style="list-style-type: none"> Introduction of Lesson Agenda Homework Accountability Research Check-In Discussion: Developing a Perspective Writing an Evidence-Based Perspective Closing 	<ol style="list-style-type: none"> 5% 10% 15% 30% 35% 5%

Materials

- Student copies of the **Organizing Evidence-Based Claims Tools** (refer to 9.3.2 Lesson 11)
- Research Portfolios** (students have these)
- Copies of the **End-of-Unit Assessment** for each student
- Copies of the **Evidence-Based Perspective Rubric** for each student

Learning Sequence

How to Use the Learning Sequence	
Symbol	Type of Text & Interpretation of the Symbol
10%	Percentage indicates the percentage of lesson time each activity should take.
no symbol	Plain text indicates teacher action.
	Bold text indicates questions for the teacher to ask students.
	<i>Italicized text indicates a vocabulary word.</i>
►	Indicates student action(s).
💬	Indicates possible student response(s) to teacher questions.
❗	Indicates instructional notes for the teacher.

Activity 1: Introduction of Lesson Agenda

5%

Begin by reviewing the agenda and sharing the assessed standards for this lesson: W.9-10.7 and W.9-10.9. In this lesson, students finalize the Research Portfolio for assessment purposes. Then students discuss their developing perspective concerning their research question/problem using the Organizing Evidence-Based Claims Tools from the previous lesson. Finally, students write an Evidence-Based Perspective (one-page synthesis) using the Organizing Evidence-Based Claims developed in the previous lesson and supporting the perspective with relevant evidence and reasoning from the research.

- Students look at the agenda.

Activity 2: Homework Accountability

10%

Instruct students to take out the revised Organizing Evidence-Based Claims Tools (EBC) from the previous lesson's homework.

Instruct students to Turn-and-Talk with a classmate about revisions they made to the Organizing EBC Tools and how the EBC Criteria Checklist guided their review.

- 💬 Student responses may include the following:
 - I had to choose better evidence to support some of my claims. My evidence did not always directly address the claims I made. For example, some of my evidence underneath the point "Animal Intelligence can be measured by observing social awareness skills" did not always address social awareness skills, so the claim was weaker as a result.
 - I have to improve my claim and make it more comprehensive to incorporate all the written evidence. For example, my claim that "Animal intelligence can be measured by observing qualities of intelligence that are shared by humans" did not include the evidence from Point

1 about the animal's perspective and how important it is to research. I needed to refine the claim to give it a larger scope and to make it more inclusive of all the evidence.

① Consider circulating during the pair discussion to monitor students' homework completion.

Activity 3: Research Check-In

15%

Inform students that they will be completing a final review of their Research Portfolios by rereading the Student Research Plan and conducting a final check of all the documents and sections of the portfolio. Instruct students to take out the Research Portfolio.

Instruct students to review the Student Research Plan for all research activities.

Inform students that in this lesson, they will complete the last step in the Student Research Plan: Reviews and synthesizes the research to develop a written Evidence-Based Perspective (Part 3: Organizing and Synthesizing Inquiry).

► Students listen.

Instruct students to use the Student Research Plan as a guide to finalize all sections of the Research Portfolio. Direct students to file all sources, annotated copies, notes, tools, and assessments in the Research Portfolio. Instruct students to keep out the Organizing Evidence-Based Claims Tools from the previous homework activity.

① The Research Portfolio sections are the following: 1. Defining an Area of Investigation, 2. Gathering and Analyzing Information, 3. Drawing Conclusions, 4. Discarded Material.

Instruct students to finalize the Research Portfolio by placing the Student Research Plan in the front of the portfolio. Direct students to keep the Research Portfolio accessible because they may return to it during the following discussion activity or while writing of the Evidence-Based Perspective.

① Inform students that they will submit the Research Journal at the end of the lesson as part of the completed Research Portfolio.

Activity 4: Discussion: Developing a Perspective

30%

Remind students that through the research process they were instructed to find information to deepen their understanding about a topic through questioning and developing ideas about various sources. Students were conducting inquiry for exploration and not to prove an established perspective about a topic. Now that the research has been conducted, it is time to think about what ideas or opinions have developed as a result of the research outcomes. Explain to students that in the following discussion,

they will have an opportunity to look at the claims made in the previous lesson and discuss their developing perspective about their research question/problem.

