

## 9.3.3

## Unit Overview

### Synthesizing Research through the Writing Process

<b>Text(s)</b>	<i>Student texts (research sources) will vary*</i>  *By Unit 3, students will have chosen texts for research based on their individual research question/problem.
<b>Number of Lessons in Unit</b>	8

### Introduction

In this unit, 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 a research paper that articulates the conclusions gleaned from research throughout Module 9.3. In order to do this, students must synthesize and draw independent conclusions from information across multiple texts and articulate their research findings in an organized, cogent, and formal informational essay. As part of this process, students engage in a writing cycle in which they self-edit, provide peer reviews, and continually revise their work. Students receive direct instruction on a myriad of topics related to the writing process, including:

- Creating outlines
- Organizing topics and claims in a logical manner
- Drafting effective introductions, body paragraphs, and conclusions
- Creating cohesion within and between paragraphs
- Using colons and semicolons
- Adhering to MLA citation conventions
- Writing in a formal, objective tone

No new texts are introduced in this unit, which breaks from the pattern established in previous units. Instead, students will focus on analyzing the sources they collected for their Research Portfolio in Unit 9.3.2, delving more deeply into them as needed throughout the writing process.

The formal assessment for this unit is the final draft of the research paper. In the final lesson of this unit—after students have had the opportunity to outline, draft, revise, and edit their paper—students submit their final papers for assessment against the Research Paper Writing Rubric as well as the Informative and Explanatory Writing Checklists: Module 9.3.3, which students used throughout the unit to guide their writing.

## Literacy Skills and Habits

- 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
- Edit for a variety of purposes, including using semi-colons, colons, and correct spelling
- Use formal style and objective tone in writing
- Write coherently and cohesively

## Standards for This Unit

CCS Standards: Writing	
<b>W.9-10.2.a-f</b>	<p><b>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.</b></p> <p><b>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></p> <p><b>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.</b></p> <p><b>c. Use appropriate and varied transitions to link the major sections of the text,</b></p>

	<p>create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>d. Use precise language and domain-specific vocabulary to manage the complexity of the topic.</p> <p>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.</p> <p>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).</p>
<b>W.9-10.4</b>	<b>Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</b>
<b>W.9-10.5</b>	<b>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 on page 55.)</b>
<b>W.9-10.7</b>	<b>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.</b>
<b>W.9-10.8</b>	<b>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.</b>
<b>W.9-10.9</b>	<b>Draw evidence from literary or informational texts to support analysis, reflection, and research.</b>

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.9-10.2.a-c	<p><b>Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.</b></p> <p><b>a. Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses.</b></p> <p><b>b. Use a colon to introduce a list or quotation.</b></p> <p><b>c. Spell correctly.</b></p>
L.9-10.3.a	<p><b>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.</b></p> <p><b>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 A Manual for Writers</i>) appropriate for the discipline and writing type.</b></p>
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.

**Note:** Bold text indicates targeted standards that will be assessed in the unit.

## Unit Assessments

Ongoing Assessment	
Standards Assessed	W.9-10.2.a-f, W.9-10.4, W.9-10.5, W.9-10.8, W.9-10.9, L.9-10.2.a-c, L.9-10.3.a
Description of Assessment	Varies by lesson but may include drafted portions of the essay with a focus on the specific goal of individual lessons—e.g., introduction development, cohesion within and between paragraphs, proper citation methods, and incorporation of peer and teacher feedback.

End-of-Unit Assessment	
Standards Assessed	W.9-10.2.a-f
Description of Assessment	Students will be assessed on the final draft of their research paper and its alignment to the criteria of an informative/explanatory text. 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 should accurately organize and demonstrate thoughtful analysis of the evidence gathered through research.

## Unit-at-a-Glance Calendar

Lesson	Text	Learning Outcomes/Goals
1	Research Portfolio Texts	Students determine a central claim from their <b>Research Frame</b> and Evidence Based-Perspective writing assignment and begin to construct an outline for their research paper. Students organize their claims and supporting evidence for each claim. Students also analyze the evidence that supports each claim to complete their <b>Outline Tool</b> .

2	Research Portfolio Texts	Students participate in a peer review of their outlines to ensure readiness to begin drafting their research paper. Students learn the components of an effective introduction. Students write the first draft of the introduction of the research paper.
3	Research Portfolio Texts	Students learn how to effectively integrate information into writing selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. Students learn MLA conventions for in-text citation as well as for the works cited page. Students draft their works cited page and integrate proper citations into their papers.
4	Research Portfolio Texts	Students continue to draft their research paper while focusing on cohesion—both within and between paragraphs. Students receive instruction around topic development and writing conclusion paragraphs.
5	Research Portfolio Texts	Students learn how to identify and incorporate formal style and objective tone into their writing. Students use their first drafts to participate in peer review and teacher conferences.
6	Research Portfolio Texts	Students continue to refine and revise their research papers. Students will focus on editing for flow and cohesiveness of the entire research paper. Students continue to provide peer feedback and conference with the teacher.
7	Research Portfolio Texts	Students continue to edit and revise their research papers. Students are introduced to a new language standard, L.9-10.2, and practice incorporating semi-colons and colons into their writing. Students continue the peer review process for grammar and spelling.
8	Research Portfolio Texts	Students work in-class to finalize their research papers—editing, polishing, and rewriting as necessary. Students are evaluated on the final draft's alignment to the criteria established in the Research Paper Writing Rubric: Informative/Explanatory.

## Preparation, Materials, and Resources

### Preparation

- Review the Research Paper Writing Rubric: Informative/Explanatory.
- Review the Informative/Explanatory Writing Checklists (refer to 9.3. Unit 3).
- Review all unit standards and post in classroom.
- Consider creating a word wall of the vocabulary provided in all lessons.

### Materials/Resources

- Chart paper
- Writing utensils including pencils, pens, markers, and highlighters
- Methods for collecting student work: student notebooks, folders, etc.
- Access to technology (if possible): interactive whiteboard, document camera, LCD projector, computers for individual students (for word processing)
- Copies of the Research Paper Writing Rubric: Informative/Explanatory
- Copies of the Informative and Explanatory Writing Checklists: Module 9.3 Unit 3

## 9.3.3

## Lesson 1

## Introduction


In this lesson, students are introduced to the process of drafting a research paper. Students draft, revise, and edit this research paper over the course of the entire unit. Students learn how to develop their research paper from the Evidence-Based Perspective writing assignment they completed in the previous lesson. Students determine a central claim from their **Research Frame** and Evidence Based-Perspective writing assignment and construct an outline for their research paper. Students organize their claims and supporting evidence for each claim. Students also analyze the evidence that supports each claim to complete their **Outline Tool**. Students are assessed on the central claim as well as the organization of two Evidence-Based Claims from their outline. For homework, students find an additional piece of evidence for each of their claims and analyze how this evidence further supports their claim. Then they record their evidence and analysis on the **Additional Evidence Outline Tool**.

## Standards

Assessed Standard(s)	
W.9-10.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
Addressed Standard(s)	
W.9-10.5	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.
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.



## Assessment

Assessment(s)
<p>This learning in this lesson is captured through the Outline Tool. The tool is assessed on the strength of organization of claims and evidence to support the central claim and the analysis of the connections between evidence.</p> <p> This assessment will be evaluated using the Evidence-Based Claims Criteria Checklist.</p>
High Performance Response(s)
<p>A high performance response may include the following:</p> <ul style="list-style-type: none"> <li>• See Model Outline Tool for a high performance response.</li> </ul>

## Vocabulary

Vocabulary to provide directly (will not include extended instruction)
<ul style="list-style-type: none"> <li>• iterative (adj.) – repetitious</li> <li>• drafting (v.) – drawing up in written form</li> <li>• revising (v.) – altering something already written or printed, in order to make corrections, improve, or update</li> </ul>
Vocabulary to teach (may include direct word work and/or questions)
<ul style="list-style-type: none"> <li>• None.*</li> </ul>

\*Students will encounter domain-specific vocabulary related to their individual research question/problem by reading, annotating, and recording notes on various sources. Students will track some of this vocabulary in their Vocabulary Journal when conducting independent searches during class and for homework.

## Lesson Agenda/Overview

Student-Facing Agenda	% of Lesson
<p><b>Standards &amp; Text:</b></p> <ul style="list-style-type: none"> <li>• Standards: W.9-10.9, W.9-10.5, W.9-10.7</li> </ul>	

Learning Sequence:	
1. Introduction of Lesson Agenda	1. 5%
2. Homework Accountability	2. 10%
3. Introduction to the Writing Process	3. 15%
4. Evidence Organization	4. 35%
5. Lesson Assessment	5. 30%
6. Closing	6. 5%

## Materials

- Copies of **Outline Tool** for each student
- Copies of **Additional Evidence Outline Tool** for each student
- Student copies of **Evidence-Based Claims Criteria Checklist** (refer to 9.3.2 Lesson 10)
- **Research Portfolio** (students have these)

## Learning Sequence

How to Use the Learning Sequence	
Symbol	Type of Text & Interpretation of the Symbol
<b>10%</b>	<b>Percentage indicates the percentage of lesson time each activity should take.</b>
no symbol	Plain text indicates teacher action.
	<b>Bold text indicates questions for the teacher to ask students.</b>
	<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 introducing the agenda and assessed standard for this lesson: W.9-10.9. Explain that in this lesson students are introduced to the writing process, a research paper, and drafting an outline using an Outline Tool. Students determine a central claim from their Research Frame and Evidence Based-Perspective writing assignment and construct an outline for their research paper. Students organize their claims and supporting evidence for each claim. Students also analyze the evidence that supports each claim to complete their Outline Tool.

- ▶ Students follow along and read the agenda.

## Activity 2: Homework Accountability

10%

Instruct students to form pairs to share their three to five vocabulary words as well as their paragraph explaining how these words helped deepen their understanding of their research question.

- ▶ Students form pairs for a Turn-and-Talk and discuss their vocabulary homework.
- 💬 Student responses will vary based on their individual research: In the article, “Think You’re Smarter than Animals? Maybe Not,” Alexandra Horowitz and Ammon Shea write about comparing “our own cognitive faculties” with animals. I didn’t know what cognitive faculties meant but because of the context I thought it might have something to do with thinking or intelligence. When I looked up the both of the words, I learned that *cognitive* means “the act or process of knowing” and *faculties* are “powers of the mind, as memory, reason, or speech.” So cognitive faculties must mean “knowing powers” or intelligence. Knowing the terms helped deepen my understanding of the comparison Horowitz and Shea are making between animal and human intelligence. Further vocabulary words I defined and recorded in my journal were *etiquette* and *replications*. Knowing the meaning of these words helped deepen my understanding of the first study present in the *New York Times* article. The authors write about the chimps using social etiquette, which means “polite social behavior.” The chimps display the etiquette by “laugh replications” and *replications* means “a copy.” Knowing these words helped reinforce my understanding that the chimps are intelligent because they want to get along socially and be polite with other monkeys.

## Activity 3: Introduction to the Writing Process

15%

Share with students that the writing process is *iterative*, much like the research process in Unit 2. Remind students that *iterative* means “repeating,” which means students will frequently reassess their work or their thinking, and improve it. In this unit students compose a formal research paper. Explain that writing is a process that takes many forms and students can accomplish it through a variety of methods. Though there are many different ways to approach the writing process, they all involve multiple drafts and revisions. Inform students they will be *drafting*, *revising*, peer reviewing, and editing throughout this unit to create a well-crafted research paper.

- ① Remind students that *drafting* is “drawing up in written form” and *revising* is “altering something already written or printed, in order to make corrections, improve, or update.” Consider asking students why they might need to revise a draft. Remind students to record the definitions of *iterative*, *drafting*, and *revising* in their Vocabulary Journals.

- Students listen.

Explain that the research paper they complete in this unit is informative and expository, and is meant to clearly present the information gathered from their research. Advise students to keep in mind that the purpose of writing an analytical research paper is to convey complex ideas, concepts, and information clearly and accurately. Explain that students must also develop a central claim and support that claim using evidence.

- ① For clarity, it may be helpful to refer to the explanation of the difference between informational and argumentative writing in the CCSS Appendix A (p. 23): “Although information is provided in both arguments and explanations, the two types of writing have different aims. Arguments seek to make people believe that something is true or to persuade people to change their beliefs or behavior. Explanations, on the other hand, start with the assumption of truthfulness and answer questions about why or how. Their aim is to make the reader understand rather than to persuade him or her to accept a certain point of view. In short, arguments are used for persuasion and explanations for clarification.”

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Explain that the Evidence-Based Perspective they developed at the end of the last unit, Unit 2, is the foundation for their research paper. Return to students their Evidence-Based Perspective written assignments as well as their Research Portfolios. Inform them that they will be using their Evidence-Based Perspective to guide the claims and evidence they will express in their paper. The Evidence-Based Perspective encompasses the personal conclusions and insights students drew from their research to help guide their writing. The research paper is a logical, well-organized and coherent synthesis of students’ research and their personal conclusions and perspectives on their research so far.

Explain that a research paper has a formal structure: introduction, body paragraphs, conclusion, and works cited page. Inform students that they will be focusing on each of these parts in lessons throughout this unit in order to produce a final research paper for the End-of-Unit Assessment.

- Students listen.

## Activity 4: Evidence Organization

**35%**

Explain that the focus of this lesson is properly organizing their evidence and claims. This gives them a clear structure to follow when they begin writing. Explain that they will use their research question to form the central claim in their research paper. Instruct students to take out their Evidence-Based Perspective writing assignment and their Research Frame, and briefly discuss in pairs the strongest or most interesting possible central claim that has emerged from their research.

- ▶ Students form pairs to discuss possible central claims for their research paper.

