



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Overview



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Unit 1: Building Background Knowledge: Animal Defenses and the Research Process

In the first unit of this module, students begin by building background knowledge on animal defense mechanisms using an Animal Defenses research journal to record notes and synthesize new information. Listening closely and close reading of informational texts about animal defense mechanisms will prepare students for the mid-unit assessment in which they examine visuals in the text and read about caterpillars' defense mechanisms. Students then begin a deeper and more focused

study of the topic by researching the millipede and its defense mechanisms. They will continue to record notes and to synthesize new information in their Animal Defenses research journals. This whole-class study of the millipede will act as a model for students as they research an animal of their choice in Unit 2. At the end of this unit, students select their “expert animal” to research with a small group during Unit 2.

Guiding Questions and Big Ideas

- **How do animals' bodies and behaviors help them survive?**
- **How can a writer use knowledge from their research to inform and entertain?**
- *To protect themselves from predators, animals use different defense mechanisms.*
- *In order to entertain and inform, writers become researchers.*



Mid-Unit 1 Assessment	<p>Reading about Caterpillars, Answering Questions, and Determining the Main Idea</p> <p>This assessment centers on standards NYS ELA CCLS RI.4.2, RI.4.4, and RI.4.7. Students read an informational text (including diagrams) about an animal’s defense mechanisms. They answer selected-response text-dependent questions that challenge them to interpret information presented in the diagrams and explain how the information in the diagrams contribute to an understanding of the text in which it appears. They then identify the main idea and supporting details of each section of the text.</p>
End of Unit 1 Assessment	<p>Answering Questions and Summarizing Texts about Animal Defense Mechanisms</p> <p>This two-part assessment centers on standards NYS ELA CCLS RI.4.1, RI.4.2, and SL.4.2. In the first part of the assessment, students read a new text on an animal and its defense mechanisms. They then answer multiple-choice text-dependent questions that include comprehension of key passages and vocabulary. Students then identify the main idea of the text before writing a text summary. In the second part of the assessment, students listen to a transcript read aloud and then write to paraphrase the information presented.</p>



Content Connections

This module is designed to address English Language Arts standards as students read informational texts about animal defense mechanisms. However, the module intentionally incorporates science practices and themes to support potential interdisciplinary connections to this compelling content. These intentional connections are described below.

Big ideas and guiding questions are informed by the New York State Common Core K–8 Science Framework:

- Next-Generation Science Standards 4L-S1-1
- From Molecules to Organisms: Structure and Processes

NYS Science Standard 4:

Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.

Key Idea 2:

- Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.

Key Idea 5:

- Organisms maintain a dynamic equilibrium that sustains life. Key Idea 6: Plants and animals depend on each other and their physical environment.

Texts

1. Christina Wilsdon, *Animal Behavior: Animal Defenses* (Chelsea House Publishing (L); 1st edition, April 2009), ISBN: 978-1-60413-089-8.
2. Marilyn Singer, *Venom* (Plain City, Ohio: Darby Creek Publishing, 2007), ISBN: 978-1-58196-043-3. (Teacher copy only.)
3. Lea Winerman, “Award-Winning Survival Skills” in *Science World*, Nov. 2002, 8–13.



This unit is approximately 3 weeks or 14 sessions of instruction.

Lesson	Lesson Title	Long Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 1	Building Background Knowledge: What Are Animal Defense Mechanisms?	<ul style="list-style-type: none"> I can explain what a text says using specific details from the text. (RI.4.1) I can make inferences using specific details from the text. (RI.4.1) 	<ul style="list-style-type: none"> I can infer about animal defense mechanisms based on information in pictures and text. I can support my inferences with details and examples from pictures and texts. I can document my research using a research journal. 	<ul style="list-style-type: none"> Observations during carousel brainstorm Participation during unpacking of guiding questions Animal Defense Mechanisms: KWL Chart 	<ul style="list-style-type: none"> Guiding Questions anchor chart Performance Task anchor chart Carousel Brainstorm protocol
Lesson 2	Building Background Knowledge: Launching Research of Animal Defense Mechanisms	<ul style="list-style-type: none"> I can paraphrase portions of a text that are read aloud to me. (SL.4.2) I can explain what a text says using specific details from the text. (RI.4.1) I can infer what a text says using specific details from the text. (RI.4.1) I can interpret information presented through charts or graphs. I can explain how that information helps me understand the text around it. (RI.4.7) 	<ul style="list-style-type: none"> I can explain what it means to be a researcher. I can paraphrase information presented in a read-aloud on animal defense mechanisms. I can infer about a text by examining its visual. 	<ul style="list-style-type: none"> Animal Defense research journals-pages 2 and 3: Listening Closely and Examining Visuals note-catchers Observations from participation in Animal Defense Mechanisms: KWL chart construction 	<ul style="list-style-type: none"> Close Readers Do These Things anchor chart Performance Task anchor chart Back-to-Back, Face-to-Face protocol
Lesson 3	A Closer Read for Vocabulary: Words Related to Animal Defenses	<ul style="list-style-type: none"> I can paraphrase portions of a text that is read aloud to me. (SL.4.2) I can determine the meaning of academic words or phrases in an informational text. (RI.4.4) I can determine the meaning of content words or phrases in an informational text. (RI.4.4) I can use a variety of strategies to read words. (RF.4.3) I can use a variety of strategies to determine the meaning of words and phrases. (L.4.4) 	<ul style="list-style-type: none"> I can paraphrase information presented in a read-aloud on animal defense mechanisms. I can use different strategies to help me read unfamiliar words. I can determine the meanings of unfamiliar words to help me better understand "Award-Winning Survival Skills." 	<ul style="list-style-type: none"> Listening Closely note-catcher (page 2 of Animal Defenses research journal) Glossary (pages 24-26 Animal Defenses research journal) 	<ul style="list-style-type: none"> Vocabulary Strategies anchor chart



Lesson	Lesson Title	Long Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 4	A Closer Read for Main Ideas: What Is Important about Animal Defenses?	<ul style="list-style-type: none"> I can paraphrase portions of a text that is read aloud to me. (SL.4.2) I can determine the main idea using specific details from the text. (RI.4.2) I can determine the meaning of academic words or phrases in an informational text. (RI.4.4) I can determine the meaning of content words or phrases in an informational text. (RI.4.4) 	<ul style="list-style-type: none"> I can paraphrase information presented in a read-aloud on animal defense mechanisms. I can determine the main idea of sections of “Award-Winning Survival Skills.” I can identify details that support the main idea of sections of “Award-Winning Survival Skills.” 	<ul style="list-style-type: none"> Listening Closely note-catcher (page 4 of Animal Defenses research journal) Determining the Main Idea note-catcher (page 5 of Animal Defenses research journal) 	<ul style="list-style-type: none"> Vocabulary Strategies anchor chart Back-to-Back, Face-to-Face protocol
Lesson 5	Reading Scientific Text: Building Expertise on Animal Defense Mechanisms	<ul style="list-style-type: none"> I can paraphrase portions of a text that is read aloud to me. (SL.4.2) I can interpret information presented through charts or graphs. I can explain how that information helps me understand the text around it. (RI.4.7) I can determine the main idea using specific details from the text. (RI.4.2) 	<ul style="list-style-type: none"> I can paraphrase information presented in a read-aloud on animal defense mechanisms. I can make inferences about animal defense by examining articles that include text and visuals. I can determine the main idea of a section of Animal Behaviors: Animal Defenses. 	<ul style="list-style-type: none"> Listening Closely note-catcher (Page 6 of Animal Defenses research journal) Examining Visuals note-catcher (page 7 of Animal Defenses research journal) Determining Main Ideas note-catcher (page 8 of Animal Defenses research journal) Observation of participation during Jigsaw 	<ul style="list-style-type: none"> Jigsaw protocol
Lesson 6	Reading Scientific Text: Reading Closely on Animal Defense Mechanisms	<ul style="list-style-type: none"> I can determine the main idea using specific details from the text. (RI.4.2) I can paraphrase portions of a text that are read aloud to me. (SL.4.2) I can document what I learn about a topic by taking notes. (W.4.8) 	<ul style="list-style-type: none"> I can identify details that support the main idea of a section of Animal Behaviors: Animal Defenses. I can paraphrase and take notes on information presented by my peers in Jigsaw groups. 	<ul style="list-style-type: none"> Determining the Main Idea note-catcher (page 8 in Animal Defenses research journal) Observation of participation during Jigsaw 	<ul style="list-style-type: none"> Jigsaw protocol



Lesson	Lesson Title	Long Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 7	Mid-Unit Assessment: Reading about Caterpillars, Answering Questions, and Determining the Main Idea	<ul style="list-style-type: none"> I can determine the main idea using specific details from the text. (RI.4.2) I can interpret information presented through charts or graphs. I can explain how that information helps me understand the text around it. (RI.4.7) I can determine the meaning of academic words or phrases in an informational text. (RI.4.4) I can determine the meaning of content words or phrases in an informational text. (RI.4.4) 	<ul style="list-style-type: none"> I can make inferences about caterpillar defense mechanisms by examining articles that include text and diagrams. I can determine the main idea of a text on caterpillar defense mechanisms. I can find the meanings of unfamiliar words to help me better understand “Award-Winning Survival Skills: How Animals Elude Prey.” 	<ul style="list-style-type: none"> Mid-Unit 1 Assessment Animal Defenses research journal glossary 	<ul style="list-style-type: none"> Close Readers Do These Things anchor chart Vocabulary Strategies anchor chart
Lesson 8	Preparing for a Text-based Discussion: Science Talk about Animal Defenses	<ul style="list-style-type: none"> I can effectively engage in discussions with diverse partners about fourth-grade topics and texts. (SL.4.1) I can prepare myself to participate in discussions. <ul style="list-style-type: none"> I can draw on information to explore ideas in the discussion. 	<ul style="list-style-type: none"> I can effectively participate in a Science Talk about animal defense mechanisms. <ul style="list-style-type: none"> I can prepare for the Science Talk by using evidence from animal defense mechanism texts. 	<ul style="list-style-type: none"> Animal Defense Mechanisms: Preparing for a Science Talk note-catcher 	<ul style="list-style-type: none"> Science Talk Norms anchor chart Quiz-Quiz-Trade protocol Fishbowl protocol
Lesson 9	Text-Based Discussion: Science Talk about Animal Defenses	<ul style="list-style-type: none"> I can effectively engage in discussions with diverse partners about fourth-grade topics and texts. (SL.4.1) <ul style="list-style-type: none"> I can draw on information to explore ideas in the discussion. I can follow our class norms when I participate in a conversation. I can ask questions that are on the topic being discussed. I can connect my questions and responses to what others say. 	<ul style="list-style-type: none"> I can effectively participate in a Science Talk about animal defense mechanisms. <ul style="list-style-type: none"> I can ask questions so I am clear about what is being discussed. I can ask questions on the topic being discussed. I can follow our class norms when I participate in a conversation. I can observe others participating in a Science Talk. 	<ul style="list-style-type: none"> Preparing for a Science Talk note-catcher 	<ul style="list-style-type: none"> Science Talk Norms anchor chart Science Talk protocol



Lesson	Lesson Title	Long Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 10	<ul style="list-style-type: none"> Determining Main Idea and Summarizing: Reading Closely about Millipedes 	<ul style="list-style-type: none"> I can paraphrase portions of a text that is read aloud to me. (SL.4.2) I can determine the main idea using specific details from the text. (RI.4.2) I can summarize informational text. (RI.4.2) 	<ul style="list-style-type: none"> I can determine the main idea of a section of Venom. I can summarize a section of Venom using the main idea and supporting details found in the text. 	<ul style="list-style-type: none"> Listening Closely note-catcher (page 12 of Animal Defenses Research Journal) Determining the Main Idea note-catcher (page 13 of Animal Defenses Research Journal) 	<ul style="list-style-type: none"> Summarizing Informational Text anchor chart
Lesson 11	Close Reading: Learning About Poisonous Animals	<ul style="list-style-type: none"> I can explain what a text says using specific details from the text. (RI.4.1) I can make inferences using specific details from text. (RI.4.1) I can interpret information presented through charts or graphs. I can explain how the information helps me understand the text around it. (RI.4.7) I can determine the meaning of academic words or phrases in an informational text. (RI.4.4) I can determine the meaning of content words or phrases in an informational text. (RI.4.4) 	<ul style="list-style-type: none"> I can make inferences based on information from pictures and text in a section of Animal Behavior: Animal Defenses, "Poisonous Prey". I can support my inferences with details and examples from pictures and texts in a section of Animal Behaviors: Animal Defenses, "Poisonous Prey". I can find the meanings of unfamiliar words to help me better understand a section of Animal Behaviors: Animals Defenses, "Poisonous Prey". 	<ul style="list-style-type: none"> Listening Closely note-catcher (page 14 of Animal Defenses research journal) "Poisonous Prey" note-catcher (pages 15-20 Animal Defenses research journal) 	<ul style="list-style-type: none"> Close Readers Do These Things anchor chart Back-to-Back, Face-to-Face protocol