- ▶ Students listen.

Ask students the following question:

What is a perspective?

- ▶ Student responses may include a viewpoint or an opinion.

Define the word *perspective* (“a way of regarding facts or situations and judging their importance”) and display the definition for students to see. Explain to students that a perspective is the mindset or way of thinking about a topic. It could be considered a viewpoint or opinion on a topic.

- ▶ Students listen.

Inform students they have already begun to develop a perspective by analyzing the research and developing claims about it.

- ▶ Students listen.

Display the following guiding questions for students:

How has your understanding of the research question/problem developed or deepened as a result of the research?

Based on your claims, what ideas can you connect and what do those connections tell you about the research question/problem?

Based on your claims, what is your overall view or opinion about the research question/problem?

How did the research lead you to these views or opinions?

- ▶ Students examine the guiding questions.

Instruct students to reflect on their claims from the previous lesson (Organizing Evidence-Based Claims Tools) using the guiding questions. Ask students to take notes on a separate sheet of paper about each guiding question, as they reflect on the claims and the research process as a whole.

Explain to students that in this lesson, they will continue the work of collaborative discussion outlined in SL.9-10.1, to which students were previously introduced. Remind students these discussion strategies have been taught in previous modules.

- ▶ Students listen.

- ① Consider reminding students of the skills inherent in the sub-standards of Standard SL.9-10.1, to which students were previously introduced.
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Instruct students to form small groups and discuss the guiding questions regarding their respective research questions/problems. Remind students to use specific evidence to support their conclusions or reflections about the research work.

- 💬 Student responses will vary based on individual student's research question/problem. Examples of student responses may include the following:
- I now understand that animal intelligence is real and that it is comparative to human intelligence. The research demonstrates that animals can learn language and advanced concepts like Alex, the parrot, who could understand the concept of same and different and who labeled colors and shapes.
 - How animals display their intelligence is closely linked to how their intelligence is measured. Animals are unlikely to show their true cognitive potential if the experiment is designed with humans and not animals in mind. For example, the elephant and the mirror example shows elephants are aware of themselves but the mirror has to be the right size. Humans have to consider animals' perspectives when designing animal intelligence experiments.

- ① Circulate while student groups are discussing to monitor student progress.
- ① Place students in heterogeneous groups of four to five that will remain consistent throughout the module. Consider forming groups ahead of time to maximize the range of different research topics and questions within each group. The goal of these groups is to create small communities of inquiry/research teams that provide support and accountability to each other. Students should know about their teammates' topics, research questions, central claims, etc. Students should share claims and evidence that arise from their individual inquiry and learn from each other's research processes, which they may use to potentially refine their own inquiry topics and questions.

Activity 5: Writing an Evidence-Based Perspective

35%

Inform students they will now write about their Evidence-Based Perspective in a one-page synthesis using their research evidence and details for support.

- Students listen.

Instruct students to use their Organizing Evidence-Based Claims Tools from the previous lesson and their discussion notes from the previous activity to write a cohesive perspective about their research question/problem. Remind students that their perspectives must be supported with evidence and reasoning elicited from the research, so they should use specific research from the Research Portfolio. Remind students of the focus for this writing: to develop a perspective on the research and not summarize all the research outcomes.

① Consider providing students the Evidence-Based Perspective Rubric to guide their writing.

Remind students to paraphrase and quote the evidence correctly when crafting the perspective.

- ▶ Students listen.

① Students were taught paraphrasing and quoting evidence correctly in Module 9.1.1.

Transition students to writing the Evidence-Based Perspective.

- ▶ Students independently write an Evidence-Based Perspective.

① See the High Performance Response at the beginning of the lesson.

Collect the Evidence-Based Perspective.

Activity 6: Closing

5%

Instruct students to file the Organizing Evidence-Based Claims Tools from the previous activity in Section 3 of the Research Portfolio. Instruct students to remove the Vocabulary Journal from the Research Portfolio.

Collect the Research Portfolio.

① Make sure students have the Research Journal in the Research Portfolio for assessment purposes.