Distribute the Outline Tool. Instruct students to write down their chosen research question or inquiry path. Remind students that they have answered the research question in their Evidence-Based Perspective writing assignment, and they will need to distill this answer on their Outline Tool into one sentence: a central claim. For instance, if their research question was: “How does animal intelligence compare with human intelligence?” then they would write the answer to this question based on conclusions expressed in the Evidence-Based Perspective writing assignment: “Animals and humans have different kinds of intelligence, and there are many instances where animals display remarkable intelligence, but they cannot always be tested in the same way as people.”

- ▶ Students write down their research question and central claim on the Outline Tool.
- 💬 Student responses will vary depending on the research.

Explain that there are a variety of ways to organize a research paper. Explain that students should organize their claims and evidence in a logical, sequential manner that clearly supports their analysis. For instance, if a research paper is about how animal intelligence compares to human intelligence these are some claims that have been developed by research. Display the following claims for students:

- Claim: Research has shown that some animals can actually learn human language.
- Claim: Researchers can measure animal intelligence by observing qualities of intelligence that are shared by humans, but they must design their experiments considering the animal's perspective.
- Claim: Historically there has been an idea that humans are smarter than animals.

Explain to students that of these three examples, the claim about the historical ideas around animal intelligence is the most logical claim to begin with because it informs the way we think about animal intelligence today. Ask students:

### **What is the next logical claim in this sequence and why?**

- 💬 The next logical claim would be the one that measures animal intelligence because we need to measure animal intelligence before coming to the conclusion that they can learn a language or test their intelligence.

Instruct students to retrieve all of the Organizing Evidence-Based Claims Tools they have in their Research Portfolio that align with their central claim. Display some potential questions for students to guide their organization of the tools from their portfolio:

**If I have these three Organizing Evidence-Based Claims Tools, which one would be most effective at the beginning of the research paper?**

**Which one would be most effective at the end?**

**Are my Evidence-Based Claims in a logical order?**

- ▶ Students follow along and read the guiding questions.

Instruct students to physically arrange their Organizing EBC Tools on their workspace in an order that reflects where each claim would appear in the research paper.

① **Differentiation Consideration:** The organizational structure in this lesson is not meant to be prescriptive, but rather model a way to potentially organize a research paper. If students require more explicit modeling or instruction around organization of research papers, consider providing additional resources and graphic organizers to help students organize and structure their claims and evidence.

① All Organizing EBC Tools were created in 9.3.2 Lesson 11.

- ▶ Students organize their Organizing EBC Tools on their workspace.

Instruct students to do a brief Turn-and-Talk in pairs. Specifically, ask students to discuss their answers to this question:

**How does this order effectively support your central claim?**

- ▶ Students do a Turn-and-Talk in pairs.

① **Differentiation Consideration:** Students can also work with their pre-established research groups for this activity.

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Instruct student pairs to briefly share the results of their discussion. Ask students if anyone has changed their plan based on their classmate's suggestions.

Instruct students to independently copy onto their Outline Tool the order of their Evidence Based Claims and the evidence from the Organizing EBC Tools. Remind students that the purpose of this outline is to have a clear plan for their research paper and to consolidate all of their information. Instruct students to select the strongest evidence to support their claim.

- ▶ Students work independently on their Outline Tool.
- 🗨 See the Model Outline Tool for potential student responses.

Explain that the portion of the outline they have completed is the frame for the paper's introduction (which will introduce the central claim) and the body (which presents the claims and evidence that support the central claim). Instruct students to look at their first claim on the Outline Tool. Explain that they need evidence to support each claim in the body of their paper and must briefly write how this

evidence supports each claim. Inform students that this analysis is the starting point for each body paragraph.

- ▶ Students follow along.

Instruct students to form pairs to discuss their ideas about how their evidence supports the claim. Then students can complete the “analysis” portion of the Outline Tool.

- ▶ Students discuss their ideas in pairs and fill in the Outline Tool.
- 🗨 See the Model Outline Tool for examples of analysis of the evidence and how it supports the claim.

### Activity 5: Lesson Assessment

**30%**

Inform students that they will submit their Outline Tool for this lesson’s assessment. They will be assessed on the central claim, four Evidence-Based Claims with one piece of evidence for each claim, a brief analysis of that evidence, and connections between the evidence. Inform students that the Evidence-Based Claims Criteria Checklist will guide the evaluation of this assessment, and students should refer to their checklists while completing their Outline Tool.

- ① Evaluate the assessment using the Evidence-Based Claims Criteria Checklist.

- ▶ Students work on their Outline Tool.

Distribute the Additional Evidence Outline Tool and instruct students to record their claims on this tool, as they will need this information for homework.

- ▶ Students turn in their Outline Tool after recording their claims on the Additional Evidence Outline Tool.

### Activity 6: Closing

**5%**

Display and distribute the homework assignment. For homework, instruct students to find an additional piece of evidence for each of their claims and analyze how this evidence further supports their claim. Instruct students to then record their evidence and analysis on the Additional Evidence Outline Tool.

- ▶ Students follow along.

## Homework

For homework, record an additional piece of evidence for each claim. Be sure to analyze the additional evidence and how it supports the claims. Record your evidence and analysis on the Additional Evidence Outline Tool. Be sure to use your Organizing Evidence-Based Claims Tools from the Research Portfolio to support the analysis.



## Outline Tool

<b>Name:</b>		<b>Class:</b>		<b>Date:</b>	
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[Introduction]	
<b>Research Question:</b>	
<b>Central Claim:</b>	
[Body] <b>Claim:</b>	
<b>Evidence:</b>	<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>
<b>Claim:</b>	
<b>Evidence:</b>	<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>
<b>Claim:</b>	
<b>Evidence:</b>	<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>

<b>Claim:</b>	
<b>Evidence:</b>	<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>
<b>[Conclusion]</b>	

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## Model Outline Tool

<b>Name:</b>		<b>Class:</b>		<b>Date:</b>	
<p>[Introduction]</p> <p><b>Research Question:</b> How does animal intelligence compare with human intelligence?</p> <p><b>Central Claim:</b> The question still has no clear answer; ultimately, it depends on the standards we use to measure intelligence, and whether or not it is fair (or even possible) to compare humans to animals.</p>					
<p>[Body] <b>Claim:</b> Historically there has been an idea that humans are smarter than animals.</p>					
<p><b>Evidence:</b> “Animals might be capable of learning, they argued, but surely not of thinking and feeling” (Waal).</p>			<p><b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i></p> <p>This evidence demonstrates that there has historically been a view that animals are not as intelligent as humans. Thinking like this goes at least as far back as the time of ancient Greece.</p>		
<p><b>Claim:</b> Researchers can measure animal intelligence by observing qualities of intelligence that are shared by humans, but they must design their experiments considering the animal's perspective.</p>					
<p><b>Evidence:</b> “The researchers discovered that when one chimp laughed others sometimes engaged in ‘laugh replications’ that lacked the full acoustic structure of spontaneous laughter. In other words, they were fake-laughing” (Horowitz and Shea).</p>			<p><b>Analysis of Evidence:</b> How does the evidence support your claim?</p> <p>This evidence demonstrates that there can be other ways of measuring intelligence. Animals behave in a variety of ways and though there are times human qualities can be measured, the animal’s perspective should be considered in order to truly measure their intelligence.</p>		

<b>Claim:</b> Sometimes animals possess an intelligence that we must uncover.	
<b>Evidence:</b> “Current evidence has shown that both humans and animals have the ability to mentally represent and compare numbers” (Duke).	<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>  This evidence shows that there are types of intelligence that animals possess that scientists need to research and uncover. A lot of scientists knew that animals could recognize amounts, but it takes more analysis and tests to figure out that a monkey could actually do mathematical problems.
<b>Claim:</b> Some animals can actually learn human language.	
<b>Evidence:</b> “Under Pepperberg’s patient tutelage, Alex learned how to use his vocal tract to imitate almost one hundred English words” (Morell).	<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>  This evidence supports the claim that some animals can even learn language. Alex the parrot is an example of an animal that was taught to imitate human sounds and also can form small sentences. This is another way that animals display their intelligence.
[Conclusion]  <b>Restate central claim:</b> All of these examples prove that animals are often more intelligent than we can see at first. But there is still an unanswered question: How do they compare to humans?	

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## Additional Evidence Outline Tool

<b>Name:</b>		<b>Class:</b>		<b>Date:</b>	
[Body] <b>Claim:</b>					
<b>Evidence:</b>			<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>		
<b>Claim:</b>					
<b>Evidence:</b>			<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>		
<b>Claim:</b>					
<b>Evidence:</b>			<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>		
<b>Claim:</b>					
<b>Evidence:</b>			<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>		

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## Model Additional Evidence Outline Tool

<b>Name:</b>		<b>Class:</b>		<b>Date:</b>	
[Body] <b>Claim:</b> Historically there has been an idea that humans are smarter than animals.					
<b>Evidence:</b> “Aristotle's idea of the scala naturae, the ladder of nature, put all life-forms in rank order, from low to high” (Waal).			<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>  This evidence demonstrates that there has historically been a view that animals are not as intelligent as humans. Thinking like this goes at least as far back as the time of ancient Greece.		
<b>Claim:</b> Researchers can measure animal intelligence by observing qualities of intelligence that are shared by humans, but they must design their experiments considering the animal's perspective.					
<b>Evidence:</b> “A few recent research papers describe animal competence at social and cognitive tasks that humans often struggle with—mastering conversational etiquette” (Horowitz and Shea).			<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>  This evidence demonstrates that there can be other ways of measuring intelligence. Animals behave in a variety of ways and though there are times human qualities can be measured, the animal's perspective should be considered in order to truly measure their intelligence.		
<b>Claim:</b> Sometimes animals possess an intelligence that we must uncover.					
<b>Evidence:</b>  “We know that animals can recognize quantities, but there is less evidence for their ability to carry out explicit mathematical tasks, such as addition...Our study shows that they can” (Duke).			<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>  This evidence shows that there are types of intelligence that animals possess that scientists need to research and uncover. A lot of scientists knew that animals could recognize amounts, but it takes more analysis and tests to figure out that a monkey could actually do mathematical problems.		

<b>Claim:</b> Some animals can actually learn human language.	
<b>Evidence:</b>  “Pepperberg walked to the back of the room, where Alex sat on top of his cage preening his pearl gray feathers. He stopped at her approach and opened his beak. ‘Want grape,’ Alex said” (Morell).	<b>Analysis of Evidence:</b> <i>How does the evidence support your claim?</i>  This evidence supports the claim that some animals can even learn language. Alex the parrot is an example of an animal that was taught to imitate human sounds and also form short sentences. This is another way that animals display their intelligence.

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## 9.3.3

## Lesson 2

## Introduction

In this lesson, students participate in a peer review of their outlines to ensure they are ready to begin drafting their research paper. Students then learn the components of an effective introduction. The assessment in this lesson is the first draft of the introduction of the research paper. For homework, students begin drafting the body of their research paper.

## Standards

Assessed Standard(s)	
W.9-10.2.a	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.  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.
Addressed Standard(s)	
W.9-10.5	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.

## Assessment

Assessment(s)
The learning in this lesson is captured by the student's first draft of their introduction for their research paper. This introduction should be engaging and include the central claim of the research paper.  ① This assessment will be evaluated using the W.9-10.2.a portion of the Research Paper Writing Rubric: Informative/Explanatory (located in the 9.3.3 Rubric and Checklist Packet).
High Performance Response(s)
A high performance response may include the following:



- Plenty of people say their pets are intelligent, emotional creatures. Some people might even argue that their dog is smarter than their neighbor. But how smart are animals really? Over the centuries, people have offered many ways of thinking about animal cognition—that is, the mental capacities of animals. In the seventeenth century, René Descartes claimed that animals do not think at all, and that is why they are not able to speak (Castro and Wasserman). Recently, though, many researchers have begun to observe extraordinary signs of intelligence in dolphins, chimps, dogs, and even parrots—from following instructions and using tools, to being able to speak and do math. But while some animals may show signs of intelligence, a question remains: How does animal intelligence compare to human intelligence? That is to say, while we think that humans are smarter, how much smarter are we, exactly? The question still has no clear answer; it depends on how we measure intelligence and whether or not it is fair (or even possible) to compare humans to animals.

## Vocabulary

### Vocabulary to provide directly (will not include extended instruction)

- multimedia (n.) – multimedia is the combined use of several media (means of communication) e.g., a presentation that incorporates video and sound
- formatting (n.) – the organization, plan, style, or type of something

### Vocabulary to teach (may include direct word work and/or questions)

- None.\*

\*Students will encounter domain-specific vocabulary related to their individual research question/problem by reading, annotating, and recording notes on various sources. Students will track some of this vocabulary in their Vocabulary Journal when conducting independent searches during class and for homework.

## Lesson Agenda/Overview

Student-Facing Agenda	% of Lesson
<b>Standards &amp; Text:</b> <ul style="list-style-type: none"> <li>Standards: W.9-10.2.a, W.9-10.5</li> <li>Text: Sources from research</li> </ul>	
<b>Learning Sequence:</b>	

1. Introduction of Lesson Agenda	1. 10%
2. Homework Accountability	2. 20%
3. Drafting Introductions	3. 30%
4. Lesson Assessment	4. 30%
5. Closing	5. 10%

## Materials

- Student copies of the **9.3 Common Core Learning Standards Tool** (refer to 9.3.1 Lesson 1)
- Copies of the **9.3.3 Rubric and Checklist Packet** for each student
- Student copies of the **Outline Tool** (refer to 9.3.3 Lesson 1)
- Student copies of the **Additional Evidence Outline Tool** (refer to 9.3.3 Lesson 1)

## 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.
	<b>Bold text indicates text dependent questions.</b>
	<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

10%

Begin by reviewing the lesson agenda and assessed standard for this lesson: W.9-10.2.a. Inform students that in this lesson, they finalize their outline and draft an introduction.