Lesson	Lesson Title	Long Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 12	Close Reading Continued: Learning About Poisonous Animals	<ul style="list-style-type: none"> I can explain what a text says using specific details from the text. (RI.4.1) I can make inferences using specific details from text. (RI.4.1) I can determine the meaning of academic words or phrases in an informational text. (RI.4.4) I can determine the meaning of content words or phrases in an informational text. (RI.4.4) I can use a variety of strategies to read words. (RF.4.3) I can use a variety of strategies to determine the meaning of words and phrases. (L.4.4) 	<ul style="list-style-type: none"> I can make inferences based on information from pictures and text in a section of Animal Behavior: Animal Defenses, "Poisonous Prey". I can support my inferences with details and examples from pictures and texts in a section of Animal Behaviors: Animal Defenses, "Poisonous Prey". I can find the meanings of unfamiliar words to help me better understand a section of Animal Behaviors: Animals Defenses, "Poisonous Prey". 	<ul style="list-style-type: none"> "Poisonous Prey" note-catcher (continued from Lesson 11; pages 15-20 Animal Defenses research journal) 	<ul style="list-style-type: none"> Close Readers Do These Things anchor chart Vocabulary Strategies anchor chart Ink-Pair-Share Protocol
Lesson 13	Science Talk: Synthesizing What We Know about Millipedes	<ul style="list-style-type: none"> I can effectively engage in discussions with diverse partners about fourth-grade topics and texts. (SL.4.1) <ul style="list-style-type: none"> I can prepare myself to participate in discussions. I can draw on information to explore ideas in the discussion. I can follow our class norms when I participate in a conversation. I can ask questions that are on the topic being discussed. I can connect my questions and responses to what others say. I can accurately synthesize information from two texts on the same topic. (RI.4.9) 	<ul style="list-style-type: none"> I can effectively participate in a Science Talk about millipede defense mechanisms. <ul style="list-style-type: none"> I can prepare for the Science Talk by using evidence from animal defense mechanism texts. I can ask questions so I am clear about what is being discussed. I can ask questions on the topic being discussed. I can follow our class norms when I participate in a conversation. 	<ul style="list-style-type: none"> Preparing for a Science Talk note-catcher (page 22 Animal Defenses research journal) Observation of Science Talk 	<ul style="list-style-type: none"> Science Talk Norms anchor chart Participating in a Science Talk anchor chart Science Talk protocol



Lesson	Lesson Title	Long Term Targets	Supporting Targets	Ongoing Assessment	Anchor Charts & Protocols
Lesson 14	End of Unit Assessment: Answering Questions and Summarizing Texts about Animal Defense Mechanisms	<ul style="list-style-type: none">• I can explain what a text says using specific details from the text. (RI.4.1)• I can make inferences using specific details from text. (RI.4.1)• I can determine the main ideas using specific details from the text. (RI.4.2)• I can summarize informational or persuasive text. (RI.4.2)• I can paraphrase portions of a text that is read aloud to me. (SL.4.2)	<ul style="list-style-type: none">• I can paraphrase information read aloud about animal defense mechanisms.• I can determine the main idea of “Hearing Sounds through the Ground.”• I can summarize “Hearing Sounds through the Ground” using the main idea and supporting details found in the text.	<ul style="list-style-type: none">• End of Unit 1 Assessment• Tracking My Progress, End of Unit 1 recording form	



Optional: Experts, Fieldwork, and Service

Experts:

- Invite a biologist or zoologist to discuss animal defense mechanisms.

Fieldwork:

- Arrange for a visit to a local zoo to observe animal defense mechanisms.

Service:

- N/A

Optional: Extensions

- Conduct a deeper study of millipedes: Compare and contrast different species and their defenses.
- Create a food web with the millipede to explore the relationships between predators and prey.
- Read about the habitats and ecosystems and the role of individual species in maintaining balance.
- Adopt a millipede as a class pet and observe and record its behaviors.
- Collaborate with the art teacher to teach students how to create scientific drawings and create a scientific drawing of the millipede.
- Conduct hands-on science experiments and demonstrations. Note: The goal of the lessons in this unit is for students to build scientific knowledge while becoming better readers. These lessons do not fully address science content standards, nor do they replace hands-on, inquiry-based science.



Preparation and Materials

Animal Defenses Research Journal

In Lessons 2–14, students will use an Animal Defenses research journal to record notes and observations about general animal defense mechanisms and the millipede. This journal will be referenced and used in Units 2 and 3 as students write the informational and narrative pieces of the final performance task. Prior to Lesson 2, this journal should be prepared for students and will be used in each subsequent lesson of the unit. Later, in Unit 2, once students have selected an animal to research with a small group, they will use another journal for their research (Expert Animal research journal) with similar graphic organizers and note-catchers. This will help students gather evidence from the texts they read and synthesize their new learning in a similar fashion to Unit 1.

In advance of this unit, consider preparing the Animal Defenses research journal (in Lesson 1) as a copied and stapled packet. In addition, consider providing students with a research folder for use throughout the module. This will help students keep their materials (research journals, texts, writing) organized and in one place.

Note: Each lesson contains a completed page of the Animal Defenses research journal for teacher reference.



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Grade 4: Module 2B: Unit 1:

Recommended Texts



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The list below includes texts with a range of Lexile® text measures about various animals and their physical attributes, behaviors, and how they survive. This provides appropriate independent reading for each student to help build content knowledge about the topic.

It is imperative that students read a high volume of texts at their reading level in order to continue to build the academic vocabulary and fluency demanded by the CCLS

Common Core Band Level Text Difficulty Ranges:

(As provided in the NYSED Passage Selection Guidelines for Assessing CCSS ELA)

- Grade 2–3: 420–820L
- Grade 4–5: 740–1010L

Where possible, texts in languages other than English are also provided. Texts are categorized into three Lexile levels that correspond to Common Core Bands: below grade band, within band, and above band. Note, however, that Lexile® measures are just one indicator of text complexity, and teachers must use their professional judgment and consider qualitative factors as well. For more information, see Appendix 1 of the Common Core State Standards.

Title	Author And Illustrator	Text Type	Lexile Measure
Lexile text measures below band level (under 420L)			
<i>Hungry, Hungry Sharks</i>	Joanna Cole (author)	Informational	410
<i>High, Higher, Highest: Animals That Go to Great Heights</i>	Michael Dahl (author)	Informational	490
<i>Sloths</i>	Mari Schuh (author)	Informational	560
<i>Animal Characteristics</i>	Sue Barraclough (author)	Informational	620*
<i>Komodo Dragons on the Hunt</i>	Janet Riehecky (author)	Informational	660
<i>The Best Camouflaged Animals</i>	Megan Cooley Peterson (author)	Informational	670
<i>Camouflage and Mimicry: Animal Weapons and Defenses</i>	Janet Riehecky (author)	Informational	690

* Lexile based on a conversion from Accelerated Reading level



Title	Author And Illustrator	Text Type	Lexile Measure
<i>The Case of the Missing Arctic Fox</i>	Heather Montgomery (author)	Informational	700
Lexile text measures within band level (420–820L)			
<i>Freaky Faces</i>	David Armentrout (author)	Informational	780
<i>Animal Champions</i>	John Bonnett Wexo (author)	Informational	780*
<i>Animal Defenses</i>	Etta Kaner (author), Pat Stephens (illustrator)	Informational	790
<i>Biggest, Strongest, Fastest</i>	Steve Jenkins (author)	Informational	840
Lexile text measures above band level (over 820L)			
<i>Deadly! The Truth About the Most Dangerous Creatures on Earth</i>	Nicola Davies (author)	Informational	1230
<i>Jungle Bugs: Masters of Camouflage and Mimicry</i>	Bruce Purser (author)	Informational	No LXL

*Lexile based on a conversion from Accelerated Reading level

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Grade 4: Module 2B: Unit 1: Lesson 1

Building Background Knowledge: What Are Animal Defense Mechanisms?



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can explain what a text says using specific details from the text. (RI.4.1)

I can make inferences using specific details from the text. (RI.4.1)

Supporting Learning Targets

- I can infer about animal defense mechanisms based on information in pictures and text.
- I can support my inferences with details and examples from pictures and texts.
- I can document my research using a research journal.

Ongoing Assessment

- Observations during carousel brainstorm
- Participation during unpacking of guiding questions
- Animal Defense Mechanisms: KWL chart



Agenda	Teaching Notes
<ol style="list-style-type: none">Opening<ol style="list-style-type: none">Reviewing Learning Targets (5 minutes)Work Time<ol style="list-style-type: none">Discovering Our Topic: Carousel Brainstorm (20 minutes)Engaging the Reader: Read-aloud of <i>Venom</i> (10 minutes)Preparing to Research (15 minutes)Closing and Assessment<ol style="list-style-type: none">KWL Chart: Animal Defense Mechanisms (5 minutes)Launching Independent Reading (5 minutes)Homework<ol style="list-style-type: none">Begin your independent reading book for this unit.	<ul style="list-style-type: none">In this lesson, students use the Carousel Brainstorm protocol to preview <i>Venom</i> and <i>Animal Behaviors: Animal Defenses</i> as a way to build schema on the topic of animal defenses. Since there are 10 posters to use with this protocol, students likely will not get a chance to visit each poster. Strategically group students and decide which posters they will visit—for example, consider assigning ELLs to the same group and assign them to examine Carousel Brainstorm posters 1–7 since they are not as text-heavy as posters 8–10.The read-aloud of <i>Venom</i> serves as an engagement strategy by having students examine the diagrams to build background knowledge. Students do not receive their own copy. You may invite students to look through <i>Venom</i> during independent reading or other flextime throughout the school day. In subsequent lessons, this text is used as a read-aloud routine for students to listen and then paraphrase to address SL.4.4.In this lesson, students consider the module’s performance task prompt to help focus their work. To give yourself more context, preview the full performance task: a stand-alone teacher-facing document.In this lesson students learn a cold call strategy called equity sticks. Equity sticks are Popsicle sticks with each student’s name that can be pulled randomly for students to respond to teacher prompts. Research indicates that cold calling improves student engagement and critical thinking. Prepare students for this strategy by discussing the purpose, giving appropriate think time, and indicating that this strategy will be used before students are asked questions. Feel free to use some other total participation technique instead; the goal is to ensure participation and accountability.In the closing, students construct a KWL chart. Allow students to generate an initial list in the K, or knowledge column. Students may make statements that you know to be untrue, but these should still be added to the chart. As the class continues to read and learn about animal defense mechanisms, these items can then be confirmed as true or untrue. As this chart is added to in subsequent lessons, the class can mark these items with a Y if they are confirmed to be true or an N if they are confirmed to be untrue.Each unit in this module is accompanied by a list of Recommended Texts at a variety of reading levels. Students should use the classroom, school, or local library to obtain book(s) about the topics under study at their independent reading level. These books can be used in a variety of ways—as independent and partner reading in the classroom whenever time allows, as read-alouds by the teacher to entice students into new books, and as an ongoing homework expectation. In this lesson, students browse and select one of these texts for reading throughout the unit.



Agenda	Teaching Notes (continued)
	<ul style="list-style-type: none">• In advance: Prepare Carousel Brainstorm posters (see preparation information in supporting materials). Note that this preparation will take time.• Prepare the Animal Defenses research journal, where students will record their research notes and thinking throughout Unit 1. Consider stapling these journals into packets for students prior to this lesson. You may have each student create a research folder for storing their journals and other notes, texts, and writing throughout the module.• In this lesson, students will browse recommended texts to select books for independent reading. Be sure to have prepared students to select these texts by teaching a mini-lesson on selecting “just right” books at their individual reading level. See separate stand-alone document Launching Independent Reading in Grade 3-5 Sample Plan.• Prepare an equity stick for each student by writing the names of students in your class on a Popsicle stick. These can be held in a small jar and will be used as a strategy for cold calling throughout the rest of the modules.• Review: Carousel Brainstorm protocol (see Appendix).• Post: Learning targets.



Lesson Vocabulary	Materials
infer, inference, defense, mechanism, support, document, inform, entertain; venom/venomous, poison/poisonous, self-defense, survive, toxic, predator, prey	<ul style="list-style-type: none">• Carousel Brainstorm Poster Preparation (for teacher reference)• Carousel Brainstorm posters (new; teacher-created; see poster preparation information in supporting materials)• Carousel Brainstorm: Photos for Posters (one photo per posters 3–10; see supporting materials)• Document camera• Directions for Carousel Brainstorm (one to display)• Markers (different colors for each group)• Equity sticks (Popsicle sticks with each students' names written on them)• <i>Venom</i> (book for teacher read-aloud, cover and pages 4–5)• Guiding Questions anchor chart (new; teacher-created)• Performance Task anchor chart (new; teacher-created)• Animal Defense research journals (one per student and one to display; see Teaching Notes)• KWL chart from page 1 of Animal Defenses research journal (model, for teacher reference)• Unit 1 Recommended Texts (see Module overview documents)• Launching Independent Reading in Grade 3-5 Sample Plan (stand-alone document on EngageNY.org, for teacher reference)



Opening	Meeting Students' Needs
<p>A. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none"> Read the first learning target aloud to students: <ul style="list-style-type: none"> * “I can infer about animal defenses based on information in pictures and text.” Circle the word <i>infer</i> and ask students to Think-Pair-Share reviewing what it means to infer about something. Listen for responses like: “You use what you know and what the text says to figure out something the author doesn’t specifically say.” If clarification is needed, explain what it means to infer or to draw an inference. Say something like: “To make an <i>inference</i>, a reader uses what he or she already knows about a topic and combines it with the text he or she read (and notes about the text) to figure out something that the author does not explicitly tell the reader.” Provide an example if necessary. You might tell students that if someone is crying, you might infer that someone is sad: you take something you see and combine it with something you already know to infer. They didn’t tell you so you can’t be 100 percent sure, but the detail you saw was the person’s tears and your background knowledge is that people tend to cry tears when they are hurt or sad. You put what you saw (the evidence) together with what you already knew (that tears means hurt or sad) to draw an inference. Tell them today they will infer about animal <i>defense mechanisms</i>, the topic the class will be studying for the next few weeks. They will use pictures and text to do this. <ul style="list-style-type: none"> – Explain that the first word in the term <i>defense mechanism</i>, <i>defense</i>, means to protect yourself or keep something or someone from getting hurt. – The second word, <i>mechanism</i>, means natural reaction in response to something else, so the term <i>defense mechanism</i> means how animals react to protect themselves from harm. Ask for a student volunteer to read the second learning target: <ul style="list-style-type: none"> * “I can support my inferences with details and examples from pictures and texts.” Remind students that whenever they make an inference, they must support it with information from the text they are reading and thinking about. Ask for a student volunteer to read the last learning target: <ul style="list-style-type: none"> * “I can document my research using a research journal.” Ask students to Think-Pair-Share about what it means to document research. Listen for responses like: “It means to record information we have learned from things we’ve read.” 	<ul style="list-style-type: none"> Discussing and clarifying the language of learning targets helps build academic vocabulary.