Display and distribute the homework assignment. For homework, instruct students to complete the following vocabulary activity using the Vocabulary Journal from this unit.

Choose three to five words or phrases from the research (sources) that were important in deepening your understanding of the research question/problem. In a paragraph, discuss how the three to five words helped you better understand the research question/problem.

- ▶ Students follow along.

- ① See a sample student response of the homework in 9.3.2 Lesson 1 (Homework Accountability).
- ① Direct students to keep the Vocabulary Journal for more vocabulary work in Unit 3.
- ① Students will have the Research Portfolio redistributed in Unit 3 in order to write the research paper.
- ① Consider drawing students' attention to their application of standard L.9-10.4.a, c, d by using context to make meaning of a word; consulting reference materials to clarify its precise meaning; verifying the preliminary determination of its meaning.

Homework

Complete the following vocabulary activity using the Vocabulary Journal from this unit.

- Choose three to five words or phrases from the research (sources) that were important in deepening your understanding of the research question/problem. In a paragraph, discuss how the three to five words helped you better understand the research question/problem.

End-of-Unit Assessment (9.3.2 Lesson 12)

Evidence-Based Perspective

Your Task: Write a one-page synthesis of your personal conclusions and perspective derived from your research. Draw on your research outcomes, as developed in the Organizing Evidence-Based Claims Tools to express your perspective on your research question/problem.

Your writing will be assessed using the Evidence-Based Perspective Rubric.

Guidelines

Be sure to:

- Develop a perspective on the research, and not summary all the research outcomes.
- Support your perspective with relevant evidence from your research.
- Organize your perspective using the claims you developed on your Organizing Evidence-Based Claims Tools (based on your inquiry paths).
- Use specific research from your Research Portfolio to support your claim(s).
- Organize your ideas in a cohesive and coherent manner.
- Use precise language appropriate for your task.
- Follow the conventions of standard written English.

CCLS: W.9-10.7; W.9-10.9

Commentary on the Task:

This task measures W.9-10.7 because it demands that students:

- 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

This task measures W.9-10.9 because it demands that students:

- Draw evidence from literary or informational texts to support analysis, reflection, and research

Evidence Based Perspective Rubric (9.3.2 End-of-Unit Assessment)

CCSS.ELA-Literacy.W.9-10.7 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.

CCSS.ELA-Literacy.W.9-10.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

Criteria	4 – Writing at this Level:	3 – Writing at this Level:	2 – Writing at this Level:	1 – Writing at this Level:
CCSS.ELA-Literacy.W.9-10.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem.	Clearly states a question or problem; writer demonstrates substantial evidence of sustained research addressing a question or a problem.	Includes a clear question or a problem; writer demonstrates some evidence of sustained research in response to a question or a problem.	Includes a question or a problem; writer's research is limited and a question or a problem has a limited response.	Does not include a clear question or a problem and demonstrate almost no evidence of research.
Narrow or broaden the inquiry when appropriate.	Clearly narrows or broadens the inquiry while conducting research.	Some evidence of narrowing or broadening the inquiry while conducting research.	Demonstrates limited narrowing or broadening of inquiry while conducting research.	Conducts very little inquiry.
Synthesize multiple sources on the subject.	Successfully synthesizes multiple sources while addressing a question or a problem.	Provides some synthesis of sources while addressing a question or a problem.	Synthesis of sources is limited while addressing a question or a problem.	Does not synthesize sources or address a question or a problem.
Demonstrate understanding of the subject under investigation.	Demonstrates a deep understanding of the subject of research.	Demonstrates some understanding of the subject.	Demonstrates limited understanding of the subject.	Demonstrates vague understanding of the subject.

Criteria	4 – Writing at this Level:	3 – Writing at this Level:	2 – Writing at this Level:	1 – Writing at this Level:
CCSS.ELA-Literacy.W.9-10.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.	Extensively draws evidence from the informational texts that were read; uses the information to support analysis, reflection, and research.	Draws some evidence from informational texts that were read; uses the some of the information to support analysis, reflection, and research.	Draws limited evidence from informational texts that were read; analysis limited.	Does not draw evidence from informational texts.