- Students follow along and read the agenda.

Ask students to read standard W.9-10.2.a on their 9.3 Common Core Learning Standards Tool and assess their familiarity with and mastery of it.

- ⓘ If students are unfamiliar with the language of this standard, explain that *formatting* is the organization, plan, style, or type of something. Also, *multimedia* is the combined use of several

media (means of communication) e.g., a presentation that incorporates video and sound. Remind students to record the definitions of *multimedia* and *formatting* in their vocabulary journals.

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Display and distribute the 9.3.3 Rubric and Checklist Packet. Inform students their research papers will be evaluated using the Research Paper Writing Rubric: Informative/Explanatory. Explain to students that each part of this rubric is aligned to specific Common Core Standards that are targeted to assess components of informative and explanatory writing as well as relevant language standards.

Inform students that the 9.3.3 Rubric and Checklist Packet is a resource they will refer to as they engage in the writing process throughout this unit. At the front of the packet is the Research Paper Writing Rubric: Informative/Explanatory. The rest of the packet contains excerpted portions of the rubric aligned to specific targeted standards. Each excerpted standard rubric row also contains space for feedback and a corresponding checklist that will be used to guide peer review, teacher feedback, and assessment in this unit. Instruct students to briefly review the 9.3.3 Rubric and Checklist Packet.

- ▶ Students follow along and review the 9.3.3 Rubric and Checklist Packet.

## Activity 2: Homework Accountability

**20%**

Instruct students to form pairs and take out their Additional Evidence Outline Tool. Inform students that they need to make sure they have a strong outline and central claim to direct their writing before they start to draft their research paper. Remind students that a purposeful and clear outline will assist them throughout the process of drafting their research paper.

Instruct students to share their Additional Evidence Outline Tool with a classmate to do a peer review of their organizational plan for their research paper. Remind students that a fully planned outline will include the central claim, all sub-claims, evidence supporting the central claim, and analysis of the evidence.

- ▶ Students form pairs and do a peer review of their Additional Evidence Outline Tools.

💬 Student responses will vary according to their individual research and outline.

- ① Consider sharing with students the Model Additional Evidence Outline Tool as a reminder of what an exemplar response looks like.

### Activity 3: Drafting an Introduction

30%

Explain that students will begin the first draft of their research paper. Once the outline is complete, there are many ways to begin writing a paper. Inform students the focus of this lesson is writing the introduction of the research paper.

#### What do you know about an introduction based on the work you have done in the past?

- ▶ Students share their understanding of an introduction.
- 💬 An introduction is the first part of a paper or essay. The introduction should tell the reader the central claim of the paper. It can also be the “hook” that grabs readers’ attention. The introduction should be a high-level overview of the paper and not include all of the smaller details in the paper.

① Potential student responses are drawn from the previous instruction of introductions in this curriculum. Refer to 9.1.1 Lesson 15.

Explain that an introduction is the first part of the research paper. An introduction should be interesting and get the reader’s attention, give context for what will be covered in the research paper, preview what will follow, and include the central claim of the research paper. A good introduction should be one to two paragraphs long. Typically, the central claim should be the last sentence of the introduction. Explain to students that they should include their strongest claims in the introduction in a clear, organized fashion, but they do not need to include all the evidence that supports the claims—that will come in the body of the research paper. However, if it makes sense to do so, students can choose to put into the introduction one or two pieces of evidence that support the strongest claims in their paper.

- ▶ Students follow along.

Display an exemplar introduction for students and ask them to read the introduction and then form pairs for a Turn-and-Talk to briefly discuss their understanding of the introduction.

- Exemplar Introduction: Plenty of people say their pets are intelligent, emotional creatures. Some people might even argue that their dog is smarter than their neighbor. But how smart are animals really? Over the centuries, people have offered many ways of thinking about animal cognition—that is, the mental capacities of animals. In the seventeenth century, René Descartes claimed that animals do not think at all, and that is why they are not able to speak (Castro and Wasserman). Recently, though, many researchers have begun to observe extraordinary signs of intelligence in dolphins, chimps, dogs, and even parrots—from following instructions and using tools, to being able to speak and do math. But while some animals may show signs of intelligence, a question remains: How does animal intelligence compare to human intelligence? That is to say, while we think that humans are smarter, how much smarter are we, exactly? The question still has no clear answer; it

depends on how we measure intelligence, and whether or not it is fair (or even possible) to compare humans to animals.

- ▶ Students read the example introduction and form pairs to discuss it in a Turn-and-Talk.

Explain that there are a lot of different methods for creating an interesting introduction that will grab the reader's attention. Explain that students could present a problem, question, or interesting fact associated with their research. They could also retell an interesting story they came across in the course of their research. Using descriptive words that will bring the reader into the context of the topic is also a great way to begin a research paper. Instruct students to discuss the following questions in pairs before sharing with the entire class.

**What method did the author of the introduction use to get the attention of the reader? Is this an effective method?**

- ☞ The author started their introduction writing about pets to get the reader's attention. This is an effective method because a lot of people have pets and think their pets are smart.

**What is the author going to be writing about in the paper? What is the central claim of this research paper?**

- ☞ The author is going to write about animal intelligence compared to human intelligence. They mention dolphins, monkeys, dogs, and parrots and experiments associated with these animals. The central claim of this research paper is that there are different ways to measure intelligence, and it may not be possible to fairly compare animals and humans.
- ① **Differentiation Consideration:** Consider forming student research groups and have them brainstorm interesting ways to introduce their research paper. Allow each student to write a sample, and then instruct students to have a round-robin style discussion wherein each student passes their sample to a member of their group and the group discusses each sample and which sample interested them the most and why.

## Activity 4: Lesson Assessment

30%

Explain that students will now independently draft their own introductions for the lesson assessment. Remind students that this is a first draft, and while they should be focusing on the conventions established for an effective introduction, they will be working to edit and refine their writing in later lessons. Inform students that the assessment will be evaluated using the W.9-10.2.a portion of the Research Paper Writing Rubric: Informative/Explanatory. Remind students to refer to the W.9-10.2.a checklist in the 9.3.3 Rubric and Checklist Packet as they are writing their introductions.

- ① The process of writing a research paper will involve drafting, peer review, editing, and revising. If access to technology is available, consider using a cloud or electronic storage system (MS Word, Google Drive, etc.) that allows each student to write and track changes using a word processing program. If technological resources are not available, use the established classroom protocols for drafting, editing, and revising hard copies.
  - ▶ Students independently draft the opening paragraph of their paper.
- ① Consider having students email their introductions to the teacher, uploading them to a cloud for teacher access, or handing in a copy on paper for assessment.
  - ▶ See the High Performance Response at the beginning of this lesson.

## Activity 5: Closing

**10%**

Display and distribute the homework assignment. For homework, instruct students to draft the first paragraph of the body of their research paper using their Outline Tool and Additional Evidence Outline Tool to guide their writing. Inform students that they will receive instruction on crafting strong body paragraphs in the following lessons. This body paragraph is a first draft and should be a full paragraph using complete sentences. It should clearly articulate all the relevant information about the first claim that students have collected on their Outline Tool and Additional Evidence Outline Tool.

- ▶ Students follow along with the homework assignment.

## Homework

For homework, draft the first paragraph of the body of your research paper. Be sure to clearly articulate all of the relevant information from your Outline Tool and Additional Evidence Outline Tool while you are drafting your paragraph.

## 9.3.3

## Lesson 3

## Introduction

In this lesson, students learn how to effectively integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism, and following a standard format for citation. Students learn MLA conventions for in-text citation as well as for a works-cited page. Drafting their works-cited page—which is integral to the creation of any research paper—will help students avoid plagiarism. For the lesson assessment, students are asked to complete a words cited page, referencing all research in the research paper while also inserting in-text citation into a sample body paragraph. For homework, students are asked to draft the remaining body paragraphs of their paper using the in-text citation methods learned in class.

## Standards

Assessed Standard(s)	
W.9-10.8	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.
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. 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 Standard(s)	
W.9-10.2.b, c	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. 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.
W.9-10.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

## Assessment

Assessment(s)
Students are assessed on adherence to the organization structure in their outline as well as how well they followed the citation methods discussed in class to avoid plagiarism.
High Performance Response(s)
<p>A high performance response may include the following:</p> <ul style="list-style-type: none"> <li>• See attached works-cited page.</li> <li>• Sample body paragraph: Consider Alex the parrot. Animal scientist Irene Pepperberg spent 30 years teaching Alex, an African gray parrot, to speak (Morell). At first Alex would simply reproduce noises, but Irene also taught him the <i>meaning</i> of those sounds using simple patterns, like counting from one to ten. Eventually, Alex could differentiate between shapes and colors, and even communicated desires like, “Want grape,” or “Wanna go tree” (Morell). Pepperberg still works with a number of other parrots to teach them similar skills.</li> </ul> <p>① Use the MLA Citation Handout (at the end of the lesson) as well as the W.9-10.8 and L.9-10.3.a portions of the Research Paper Writing Rubric: Informative/Explanatory to evaluate this assessment. Make sure students are properly citing references using the MLA guidelines.</p>

## Vocabulary

Vocabulary to provide directly (will not include extended instruction)
<ul style="list-style-type: none"> <li>• citation (n.) – a quotation from or reference to a book, paper, or author</li> </ul>
Vocabulary to teach (may include direct word work and/or questions)
<ul style="list-style-type: none"> <li>• None.*</li> </ul>

\*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](http://www.engageny.org/sites/default/files/resource/attachments/9-12_ela_prefatory_material.pdf).



- ① Students should use their Vocabulary Journal to incorporate domain-specific vocabulary from Unit 9.3.2 into their research paper, as well as to record process-oriented vocabulary defined in the lesson.

## Lesson Agenda/Overview

Student-Facing Agenda	% of Lesson
<b>Standards &amp; Text:</b> Standards: W.9-10.8, L.9-10.3.a, W.9-10.2.b, c, W.9-10.4	
<b>Learning Sequence:</b> <ol style="list-style-type: none"> <li>1. Introduction of Lesson Agenda</li> <li>2. Homework Accountability</li> <li>3. Citation Methods</li> <li>4. Assessment: Works Cited Page and Body Paragraph</li> <li>5. Closing</li> </ol>	<ol style="list-style-type: none"> <li>1. 10%</li> <li>2. 10%</li> <li>3. 35%</li> <li>4. 40%</li> <li>5. 5%</li> </ol>

## Materials

- Student copies of the **9.3 Common Core Learning Standards Tool** (refer to 9.3.1 Lesson 1)
- Copies of the **MLA Citation Handout** for each student
- Student copies of the **9.3.3 Rubric and Checklist Packet**

## 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.
	<b>Bold text indicates questions for the teacher to ask students.</b>
	<i>Italicized text indicates a vocabulary word.</i>
►	Indicates student action(s).
☞	Indicates possible student response(s) to teacher questions.
①	Indicates instructional notes for the teacher.

## Activity 1: Introduction of Lesson Agenda

10%

Begin by reviewing the agenda and the assessed standards for this lesson: W.9-10.8 and L.9-10.3.a. Inform students that in this lesson, they will focus on proper citation methods in a research paper. Post or project the L.9-10.3.a standard for students. Ask students to get out their 9.3 Common Core Learning Standards Tool, read the new standard, and discuss their understanding in pairs. Inform students they will be learning to incorporate MLA style citations into their writing in this unit.

- ▶ Students listen and discuss their understanding of the new standard, L.9-10.3.a in pairs.

## Activity 2: Homework Accountability

10%

Instruct students to form small groups. Ask students to share the first body paragraph they drafted for homework as well as their introduction paragraph assessed by the teacher with the small group. Ask students to discuss how drafting the introduction has helped them further clarify the direction of their research papers.

- ▶ Students form small groups and share their opening paragraphs with one another.
- 💬 Possible student discussion responses may include:
  - Drafting the opening paragraphs of my research paper helped me articulate what I wanted to say in the rest of the paper. It steered the direction and helped me think through the organization of my body paragraphs.

## Activity 3: Citation Methods

35%

Share with students that they will now learn how to cite information correctly within their paper. Inform students they have gathered information about their topic and have begun to organize it in a way that supports their claim. Explain to students that although they are the authors of their own paper, they are drawing on multiple other authors in order to make their point. Remind students that if they do not give those other authors credit for the work they reference, it is called *plagiarism*. Remind students that *plagiarism* is taking someone else's work or ideas and passing them off as one's own. Inform students that *plagiarism* is an ethical offense, and can often result in serious consequences. Explain to students that in addition to disciplinary consequences, *plagiarism* is counter-productive to the learning process, as stealing someone else's ideas will not result in the deep understanding that results from learning on one's own.

- ▶ Students listen.

Explain to students that someone can plagiarize by copying and pasting the exact words from a source without quoting it, but also by using different words to express the same idea as another author (e.g., if someone takes the central claim and evidence from another paper and writes it with different words, it is still *plagiarism* if it is not cited).

Inform students they can avoid plagiarism by always *citing* works properly. Proper *citation* gives credit to the author one is quoting, paraphrasing, or referencing. Explain to students that *citation* is quoting or referencing a book, paper, or author. Explain to students that there is a specific format for doing this, called MLA citation. Distribute the MLA Citation Handout. Ask students to look at the in-text citation portion of the handout first.

- ▶ Students listen and examine the in-text citation portion of the Citation Handout.

① Remind students to record the definition of *citation* in their Vocabulary Journals.