Opening (continued)	Meeting Students' Needs
<ul style="list-style-type: none">Have students give a quick thumbs-up, thumbs-down, or thumbs-sideways to indicate how well they understand today's learning targets.	

Work Time	Meeting Students' Needs
<p>A. Discovering Our Topic: Carousel Brainstorm (20 minutes)</p> <ul style="list-style-type: none">Point out the Carousel Brainstorm posters displayed around the classroom.Using a document camera, review the posted Directions for Carousel Brainstorm briefly with students and remind them about expectations for group work and discussion.Explain that today, they will be in groups of three to four, and rotate through the Carousel Brainstorm posters to discuss the following question:<ul style="list-style-type: none">* "What can you infer about animal defenses can you make from the pictures and/or text on this poster?"Remind students that inferring is when you see or read new information and take what you know from past experience or reading to come to a conclusion about the new information. It is a guess based on evidence.If necessary, model briefly by saying something like: "For example, if I were in a group visiting poster 1, I would start by looking at the pages book marked in the text <i>Venom</i> by Marilyn Singer. For example, on page 8 there is a picture of a house with a white fence in front of it. I see a heading that says, 'Home Is Where the Venom Is.' I think that venom is like poison because I have heard about poisonous snakes having venom, so I infer that this means there can be poisonous animals in people's houses! The details that support this inference are the picture of the house and the heading. Next, I would share this inference with my group and we would record it on this Carousel Brainstorm poster."Group students and indicate where each group will start. (You may leave this open-ended and allow groups to visit as many charts as time allows or assign particular charts to each group.)Distribute markers (different colors for each group) and ask students to begin. Give them 3 minutes to work on each chart, and then rotate. As students are writing, monitor for text-based inferences. If necessary, gently point participants to interesting comments and inferences, pushing students to cite evidence for their inferences.At the end of 15 minutes, invite students to go back to the poster where they began and read through all of the inferences and comments on their assigned poster. Explain that they should be thinking about what they notice and wonder about what has been written on their poster.	<ul style="list-style-type: none">Consider partnering ELL students who speak the same home language, since discussion of complex content is required. This allows students to have more meaningful discussions and clarify points in their native language.Provide ELLs with a sentence starter or frame to aid in language production. For example: <i>In the photograph I see ... this makes me think that ...</i>



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> Ask: <ul style="list-style-type: none"> “What patterns or themes did you notice in all of the Carousel Brainstorm posters?” Invite each group to share out round-robin style what they noticed and wondered until all posters have been shared. Listen for responses like: “I noticed that many of the posters had animals on them,” or “I saw the word <i>defenses</i> repeated again and again.” 	
<p>B. Engaging the Reader: Read-aloud of <i>Venom</i> (10 minutes)</p> <ul style="list-style-type: none"> Introduce equity sticks by explaining to students that before you begin today’s lesson you would like to share a new strategy the class will use to help them with their learning. Show students the equity sticks. Tell them that each student has a Popsicle stick with his or her name on it. Tell them that the class will use these sticks as a way to call on students to participate during class. This will help you check their understanding during lessons. Tell them the reason they are called equity sticks is because everyone has one and will get a chance to think about questions asked in class and share their thinking. Remind students that all learners, including adults, must be willing to take risks to learn something new. They may not always be confident in their thinking, but sharing their thinking is important to learn new things. Discuss the importance of being respectful of everyone’s learning by asking: <ul style="list-style-type: none"> “How can the class be respectful when others are sharing their thinking about questions?” Listen for responses like: “We’ll actively listen to the speaker by looking at him or her while he or she talks,” or “Only one person will speak at a time.” Display the cover of <i>Venom</i> so all students can see. Read the title and author aloud to students. Ask: <ul style="list-style-type: none"> “What do you think <i>venom</i> means?” Use equity sticks to call on a few students. Accept all responses, but do not clarify the meaning at this point. Ask: <ul style="list-style-type: none"> “What do you notice about this book? What do you think you will learn from it?” Read the back cover of the book, then ask: <ul style="list-style-type: none"> “Now what do you think <i>venom</i> means?” Display pages 4 and 5 to students. Read the title: “Introduction: Don’t Eat, Don’t Touch, Don’t ... Well, Just Don’t!” Ask: <ul style="list-style-type: none"> “What do you notice about these pages? What do you wonder about these pages?” 	<ul style="list-style-type: none"> Research indicates that cold calling improves student engagement and critical thinking. Be sure to prepare students for this strategy by discussing the purpose, giving appropriate think time, and indicating that this strategy will be used before students are asked questions. Whole class discussions encourage respectful and active listening, as well as social construction of knowledge. Consider taking more time to practice respectful use of the equity sticks if students demonstrate a need for this.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> Listen for students to notice the text features, headings, color, and use of punctuation (all of which are to capture the reader's attention and cue them to the topic's dangerous nature). Read aloud the three paragraphs on page 4. Invite students to turn and talk, sharing one interesting thing they learned while listening to page 4. After a minute, use equity sticks to cold call several students and ask: <ul style="list-style-type: none"> * "What is one thing your partner learned while listening to page 4?" As students share their partner's learning, ask students to give a thumbs-up to show if they found the same thing interesting. Validate responses, then ask the following questions and continue to use equity sticks to cold call students: <ul style="list-style-type: none"> * "According to this text, what does <i>poisonous</i> mean?" Listen for responses like: "Something that has poison," or "something that can make you sick." * "What do you think the suffix <i>-ous</i> means?" Guide students in noticing that the suffix <i>-ous</i> turns a word into an adjective that describes the quality of the base word. A word ending in <i>-ous</i> means it has an abundance of, or is full of, something. Ask for other examples of words that end in <i>-ous</i> (dangerous, envious). Then ask: <ul style="list-style-type: none"> * "After reading this page, did your definition of 'venom' change? Why or why not?" Listen for students to define "venom" as "poison." * "Why do you think the author titled this book <i>Venom</i>?" Validate responses. If it did not come up in the discussion, explain to students this book is all about animals that use venom and poison to survive. Invite students to look at the visual on page 4. Read aloud the title and question. Read about each pair of animals. Ask students to hold up one finger if they think the animal on the left is poisonous, or two fingers if they think the animal on the right is poisonous (i.e., hold up one finger for the American toad or two fingers for the bullfrog for the first set of animals). Read aloud the title and two paragraphs on page 5. Invite students to turn and talk, sharing one interesting thing they learned while listening to page 5. After a minute, use equity sticks to cold call several students and ask: <ul style="list-style-type: none"> * "What is one thing your partner learned while listening to page 5?" As students share their partner's learning, ask students to give a thumbs-up to show if they also think what the student is sharing is interesting. Validate responses. Ask: 	<ul style="list-style-type: none"> Hearing a complex text read slowly, fluently, and without interruption or explanation promotes fluency for students; they are hearing a strong reader read the text aloud with accuracy and expression, and are simultaneously looking at and thinking about the words on the printed page. Set clear expectations that students read along silently in their heads as you read the text aloud.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> * “Why might an animal use venom?” Listen for responses like: “To catch prey,” “for self-defense,” or “to defend their family or community.” • Invite students to look at the diagram on page 5. Read aloud the title and directions. Invite students to match the animal with how it injects venom. • Tell students that they will use this book throughout the module to learn about animal defense mechanisms. They will have many more opportunities to read this book, and can read through it on their own during independent reading or in their free time during the school day if they wish. 	
<p>C. Preparing to Research (15 minutes)</p> <ul style="list-style-type: none"> • Display Guiding Questions anchor chart. Use equity sticks to call on a student to read each question aloud. • Invite students to focus on the first question: “How do animals’ bodies and behaviors help them <i>survive</i>?” to Think-Pair-Share. Ask: <ul style="list-style-type: none"> * “What does survive mean?” Listen for responses like: “It means to stay alive.” * “What do you think is meant by animals’ bodies and behaviors?” Listen for responses like: “Their bodies are how they physically look and are made, and their behaviors are how they act.” • Explain to students that scientists call what animals do to protect themselves and survive <i>animal defense mechanisms</i>, and in this module, they will learn about defense mechanisms of all kinds of animals. • Invite students to focus on the second question: “How can a writer use knowledge from their research to <i>inform</i> and <i>entertain</i>?” to Think-Pair-Share. Ask: <ul style="list-style-type: none"> * “What does it mean to inform?” Listen for responses like: “It means to teach someone about something.” * “What does it mean to entertain?” Listen for responses like: “It means to do something for someone to enjoy.” * “What does the word research mean?” Listen for responses like: “It means you learn about something by reading.” • If necessary, give an example of something that informs (the nightly news) and something that entertains (a sitcom or movie), and something that does both (a nature show or a show about a period in history). 	<ul style="list-style-type: none"> • Guiding questions provide motivation for student engagement in the topic, and give a purpose to reading a text closely.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Explain to students that their written performance task for this module will have to inform and entertain their readers on the topic of animal defense mechanisms and that they will have an opportunity to learn about research during the study of this topic.• Display Performance Task anchor chart. Use equity sticks to call on a student to read the prompt (the first three sentences only). Invite students to give a thumbs-up if they have read a choose-your-own-adventure-type book before, or a thumbs-down if they have not.• Explain that a choose-your-own-adventure is a story that has two possible endings and the reader decides what a character will do at certain points in the story. Tell students that they will learn more about this genre later in the module; for the time being, they just need to know they will research an animal and its defense mechanisms to write a narrative.• Distribute Animal Defense research journals. Invite students to look through their journals and think about what they notice and wonder about them.• Invite students to do a quick go-around in which each person shares in turn. Ask:<ul style="list-style-type: none">* “What do you notice about the research journal?”• Validate student responses and summarize what students noticed. This may sound something like: “Great observations! I heard several of you say that you noticed there were three different sections—one for general animal defense mechanisms, one for the millipede, and one for expert group animals.”• Explain to students they will be using the research journal during the entire module, first to collect and document research about animal defense mechanisms in this unit and in Unit 2, and then later to write their choose-your-own-adventure narratives in Units 2 and 3.• Invite students to Think-Pair-Share, sharing what they wonder about the research journal. Answer any clarifying questions students may have about it, and say that other things they are wondering about it will be answered as they use the journal.	



Closing and Assessment	Meeting Students' Needs
<p>A. KWL Chart: Animal Defense Mechanisms (5 minutes)</p> <ul style="list-style-type: none"> • Invite students to open to page 1 in their research journals, the Animal Defense Mechanisms: KWL chart. Explain the KWL table to students if a KWL chart has not been used yet with your class (K = what we know or think we know; prior knowledge about the topic, W = what we want to know; our questions, and L = what we learned; answers to our questions or information that confirms/refutes our prior knowledge). • Tell students that for the next several days, the class will record their knowledge, questions, and learning using this chart. Invite the students to take several minutes to list all they already know about animal defense mechanisms in the left K column. • Use equity sticks to cold call several students to share out with the class. Record students' comments (both accurate and inaccurate) in the K column. For example, a student may share correct information such as: "Venom is a defense mechanism of some snakes." Or they might inaccurately say: "Tigers use venom as a defense mechanism." Tell students that during this unit, they will continue to learn about animal defense mechanisms and will be looking for evidence from different texts to either confirm or revise their current knowledge. This chart will grow throughout this unit as a way to document class growth in their knowledge about animal defense mechanisms. 	<ul style="list-style-type: none"> • Graphic organizers engage students more actively and provide the necessary scaffolding especially critical for learners with lower levels of language proficiency and/or learning. For students needing additional support, provide a partially filled-in graphic organizer.
<p>B. Launching Independent Reading (5 minutes)</p> <ul style="list-style-type: none"> • Tell students that you have gathered many books related to this topic for them to read independently throughout the module. • Remind students that they should use the Goldie Locks Rule for selecting "just right" texts for independent reading. • Invite students to browse the recommended texts you have displayed for them. • Tell students they will now think of what they are curious about regarding animal defense mechanisms. What do they want to learn about them? Explain that this is a process that researchers go through to guide their research and discovery. Without curiosity, researchers wouldn't have any motivation to learn deeply about a topic. Researchers often ask: "Why?" or "How come?" or "What if?" • Invite students to record at least three questions that they want to know concerning animal defense mechanisms in the middle W column. If students do not have much background knowledge about this topic, they may not have many questions at this time. This is okay; the class will revisit and record more on this chart as they read other texts. Reiterate that they will look for answers to these questions as they continue learning about animal defense mechanisms during this unit. 	<ul style="list-style-type: none"> • You may wish to provide students with additional time to browse and select a text for reading at their independent reading level.



Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Begin your independent reading book for this unit.	<ul style="list-style-type: none">• Students who cannot yet read independently at any level will benefit from hearing books read to them, either by a caregiver or through audio recordings. Hearing books/texts can be an ongoing assignment for these students.• In addition, www.novelnewyork.org has a free, searchable database of content-related texts that can be played as audio files on a home or library computer. Texts on this site can also be translated into many languages. Use the database to provide at-home reading of related texts to ELLs and their families in their native languages.



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 1

Supporting Materials



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Carousel Brainstorm:
Poster Preparation Directions for Teacher Reference

Directions: On a sheet of chart paper, create the posters according to the directions below. Post around the classroom in advance of the lesson.

<p>Carousel Brainstorm poster 1</p>	<p>Write the discussion question on the top of the poster: “What can you infer about animal defense mechanisms from these pictures and/or text?”</p> <p>Display the book <i>Venom</i> by Marilyn Singer under the poster.</p> <p>Bookmark the following pages of the book with sticky notes: page 8 (“Home Is Where the Venom Is” and photograph of the house) page 22 (“Pretty Poison” and photos of butterflies) page 81 (“Eight Arms to Hold You” and photos of octopuses)</p>
<p>Carousel Brainstorm poster 2</p>	<p>Write the discussion question on the top of the poster: “What can you infer about animal defense mechanisms from these pictures and/or text?”</p> <p>Display several copies of the book <i>Animal Behaviors</i> by Christina Wilsdon under the poster.</p> <p>Bookmark the following pages of the books with sticky notes: page 15 (a photo of a walkingstick insect) page 36 (a photo of an opossum playing dead) page 57 (a photo of a poison dart frog) page 59 (a photo of a cinnabar caterpillar) page 92 (a photo of a hover fly)</p>

Carousel Brainstorm:

Preparation Directions for Teacher Reference Cont'd.

Directions: On a sheet of chart paper, create the posters according to the directions below. Post around the classroom in advance of the lesson.

<p>Carousel Brainstorm poster 3</p>	<p>Print and display the photo for poster 3.</p> <p>Write the following quote from <i>Animal Behavior: Animal Defenses</i>, page 50, below the photo: “Their name, which means ‘little armored one’ in Spanish, refers to their bony armor.”</p> <p>Write the discussion question below the photo and quote on the poster: “What can you infer about animal defense mechanisms from these pictures and/or text?”</p>
<p>Carousel Brainstorm poster 4</p>	<p>Print and display the photo for poster 4.</p> <p>Write the following quote from <i>Animal Behavior: Animal Defenses</i>, page 8, below the photo: “[It] bounces into the air with arched back and stiff legs. This motion is called stotting or pronking.”</p> <p>Write the discussion question below the photo and quote on the poster: “What can you infer about animal defense mechanisms from these pictures and/or text?”</p>
<p>Carousel Brainstorm poster 5</p>	<p>Print and display the photo for poster 5.</p> <p>Write the following quote from <i>Venom</i>, page 15, below the photo: “They have a tough exoskeleton, and their main defense is to roll into a tight ball.”</p> <p>Write the discussion question below the photo and quote on the poster: “What can you infer about animal defense mechanisms from these pictures and/or text?”</p>



Carousel Brainstorm:

Preparation Directions for Teacher Reference Cont'd.

Directions: On a sheet of chart paper, create the posters according to the directions below. Post around the classroom in advance of the lesson.

Carousel Brainstorm poster 6	<p>Print and display the photo for poster 6.</p> <p>Write the following quote from <i>Animal Behavior: Animal Defenses</i>, page 97, below the photo: “[It] is named for its stunning ability to mimic not one, but at least three dangerous animals that share its tropical ocean home.”</p> <p>Write the discussion question below the photo and quote on the poster: “What can you infer about animal defense mechanisms from these pictures and/or text?”</p>
Carousel Brainstorm poster 7	<p>Print and display the photo for poster 7.</p> <p>Write the following quote from <i>Animal Behavior: Animal Defenses</i>, page 105: “It feeds on poisonous milkweed plants as a caterpillar. It is unharmed by the poison and stores it up in its body to make itself poisonous to predators.”</p> <p>Write the discussion question below the photo and quote on the poster: “What can you infer about animal defense mechanisms from these pictures and/or text?”</p>

Carousel Brainstorm:

Preparation Directions for Teacher Reference Cont'd.

Directions: On a sheet of chart paper, create the posters according to the directions below. Post around the classroom in advance of the lesson.

Carousel Brainstorm poster 8	<p>Write the following quote from Animal Behavior: Animal Defenses, page 9: “Much of an animal’s self-defense behavior comes from within it. Most animals are born ‘knowing’ how to defend themselves. Scientists call this inborn knowledge instinct.”</p> <p>Write the discussion question below the photo and quote on the poster: “What can you infer about animal defense mechanisms from these pictures and/or text?”</p>
Carousel Brainstorm poster 9	<p>Write the following quote from Animal Behavior: Animal Defenses, page 14: “Camouflage, also known as cryptic coloration, is the one-size-fits-all defense in the world of animals. Animals ... depend on their cryptic colorations to help them blend in.”</p> <p>Write the discussion question below the photo and quote on the poster: “What can you infer about animal defense mechanisms from these pictures and/or text?”</p>



Carousel Brainstorm: Photos for Posters

Teacher Directions: On a sheet of chart paper, post each of these photos according to the preparation directions for the Carousel Brainstorm.

Poster #4



Photo by Yathin Krishnappa, Creative Commons.



Carousel Brainstorm: Photos for Posters

Poster #5



Photo by Noelle (pause.reflect), Creative Commons



Carousel Brainstorm: Photos for Posters

Poster #7



Photo by Sid Mosdell, Creative Commons.



Carousel Brainstorm: Photos for Posters

Expeditionary Learning is seeking permission for the remaining poster images. We will post an updated version of the lesson once permission is granted.



Directions for Carousel Brainstorm

Carousel Brainstorm Protocol

In this protocol, you will work with your group to answer the following question as you visit a series of posters and examine their photographs or text. After discussing the question and the poster, your group will record their thinking on the poster below the picture or text.

Discussion question: What can you infer about animal defense mechanisms from these pictures and/or text?

Directions:

1. Examine the poster's picture or text and discuss the question above.
2. Record your group's response using details from the picture or text to support your answer.
3. Move to the next poster when your teacher gives a signal.
4. If another group has visited the poster before your group, respond to both the question and their answer.



Performance Task Anchor Chart
(For Teacher Reference)

Directions: Write the following on a piece of chart paper in advance of this lesson.

Performance Task

After researching informational texts on animal defenses, create a choose-your-own adventure book about your chosen animal. Write an introduction that describes your animal's physical characteristics, habitat, predators, and defense mechanisms. In your narrative, describe an encounter with a predator and two possible defense mechanisms for survival. Use details and examples from your research to develop your narrative, including concrete words, phrases, and sensory details to convey your animal's experiences.



KWL Chart, Page 1 of Animal Defenses Research Journal:
(For Teacher Reference)

Guiding question: How do animals' bodies and behaviors help them survive?

I THINK I KNOW		I WANT to know	I LEARNED	
Information	Y/N		Information	Source
<ul style="list-style-type: none">• venom is poison• animals have lots of different ways they defend themselves• mimicry is when animals look or act like other animals as a way to protect themselves• some fish use camouflage to blend in with what's around them as a way to hide from predators		<ul style="list-style-type: none">• How does a tiger protect itself?• What if a human approaches an animal? Does the animal use the same defenses it would use if a predator came near it?• How does a jellyfish sting an enemy?		



Animal Defenses Research Journal

Name:

Date:

KWL Chart: Animal Defense Mechanisms

Guiding question: How do animals' bodies and behaviors help them survive?

I THINK I KNOW		I WANT to know	I LEARNED	
Information	Y/N		Information	Source



Animal Defenses Research Journal:
Listening Closely Note-catcher

Source: *Venom* pages 16–17 and 19–20

Directions: Listen as *Venom* is read aloud. Use the table below to record your notes.

Examples of How Bees and Wasps Protect Themselves	How This Helps Bees and Wasps Survive
<i>Venom</i> pages 16–17	
<i>Venom</i> pages 19–20	
Other Facts about Bees and Wasps	

Explain what this section of *Venom* was about?



Animal Defenses Research Journal:
Examining Visuals

Source: “Award-Winning Survival Skills: How Animals Elude Predators”

Directions:

Look at the visual on page 2 of “Award-Winning Survival Skills: How Animals Elude Prey.”

In the first column of the graphic organizer below, record three details you see in the visual.

In the second column of the graphic organizer, record the inferences you make based on these details.

****NOTE: Do NOT complete the right-hand column of the graphic organizer yet!**

Read the article.

In the right-hand column of the graphic organizer, record details from the text that support your inferences in the middle column.

Details from the Visual (explicit information)	My Inferences (what I infer about this animal)	Details in the Text That Support My Inferences (confirmed with explicit information)



Animal Defenses Research Journal:
Listening Closely Note-catcher

Source: *Venom* pages 26–27

Directions: Listen as *Venom* is read aloud. Use the table below to record your notes.

Examples of How Ants Protect Themselves	How This Helps Ants Survive
<i>Venom</i> pages 26–27	
Other Facts about Ants	

Explain in your own words what this section of *Venom* was about:



Animal Defenses Research Journal:
Determining Main Ideas

Source: “Award-Winning Survival Skills”

Best Action Hero—The spiny pufferfish

Main Idea:

Supporting Details:

Best Special Effect—The three-banded armadillo

Main Idea:

Supporting Details:



Animal Defenses Research Journal:
Determining Main Ideas

Best Impersonator—The mimic octopus

Main Idea:

Supporting Details:



Animal Defenses Research Journal:
Listening Closely Note-catcher

Source: *Venom* pages 74–75

Directions: Listen as *Venom* is read aloud. Use the table below to record your notes.

Examples of How Pufferfish Protect Themselves	How This Helps Pufferfish Survive
<i>Venom</i> pages 74–75	
Other Facts about Pufferfish	

Explain in your own words what this section of *Venom* was about:

Animal Defenses Research Journal:
Examining Visuals

Source: *Animal Behaviors: Animal Defenses*

1. Look at the visual in your group's section of *Animal Behaviors: Animal Defenses*.
 - Group 1—page 59
 - Group 2—page 78
 - Group 3—page 92
2. In the first column of the graphic organizer below, record three details you see in the visual.
3. In the second column of the graphic organizer, record the inferences you make based on these details.

****NOTE: Do NOT complete the right-hand column of the graphic organizer yet!**

1. Read your group's assigned pages.
 - Group 1—"Bad Smells, Bad Tastes, and Powerful Poisons" (page 55—top of 56, stopping at "Poisonous Prey"; pages 58–60)
 - Group 2—"Venomous Stings and Bites" (page 73; "How Venom Works" box on page 76; "Stinging Tentacles" pages 77–78)
 - Group 3—"Mimicry" (pages 91–94)
2. In the right-hand column of the graphic organizer, record details from your section of the text that support your inferences in the middle column.

Details from the Visual (explicit information)	My Inferences (what I infer about this animal)	Details in the Text That Support My Inferences (confirmed with explicit information)



Animal Defenses Research Journal:
Determining Main Ideas

Source: *Animal Behavior: Animal Defenses*

Reread the text and identify the main idea for each section of the text.

“Avoiding Danger” pages 7–9, stopping at “Self-Defense”; last two paragraphs on page 21; and “Escape Artists” first two paragraphs on page 22

Main Idea:

Supporting Details:

“Bad Smells, Bad Tastes, and Powerful Poisons” pages 55–56, stopping at “Poisonous Prey”; pages 58–60

Main Idea:

Supporting Details:



Animal Defenses Research Journal:
Determining Main Ideas

***“Venomous Stings and Bites”* page 73; *“How Venom Works”* box on page 76; *“Stinging Tentacles”* pages 77–78**

Main Idea:

Supporting Details:

***“Mimicry”* pages 91–94**

Supporting Details:



Animal Defenses Research Journal:
Preparing for a Science Talk

Question: How do animals' bodies help them survive?

Preparation: Look back in your Animal Defenses research journal and texts about animal defense mechanisms to find evidence to help you answer the Science Talk question.

When I read or see that (evidence) ...	It makes me think that animals' bodies help them survive by ...
(Example) most spiders are venomous (<i>Venom</i> page 8)	(Example) I think that the venom paralyzes or kills the spider's prey and enemies.



Animal Defenses Research Journal:
Science Talk Notes and Goals

My Science Talk Notes: Ideas and Questions

My teacher's feedback:

My goals for the next Science Talk:



Animal Defenses Research Journal:
Millipede Defense Mechanisms: KWL Chart

Guiding question: How do millipedes' bodies and behaviors help them survive?

I THINK I KNOW		I WANT to know	I LEARNED	
Information	Y/N		Information	Source

Animal Defenses Research Journal:
Millipede Defense Mechanisms
Listening Closely Note-catcher

Source: *Venom* page 15

Directions: Listen as *Venom* is read aloud. Use the table below to record your notes.