Remind students that the information needed for proper citation is in their Potential Sources Tool, which they received in Unit 9.3.2, Lesson 3. Inform students that within their essays, they should cite authors by providing, in parentheses, an author's last name as well as a page number after a quote, paraphrase, or use of idea (e.g., "People and animals are supposed to be together" (Grandin 5).) Explain to students that if the author's name already appears in the sentence, the parentheses can simply include a page number (e.g., Grandin says that "People and animals are supposed to be together" (5).) Instruct students that if the name of the author is unknown, they should provide a shortened version of the title instead (e.g., "People and animals are supposed to be together" ("*Animals*" 5).) This is useful for Internet articles and other sources where the author may not be given direct credit.

- ▶ Students listen.

① **Differentiation Consideration:** The specific formatting of in-text citations may require additional hands-on practice. Consider expanding this into a longer activity where students practice pulling quotes from and paraphrasing their sources.

① **Differentiation Consideration:** Consider telling students that web tools exist (like Easybib.com) to assist with citation formatting.

Explain to students that all of this information informs the reader where the source of the information provided in the paper derived from (e.g., "on page 5 of a book by Grandin"). This book will be listed on the works-cited page. Explain to students that a works-cited page comes as the final page in a research paper and is a list of all the sources used to write the paper. Ask students to look at the example on their handout and notice the formatting differences between different media. A book, for example, is cited like this:

Last Name, First Name. *Title of Book*. City of Publication. Publisher, Year of

Publication. Medium of Publication.

Instruct students to notice the difference between this format and that of a website:

Editor, Author or Compiler Name (if available). *Name of Site*. Version Number. Name of Institution/Organization Affiliated with the Site (Sponsor or Publisher), Date of Resource Creation (if available). Medium of Publication. Date of Access.

- ① Given the wide variety of source types students may have compiled over the course of their research, citation instruction for each and every medium may require extensive work. Consider focusing primarily on books or web publications and provide students with the following URL for reference when citing sources: <https://owl.english.purdue.edu/owl/resource/747/1/>. Alternatively, depending on the size of the class, consider providing individual instruction for students with atypical sources (e.g., radio interviews).

- ▶ Students listen and observe differences between various sources.

- ① Information in this section adheres to MLA style and is modeled after instruction on <https://owl.english.purdue.edu/owl/resource/747/1/>.

#### Activity 4: Assessment: Works Cited Page and Body Paragraph

**40%**

Ask students to gather all the sources they intend to use to write their research paper. Inform students that they will work individually to create a works cited page for their research paper, using the Citation Handout and/or <https://owl.english.purdue.edu/owl/resource/747/1/> as a guide. Instruct students to also refer to the W.9-10.8 & L.9-10.3.a checklist in the 9.3.3 Rubric and Checklist Packet.

- ▶ Students independently create their works cited pages.

- ① Check in with students individually as they work, assisting as needed.

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Ask students to take out the body paragraph they wrote for homework and insert proper in-text citation methods as needed.

- ① Assess students on their adherence to MLA conventions learned in class by using the MLA Citation Handout for reference (see the end of the lesson) as well as the W.9-10.8 and L.9-10.3.a portions of the Research Paper Writing Rubric: Informative/Explanatory.

- 💬 A High Performance Response may resemble:

- Consider Alex the parrot. Animal scientist Irene Pepperberg spent 30 years teaching Alex, an African gray parrot, to speak (Morell). At first Alex would simply reproduce noises, but Irene also taught him the *meaning* of those sounds using simple patterns, like counting from one to ten. Eventually, Alex could differentiate between shapes and colors, and even communicated desires like, “Want grape” or “Wanna go tree” (Morell). Pepperberg still works with a number of other parrots to teach them similar skills.

## Activity 5: Closing

5%

Display and distribute the homework assignment. For homework, ask students to draft their remaining body paragraphs using the in-text citation methods learned in class.

- ▶ Students follow along.

## Homework

Draft the remaining body paragraphs of the research paper using the in-text citation methods learned in class.

## MLA Citation Handout

<b>Name:</b>		<b>Class:</b>		<b>Date:</b>	
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### In-Text Citations

For in-text citations, use the following as examples:

“People and animals are supposed to be together” (Grandin 5).

Grandin says, “People and animals are supposed to be together” (5).

### Works-Cited Page

Here are the different citation methods for various forms of media.

#### Book

##### Basic format:

Last Name, First Name. *Title of Book*. Place of Publication: Publisher, Year of Publication. Medium of Publication.

##### Example:

Smith, Joe. *Joe Smith's Theory of the Universe*. New York: Books Limited, 2013. Print.

#### Magazine/Journal

##### Basic Format:

Author(s). "Title of Article." *Title of Periodical* Day Month Year: Pages. Medium of Publication.

##### Example:

Smith, Joe. “Joe Smith’s Theory of the Universe.” *Universe Theories*. 20 Apr. 1989: pp. 100–109. Print.

## Website

### Basic Format:

Editor, Author or Compiler Name (if available). *Name of Site*. Version Number. Name of Institution/Organization Affiliated with the Site (Sponsor or Publisher), Date of Resource Creation (if available). Medium of Publication. Date of Access.

### Example:

Smith, Joe. *Guide to My Theory of the Universe*. UniverseBlogs. 16 Apr. 2001. Web. 19 Dec 2013.

## Motion Picture

### Basic Format:

*Title of Motion Picture*. Director. If relevant, list performers using 'perf.' to distinguish them from director. Distributor. Date of Release. Medium.

### Example:

*Theories of the Universe*. Dir. Joe Smith. Perf. Joe Smith, Jane Smith, Robert Smith. Touchstone. 2012.  
DVD.

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Adapted from The Purdue OWL Family of Sites. The Writing Lab and OWL at Purdue and Purdue University, 2008. Web. 1 Dec. 2013.

## 9.3.3

## Lesson 4

## Introduction

In this lesson, students continue to draft their research papers while focusing on cohesion—both within and between paragraphs. Students will also receive instruction around topic development and writing conclusion paragraphs. Students are assessed based on the coherence of their drafts. For homework, students draft their conclusion paragraph using the W.9-10.2.f checklist as a guide. Students also choose one of their sources to read, circling words and phrases from the **Connecting Ideas Handout** and making a note of how those words and phrases help to connect their ideas.

## Standards

Assessed Standard(s)	
W.9-10.2.b, c	<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> <p>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.</p> <p>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.</p>
W.9-10.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
Addressed Standard(s)	
W.9-10.2.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> <p>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).</p>
W.9-10.8	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.



## Assessment

Assessment(s)
<ul style="list-style-type: none"> <li>The learning in this lesson will be captured through the strength of inter- and intra-paragraph cohesion and development of a topic.</li> </ul> <p>① This assessment is evaluated using the W.9-10.b and c portions of the Informative/Explanatory Research Paper Writing Rubric and Checklist (refer to 9.3.3 Rubric and Checklist Packet in 9.3.3 Lesson 2).</p>
High Performance Response(s)
<p>A High Performance Response may include the following:</p> <ul style="list-style-type: none"> <li>Thus, modern researchers claim that language is not the only sign of intelligence. Sometimes, very bright animals do not express their intelligence in ways that we can immediately see or notice. For example, a recent study of 59 chimpanzees concluded that the animals “fake laugh” in response to others’ laughter. According to Horowitz and Shea, “The researchers discovered that when one chimp laughed others sometimes engaged in ‘laugh replications’ that lacked the full acoustic structure of spontaneous laughter. In other words, they were fake-laughing.” This behavior exhibits chimps’ social etiquette. It is spontaneous and untaught, but humans would not notice it right away.</li> <li>Sometimes animals possess an intelligence that we must uncover. A recent study by researchers at Duke University revealed something about rhesus macaque monkeys: They can “mentally represent and compare numbers,” as well as do simple math problems (Duke). “We know that animals can recognize quantities, but there is less evidence for their ability to carry out explicit mathematical tasks, such as addition,” said graduate student Jessica Cantlon. “Our study shows that they can” (Duke). The monkeys were offered a “variable number of dots” on a touch screen. The dots disappeared, and a new screen appeared with two boxes, one with the sum of the first two sets of dots and one with a different number. When the monkeys tapped the box with the sum of the first two sets, they were rewarded with food. The same test was given to a group of college students. While the college students got the answer correct more often (94% vs. 76%), both the students and the monkeys responded at the same rate. Similarly, both groups’ number of correct answers declined equally when the two sets of numbers were close together (e.g., 11 and 12) (Duke). This study proves that the monkeys already had this ability, and were simply using it in ways we did not notice; we only had to construct the right test for them to show us this intelligence.</li> </ul>

## Vocabulary

Vocabulary to provide directly (will not include extended instruction)
<ul style="list-style-type: none"> <li>cohesion (n.) – the action or fact of forming a united whole</li> <li>transition (n.) – a passage in a piece of writing that smoothly connects two topics or sections to each other</li> </ul>
Vocabulary to teach (may include direct word work and/or questions)
<ul style="list-style-type: none"> <li>None.*</li> </ul>

\*Students should be using their Vocabulary Journal to incorporate domain-specific vocabulary from Unit 9.3.2 into their research paper, as well as to record process-oriented vocabulary defined in the lesson.

## Lesson Agenda/Overview

Student-Facing Agenda	% of Lesson
<b>Standards &amp; Text:</b> <ul style="list-style-type: none"> <li>Standards: W.9-10.2b, c, W.9-10.4, W.9-10.2.f, W.9-10.8</li> </ul>	
<b>Learning Sequence:</b> <ol style="list-style-type: none"> <li>Introduction of Lesson Agenda</li> <li>Homework Accountability</li> <li>Cohesion in Writing and Topic Development</li> <li>Drafting</li> <li>Conclusion Instruction</li> <li>Closing</li> </ol>	<ol style="list-style-type: none"> <li>5%</li> <li>10%</li> <li>25%</li> <li>40%</li> <li>15%</li> <li>5%</li> </ol>

## Materials

- Copies of the **Connecting Ideas Handout** for each student
- Student copies of the **9.3.3 Rubric and Checklist Packet**
- Students copies of the **MLA Citation Handout** (refer to 9.3.3 Lesson 3)

## 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.
	<b>Bold text indicates questions for the teacher to ask students.</b>
	<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 the assessed standard for this lesson: W.9-10.2b, c and W.9-10.4. Inform students that today's topic is cohesion in writing, as well as how to properly develop a topic.

- ▶ Students listen.

### Activity 2: Homework Accountability

10%

Place students in pairs and instruct them to briefly look over one another's citation strategies in the paragraphs they drafted for homework. Students should provide positive feedback and highlight any errors in citation. To guide their feedback, students should reference the MLA Citation Handout they received in the previous lesson, comparing their peers' work to the examples in the handout.

- ▶ In pairs, students look over the paragraphs they drafted for homework. An example critique would be:
- 💬 MLA guidelines require that you name the publication the article appeared in, but you forgot to add the publication.

### Activity 3: Cohesion in Writing and Topic Development

25%

Instruct students to finish drafting their paragraphs if they have not already and then work to organize the paragraphs to create *cohesion* throughout the paper. Explain to students that *cohesion* in writing refers to how well the paragraphs and sentences flow into one another to create a whole that is clear and logical to the reader. Explain to students that to create *cohesion*, they must do two things: organize the information logically and use correct *transition* words between sentences and paragraphs. Explain to

students that a *transition* is passage in a piece of writing that smoothly connects two topics or sections to each other. Explain to students that arriving at a point of *cohesion* is the result of a process that involves revision and editing.

① Remind students to record the definitions of *cohesion* and *transition* in their Vocabulary Journals.

Distribute the Connecting Ideas Handout.

Provide students with the following two examples, and ask them to consider which they think is more cohesive and logical.

- Much of her work has revolved around creating less stressful environments for animals in the meatpacking industry, in turn helping businesses prosper. Temple Grandin is an animal scientist who argues that untrained handlers and poor systems design often cause stress in the meatpacking industry. Grandin says that, “Stress is bad for human growth, too” (p. 21). “...stressed animals gain less weight, which means less meat to sell. Dairy cattle who’ve been handled with prods give less milk” (p. 21).
- Temple Grandin, an animal scientist, argues that untrained handlers and poor systems design often cause stress in the meatpacking industry. She claims that “stressed animals gain less weight, which means less meat to sell. Dairy cattle who’ve been handled with prods give less milk,” (p. 21). For this reason, much of her work has revolved around creating less stressful environments for animals in the meatpacking industry, in turn helping businesses prosper.

Once students have read the examples, ask pairs to discuss which one is more cohesive. Ask volunteers to explain their answer.

💬 The second paragraph is more cohesive. The first paragraph is confusing to read.

Ask students:

**What about the first paragraph makes it less cohesive?**

💬 It jumps around and has unnecessary information. It seems like this information belongs in multiple paragraphs.

**What about the second paragraph makes it more cohesive?**

💬 The second paragraph provides only relevant information and presents it logically, so the reader can follow along without becoming confused.

**What specific words and phrases in the more cohesive paragraph contribute to its success?**

- Temple Grandin is introduced in the first sentence as “an animal scientist,” so the reader is introduced to her just before we learn about her arguments. The phrase “for this reason” helps the reader see the connection between the previous sentence and the following one.

Explain to students that cohesion should also exist between paragraphs. In both cases, transitional words and phrases can help link their ideas and support the logic of the paper. Direct students to look at their **Connecting Ideas** Handout for transitional words to use in specific cases. To show how ideas are similar, students might use phrases like, “in the same way,” or “similarly.” For example: “Grandin argues that, ‘stressed animals gain less weight’ (p. 21). Similarly, she claims that “stress is bad for human growth.” Show students that these words can be used within a paragraph but also to connect two different paragraphs.

- ▶ Students listen and look over the words on their handout.

Present student pairs with the following two paragraphs and examine how they cohere from sentence to sentence and between paragraphs:

- Many people would say this is unfair. For example, what if someone held a book up to a dolphin and asked the dolphin to read it aloud? Even if a researcher spent years trying to teach a dolphin to read aloud, he will never be able to do it. When the dolphin inevitably fails this task, is it fair to assume it is because he is dumb? Perhaps it is more correct to say that dolphins do not have the physical ability to read text aloud than it is to claim that they cannot do it because they are unintelligent. Dolphins do not have the correct vocal chords or jaw structure to read aloud. Similarly, one could never teach a dolphin to have a thumb. Would a dolphin be considered unintelligent if it could not hold a hammer?
- Thus, modern researchers claim that language is not the only sign of intelligence. Sometimes, very bright animals do not express their intelligence in ways that we can immediately see or notice. For example, a recent study of 59 chimpanzees concluded that the animals “fake laugh” in response to others’ laughter. According to Horowitz and Shae, “The researchers discovered that when one chimp laughed others sometimes engaged in ‘laugh replications’ that lacked the full acoustic structure of spontaneous laughter. In other words, they were fake-laughing.” This behavior exhibits chimps’ social etiquette. It is spontaneous and untaught, but humans would not notice it right away.

Ask student volunteers to identify words that help with transition and cohesion, using their Connecting Ideas Handout as a reference.

- Student responses should include words like “for example,” “similarly,” and “thus.”

Inform students that the Connecting Ideas Handout is a good resource to have as they write this research paper and beyond this unit as they continue to write formally. Ask students to use the categories column to direct their choice of transitional words and phrases as they write. For example, if

they are looking to add more information about what they are talking about, they can look in the “Add Related Information” section and choose the word “furthermore” to help them connect their ideas.

- ▶ Students listen and examine the handout.

Inform students that cohesion and the logical presentation of information are both crucial to effectively developing a topic. In addition to having concrete details and relevant examples to support a claim, the information has to be presented in a way that is appropriate to the audience’s knowledge of the topic. Share with students that, in a way, writing a paper is like teaching: writers are teaching the reader what they know about a topic. To do this, students must start slowly and build up to an understanding, working logically as they progress through information to ensure that the reader understands the topic and research. Remind students that arriving at a point of cohesion is the result of a process that involves revision and editing.

- ▶ Students listen.

## Activity 4: Drafting

**40%**

Ask students to take out the 9.3.3 Rubric and Checklist Packet, and turn to the checklists for sub-standard W.9-10.2.b, c.

- ▶ Students turn to the checklists for sub-standards W.9-10.2.b, c.

Instruct students to use both checklists as they are drafting, organizing, and adjusting their paragraphs for cohesion and development of a topic. Inform students that they will be assessed according to this document when they submit their final paper.

- ▶ Students listen.

Ask students to organize their paragraphs and make any adjustments to what they have written to ensure:

1. There is cohesion and logic to their paragraphs.
2. The information is presented in a way that effectively develops a topic for the reader. Remind students that they may need to add concrete details, transition words, or delete sentences/passages to polish their paper.

- ▶ Students work independently on their drafts to ensure cohesion, logic, and appropriate topic development.

① As students work, walk around the class and address individual concerns.

Ask students to submit two paragraphs they worked on in class, and assess them on their use of transitional words/phrases and logical presentation of information.

- ▶ Students submit two paragraphs they worked on in class.

### Activity 5: Conclusion Instruction

**15%**

Once students have finished drafting for the day, inform them that they will begin drafting their conclusions tonight for homework. Direct students to turn to the checklist for sub-standard W.9-10.2.f in their 9.3.3 Rubric and Checklist Packet. Remind students to reference this checklist as they are drafting their conclusions.

- ▶ Students examine the checklist for sub-standard W.9-10.2.f.

Explain to students that an effective conclusion restates the claim of the paper and briefly summarizes some of the evidence presented in the paper to reinforce that claim. Explain that a conclusion is somewhat like the introduction paragraph in reverse: The first sentence of the conclusion paragraph should generally state the central claim of the paper, and the following sentences should open out and possibly offer a new way of thinking.

- ▶ Students listen.

Present students with the following example of a conclusion:

- All of these examples prove that animals are often more intelligent than we can see at first. But there is still an unanswered question: How do they compare to humans? One answer is that animals, while often smarter than we think, are not nearly as smart as us. It would not take the average human 30 years to learn to count to seven or learn to say, “Want grape.” By the same token, animals seem to have no interest in studying humans, but our desire to know about them highlights our superior intelligence. However, there is another possibility: What if we are only measuring the intelligence we humans can see? What if there is something brilliant going on that we have not learned to measure and analyze? We have learned to teach parrots English, and perhaps it is only a matter of time before we begin to learn some complex language of the animal kingdom previously unknown to us.

Ask students what they notice about the conclusion, discussing the following questions as a class:

**What elements of the paragraph conclude the essay, and in what direction does the conclusion lead the reader?**

- 💬 The conclusion briefly states what the research in the paper implies and returns to the question introduced at the beginning of the essay: “Who is smarter, animals or humans?”

**What is similar about the conclusion and the introduction? What's different?**

① If needed, present students with the model introduction and have them re-read it.

- The conclusion restates the introduction's claim that it is not an easy question to answer. Unlike the introduction, the conclusion then offers that there is so much we have yet to learn. It leads the reader to be interested in reading more about the topic.

**Activity 6: Closing****5%**

Display and distribute the homework assignment. For homework, instruct students to draft their conclusions, using the W.9-10.2.f checklist as a guide. Instruct students to also choose one of their sources and read through it, circling words and phrases from the Connecting Ideas Handout and briefly explaining how those words and phrases connect ideas.

**Homework**

For homework, draft your conclusion paragraph using the W.9-10.2.f checklist as a guide. Also, choose one of your sources and read through it, circling words and phrases from the Connecting Ideas Handout and briefly explain how those words and phrases connect ideas.



# CONNECTING IDEAS

## USING TRANSITIONAL WORDS AND PHRASES

Transitional words and phrases create links between your ideas when you are speaking and writing. They help your audience understand the logic of your thoughts. When using transitional words, make sure that it is the right match for what you want to express. And remember, transition words work best when they are connecting two or more strong ideas that are clearly stated. Here

ADD RELATED INFORMATION	GIVE AN EXAMPLE OR ILLUSTRATE AN IDEA	MAKE SURE YOUR THINKING IS CLEARLY UNDERSTOOD	COMPARE IDEAS OR SHOW HOW IDEAS ARE SIMILAR	CONTRAST IDEAS OR SHOW HOW THEY ARE DIFFERENT
<ul style="list-style-type: none"> <li>furthermore</li> <li>moreover</li> <li>too</li> <li>also</li> <li>again</li> <li>in addition</li> <li>next</li> <li>further</li> <li>finally</li> <li>and, or, nor</li> </ul>	<ul style="list-style-type: none"> <li>to illustrate</li> <li>to demonstrate</li> <li>specifically</li> <li>for instance</li> <li>as an illustration</li> <li>for example</li> </ul>	<ul style="list-style-type: none"> <li>that is to say</li> <li>in other words</li> <li>to explain</li> <li>i.e., (that is)</li> <li>to clarify</li> <li>to rephrase it</li> <li>to put it another way</li> </ul>	<ul style="list-style-type: none"> <li>in the same way</li> <li>by the same token</li> <li>similarly</li> <li>in like manner</li> <li>likewise</li> <li>in similar fashion</li> </ul>	<ul style="list-style-type: none"> <li>nevertheless</li> <li>but</li> <li>however</li> <li>otherwise</li> <li>on the contrary</li> <li>in contrast</li> <li>on the other hand</li> </ul>
EXPLAIN HOW ONE THING CAUSES ANOTHER	EXPLAIN THE EFFECT OR RESULT OF SOMETHING	EXPLAIN YOUR PURPOSE	LIST RELATED INFORMATION	QUALIFY SOMETHING
<ul style="list-style-type: none"> <li>because</li> <li>since</li> <li>on account of</li> <li>for that reason</li> </ul>	<ul style="list-style-type: none"> <li>therefore</li> <li>consequently</li> <li>accordingly</li> <li>thus</li> <li>hence</li> <li>as a result</li> </ul>	<ul style="list-style-type: none"> <li>in order that</li> <li>so that</li> <li>to that end, to this end</li> <li>for this purpose</li> <li>for this reason</li> </ul>	<ul style="list-style-type: none"> <li>First, second, third...</li> <li>First, then, also, finally</li> </ul>	<ul style="list-style-type: none"> <li>almost</li> <li>nearly</li> <li>probably</li> <li>never</li> <li>always</li> <li>frequently</li> <li>perhaps</li> <li>maybe</li> <li>although</li> </ul>

## 9.3.3

## Lesson 5

## Introduction

In this lesson, students learn how to identify and use formal style and objective tone. After receiving instruction on formal style and objective tone, students use their first drafts to participate in peer review and teacher conferences. In this lesson, students are assessed on the effective integration of peer and teacher editing for formal style, objective tone, and topic development in two body paragraphs. For homework, students continue to self-edit the remainder of their research paper for formal style, objective tone, and topic development.

## Standards

Assessed Standard(s)	
W.9-10.2 b, e	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.  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.  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.
W.9-10.5	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 on page 55.)
Addressed Standard(s)	
W.9-10.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
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.9-10.3	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.
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## Assessment

Assessment(s)
<p>The learning in this lesson will be captured through incorporation of peer and teacher feedback, regarding formal style and objective tone in two body paragraphs.</p> <p>① This assessment will be evaluated using the W.9-10.2.b, e portion of the Informative/Explanatory Research Paper Writing Rubric and Checklist (located in the 9.3.3 Rubric and Checklist Packet).</p>
High Performance Response(s)
<p>A high performance response may include the following:</p> <p><b>Pre-Revision:</b></p> <p>For some reason, the ancient Greeks thought that there was a ladder of intelligence or something. And humans were super close to angels but animals weren't as close (Waal). For a while most scientists and philosophers thought things like that, saying stuff like animals had no souls, and that they could "learn" but not "think" or "feel." I think that a lot of people who made these claims didn't try so hard to discover signs of animal thinking. They would always test the animals in ways that were appropriate for human subjects and everything, but not for the animals themselves.</p> <p><b>Post-Revision:</b></p> <p>The ancient Greeks thought that there was a ladder of intelligence, with all life forms ranking from low to high, and humans were the closest things to angels on earth (Waal). From then until somewhat recently, many scientists and philosophers followed this idea in one way or another, claiming that animals had no souls, and that they could potentially "learn" but not "think" or "feel" (Waal). Most people who made these claims did not try very hard to discover signs of animal cognition, and would often test the animals in ways that were appropriate for human subjects, but not for the animals themselves.</p>

## Vocabulary

Vocabulary to provide directly (will not include extended instruction)
<ul style="list-style-type: none"> <li>objective tone (n.) – a style of writing not influenced by personal feelings or opinions that is based on fact and makes use of the third-person point-of-view</li> <li>subjective tone (n.) – a style of writing that involves personal opinion and expression</li> </ul>

- norms (n.) – standards, models, or patterns
- discipline (n.) – branch of learning or instruction
- colloquial (adj.) – used in conversation

#### Vocabulary to teach (may include direct word work and/or questions)

- None.\*

\*Students should be using their Vocabulary Journal to incorporate domain-specific vocabulary from Unit 9.3.2 into their research paper, as well as to record process-oriented vocabulary defined in the lesson.

## Lesson Agenda/Overview

Student-Facing Agenda	% of Lesson
<b>Standards &amp; Text:</b> <ul style="list-style-type: none"> <li>• Standards: W.9-10.2.b, e, W.9-10.5, W.9-10.4, SL.9-10.1, L.9-10.3</li> <li>• Text: Sources from research</li> </ul>	
<b>Learning Sequence:</b> <ol style="list-style-type: none"> <li>1. Introduction of Lesson Agenda</li> <li>2. Homework Accountability</li> <li>3. Objective and Formal Tone</li> <li>4. Peer Review and Teacher Conference</li> <li>5. Lesson Assessment</li> <li>6. Closing</li> </ol>	<ol style="list-style-type: none"> <li>1. 10%</li> <li>2. 10%</li> <li>3. 15%</li> <li>4. 40%</li> <li>5. 20%</li> <li>6. 5%</li> </ol>

## Materials

- Student copies of the **9.3 Core Curriculum Learning Standards Tool** (refer to 9.3.1 Lesson 1)
- Student copies of the **9.3.3 Rubric and Checklist Packet**
- Student copies of the **Connecting Ideas Handout** (refer to 9.3.3 Lesson 4)

## 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.
	<b>Bold text indicates text dependent questions.</b>
	<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

10%

Begin by reviewing the agenda for the lesson and the assessed standards: W.9-10.2.b, e and W.9-10.5. Inform students that this lesson guides them in using formal style and objective tone for a research paper. Students engage in peer-review and teacher conferences for the purpose of editing their first drafts.

Ask students to take out their 9.3 Core Curriculum Learning Standards Tool and read standard W.9-10.2.b, e, focusing on substandard e. Explain to students that *norms* means standards or patterns and *discipline* means the branch of learning. In other words, students should use patterns of writing appropriate for the ELA *discipline*. Instruct students to assess their familiarity with and mastery of this substandard.

- Students read standard W.9-10.2.e, assessing their familiarity with and mastery of it.

📘 Remind students to record the definitions of *norms* and *discipline* in their Vocabulary Journals.

## Activity 2: Homework Accountability

10%

Instruct students to work in pairs and exchange their concluding paragraphs. Remind students to offer supportive feedback if they notice areas in need of improvement and refer to the 9.3.3 Rubric and Checklist to guide their review.

- Students form pairs and exchange their concluding paragraphs for peer review.

Request that student pairs briefly share the transitional words and phrases they found in their sources, explaining how those words help to connect ideas. Remind students to refer to their Connecting Ideas Handout as a resource for transitional words and phrases.

- Student pairs briefly share the transitional words and phrases they found in their sources, explaining how those words help to connect ideas.