Examples of How Millipedes Protect Themselves	How This Helps Millipedes Survive
<i>Venom</i> page 15	
Other Facts about Centipedes and Millipedes	

Explain in your own words what this section of *Venom* was about:



Animal Defenses Research Journal:
Millipede Defense Mechanisms
Determining the Main Idea

Source: _____

Reread the text and identify the main idea for each section of the text.

Main Idea:	Supporting Details: <i>Explicit information from text</i>

Reading and Writing Like a Researcher:

Summarize page 15 of *Venom*. Use details from the text to support your explanation.



Animal Defenses Research Journal:
Millipede Defense Mechanisms
Listening Closely Note-catcher

Source: _____

Directions: Listen as the text is read aloud. Use the table below to record your notes.

Examples of How Millipedes Protect Themselves	How This Helps Millipedes Survive
Other Interesting Things:	



Animal Defenses Research Journal:
“Poisonous Prey” Note-catcher

Source: _____

Focus question: How do animals use poison to survive?

<p>1. What is the gist of this section of the text?</p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<p>2. Read Paragraph 1 aloud to a partner. Then use the glossary in the back of <i>Animal Behavior: Animal Defenses</i> to answer the questions on the right.</p>	<p>What does the word “predator” mean?</p> <p>What does the word “prey” mean?</p> <p>Who is usually poisonous, the predator or the prey?</p>
<p>3. Now, reread the first paragraph on page 56 silently. Then use details from the text to answer the questions on the right.</p>	<p>What is a poisonous animal? How is a poisonous animal different from a venomous animal?</p> <p>What is the purpose of this paragraph? What sentence in the text makes you think so?</p>



Animal Defenses Research Journal:
“Poisonous Prey” Note-catcher

<p>4. Take turns reading the second and third paragraphs on page 56 to your partner. Then, working together, use details from the text to answer the questions on the right.</p>	<p>The text says, “If the bird swallows the monarch, it regrets it.” What do you think “regret” means?</p> <p>Why would the bird regret it?</p>
<p>5. Look carefully at the following quote: “Scientists have found that the mere sight of a monarch can cause these ‘educated’ birds to gag and retch, as if they were about to be sick.” (page 56) Together, use this quote to answer the questions on the right.</p>	<p>What do you think “retch” means? What words in the text make you think so?</p> <p>Why is the word <i>educated</i> in quotation marks?</p> <p>What does an “educated bird” know?</p> <p>How does poison help the monarch to survive?</p>



Animal Defenses Research Journal:
“Poisonous Prey” Note-catcher

<p>6. Reread the focus question. Using evidence from the text, write one way animals use poison to survive in the box on the right. Write the answer to this question with your red pencil.</p>	<p>One way animals use poison to survive is _____</p> <p>_____</p> <p>I think this because _____</p> <p>_____</p> <p>_____</p>
<p>7. Listen as your teacher reads the fourth paragraph on page 56 aloud. Your teacher will help you to choose the right strategy to use in answering the questions on the right.</p>	<p>What familiar word do you recognize in “entrap”?</p> <p>What do you think “entrap” means?</p> <p>What do you think “oozes” means? What words in the text make you think so?</p> <p>What do you think “affect” means? What words in the text make you think so? How is this different from the meaning of the word “effect”? Use a dictionary to help you figure out the difference.</p> <p>What is the purpose of this paragraph? What sentence in the text makes you think so?</p>



Animal Defenses Research Journal:
“Poisonous Prey” Note-catcher

<p>8. Using evidence from the text, sketch what the pill millipede does when attacked by a predator.</p>	
<p>9. Reread the focusing question. Using evidence from the text, write another way animals use poison to survive in the box on the right. Write the answer to this question with your red pencil.</p>	<p>Another way animals use poison to survive is _____</p> <p>_____</p> <p>I think this because _____</p> <p>_____</p> <p>_____</p>
<p>STOP HERE: Continue with the questions below in Lesson 12.</p>	
<p>10. Reread the fifth paragraph on page 56 (continued on page 57) silently. Then use details from the text to answer the question on the right.</p>	<p>What is the purpose of this paragraph?</p> <p>What sentence in the text makes you think so?</p>



Animal Defenses Research Journal:
“Poisonous Prey” Note-catcher

<p>11. Read the second paragraph on page 57 to a partner. Look carefully at the following quote and use it to answer the questions on the right:</p> <p>“Poison dart frogs (also called poison arrow frogs), which live in Central and South America, excrete a poisonous, foul-tasting fluid from their skin when threatened.” (page 57)</p>	<p>What is another name for “poison dart frogs”? How do you know?</p> <p>What do you think “toxic” means? What words in the text make you think so?</p> <p>The dash “-” in this quote is called a hyphen. Authors sometimes use a hyphen to join two or more words together to make a new word, called a “compound word.” What two words are joined together with a hyphen in this quote?</p> <p>CHALLENGE QUESTION: What part of speech is the compound word “foul-tasting” in this sentence?:</p> <p>The foul-tasting fluid helps the frog survive in two ways. What are they?</p>
<p>12. Think back to the focus question. Using evidence from the text, write one way animals use poison to survive in the box on the right.</p> <p>Write the answer to this question with your red pencil.</p>	<p>Another way animals use poison to survive is _____</p> <p>_____</p> <p>I think this because _____</p> <p>_____</p> <p>_____</p>



Animal Defenses Research Journal:
“Poisonous Prey” Note-catcher

<p>13. Examine the photo and caption on page 57. Use details from the text to answer the questions on the right.</p>	<p>Read the caption and look carefully at the photo. What single word in the caption best describes what the photo is meant to show us?</p> <p>What defense mechanism does the poison dart frog use to help it survive?</p> <p>What do you think “excrete” means? What words in the text make you think so?</p> <p>What do poison dart frogs excrete? Use exact words from the text.</p>					
<p>14. Reread the first paragraph on page 58 silently. Then use details from the text to answer the questions on the right.</p> <p>“Of course, if a poisonous animal had a choice, it would rather not be attacked in the first place. It is better for it to stop an attack before it starts.” (page 58)</p>	<p>In the boxes below, draw a picture of each of the ways the text tells us that poisonous animals “stop an attack before it starts.” Be sure to label each picture with words from the text.</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table>					



Animal Defenses Research Journal:
“Poisonous Prey” Note-catcher

Pulling it all together ...	
<p>WORD MEANING</p> <p>15. Reread this note-catcher, noticing the words in bold print. Turn and talk with a partner about three ways you might figure out the meaning of an unknown word. Then, follow the directions on the right.</p>	<p>Add the definitions for “predator” and “prey” to the glossary of your Animal Defenses research journal.</p> <p>Choose three words in bold print on this note-catcher in addition to “predator” and “prey.” Add the definitions of these words to the glossary of your Animal Defenses research journal.</p>
<p>SENTENCE MEANING</p> <p>16. Look back at the answers you wrote in red.</p> <p>What do you notice about sentences that tell the purpose of a paragraph? Hint: You may need to look for these sentences in the text to see a pattern.</p>	
<p>THE BIG IDEA</p> <p>17. Use the evidence you recorded on this sheet, as well as additional evidence from the text, to answer the question below in a well-written paragraph.</p>	<p>THINK: Based on your observations about the paragraphs in this text, what will be important to consider when writing the first sentence of your own paragraph?</p>

Synthesize! Explain how animals use poison to survive (remember to use key words from the focus question in your response):

Animal Defenses Research Journal:
Preparing for a Science Talk

Question: Which millipede defense mechanism is most important? Why?

Preparation: Look back in your Animal Defenses research journal and texts about animal defense mechanisms to find evidence to help you answer the Science Talk question.

When I read or see that (evidence) ...	It makes me think that the most important millipede defense mechanism is ... because ...
(Example) most spiders are venomous (<i>Venom</i> page 8)	(Example) I think that the venom paralyzes or kills the spider's prey and enemies.



Animal Defenses Research Journal:
Science Talk Notes and Goals

My Science Talk Notes: Ideas and Questions

Now that I have heard everyone's reasons and their evidence, the millipede defense mechanism I think is most important is

because

My teacher's feedback:

My goals for the next Science Talk:



Animal Defenses Research Journal:
Glossary

Word/Phrase	Definition	Vocabulary strategy I used to learn this word:	Sketch/Diagram
defenses/defense mechanisms	how animals protect themselves or their kind	inferred from the text	
entrap			
extract			
frantically			
habitat			
injecting			



Animal Defenses Research Journal:
Glossary

Word/Phrase	Definition	Vocabulary strategy I used to learn this word:	Sketch/Diagram
mimicry			
predator			
prey			
poisonous			
quickly			
seizes			
survive			



Animal Defenses Research Journal:
Glossary

Word/Phrase	Definition	Vocabulary strategy I used to learn this word:	Sketch/Diagram
threaten			
unpleasant			
venom	poison that is injected with fangs, stingers, or spines	defined in the text	
warning			



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 2

Building Background Knowledge: Launching Research of Animal Defense Mechanisms



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can paraphrase portions of a text that are read aloud to me. (SL.4.2)
I can explain what a text says using specific details from the text. (RI.4.1)
I can infer what a text says using specific details from the text. (RI.4.1)
I can interpret information presented through charts or graphs. I can explain how that information helps me understand the text around it. (RI.4.7)

Supporting Learning Targets

- I can explain what it means to be a researcher.
- I can paraphrase information presented in a read-aloud on animal defense mechanisms.
- I can infer about a text by examining its visuals.

Ongoing Assessment

- Animal Defense research journals pages 2 and 3:
Listening Closely and Examining Visuals note-catchers
- Observations from participation in Animal Defense
Mechanisms: KWL chart construction



Agenda	Teaching Notes
<ol style="list-style-type: none">Opening<ol style="list-style-type: none">Reviewing Learning Targets (5 minutes)Beginning the Research Process: What Does It Mean to Research? (15 minutes)Work Time<ol style="list-style-type: none">Read-aloud and Paraphrasing Venom (15 minutes)Reading for the Gist and Examining Visuals—“Award-Winning Survival Skills” (20 minutes)Closing and Assessment<ol style="list-style-type: none">KWL: Animal Defense Mechanisms (5 minutes)Homework<ol style="list-style-type: none">“Award-Winning Survival Skills” Vocabulary	<ul style="list-style-type: none">This is the first of four lessons where students read the article Award-Winning Survival Skills. This article allows students to build background knowledge on the topic of animal defense mechanisms while at the same time practicing the key reading skills they will have to use independently later in this unit and Unit 2. In this lesson, students preview the visuals, then read the full article for the gist. For homework, students then reread the opening and circle challenging vocabulary. Then, in Lesson 3, students use vocabulary strategies as the reread three sections of the text. Finally, in Lesson 4, students reread these same sections to identify the main idea and supporting details.Note that over the course of these lessons, students do not read the “Hands-on Science: Master of Disguise” box on the last page of the article. You may invite students to read it on their own during independent reading or another time over the course of the module.Students use the Back-to-Back and Face-to-Face protocol in this lesson. Consider having students practice using this protocol prior to this lesson using topics that are of personal interest to them so when they use it with content, the protocol enhances the conversation and the focus is on the content.As in Lesson 1, students hear a portion of the book Venom read aloud. The Listening Closely note-catcher is introduced, and will be used and expanded upon in later lessons. This supports students in meeting the target: “I can paraphrase portions of a text that is read aloud to me.” Since this lesson is students’ first use of this note-catcher, its use is modeled during Opening Part A. If it’s difficult to read the text aloud and model using the organizer at the same time, consider inviting a “guest reader” to the class for the read-aloud of Venom; this guest reader might be the principal, another teacher, or a parent volunteer.During Lessons 2–4, students should work with a reading partner. Strategically partner students so they can support one another well as they read this complex text.Consider whether or not to have students use sticky notes to write their gist statements for each section of the text, or if students should write in the margins or on a separate sheet of paper.For homework, students reread the article and identify any challenging vocabulary words. These words will be used in Lesson 3 as a way to start the discussion about determining the meaning of unknown words when reading an informational text.In advance: Arrange for a guest reader for the read-aloud of Venom. Practice Back-to-Back and Face-to-Face protocol with questions/topics of personal interest to students



Agenda	Teaching Notes (continued)
	<ul style="list-style-type: none"> • Review: Back-to-Back and Face-to-Face protocol, as well as Fist to Five in Checking for Understanding techniques (see Appendix). • Locate the Close Readers Do These Things anchor chart (from Module 1, Unit 1, Lesson 3) or recreate this chart to display. See Work Time B. • Post: Learning targets.