### Activity 3: Formal Style and Objective Tone

15%

Share with students the importance in academic writing of maintaining a formal style. Inform students that a formal style is used for writing academic papers as well as in college and the workplace. It is important when writing a research paper to use a formal style because it makes a research paper appealing and accessible to a wide audience. A formal style uses correct and specific language, correct grammar, and complete sentences. Remind students to avoid contractions (e.g., don't), abbreviations (e.g., gov't), or slang (e.g., ain't).

- ▶ Students listen.

Display two sentences for students:

- I think that a lot of people who made these claims didn't try so hard to discover signs of animal thinking. They would always test the animals in ways that were, like, cool for human subjects and everything. But not for the animals themselves.
- Even if a researcher spent years trying to teach a dolphin to read aloud, the dolphin will never be able to read. This example illustrates an important point: although animals do not display their intelligence in the same way as humans, it does not mean they do not have intelligence.

Ask student pairs to complete a brief Turn-and-Talk discussing which sentence is formal and which is informal.

- 💬 The first sentence is casual: it sounds like someone is talking, and it also uses contractions such as "didn't." There is also an incomplete sentence. The sentence: "But not for the animals themselves" does not have a subject. The second sentence is written in a formal style because it has complete sentences and does not include abbreviations.

- ① **Differentiation Consideration:** Instead of these examples consider providing students with guidelines for informal and formal style. Informal style is defined as being *colloquial* (i.e., used in conversation). The prose is simple, without contractions and abbreviations, and can use empathy and emotion. Formal style is often complex and objective. It is written using full words and in the third person. \*Source: <http://blog.ezinearticles.com/2011/03/formal-vs-informal.html>
- ① Consider drawing students' attention to their application of standard L.9-10.3 through the process of applying appropriate knowledge of language to making more effective choices for meaning and style.

Explain to students that along with using a formal tone in their paper, it is equally important to use an *objective tone*. When writing with an *objective tone*, writers should avoid expressing their personal opinions and focus on presenting the information and conclusions gathered from the research. Remind students the purpose of this research paper is not to present opinion; it is to present information about a topic. Writing with an *objective tone* also means using the third-person point-of-view (i.e., *he, she, it*,

*they, one*) instead of the first-person point-of-view (i.e., *I, we*) or the second-person point-of-view (i.e., *you*).

① Remind students to record the definition of *objective tone* in their Vocabulary Journals.

Display the following examples for students:

- You might think that dolphins are smart, and just because you cannot teach them to read, the research I found shows that this doesn't mean they are unintelligent.
- Perhaps it is more correct to say that dolphins do not have the physical ability to read text aloud than it is to claim that dolphins cannot learn to read because they are unintelligent.

Ask student pairs to complete a brief Turn-and-Talk to discuss which sentence uses an *objective tone*.

► Students complete a Turn-and-Talk with a partner.

☞ The second sentence uses *objective tone* because it doesn't have "I" or "we" in the sentence. It also clearly presents information gathered in the research.

① Teachers may choose to create their own examples tailored to students' degree of experience and fluency with *objective tone*. Share with students the definition of *subjective tone* as "the style of writing that involves personal opinion and expression" and ask students to record the definition in their Vocabulary Journals.

① Consider using the evidence-based perspective writing assignment as an example of an informal written assignment that uses the first-person point-of-view.

#### Activity 4: Peer Review and Teacher Conference

**40%**

Inform students that this portion of the lesson is for both peer review and a conference with the teacher. Assign students an individual time to meet with the teacher to receive feedback on their research paper. Then instruct students to form pairs to read the W.9-10.2.b, e checklists in the 9.3.3 Rubric and Checklist Packet to guide their peer review. Remind students that in this lesson, they will continue the work on 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.

① Consider reminding students of the skills inherent in the sub-standards of Standard SL.9-10.1, to which students were previously introduced.

① The peer review and teacher conference will continue in the following lesson.

- Students read the W.9-10.2.b, e checklists and discuss in pairs before beginning the peer review of their peer's body paragraphs.

Instruct students who are scheduled for individual conferences to meet with the teacher to discuss their research paper.

- ① In order to maximize work time, consider having students meet in their pre-established research groups for peer review while students have their independent teacher conferences.

### Activity 5: Lesson Assessment

**20%**

Instruct students to independently begin revising the two body paragraphs based on peer and teacher feedback. Inform students that the assessment is based on their editing and incorporation of peer and teacher feedback. Remind students to refer to the 9.3.3 Rubric and Checklist Packet. Remind students that the assessment will be evaluated using the W.9-10.2.b, e portion of the Informative/Explanatory Research Paper Writing Rubric.

- ▶ Students revise two of the body paragraphs of their research paper based on peer and teacher feedback.
- 🗨 See the High Performance Response at the beginning of this lesson.

### Activity 6: Closing

**5%**

Display and distribute the homework assignment. For homework, instruct students to review and revise all of the body of their research paper to ensure they are using formal style, objective tone, and sufficiently developing their topic throughout the paper. Remind students to use the W.9-10.2.b, e checklists in the 9.3.3 Rubric and Checklist Packet to guide their review and revisions.

- ▶ Students follow along.

## Homework

Review and revise your entire research paper for formal style, objective tone, and topic development. Use the W.9-10.2.b, e checklists in the 9.3.3 Rubric and Checklist Packet to guide your review and revisions.



## 9.3.3

## Lesson 6

## Introduction

In this lesson, students continue to refine and revise their research papers. The instruction in this lesson focuses on editing for flow and the cohesiveness of the entire research paper. Students continue to provide peer feedback as well as conference with the teacher. Students use a peer feedback rubric and checklist to guide their peer review and make revisions to their research papers. At the end of the lesson, students are assessed on their revisions for overall flow and cohesiveness, using the W.9-10.2.c portion of the **Research Paper Writing Rubric: Informative/Explanatory**. For homework, students revise their introductions and conclusions.

## Standards

Assessed Standard(s)	
W.9-10.2.c	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.  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.
W.9-10.5	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 on page 55.)
Addressed Standard(s)	
W.9-10.2.a, f	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.  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.  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).

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.
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## Assessment

Assessment(s)
<p>The learning in this lesson will be captured through student revisions based on peer and teacher feedback of the overall cohesiveness and flow of their research paper.</p> <p>① This assessment will be evaluated using the W.9-10.2.c portion of the Research Paper Writing Rubric: Informative/Explanatory (located in the 9.3 Unit 3 Rubric and Checklist Packet).</p>
High Performance Response(s)
<p>A high performance response may include the following:</p> <p><b>Pre-Revision:</b></p> <p><b>Are the different colors correct? Are the correct words/sentences highlighted?</b></p> <p>Modern researchers claim that language is not the only sign of intelligence. A recent study of 59 chimpanzees concluded that the animals “fake laugh” in response to others’ laughter. Sometimes, very bright animals do not express their intelligence in ways that we can immediately see or notice. This behavior exhibits chimps’ social etiquette. According to Horowitz and Shae, “The researchers discovered that when one chimp laughed others sometimes engaged in ‘laugh replications’ that lacked the full acoustic structure of spontaneous laughter. In other words, they were fake-laughing.”</p> <p><b>Rhesus macaque monkeys:</b> They can “mentally represent and compare numbers,” as well as do simple math problems (Duke). The monkeys were offered a “variable number of dots” on a touch screen. The dots disappeared, and a new screen appeared with two boxes, one with the sum of the first two sets of dots and one with a different number. When the monkeys tapped the box with the sum of the first two sets, they were rewarded with food. The same test was given to a group of college students. While the college students got the answer correct more often (94% vs. 76%), both they and the monkeys responded at the same rate. Both groups’ number of correct answers declined equally when the two sets of numbers were close together (e.g., 11 and 12), (Duke). “We know that animals can recognize quantities, but there is less evidence for their ability to carry out explicit mathematical tasks, such as addition,” said graduate student Jessica Cantlon. “Our study shows that they can” (Duke).</p> <p><b>Post-Revision:</b></p> <p>Thus, modern researchers claim that language is not the only sign of intelligence. Sometimes, very bright animals do not express their intelligence in ways that we can immediately see or notice. For example, a recent study of 59 chimpanzees concluded that the animals “fake laugh” in response to others’ laughter. According to Horowitz and Shea, “The researchers discovered that when one chimp</p>

laughed others sometimes engaged in ‘laugh replications’ that lacked the full acoustic structure of spontaneous laughter. In other words, they were fake-laughing.” This behavior exhibits chimps’ social etiquette. It is spontaneous and untaught, but humans would not notice it right away.

Sometimes animals possess an intelligence that we must uncover. A recent study by researchers at Duke University revealed something about rhesus macaque monkeys: They can “mentally represent and compare numbers,” as well as do simple math problems (Duke). “We know that animals can recognize quantities, but there is less evidence for their ability to carry out explicit mathematical tasks, such as addition,” said graduate student Jessica Cantlon. “Our study shows that they can” (Duke). The monkeys were offered a “variable number of dots” on a touch screen. The dots disappeared, and a new screen appeared with two boxes, one with the sum of the first two sets of dots and one with a different number. When the monkeys tapped the box with the sum of the first two sets, they were rewarded with food. The same test was given to a group of college students. While the college students got the answer correct more often (94% vs. 76%), both they and the monkeys responded at the same rate. Similarly, both groups’ number of correct answers declined equally when the two sets of numbers were close together (e.g. 11 and 12), (Duke). This study proves that the monkeys already had this ability, and were simply using it in ways we did not notice; we only had to construct the right test for them to show us this intelligence.

## Vocabulary

### Vocabulary to provide directly (will not include extended instruction)

- flow (n.) – in written work, flow is a logical, smooth progression of words and ideas
- climactic (adj.) – consisting of a series of related ideas so arranged that each surpasses the preceding in force or intensity
- chronological (adj.) – arranged in the order of time

### Vocabulary to teach (may include direct word work and/or questions)

- None.\*

\*Students should be using their Vocabulary Journal to incorporate domain-specific vocabulary from Unit 9.3.2 into their research paper, as well as to record process-oriented vocabulary defined in the lesson.

## Lesson Agenda/Overview

Student-Facing Agenda	% of Lesson
<b>Standards &amp; Text:</b> <ul style="list-style-type: none"> <li>Standards: W.9-10.2.c, W.9-10.5, W.9-10.2.a, f, SL.9-10.1</li> <li>Text: Sources from research</li> </ul>	
<b>Learning Sequence:</b> <ol style="list-style-type: none"> <li>Introduction of Lesson Agenda</li> <li>Homework Accountability</li> <li>Flow and Cohesiveness of the Research Paper</li> <li>Peer Review and Teacher Conference</li> <li>Revision and Lesson Assessment</li> <li>Closing</li> </ol>	<ol style="list-style-type: none"> <li>5%</li> <li>15%</li> <li>20%</li> <li>35%</li> <li>20%</li> <li>5%</li> </ol>

## Materials

- Student copies of the **9.3 Core Curriculum Learning Standards Tool** (refer to 9.3.1 Lesson 1)
- Student copies of the **9.3.3 Rubric and Checklist Packet**

## 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.
	<b>Bold text indicates text dependent questions. (In other lessons it says '...indicates questions for the teacher to ask students.' Which is correct?)</b>
	<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 introducing the agenda and assessed standards for this lesson: W9-10.2.c and W.9-10.5. Inform students that in this lesson, they are focusing on revising for cohesiveness and flow for the entire research paper.

- ▶ Students look at the agenda.

Ask students to read standard W.9-10.2.a, c, and f on their Common Core Learning Standards Tool. Inform students that these three sub-standards are the focus for the editing in this lesson, although only W.9-10.2.c will be assessed. Ask students to assess their familiarity with and mastery of these sub-standards.

- ▶ Students assess their familiarity with and mastery of W.9-10.2.a, c, and f.

### Activity 2: Homework Accountability

15%

Ask students to briefly Turn-and-Talk in pairs and discuss the revisions to their research paper based on the feedback for formal style, objective tone, and topic development in the previous lesson. Ask students to use the W.9-10.2.b, e checklists from the previous lesson to guide their discussion.

- ▶ Students Turn-and-Talk in pairs and discuss the revisions they completed for homework.

### Activity 3: Flow and Cohesiveness of the Research Paper

20%

Inform students that they will be reviewing and expanding on the process of cohesion and *flow* of a paper. Explain to students in written work, *flow* is: “a logical, smooth progression of words and ideas to clearly communicate and support a central claim or idea.” Remind students they have already learned about writing logically and using transitional words to aid cohesion. In this lesson they will be looking at their entire paper for cohesion as well as consistency between the introduction and conclusion. Explain to students that it is possible to use transitional words and phrases correctly, especially between paragraphs, but still not have a paper that flows well.

- ▶ Students listen.

① Remind students to record the definition of *flow* in their Vocabulary Journals.

Display the following example of one paragraph leading into another paragraph for students:

- Example: “The researchers discovered that when one chimp laughed others sometimes engaged in ‘laugh replications’ that lacked the full acoustic structure of spontaneous laughter. In other words, they were fake-laughing.” This behavior exhibits chimps’ social etiquette. It is spontaneous and untaught, but humans would not notice it right away.

Furthermore, a recent study by researchers at Duke University revealed something about rhesus macaque monkeys: They can “mentally represent and compare numbers,” as well as do simple math problems (Duke).

- ▶ Students follow along and read the example.

Ask students:

**What transitional word is being used in this example?**

- 💬 The word “furthermore.”

Explain to students that even though these two paragraphs are linked by a transitional word, the ideas are not flowing together. It is important that a paper’s ideas flow together and that the cohesion goes beyond just inputting appropriate words that link paragraphs together. This can be achieved by reiterating a small portion of the idea expressed in the previous paragraph as a way of introducing and leading into the next paragraph. This is an example of a transitional phrase. Explain to students that transitional phrases help sub-claims work together and connect within the paper. It is important for the overall cohesion of the paper that these sub-claims strongly connect to support the central claim of the paper. Display the revised example for students:

- Revised: “The researchers discovered that when one chimp laughed others sometimes engaged in ‘laugh replications’ that lacked the full acoustic structure of spontaneous laughter. In other words, they were fake-laughing.” This behavior exhibits chimps’ social etiquette. It is spontaneous and untaught, but humans would not notice it right away.

Sometimes animals possess an intelligence that we must uncover. A recent study by researchers at Duke University revealed something about rhesus macaque monkeys: They can “mentally represent and compare numbers,” as well as do simple math problems (Duke).

- ▶ Students follow along and read the example.

- ① **Differentiation Consideration:** Consider providing students with more examples of effective cohesion from the pre-revision and post-revision in the High Performance Response in this lesson. For example, ending a paragraph with: *“We know that animals can recognize quantities, but there is less evidence for their ability to carry out explicit mathematical tasks, such as addition,” said graduate student Jessica Cantlon. “Our study shows that they can” (Duke) doesn’t provide a logical and cohesive flow into the following paragraph. The following example qualifies the ideas in this paragraph and provides a cohesive transition: This study proves that the monkeys already had this*

*ability, and were simply using it in ways we did not notice; we only had to construct the right test for them to show us this intelligence.*

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Explain to students that along with transitional phrases, they should also ensure they have a logical sequence of claims. The organizational sequence they developed on their outline may have changed, but students should make sure that their claims are logically ordered. Inform students the principle of organization may vary depending on the content of their research paper. One type of organizational structure is *climactic* order, which builds so the strongest claim comes at the end to support the central claim. Another type of organizational structure is *chronological* order, which orders the information based on time.

► Students follow along.

- ① Remind students that they have done this thinking when they developed their outline and ordered their claims in a logical sequence.
- ① Remind students to record the definitions of *climactic* and *chronological* in their Vocabulary Journals.
- ① **Differentiation Consideration:** If students are struggling with the concepts of *climactic* and *chronological* order, consider reviewing the sample research paper in this unit as a strong example of *climactic* order.

Explain to students that another aspect of cohesion and *flow* is making certain the introduction and conclusion fit well together. Remind students that they have learned the structure of an introduction as well as a conclusion in previous lessons in this unit. When they are reviewing, students should ensure that the central claim is present in both the introduction and conclusion. Students should ensure the introduction is interesting and engaging, and the conclusion opens out at the end to offer a new way of thinking.

► Students follow along.

## Activity 4: Peer Review and Teacher Conference

35%

Inform students that they will continue to peer review as well as conference with the teacher. Review the individual assigned times to meet with students to provide feedback for their research paper. Then, instruct students to form pairs to continue peer review. Ask students to refer to the W.9-10.2.c checklist in the 9.3.3 Rubric and Checklist Packet to guide their peer review.

- ① Suggest to students that an effective strategy for review is to read a paper aloud as it will help highlight any areas that may not flow very well.

- ① Inform students that in this lesson, students will continue the work of collaborative discussion outlined in SL.9-10.1 to which they were previously introduced. Remind students these discussion strategies have been taught in previous modules. Consider reminding students of the skills inherent in the sub-standards of Standard SL.9-10.1, to which students were previously introduced.
  - ▶ Students continue the peer review of their partner's body paragraphs as well as conference with the teacher.

Instruct students who are scheduled to conference with the teacher to individually meet at their assigned time. Remind students that this is a continuation of teacher conferencing from the previous lesson.

- ▶ Students who are scheduled for a teacher conference meet with the teacher to discuss their research paper.
- ① Depending on class size, this could be a chance to continue peer review from the previous lesson or give the teacher a chance to meet with students a second time. Consider having students form pairs for review or meeting in their pre-established research teams.

### Activity 5: Revision and Lesson Assessment

**20%**

Ask students to independently revise their drafts by focusing on the entire paper and using the W.9-10.2.c checklist from the Research Paper Writing Rubric: Informative/Explanatory. Students will be assessed on their consistency of a flow and cohesiveness throughout their draft.

- ① The conventions established in previous modules, as well as in Lesson 4, will be used to evaluate students in this lesson. The established protocols for a hard-copy writing, editing, and drafting process should be implemented. Otherwise instruct students to use track changes on a digital version of their research paper.
  - ▶ Students independently revise their drafts based on peer and teacher feedback.

### Activity 6: Closing

**5%**

Display and distribute the homework assignment. For homework, instruct students to continue to revise their drafts based on feedback on the cohesion and consistency of their introduction and conclusion. Refer students to the W.9-10.2.a, f checklists in the 9.3.3 Rubric and Checklist Packet to guide their revisions and review. Ask students to come to class prepared to discuss the revisions to the introduction and conclusion.

- ▶ Students follow along.



## Homework

Revise your introductions and conclusions based on feedback on the cohesion and consistency of your introduction and conclusion. Refer to the W.9-10.2.a, f checklists to guide your revisions. Be prepared to discuss your revisions in the following lesson.

## 9.3.3

## Lesson 7

## Introduction

In this lesson, students continue to edit and revise their research papers. Students are introduced to a new language standard, L.9-10.2. They are also introduced to semicolons as a way to join independent clauses and colons as a means of introducing a quote or list through the **Colon and Semicolon Handout**. Students continue the peer review process for grammar and spelling. The assessment in this lesson is based on student revisions based on peer feedback. For homework, students continue to revise their drafts in preparation for the End-of-Unit Assessment.

## Standards

Assessed Standard(s)	
W.9-10.5	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 on page 55.)
L.9-10.2. a, b, c	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. 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.
Addressed Standard(s)	
W.9-10.2.d	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. d. Use precise language and domain-specific vocabulary to manage the complexity of the topic.
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.

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.
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## Assessment

Assessment(s)
<p>The learning in this lesson should be captured through students' revision of their research paper based on the instruction of L.9-10.2—writing conventions (capitalization, punctuation, and spelling).</p> <p>① This assessment is evaluated with the L.9-10.2 portion of the Research Paper Writing Rubric: Informative/Explanatory (located in the 9.3.3 Rubric and Checklist Packet).</p>
High Performance Response(s)
<p>A High Performance Response may include the following:</p> <p><b>Pre-Revision:</b></p> <p>Plenty of people say <b>there</b> pets are intelligent. Some people think that <b>they're</b> dog is <b>more smart</b> than their neighbor. But how smart are animals really? <b>over</b> the centuries, people offered many ways of thinking about animal cognition. <b>in the 17 century</b>, <b>rene descarte</b> said animals <b>don't</b> think at all, and that is why they are not able to speak. Recently, many researchers <b>began</b> to observe <b>extrordinary</b> signs of intelligence in dolphins, chimps, dogs, and even parrots from following instructions and using tools, to being able to speak and do math. But while some animals: may show signs of intelligence, a remaining question <b>is</b>; How <b>do</b> animal intelligence compare to human intelligence? <b>while</b> we think that humans are <b>smarter, how, much smarter</b>, are we, exactly? The question still has no clear answer... it depends on how we measure intelligence, and <b>weather</b> or not it is <b>fare</b> (or even possible) to compare us to them.</p> <p><b>Post-Revision:</b></p> <p>Plenty of people say <b>their</b> pets are intelligent, <b>emotional creatures</b>. Some people might even argue that their dog is <b>smarter</b> than their neighbor. But how smart are animals really? <b>Over</b> the centuries, people have offered many ways of thinking about animal cognition—<b>that is, the mental capacities of animals</b>. <b>In the 17<sup>th</sup> Century, René Descartes claimed</b> that animals <b>do not</b> think at all, and that is why they are not able to speak, (Castro and Wasserman). Recently, though, many researchers <b>have begun</b> to observe <b>extraordinary</b> signs of intelligence in dolphins, chimps, dogs, and even parrots—from following instructions and using <b>tools</b>, to being able to speak and do math. But while some animals may show signs of intelligence, a remaining question <b>is</b>: How <b>does</b> animal intelligence compare to human</p>

intelligence? While we think that humans are smarter, how much smarter are we exactly? The question still has no clear answer; it depends on how we measure intelligence, and whether or not it is fair (or even possible) to compare us to them.

## Vocabulary

### Vocabulary to provide directly (will not include extended instruction)

- Independent clause (n.) – a clause that can stand alone as a sentence, containing a subject and a predicate with a finite verb.
- Conventions (n.) – The way in which something is usually done, especially within a particular area or activity (in this case, grammar).

### Vocabulary to teach (may include direct word work and/or questions)

- None.\*

① Students should be using their Vocabulary Journal to incorporate domain-specific vocabulary from Unit 9.3.2 into their research paper, as well as to record process-oriented vocabulary defined in the lesson.

## Lesson Agenda/Overview

Student-Facing Agenda	% of Lesson
<b>Standards &amp; Text:</b> <ul style="list-style-type: none"> <li>• Standards: W.9-10.5, L.9-10.2.a, b, c, W.9-10.2.d, SL.9-10.1, L.9-10.6</li> <li>• Text: Sources from research</li> </ul>	
<b>Learning Sequence:</b> <ol style="list-style-type: none"> <li>1. Introduction of Lesson Agenda</li> <li>2. Homework Accountability</li> <li>3. Editing Instruction</li> <li>4. Peer Review</li> <li>5. Lesson Assessment</li> <li>6. Closing</li> </ol>	<ol style="list-style-type: none"> <li>1. 10%</li> <li>2. 10%</li> <li>3. 20%</li> <li>4. 30%</li> <li>5. 25%</li> <li>6. 5%</li> </ol>

## Materials

- Student copies of the **9.3.3 Rubric and Checklist Packet** for each student
- Copies of **Colon and Semicolon Handout** 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.
	<b>Bold text indicates questions for the teacher to ask students.</b>
	<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

**10%**

Begin by reviewing the agenda and assessed standards of this lesson: W.9-10.5, L.9-10.2. Inform students that they are focusing on grammar and spelling in this lesson and doing peer review in preparation for the End-of-Unit Assessment. Inform students that they are working with a new standard: L.9-10.2. Display the language of the standard: *Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. 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.* Ask students to put this standard in their own words.

- Students follow along and read the agenda.

Explain that students are assessed on this new standard: L.9-10.2. Ask students to individually reread standard L.9-10.2 and assess their familiarity with and mastery of the standard on the 9.3 Common Core Learning Standards Tool. Ask students to write down what they think are the large ideas in the standard and discuss with a classmate.

❗ The 9.3 Common Core Learning Standards Tool was distributed in Unit 1 Lesson 1.

Lead a share out of the standard's large ideas.

- 💬 Student responses may include: This standard is about spelling words, using correct grammar, and using semicolons and colons properly.

## Activity 2: Homework Accountability

**10%**

Instruct students to Turn-and-Talk with a classmate about the revisions they completed for homework based on the feedback around cohesion, their introductions, and conclusions from the previous lesson.

- 💬 Student responses vary based on their individual revisions.

## Activity 3: Editing Instruction

**20%**

Explain to students that editing for grammar is an important part of writing and should always be completed prior to writing their final draft. Inform students that they should always incorporate proper capitalization and punctuation into their writing, and remind them that these *conventions* have been addressed in previous modules.

- ① If students require more direct instruction around conventions of standard English capitalization, the aspects most pertinent to this unit are the capitalization of proper nouns and the first word in a sentence.

Inform students that they are focusing on how to use semicolons and colons to strengthen their writing and communicate complex ideas and that there are *conventions* for using these types of punctuation, which you can review with them.

- ① Inform students that a *convention* is the way in which something is usually done. For punctuation, a *convention* would be the way(s) a punctuation mark is most often used. Remind students to record the definition of *conventions* in their Vocabulary Journals.

- ▶ Students follow along.

Distribute the Colon and Semicolon Handout to students and ask them to follow along while learning about punctuation conventions.

- ▶ Students look over the Colon and Semicolon Handout.

Explain to students that semicolons are a type of punctuation that can be used to connect two *independent clauses*. Offer students a definition of *independent clause* as a clause that can stand alone as a sentence, containing a subject and a predicate with a finite verb. This means that an *independent clause* communicates a complete thought and it is usually a simple sentence. Display the following example for students: “The table was long.” This is an example of an independent clause.

- ① Remind students to record the definition of *independent clause* in their Vocabulary Journals.
- ① If needed, provide further instruction around independent clauses. For example, “I am,” is technically an independent clause. “The red house in Florida,” is not an independent clause. If time

allows, help students differentiate between independent and dependent clauses. (e.g., “I work at the grocery store, which is red,” the former clause being independent, the latter being dependent.)

In order to join a related independent clause and show they are related, use a semicolon. Display the following example for students: *The table was long. It could seat 15 people.* Now display the joined clauses: *The table was long; it could seat 15 people.* Explain to students that it is not incorrect to use two sentences instead of conjoining the clauses with a semicolon, but since the ideas are linked, it makes sense to conjoin them. Display the following examples for students to explain situations where a semicolon would not be appropriate: *The table was long; very long.* and *The table was long; and wooden.*

- ▶ Students follow along.

Inform students that colons are a type of punctuation that are very important in a research paper because a colon is used when introducing a quotation after an independent clause.

Display the following example for students: *It has been documented that pigeons would be much better at a game show than humans: “After training in the game, the pigeons switched 96 percent of the time” (Horowitz and Shea).* Display the following example to explain a situation where a colon would not be appropriate: *After training: “the pigeons switched 96 percent of the time” (Horowitz and Shea).*

- ▶ Students follow along.