Lesson Vocabulary	Materials
paraphrase, animal defense mechanisms, research, infer, visuals; contorts, impersonate, mimic	<ul style="list-style-type: none"> • Equity sticks • Performance Task anchor chart (from Lesson 1; teacher-created) • <i>Venom</i> (book; for teacher read-aloud, cover and pages 16–17) • Animal Defenses research journal (from Lesson 1) • Listening Closely note-catcher (page 2 of Animal Defenses research journal; from Lesson 1; one per student and one to display) • Listening Closely note-catcher (completed, for teacher reference) • Document camera • Close Readers Do These Things anchor chart (from Module 1, Unit 1, Lesson 3) • “Award-Winning Survival Skills” (article; one per student and one to display) • Examining Visuals note-catcher (page 3 of Animal Defenses research journal; from Lesson 1; one per student and one to display) • Examining Visuals note-catcher (completed, for teacher reference) • Sticky notes (optional; five per student) • Animal Defense Mechanisms: KWL chart (page 1 of Animal Defenses research journal; from Lesson 1; one per student and one to display)



Opening	Meeting Students' Needs
<p>A. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Use equity sticks to call on a student to read the first learning target:<ul style="list-style-type: none">* “I can explain what it means to be a researcher.”• Tell students that in this lesson, they will learn what it means to be a researcher or someone who deeply studies a topic.• Use equity sticks to call on a student to read the next learning target:<ul style="list-style-type: none">* “I can <i>paraphrase</i> information presented in a read-aloud on animal defense mechanisms.”• Point to the word <i>paraphrase</i> and explain that to understand this learning target, students need to know the meaning of this word. Show them that it can be broken into its parts: <i>para-</i>, meaning to come from, and <i>phrase</i>, meaning a series of words. Taken together, “to come from words” should give them a clue about the word’s meaning.• Ask students to reread the learning target with this in mind, then turn to a partner and explain what they think it means to paraphrase information from a read-aloud. Give students a few minutes to think and share; then use the equity sticks to call on a few pairs to share their explanations.• Confirm that paraphrasing information means explaining something you have read or heard in your own words. If necessary, give an example.• Read the last learning target:<ul style="list-style-type: none">* “I can infer about a text by examining its visuals.”• Underline the word <i>visuals</i>. Tell students that understanding the word <i>visuals</i> is important to understanding this learning target. Ask students to think about other words that sound like <i>visual</i> (such as <i>vision</i> or <i>visible/invisible</i>).• Ask students to turn to a partner and share what they think this word means. Remind students to use their knowledge of similar words like <i>vision</i> or <i>visible/invisible</i> and other clues from the sentence (something found in the text) to determine the meaning of this word.• Listen for responses like: “Visuals are something you can see, like a picture or drawing.” Confirm the meaning of this word and that students understand the learning target.	<ul style="list-style-type: none">• Discussing and clarifying the language of learning targets helps build academic vocabulary.



Opening (continued)	Meeting Students' Needs
<p>B. Beginning the Research Process: What Does It Mean to Research? (15 minutes)</p> <ul style="list-style-type: none"> • Display the Performance Task anchor chart and reread the performance task prompt. Remind students that they will be working towards writing a choose-your-own-adventure narrative during this module. • Tell students to think and talk about the performance task with a partner using the Back-to-Back, Face-to-Face protocol. Explain the protocol to students: <ol style="list-style-type: none"> 1. When you hear me say, “Back-to-back,” get back-to-back with a partner. 2. Listen for a question prompt, then think about your response to the question. 3. When you hear me say, “Face-to-face,” turn to face your partner. 4. Decide which partner will share first, and then take turns listening carefully while your partner is speaking. 5. When you hear me say, “Back-to-back,” thank your partner and silently go back-to-back again. • If necessary, briefly have two students model. • Invite students to stand up and place themselves back-to-back with the person next to them. Ask them to think about what it means to research. Then say, “Face-to-face!” and repeat the prompt: “What does it mean to research?” • Listen for responses like: “It means to study or collect information about a new topic.” Clarify the meaning of <i>research</i> if necessary. • After students have shared, say, “Back-to-back” again to get students ready for a new question. Continue to use the protocol for students to discuss the following questions: <ul style="list-style-type: none"> * “Why is it important for writers to research?” Listen for responses like: “They need to know a lot about what they are going to write about, so that it will be interesting.” * “What are different ways writers might conduct, or do, research?” Listen for responses like: “They read about the topic,” or “They look online to learn about what they are going to write about.” 	<ul style="list-style-type: none"> • Examining the performance task closely provides motivation for student engagement in the topic, and gives purpose to reading a text closely. • Whole class discussions encourage respectful and active listening, as well as social construction of knowledge. • Consider posting the Back-to-Back, Face-to-Face questions for struggling students to see, or writing the questions down and giving these students an opportunity to preview the questions before this discussion.



Opening (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Gather students whole group and explain that writers often have to conduct research to learn about a topic they will write about. Preview the sequence of the three units in this module so students are oriented.<ul style="list-style-type: none">– Under the performance task prompt, write: “Unit 1—Research: Animal Defense Mechanisms.” Explain that in this unit, they will learn about general animal defense mechanisms, and then do a deeper study of the defense mechanisms of the millipede. Next, write: “Unit 2—Research and Write: Build Expertise on a Selected Animal.” Tell students that in Unit 2, they will research in expert groups on different animals, and that this animal will be the main character in their narratives. However, before they can write their narrative, they have to research and write an informational piece about their animal and its defense mechanism.– Finally, write: “Unit 3—Write Narratives.” Explain that in this unit, students will read and examine a choose-your-own-adventure story to learn about this format and then plan and write their own narratives using the animal they researched as the main character.– Ask students to give you a thumbs-up if they have a general understanding of why they will become researchers on the topic of animal defense mechanisms, thumbs–sideways if they have a question, or a thumbs-down if they would like to meet for a one-on-one explanation of the task.	



Work Time	Meeting Students' Needs
<p>A. Read-aloud and Paraphrasing <i>Venom</i> (15 minutes)</p> <ul style="list-style-type: none"> If you invited a guest reader to model this lesson, introduce that person to the students, sharing that s/he will be helping with the read-aloud of <i>Venom</i> today as you model how a listener can take notes and then paraphrase a text. Display the cover of <i>Venom</i> so all students can see. Open to pages 4 and 5 and ask: <ul style="list-style-type: none"> * “What did we learn about <i>animal defense mechanisms</i> when we read aloud <i>Venom</i> yesterday?” Listen for responses like: “Some animals use venom to protect themselves.” Validate responses and explain to students that they will listen to another section of <i>Venom</i> today. Ask students to get out their Animal Defenses research journal and turn to the Listening Closely note-catcher on page 2. Using a document camera, display a blank copy of the note-catcher. Explain to students that they will use this note-catcher to record information heard during the read-aloud. Explain to students there is a guest reader for today’s read-aloud so you can model how to use the note-catcher while he or she reads the text. Use equity sticks to call on a student to read the directions and headings of the table in the note-catcher. Answer any clarifying questions students have about the directions or the headings. Tell students that they will listen to the text read aloud several times. The first time they hear it, they should simply listen for the gist. The second time they hear it, they should begin to fill in the table. Invite the guest reader to read aloud pages 16 and 17 in <i>Venom</i>. Invite students to Think-Pair-Share. Ask: <ul style="list-style-type: none"> * “What was the gist of this text?” Use equity sticks to call on a student to share his or her partner’s response. Listen for responses like: “It was about how bees sting and how they sting,” or “It was about the defense mechanisms of bees.” <ul style="list-style-type: none"> * Tell students that they will now hear page 17 read aloud a second time, and that you will model how to fill in the table while listening to the text read aloud. Explain that they do not need to write anything on their note-catchers at this time. Invite the guest reader to reread page 16. Ask students: <ul style="list-style-type: none"> * “After hearing this section of the text read again, what notes can we take, and in which box in our note-catcher would we put them?” 	<ul style="list-style-type: none"> Reading the complex text aloud slowly, fluently, and without interruption or explanation promotes fluency for students by allowing them to hear a strong reader read with accuracy and expression.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Listen for students to name various facts about bees from this section of the text. Listen for students to explain or point out that these are interesting facts about bees, but not related to their defense mechanisms and survival.• Model recording a fact in the box headed “Other Facts about Bees and Wasps” and give students a few minutes to record any facts they found interesting in this section of the note-catcher.• Next, invite the guest reader to reread page 17. Ask students:<ul style="list-style-type: none">* “After hearing this section of the text read again, what did you hear that we can we record in our note-catchers?”• Listen for students to suggest items that can be recorded in the “Examples of How Bees and Wasps Protect Themselves” and “How This Helps Bees and Wasps Survive” columns of the table. For example: “Bees produce a chemical signal” could be recorded in the first column and “This warns other bees of danger” could be recorded in the second column.• Model taking notes for these pages of the text in the top row of the note-catcher (for pages 16–17) and ask students to record their notes along with you.• Finally, ask students to reread their notes; then give students the following instructions for a Think-Pair-Share:<ol style="list-style-type: none">1. Reread your notes from today’s reading of Venom.2. Think about how we could paraphrase what we heard today.3. Share with your partner how you would explain what this section of the text is about.• Use equity sticks to call on several pairs to share how they would paraphrase the text. This allows students to hear the text paraphrased in a variety of ways. Listen for students to say something similar to: “This section of Venom was about bees, where they live, what they eat. It talked about how they use chemical signals and stingers with venom to protect their hives. And it explained that some people are allergic to bee venom and how this can be dangerous.”• Point out to students that when paraphrasing, they should include the big ideas of what they listened to, but they don’t have to include every detail. Point out that rereading their notes will help them remember the big ideas of the text.• Tell students that tomorrow they will continue reading more from this section and continue to practice paraphrasing. Encourage students to thank the guest reader.	



Work Time (continued)	Meeting Students' Needs
<p>B. Reading for the Gist and Examining Visuals—“Award-Winning Survival Skills” (20 minutes)</p> <ul style="list-style-type: none">• Place students with a partner for reading and explain that the class will continue to research animal defense mechanisms by reading an article closely for the next few lessons.• Post and review the Close Readers Do These Things anchor chart (from Module 1, Unit 1, Lesson 3).<ul style="list-style-type: none">– Read small chunks of text slowly and think about the gist.– Reread each passage one sentence at a time.– Underline things that you understand or know about.– Circle or underline words that you do not know.– Talk with your partners about all of your good ideas.– State the gist or message of the paragraph in the margin.– Listen to the questions.– Go back to the text to find answers to questions.– Talk with your partners about the answers you find.• Tell students that the article they will read is challenging and may have unfamiliar words. Reassure them that just like when they read the Great Law of Peace, they are not expected to understand it fully the first time. Remind them that one key to being a strong reader of difficult text is being willing to struggle.• Display and distribute “Award-Winning Survival Skills” to students. Build up the excitement; this text will be the first text they read and examine closely for their research.• Invite students to look through the article, thinking about what they notice and wonder. Have students Think-Pair-Share these observations and questions. Use equity sticks to call on students to share with his or her peers what they noticed or wondered about the text. If no students point out the visuals in the article, say something like: “I notice visuals on each page of this article.”• Ask:<ul style="list-style-type: none">* “How do visuals help you, the reader, to understand an informational text?” Listen for responses like: “Visuals help me to picture what the author is writing about,” or “Captions and labels on visuals explain the pictures in more detail, so I can better understand what I’m looking at.”	<ul style="list-style-type: none">• Graphic organizers and recording forms engage students more actively and provide the necessary scaffolding that is especially critical for learners with lower levels of language proficiency and/or learning. For students needing additional support, you may want to provide a partially filled-in graphic organizer.• Provide ELLs with a sentence starter or frame to aid in language production. For example: <i>In the visual I see ...</i>



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Display Examining Visuals note-catcher and invite students to open it to page 3 in their Animal Defenses research journals. Tell students that looking at visuals before reading a text can help them think more deeply about the text. Say something like: “Readers make inferences when looking at visuals just like when they read a text. After they examine a visual closely, they read the text, looking for details that support their inferences.” • Explain that they will be using this note-catcher to record information and inferences about a visual in “Award-Winning Survival Skills.” Use equity sticks to call on a student to read the Steps 1–3 on the note-catcher and the headings of the first and middle columns (“Details from the Visual” and “My Inferences”). Clarify that students will complete the only first two columns prior to reading the text. Call on a student to read Steps 4 and 5 and the heading of the last column (“Details in the Text That Support My Inferences”). Clarify that students will read the article and then complete the last column. • Invite students to look at page 2 of “Award-Winning Survival Skills” and display for students. Remind students that first they will look at the visual on the page and jot down notes about what they see in the visual in the “Details from the Visual” column. • Notice details in the visual in a manner similar to the following: “The first big thing I notice is that this visual is broken into two parts—the top part and the bottom part. In the top part, I see a big photograph and a smaller photograph in a circle, and a caption. I see the same format in the bottom part—a big photograph and a smaller one in a circle, and another caption.” • Next, ask the students to look closely at the visual and read along as you read the captions aloud. • Explain the meaning of the word <i>contorts</i>, to bend in a way that seems impossible. Tell students that the words <i>impersonate</i> and <i>mimic</i> have similar meanings. Ask students to reread each caption with their partner and see if they can figure out the meanings of these words from the words in the sentence and the visuals. • Ask a few pairs to share and listen for students to say these words mean “copy.” Prompt students to explain what clues they used in the captions or pictures to help them figure out the meaning of these words. • Next, ask students to suggest notes that you can record in the first column of the note-catcher, “Details from the Visual.” Accept only details that can be found explicitly in the visual, “two pictures with a circle in each.” If students offer up an inference based on the visual, explain that you will record those next. • Explain that now you would like them to infer about the visual. Remind students that in order to infer they must use both evidence that they see and what they know. Then, ask students to discuss the following question with their partner: * “What can you infer about the mimic octopus based on this visual?” 	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Listen for students to say: “It copies other animals so it looks poisonous.” Prompt them to explain what evidence they used from the visual to make this inference. Record inferences in the second column.• Next ask students to examine the remaining visuals in the text with their partners. Remind them that they should not yet fill out the third column of their note-catchers. Give students 10 minutes to examine the remaining visuals.• Use equity sticks to call on students to share an inference. Tell students to use the sentence frame: “We infer _____ because the visual/caption shows/says _____.” Record what students share in the “My Inferences” column on the graphic organizer.• Ask students to close their research journals. Tell them that the class will come back to the Examining Visuals note-catcher after a few days, when they have a deeper understanding of the text, to confirm what they inferred about the visuals.• Distribute five sticky notes per student (optional; see Teaching Notes). Next, tell students that now you are going to read text aloud to them and that you would like them to read along silently and listen for the gist, or what it is mostly about.• Read the text aloud and pause after each section of the text (once you reach a new heading) and ask students to turn to their partner to discuss the following question:<ul style="list-style-type: none">* “What was that section of the text mostly about?”• Use equity sticks to call on various pairs. As a class, agree on a gist statement for the section, and ask students to record a gist statement in the margin of their text, or on a sticky note.• After the first read of the text is complete, ask for a final gist statement:<ul style="list-style-type: none">* “Overall, what is this text about?”• Listen for students to say something similar to: “Different animals and how they defend themselves.”	<ul style="list-style-type: none">• Hearing a complex text read slowly, fluently, and without interruption or explanation promotes fluency for students; they are hearing a strong reader read the text aloud with accuracy and expression, and are simultaneously looking at and thinking about the words on the printed page. Set clear expectations that students read along silently in their heads as you read the text aloud.



Closing and Assessment	Meeting Students' Needs
<p>A. KWL: Animal Defense Mechanisms (5 minutes)</p> <ul style="list-style-type: none">Remind students that good researchers always reflect on and record what they've learned. Display your copy of the Animal Defense Mechanisms: KWL chart and invite students to turn to their chart on page 1 of their research journals.Invite students to Think-Pair-Share. Ask:<ul style="list-style-type: none">* "Were any of your questions answered in the text that you read today?"* "What new information did you learn from this article?"Invite students to write the answers to any questions they had in the W column under the "I Learned" column, in the "Information" section. Include the name of the article in the "Source" column.Tell students to also add one new piece of information they learned from the article in the "I Learned" column.Post and preview the homework. If necessary, indicate which section of the text they will be rereading.	<ul style="list-style-type: none">Consider adding visuals or symbols to the chart to support students.
Homework	Meeting Students' Needs
<ul style="list-style-type: none">Reread the opening section of the "Award-Winning Survival Skills" read in today's lesson. While you read, circle words that you do not know the meaning of. Choose one word you circled and try to figure out the meaning of it. Write down how you figured out what the word meant as well.	<ul style="list-style-type: none">Asking students to identify challenging vocabulary helps them monitor their understanding of a complex text. When students annotate the text by circling these words, it can also provide a formative assessment for the teacher.For students who struggle to read complex text independently, consider allowing them to reread and circle unfamiliar vocabulary with a partner during guided and independent reading time.



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 2

Supporting Materials



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Animal Defenses Research Journal:
Listening Closely Note-Catcher
(For Teacher Reference)

Source: *Venom* pages 16–17 and 19–20

Directions: Listen as *Venom* is read aloud. Use the table below to record your notes.

Examples of How Bees and Wasps Protect Themselves	How This Helps Bees and Wasps Survive
<i>Venom</i> pages 16–17	
Completed in Lesson 2 <ul style="list-style-type: none">• Bees have chemical signals called pheromones• Bees have barbed stingers that stick into the victim	Completed in Lesson 2 <ul style="list-style-type: none">• Helps to warn their hive of danger• The venom from the sting is really painful to scare away predators
<i>Venom</i> pages 19–20 Completed in Lesson 3	
Completed in Lesson 3 <ul style="list-style-type: none">• Wasps sting• The velvet wasp runs from enemies• Most wasps and bees have yellow and black stripes	Completed in Lesson 3 <ul style="list-style-type: none">• The sting hurts and scares attackers away• The wasp won't get caught and eaten or killed• The colors and stripes warn other animals that bees and wasps are venomous
Other Facts about Bees and Wasps Completed in Lessons 2 and 3 <ul style="list-style-type: none">• There are lots of different kinds of bees• Bees live in a colony and have different jobs• Most bees eat nectar and pollen• There are many kinds of wasps• Most wasps use their venom to eat other bugs	



Animal Defenses Research Journal:
Listening Closely Note-Catcher
(For Teacher Reference)

Explain what this section of *Venom* was about?

This section of *Venom* was about bees and wasps and how they sting. It explained the different kinds of bees and wasps and how they live and what they eat. It explained that bees use their stingers and venom to protect their hive and wasps mostly use their venom to kill and eat bugs, but they will sting in self-defense, too. Most bees and wasps have yellow and black stripes and this warns that they are venomous.



ANIMAL DEFENSES/ADAPTATIONS

LIFE SCIENCE

AWARD-WINNING

SURVIVAL SKILLS

HOW ANIMALS ELUDE PREDATORS



It's a dog-eat-dog world out there—not to mention a snake-eat-lizard world. To survive and reproduce, every creature must avoid becoming another predator's meal. But how to elude a hungry hunter who's bigger or faster than you?

Animals use some positively award-worthy strategies called *defenses*. "An animal's defenses are all that stand between being alive and being eaten," says biologist Tom Tregenza at the University of Leeds in the UK. The newly discovered mimic octopus, for example, fools marauders by impersonating an entire cast of less tempting prey. The flexible three-banded armadillo rolls itself up into a ball as impenetrable as an armored truck.

How did such an audacious array of animal defenses evolve in the first place? "In any large population there will be some variation," says biologist Ralph Turingan at the Florida Institute of Technology. Members of a species develop slightly different *traits* (physical characteristics): One armadillo might possess more flexible armor than another. If an individual is lucky enough to possess a trait that saves it from being devoured, the animal may live long enough to reproduce and pass the trait on to its offspring. "Eventually that trait will become dominant in future generations," Turingan says. The theory is called *natural selection*. In a nutshell, life forms best suited to their environment survive over the long haul.

To learn more about some of nature's award-winning defenses, read on . . .

by Lea Winerman

BEST SPECIAL EFFECT

The three-banded armadillo



PRIZE FACT

Three-banded armadillos sport supreme design: They use hinged bands to roll themselves up into a ball.

Note to Hollywood special-effects creators: If you need to devise ingenious strategies for heroes to protect themselves against bloodthirsty attackers, take inspiration from the three-banded armadillo. While all armadillos sport leathery armored shells to fend off predators like ravenous wildcats, "three-banded armadillos are the only ones that curl themselves into completely enclosed balls," says Southwest Missouri State University biology professor Lynn Robbins.

SCIENCE WORLD 9



The three-banded armadillo (*Tolypeutes trinctus*) and southern three-banded armadillo (*Tolypeutes matacus*) live in South America. Their body shields consist of bony plates and a layer of horn or keratin, fibrous proteins that make up tissues such as hair and nails; the plates themselves are formed by ossified or hardened skin. On their shells, three hinged bands give them the flexibility to roll themselves up. Since the shoulder and haunch plates aren't attached on the sides to the armadillos' skin, there's plenty of room inside to fit a head, legs, and tail. (The shells are also good insulators—they trap heat to help keep the creature active in winter.)

When threatened, armadillos curl up and leave only a tiny peephole from which to peer out at their predator. If touched, they snap totally shut. However, some fierce jaguars have been known to use their savage teeth and claws to crack open a tasty armadillo! Even the most dazzling special effects have their limits. . . .



PRIZE FACT

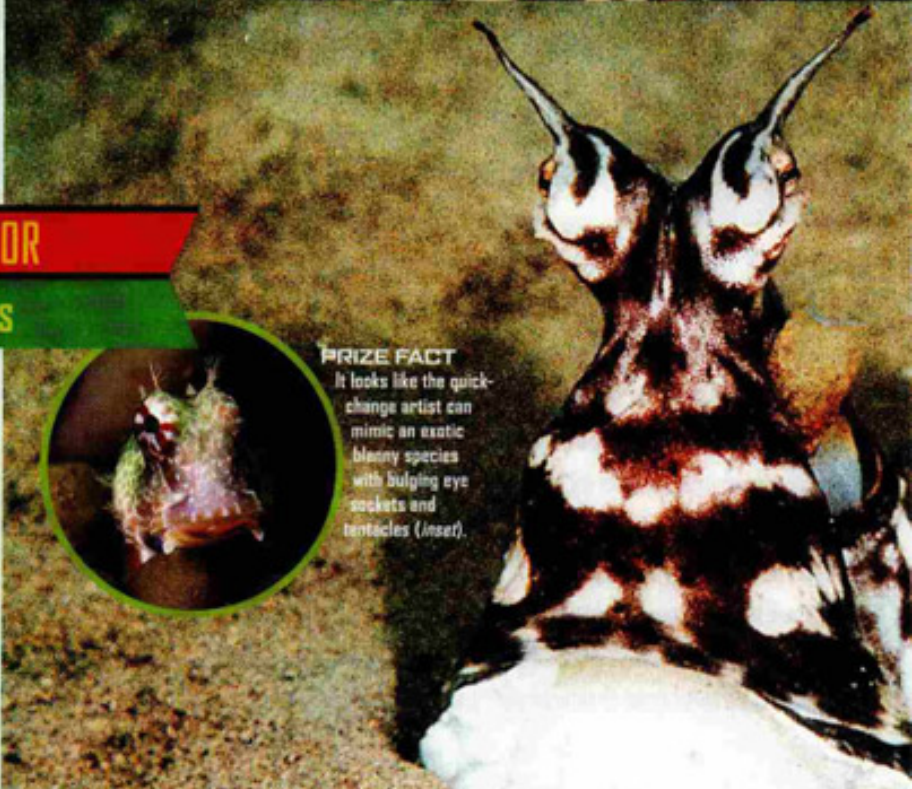
The mimic octopus contorts its body and dresses in bright stripes to impersonate the poisonous lionfish (inset).

BEST IMPERSONATOR

The mimic octopus

Do you know an undiscovered superstar—a natural talent who can mimic others on demand? For years, divers in murky waters off Indonesia snapped photos of an octopus—an eight-armed invertebrate (no backbone)—that seemed to impersonate a cast of marine animals through *mimicry*, or looking like another species. When a group of scientists got hold of the images, they hightailed it

ID NOVEMBER 8, 2002



PRIZE FACT

It looks like the quick-change artist can mimic an exotic blabby species with bulging eye sockets and tentacles (inset).



LIONFISH: OCTOPUS (TOP), BLENNYFISH: SCIENCE TACKETT/REPRINTED WITH PERMISSION FROM BBC WORLDWIDE LTD.; OCTOPUS (BOTTOM): BRIDGIE KUTER/REPRINTED WITH PERMISSION FROM BBC WORLDWIDE LTD.; POSSUM: MICHAEL HUBERT/ANIMALS

to Indonesia last year to identify the extraordinary 60-centimeter (24-inch) long copy-cat—which they dubbed the mimic octopus.

Many animals mimic other creatures to turn off predators. The harmless milk snake, for example, resembles the poisonous coral snake with its bright red, yellow, and black bands. “But this octopus is the only animal we’ve found so far that can mimic more than one animal,” says biologist Tom Tregenza at the University of Leeds. The octopus can ape at least three critters—the flatfish, lionfish, and sea snake, Tregenza’s team claims. To mimic the flatfish, the lumpy octopus speeds up, yanks in all eight arms, alters shape and color, and ripples its body in a wave!

Why imitate a slew of creatures? One clue: While many octopuses live and hide in reefs or rocks, the mimic octopus slinks along seafloor mud in plain sight. “There’s nowhere to hide,” Tregenza says. Besides, adds team scientist Roger Hanlon, “an octopus is a soft, juicy hunk of protein that everything else out there wants to eat.” Flatfish are far more populous and less likely to attract attention.

How does this superstar perform its tricks? It features a flexible body that twists into multiple forms and skin cells called *chromatophores*, which contain various colored pigments. Muscles around each chromatophore constrict or expand the cell—when constricted, skin color lightens, when expanded color darkens. The octopus alters color patterns by constricting and expanding thousands of chromatophores at the same time. Next stop, Warner Brothers?



PRIZE FACT

Is there a starring role in a *Die Hard* sequel for the pesky opossum? It also boasts a rare natural resistance to snakebite venom.

BEST ACTOR IN A DEATH SCENE

The opossum

Ever watch an actor croak—only to catch him breathing afterward? He should take lessons from the opossum, America’s only *marsupial* (mammal that carries its young in a pouch). Many predators won’t touch *carion*, or dead animals. When threatened by wild dogs or coyotes, the slow-running opossum either heads for the nearest tree to climb or else “plays possum”—feigns death. It falls over, lies still on its

side, eyes and mouth half open. Drool trickles from its mouth, its tongue lolling to one side. Most persuasive of all, it expels a green putrid-smelling substance from its anal glands. “Basically, it makes a big stinking mess,” says University of Idaho biology professor Steven Austad. The opossum can remain in this state long enough for any predator to exit the scene. Now that’s an Oscar-winning performance.

SCIENCE WORLD 11



PRIZE FACT

When this pufferfish inflates in self-defense, its skin projects razor-sharp spines that cover the body—making it look pretty unappetizing.