Another use of colons is to introduce a list. Display the following example for students: *Monkeys have plenty of skills, including: climbing trees, using tools to get food, communicating with hand gestures, and even finger-painting.”*

- ① Some students may have trouble immediately grasping the proper use of colons and semicolons. If students are struggling, work with them individually to write out 5–10 examples of the proper use of each type of punctuation.

Instruct students to keep the Colon and Semicolon Handout and use it as a reference as needed.

Remind students to be mindful of their spelling as well as their use of specific domain vocabulary they have identified from the text and recorded in their Vocabulary Journals.

- ① Instruction around independently identifying and addressing vocabulary has been established in Unit 2 of this module.

## Activity 4: Peer Review

**30%**

Inform students that they will work in pairs to continue to peer review their drafts for correct use of grammar (capitalization, punctuation), spelling, and use of domain specific vocabulary. Instruct students to look for instances in their partner's paper where a semicolon or colon should be used. Ask students to take out their 9.3.3 Rubric and Checklist Packet, and turn to the checklist for standard L.9-10.2. Ask students to use this checklist as a guide during their peer review. Remind students they should be finalizing their draft in the next lesson. Inform 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.

- ① Consider reminding students of the skills inherent in the sub-standards of standard SL.9-10.1, to which students were previously introduced.
- ① Consider completing any outstanding teacher conferences with students.

## Activity 5: Lesson Assessment

**25%**

Inform students that they should independently review and revise their draft based on the peer review. Remind students they are assessed using the checklist aligned to W.9-10.2.d and L.9-10.2 and to refer to the 9.3 Unit 3 Rubric and Checklist Packet for further guidance.

## Activity 6: Closing

**5%**

Display and distribute the homework assignment. For homework, ask students to make further grammatical edits and spelling in preparation for the End-of-Unit Assessment and be prepared to discuss one or two of their edits in the following lesson. Ask students to review their paper and make note of any evidence or information that would be well suited to present in a visual format.

- ① Remind students that the performance assessment in this module should be a multimedia presentation of their research paper.

## Homework

Continue to edit your research papers for grammar and spelling. To guide your edits, use the checklists aligned to W.9-10.2.d and L.9-10.2 and be prepared to discuss one or two edits in the following lesson. Additionally, review your research paper and identify information that would benefit from being presented in a visual or multimedia format. Capture this information in the form of a list to be reviewed in the following lesson.



## Colon and Semicolon Handout

<b>Name:</b>		<b>Class:</b>		<b>Date:</b>	
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### Common and Proper Uses of the Colon:

- Use a colon when introducing a quotation after an *independent clause*.
  - For example, it has been documented that pigeons would be much better at a game show than humans: “After training in the game, the pigeons switched 96 percent of the time” (Horowitz and Shea).
- Use a colon when introducing a list.
  - For example, monkeys have plenty of skills, including: climbing trees, using tools to get food, communicating with hand gestures, and even finger-painting.

### Common and Proper Uses of the Semicolon:

- Use a semicolon to connect two *independent clauses* that are related to one another.
  - For example, the monkey could read; he enjoyed short books.

**Further reference:** The Purdue OWL Family of Sites. The Writing Lab and OWL at Purdue and Purdue U, 2008. Web. 1 Dec. 2013. <https://owl.english.purdue.edu/engagement/2/1/44/>

- ① Remember: An *independent clause* contains both a subject and a verb, and can stand alone as a complete sentence. (e.g., “The boy runs,” is an independent clause; “The boy down the street,” is not independent.)

## 9.3.3

## Lesson 8

## Introduction

In this lesson, the End-of-Unit Assessment, students work in class to finalize their research papers, editing, polishing, and rewriting as necessary. Students are evaluated on the final draft's alignment to the criteria of **Research Paper Writing Rubric: Informative/Explanatory**. The final draft should demonstrate thoughtful analysis of the evidence gathered through research as well as the organizational structure of the chosen research paper. For homework, students should prepare for the Module Performance Assessment.

## Standards

Assessed Standard(s)	
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> <p>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.</p> <p>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.</p> <p>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.</p> <p>d. Use precise language and domain-specific vocabulary to manage the complexity of the topic.</p> <p>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.</p> <p>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).</p>
Addressed Standard(s)	
W.9-10.4	Produce clear and coherent writing in which the development, organization, and style

	are appropriate to task, purpose, and audience.
W.9-10.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.

## Assessment

Assessment(s)
<ul style="list-style-type: none"> <li>Students are assessed on the final draft's 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 their evidence-based claims as well as appropriately citing sources. The final draft should demonstrate thoughtful analysis of the evidence gathered through research as well as the organizational structure of the chosen research paper.</li> </ul> <p>① This assessment is evaluated using the <a href="#">Research Paper Writing Rubric: Informative/Explanatory</a> (located in the 9.3 Unit 3 Rubric and Checklist Packet).</p>
High Performance Response(s)
<p>A high performance response may include the following:</p> <ul style="list-style-type: none"> <li>See attached sample student research paper.</li> </ul>

## Vocabulary

Vocabulary to provide directly (will not include extended instruction)
<ul style="list-style-type: none"> <li>None.*</li> </ul>
Vocabulary to teach (may include direct word work and/or questions)
<ul style="list-style-type: none"> <li>None.*</li> </ul>

\* Students will encounter domain-specific vocabulary related to their individual research question/problem by reading, annotating, and recording notes on various sources. Students will track some of this vocabulary in their Vocabulary Journal when conducting independent searches during class and for homework.

## Lesson Agenda/Overview

Student-Facing Agenda	% of Lesson
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<b>Standards &amp; Text:</b> <ul style="list-style-type: none"> <li>Standards: W.9-10.2.a-f, W.9-10.4, W.9-10.9</li> <li>Text: None.</li> </ul>	
<b>Learning Sequence:</b>	
1. Introduction of Lesson Agenda	1. 5%
2. Homework Accountability	2. 10%
3. End-of-Unit Assessment: Final Draft	3. 80%
4. Closing	4. 5%

## Materials

- Student Copies of the **9.3.3 Rubric and Checklist Packet**
- Copies of the **End-of-Unit Assessment** for each student
- Copies of the **Research Paper** 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.
	<b>Bold text indicates text dependent questions.</b>
	<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 introducing the lesson agenda and assessed standard in this lesson: W.9-10.2.a-f. Inform students that today they are completing their final draft of their research paper to be evaluated for the End-of-Unit Assessment. Instruct students to work independently and hand in the final product at the end of class.

- Students listen.

## Activity 2: Homework Accountability

**10%**

Ask student volunteers to briefly share one or two grammatical edits they made for homework and to explain their decisions by referencing the checklists aligned to W.9-10.2.d and L.9-10.2 in their 9.3.3 Rubric and Checklist Packet.

- ① Students may have grammatical questions, which, if time allows, can be addressed during Homework Accountability.

Ask student volunteers to also share two items from the list they created, detailing any evidence that would be effective to use in a multimedia format.

💬 Possible student responses might resemble:

- One area I thought would benefit from multimedia is the portion in my essay where I discuss monkeys and students taking the same test. Because there are so many numbers, a visual graph of this might help many people understand the point more clearly.

## Activity 3: End-of-Unit Assessment: Final Draft

**80%**

Instruct students that they should spend the remaining portion of the class completing the final draft of their research paper. Inform them that they can use their Research Portfolios, all checklists and rubrics used in this unit, and previous versions of their research paper with peer comments to guide their creation of the final draft. Advise students they should use this time to edit, polish, and/or rewrite as they see fit, using all the skills they have learned over the course of this unit. Students should also finalize their works cited and format their paper according to MLA standards. Remind them to hand in their paper at the end of class and that their final draft is evaluated on its alignment to the conventions of an informative/explanatory text. It is assessed using the Research Paper Writing Rubric: Informative/Explanatory, including reference to citations as well as proof that the evidence-based perspective has developed from research and is supported by sufficient evidence.

- ▶ Students listen and begin finalizing their research papers.

## Activity 6: Closing

**5%**

Display and distribute the homework assignment. For homework, instruct students to prepare for the module performance task by reviewing their research paper and identifying evidence and claims that would be enhanced by forms of multimedia.

- ▶ Students follow along.

## Homework

Prepare for the Module Performance Assessment by reviewing your research paper and identifying evidence and claims that would be enhanced by forms of multimedia. Capture these pieces of evidence and claims in a list to be used during the module performance task.

## End-of-Unit Assessment (9.3.3 Lesson 8)

### Final Research Paper

**Your Task:** Rely on the evidence you have gathered to write the final draft of your research paper. Use the evidence-based perspective developed from your research and supported by textual evidence in crafting your final paper. Use your Research Portfolios, checklists and rubrics, and previous versions of your research paper with peer comments to guide the creation of your final draft.

Your writing will be assessed using the Research Paper Writing Rubric: Informative/Explanatory.

#### Guidelines

##### Be sure to:

- Review your writing for alignment with all parts of W.9-10.2
- Make clear, evidence-based claims about your research topic
- Paraphrase, quote, and reference relevant evidence 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
- Correctly cite all evidence, finalize your bibliography and format the paper according to MLA standards

**CCLS:** W.9-10.2(a-f)

#### Commentary on the Task:

This task measures W.9-10.2 because it demands that students:

- 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.
  - 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.
  - 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.
  - Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.
  - Use precise language and domain-specific vocabulary to manage the complexity of the topic.

Sample Student

Sample Teacher

Sample Class

Sample Date

### **Us or Them: Research on Animal Intelligence**

Plenty of people say their pets are intelligent, emotional creatures. Some people might even argue that their dog is smarter than their neighbor. But how smart are animals really? Over the centuries, people have offered many ways of thinking about animal cognition—that is, the mental capacities of animals. In the 17<sup>th</sup> Century, René Descartes claimed that animals do not think at all, and that is why they are not able to speak, (Wasserman and Castro). Recently, though, many researchers have begun to observe extraordinary signs of intelligence in dolphins, chimps, dogs, and even parrots—from following instructions and using tools, to being able to speak and do math. But while some animals may show signs of intelligence, a remaining question is: How does animal intelligence compare to human intelligence? That is to say, while we think that humans are smarter, how much smarter are we, exactly? The question still has no clear answer; it depends on how we measure intelligence, and whether or not it is fair (or even possible) to compare us to them.

The ancient Greeks thought that there was a ladder of intelligence, with all life forms ranking from low to high, and humans were the closest things to angels on earth, (Waal). From then until somewhat recently, many scientists and philosophers followed this idea in one way or another, claiming



that animals had no souls, and that they could potentially “learn,” but not “think” or “feel,” (Waal). Most people who made these claims did not try so hard to discover signs of animal cognition, and would often test the animals in ways that were appropriate for human subjects, but not for the animals themselves.

Many people would say this is unfair. For example, what if someone held a book up to a dolphin and asked the dolphin to read it aloud? Even if a researcher spent years trying to teach a dolphin to read aloud, he will never be able to do it. When the dolphin inevitably fails this task, is it fair to assume it is because he is unintelligent? Perhaps it is more correct to say that dolphins do not have the physical ability to read text aloud than it is to claim that they cannot do it because they are unintelligent. Dolphins do not have the correct vocal chords or jaw structure to read aloud. Similarly, one could never teach a dolphin to have a thumb. Would a dolphin be considered unintelligent if it could not hold a hammer?

Thus, modern researchers claim that language is not the only sign of intelligence. Sometimes, very bright animals do not express their intelligence in ways that we can immediately see or notice. For example, a recent study of 59 chimpanzees concluded that the animals “fake laugh” in response to others’ laughter. According to Horowitz and Shea, “The researchers discovered that when one chimp laughed others sometimes engaged in ‘laugh replications’ that lacked the full acoustic structure of spontaneous laughter. In other words, they were fake-laughing.” This behavior exhibits chimps’ social etiquette. It is spontaneous and untaught, but humans would not notice it right away.

Sometimes animals possess an intelligence that we must uncover. A recent study by researchers at Duke University revealed something about rhesus macaque monkeys: They can “mentally represent

and compare numbers,” as well as do simple math problems, (Duke). "We know that animals can recognize quantities, but there is less evidence for their ability to carry out explicit mathematical tasks, such as addition," said graduate student Jessica Cantlon. "Our study shows that they can," (Duke). The monkeys were offered a “variable number of dots” on a touch screen. The dots disappeared, and a new screen appeared with two boxes, one with the sum of the first two sets of dots and one with a different number. When the monkeys tapped the box with the sum of the first two sets, they were rewarded with food. The same test was given to a group of college students. While the college students got the answer correct more often (94% vs. 76%), both they and the monkeys responded at the same rate. Similarly, both groups’ number of correct answers declined equally when the two sets of numbers were close together (e.g., 11 and 12), (Duke). This study proves that the monkeys already had this ability, and were simply using it in ways we did not notice; we only had to construct the right test for them to show us this intelligence.

Finally, consider Alex the parrot. Animal scientist Irene Pepperberg spent 30 years teaching Alex, an African gray parrot, to speak, (Morell). At first Alex would simply reproduce noises, but Irene also taught him the *meaning* of those sounds using simple patterns, like counting from one to ten. Eventually, Alex could differentiate between shapes and colors, and even communicated desires like, “Want grape,” or “Wanna go tree,” (Morell). Pepperberg still works with a number of other parrots to teach them similar skills.

All of these examples prove that animals are often more intelligent than we can see at first. But there is still an unanswered question: How do they compare to humans? One answer is that animals, while often smarter than we think, are not nearly as smart as us. It would not take the average human 30 years to learn to count to seven or learn to say, “Want grape.” By the same token, animals seem to

have no interest in studying humans, but our desire to know about them highlights our superior intelligence. But there is another possibility: What if we are only measuring the intelligence we humans can see? What if there is something brilliant going on that we have not learned to measure and analyze? We have learned to teach parrots English, and perhaps it is only a matter of time before we begin to learn some complex language of the animal kingdom previously unknown to us.

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