BEST ACTION HERO

The spiny pufferfish

Ordinarily, the meek spiny pufferfish (*Diodon holocanthus*) drifts slowly in its native coral-reef habitats around the world. Its round body and small fins make it a sluggish swimmer—and perfect prey. But just try to eat it, and get ready to be BLOWN AWAY! When threatened, the puffer inflates to three times its normal size. “It just swallows water until its stomach is completely full,” says biologist and pufferfish

expert Ralph Turingan at the Florida Institute of Technology. How does the fish change shape? Its skin and stomach are super-stretchable. Also, it lacks a rib cage—no bones to impede an expanding stomach. Dare to swallow an uninflated puffer? “Sharks have actually died from a pufferfish inflating in their esophagus,” says Turingan. Other predators who’ve witnessed Superman in action stay clear of the Big Puffer!

IT'S YOUR CHOICE

Choose the correct answer(s) to these questions:

1 Which process might cause animal defenses to change over time?

- A** kin selection **B** behavioral modification
C morphogenesis **D** natural selection

2 Which of the following would most likely explain why the mimic octopus impersonates several animals?

- A** The mimic octopus is a slow swimmer.
B It lives in plain sight of other prey.
C It has small eyes, which make it a poor hunter.
D Mimicry is part of its mating process.

3 Pufferfish belong to the same family—*diodontidae*—as porcupinefish and burrfish. Which defining feature do family members share?

- A** large fins **B** bright coloring
C spiny skin **D** small teeth

ANSWERS IN TEACHER'S EDITION

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MOST OUTRAGEOUS PERFORMANCE

The tortoise beetle

Do you cheer for revolting onscreen characters? The *larvae* (immature form) of the tortoise beetle species

Hemisphaerota cynaeta may nab the Oscar for nature's most disgusting defense-maker. The palm-tree-dwelling bugs, which live in Florida and southern Georgia, cover themselves with an elaborately woven thatch of their own feces. They extrude strands of feces from an "anal turret," which swivels to shoot out the strands in all directions. The feces are dry, odorless, and chemically inert (inactive). Still, most predators won't go near the stuff.

"People react with 'yuck,' and my guess is so do predators," says expert Thomas Eisner, a Cornell University ecologist (scientist who studies the environment). "There's a rule in nature: You don't mess with feces, because it can carry parasites and microbial diseases."

Unfortunately, no protection works 100 percent of the time. "If you look hard enough at the defense of any animal, somebody manages to crash through it," Eisner says. The adult carabid beetle chomps right through the fecal shield to reach tempting larvae underneath. "If an animal like the tortoise beetle is rejected by a lot of predators, it's an incredibly desirable resource to a hunter, because no one else is competing to eat the animal," says Eisner. "If you can crash through its defense, as the carabid beetle does, you've got it made." ■



PRIZE FACT

The tortoise beetle may boast nature's most outrageous defense. While most larvae leave excrement lying around, the tortoise beetle uses it to create a protective shield.



HANDS-ON SCIENCE

MASTER OF DISGUISE

Some animals escape predators by camouflage—concealing themselves by blending into their immediate physical environment. Follow this experiment to find out how they do it.

You Need:

1 small rock • 1 large photograph of any natural landscape (cut out one from a magazine) • construction paper • leaves • flower petals • colored pencils or markers • tape • glue • scissors • writing paper • pencil or pen

To Do:

1 Study the natural features of the photograph you selected. What would a species need to camouflage itself in the environment?

2 GOAL You have to hide your species (a small rock) in the photograph.

3 RULE You can select only three of these items to construct your species' (rock's) disguise: construction paper, leaves, flower petals, colored pencils or markers.

(For example: 1 sheet of brown construction paper, 1 blue marker, and 1 maple leaf)

4 Use a pair of scissors, tape, and/or glue to dress your species' appearance.

5 Place species on the photograph.

Observe, evaluate, and record how your species fits in the environment: What features allow it to either blend in or stand out in the habitat you chose?

6 Then take your species and place it on the photographs selected by your classmates. Observe, evaluate, and record how your species fits in or stands out in different environments.

Conclusions:

In what environment would your species be most or least fit for survival? Why? Discuss.

Take It Further:

Research and report on the area depicted in your photograph. What types of species live there? What kinds of defenses do they possess?



Animal Defense Mechanisms: Examining Visuals
(For Teacher Reference)

1. Look at the visual on page 2 of “Award-Winning Survival Skills: How Animals Elude Prey.”
2. In the first column of the graphic organizer below, record three details you see in the visual.
3. In the second column of the graphic organizer, record the inferences you make based on these details.

****NOTE: Do NOT complete the right-hand column of the graphic organizer yet!**

4. Read the article.
5. In the right-hand column of the graphic organizer, record details from the text that support your inferences in the middle column.

Details from the Visual (explicit information)	My Inferences (what I infer about this animal)	Details in the Text That Support My Inferences (confirmed with explicit information)
<ul style="list-style-type: none"> • Underwater • Mimic octopus • Orangeish-red stripes • Stripes look like a lionfish • Can bulge eye sockets and tentacles and looks like a blenny species 	<ul style="list-style-type: none"> • The mimic octopus tricks other animals into thinking it's a lionfish. Lionfish are poisonous, so other animals probably know this and stay away from them. Since the mimic octopus looks like the lionfish, other animals probably stay away from them, too, because they think the octopus is a lionfish and will poison them. • The mimic octopus tricks other animals into thinking it's a blenny species by bulging its eye sockets. 	<p>REMINDER TO TEACHERS: This column will not be completed with students until Lesson 4.</p> <p>“Many animals mimic other creatures to turn off predators.” (page 3)</p> <p>“But this octopus is the only animal we’ve found that can mimic more than one animal.” (page 3)</p> <p>“The octopus can ape at least three critters—the flatfish, lionfish, and sea snake, Tregenza’s team claims.” (page 3)</p>



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 3

A Closer Read for Vocabulary: Words Related to Animal Defenses



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can paraphrase portions of a text that is read aloud to me. (SL.4.2)
I can determine the meaning of academic words or phrases in an informational text. (RI.4.4)
I can determine the meaning of content words or phrases in an informational text. (RI.4.4)
I can use a variety of strategies to read words. (RF.4.3)
I can use a variety of strategies to determine the meaning of words and phrases. (L.4.4)

Supporting Learning Targets

- I can paraphrase information presented in a read-aloud on animal defense mechanisms.
- I can use different strategies to help me read unfamiliar words.
- I can determine the meanings of unfamiliar words to help me better understand “Award-Winning Survival Skills.”

Ongoing Assessment

- Listening Closely note-catcher (page 2 of Animal Defenses research journal)
- Glossary (pages 24–26 Animal Defenses research journal)



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Reviewing Learning Targets (5 minutes)B. Engaging the Reader: Read-aloud of <i>Venom</i> (10 minutes)2. Work Time<ol style="list-style-type: none">A. A Closer Look at Words: Guided Practice (15 minutes)B. A Closer Look at Words: Partner Practice (20 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Introducing the Word Wall (5 minutes)B. Preparing for Homework (5 minutes)4. Homework<ol style="list-style-type: none">A. A Closer Look at Words in the “Best Action Hero” Section of “Award Winning Survival Skills”	<ul style="list-style-type: none">• This is the second lesson in which students read the article “Award-Winning Survival Skills.” In this lesson, students reread to determine the meaning of challenging vocabulary in the following sections of the text: the opening; “Best Special Effect: The three-banded armadillo”; “Best Impersonator: The mimic octopus”; and “Best Action Hero: The spiny pufferfish” (for homework). Students are also introduced to the glossary in their Animal Defenses research journal, which they will use to record the definitions of important words they are likely to read or use in their writing during this module.• Students again hear a portion of <i>Venom</i> read aloud. They use the Listening Closely note-catcher in the same way as in Lesson 2, with the addition of recording a gist statement. Writing a gist statement allows students to paraphrase the section of the text they heard read aloud.• This lesson introduces the Animal Defense Mechanisms glossary and Word Wall. See supporting materials for more details about how the Word Wall should be set up. Students will refer to this and their glossaries throughout the module for discussion and writing.• For this lesson, students will practice determining word meaning using primarily context clues, but you also may want to have some dictionaries on hand.• In advance: Record directions for partner practice in Work Time B:<ol style="list-style-type: none">1. Write each of the assigned words on a sticky note.2. With your partners, reread the section and locate each of the words.3. Use the vocabulary strategies to determine the meaning of each word and record it on a sticky note.4. Reread the text with your partners.5. Discuss the following question: How does understanding these words help you understand the text?• Review: Fist to Five in Checking for Understanding techniques (see Appendix).• Post: Learning targets.



Lesson Vocabulary	Materials
glossary, word wall, text features; elude, impersonating, audacious, possess, traits, defenses, poison, venom, survive, predator, prey, sport, consist, threatened, mimicry, ape, imitate	<ul style="list-style-type: none">• Equity sticks• <i>Venom</i> (book for teacher read-aloud, pages 10–11)• Animal Defenses research journals (from Lesson 1)• Listening Closely note-catcher (page 2 of Animal Defenses research journal; one per student and one to display)• Listening Closely note-catcher (completed, for teacher reference, from Lesson 2)• “Award-Winning Survival Skills” (from Lesson 2; one per student and one to display)• Vocabulary Strategies anchor chart (new; co-created with students during Work Time Part B)• Animal Defense Mechanisms Glossary (page 24–26 of Animal Defenses research journal; one per student and one to display)• Animal Defense Mechanisms Glossary (completed, for teacher reference)• Sticky notes (several per student and then six per pair)• Animal Defense Mechanisms Word Wall: Teacher Directions (for teacher reference)• Large sheet of chart paper or section of the black/white board prepared for Animal Defense Mechanisms Word Wall (see Teaching Notes)• 7 standard sized index cards (for Animal Defense Mechanisms Word Wall words)



Opening	Meeting Students' Needs
<p>A. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Use equity sticks to call on a student to read the following learning target:<ul style="list-style-type: none">* “I can paraphrase information presented in a read-aloud on animal defense mechanisms.”• Explain to students that this learning target is the same in as the last lesson. Explain that they will continue to focus on paraphrasing today when they hear more of the text <i>Venom</i> read aloud. Ask a student to recall and explain the meaning of <i>paraphrase</i> and clarify if necessary.• Use equity sticks to call on students to read the next two learning targets:<ul style="list-style-type: none">* “I can use different strategies to help me read unfamiliar words.”* “I can determine the meanings of unfamiliar words to help me better understand ‘Award-Winning Survival Skills.’”• Remind students that this is something close readers do: pay special attention to unfamiliar words to better understand a text. Tell them that today the class will generate a list of strategies to help them read and determine the meaning of unfamiliar or challenging words.• For each learning target, have students give you a Fist to Five to self-assess how close they think they are to being able to meet these targets (with five fingers indicating that they can teach this lesson to the class, four to three fingers indicating that they are close to meeting these targets with a little support, two fingers to one finger indicating that they know what these targets mean, but they need support, and a fist if they are unsure what the targets mean).	<ul style="list-style-type: none">• Discussing and clarifying the language of learning targets helps build academic vocabulary.
<p>B. Engaging the Reader: Read-aloud of <i>Venom</i> (10 minutes)</p> <ul style="list-style-type: none">• Display the cover of <i>Venom</i> so all students can see. Open to pages 16 and 17 and ask:<ul style="list-style-type: none">* “What did we learn about animal defense mechanisms when we read aloud <i>Venom</i> yesterday?”• Listen for responses like: “Bees can sting and send chemical signals to protect themselves.” Validate responses and explain to students that they will listen to another section of <i>Venom</i> today that shares information about a close relative to the bee: wasps.	



Opening (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Display the Listening Closely note-catcher (from Lesson 2; page 2 of their Animal Defense research journals) and invite students to turn to the same note-catcher in their Animal Defenses research journals. Remind students that they will use this note-catcher to record information heard during the read-aloud. • Use equity sticks to call on students. Ask: <ul style="list-style-type: none"> * “What kind of information do we record in each part of this note-catcher?” • Listen for responses like: “We record how bees and wasps protect themselves in the first column, and explain how that helps the bees and wasps survive in the second column, and we record other facts about bees and wasps box at the bottom of the chart.” • Point out where students will take notes about wasps today and the prompt at the bottom of the note-catcher where they will paraphrase the text: “What is the gist of this section of <i>Venom</i>?” Explain that they don’t have to write anything here just yet, and that they will talk about this after listening to this section of <i>Venom</i>. • Remind students that just like when they read about bees, they will get to hear you read about wasps several times. And for the first time they hear it read aloud, they should simply listen to what is being read. The second time, they should begin to fill in the table. • Tell students you will read pages 19–20 aloud, and remind them that they should just listen to what is being read. • Read pages 19 and 20 (make sure to read both sections on page 20, “It Ain’t an Ant” and “Color Me Toxic”). • Then invite students to turn and talk with a neighbor, sharing what this section was mostly about. Listen for students to say: “It was about different kinds of wasps, what they eat, and how they use their venom.” • Explain to students that they will now hear pages 19 and 20 read aloud a second time. Tell students they should now record notes in the note-catcher as you read aloud. • Read aloud pages 19 and 20 in <i>Venom</i>, stopping briefly after each paragraph. If necessary during each short pause, remind students to fill in notes on their note-catchers. • After this second read of the text, ask students to turn to a partner and share their notes. Tell them they can add to or revise their notes with their partners. • Use equity sticks to call on pairs to share notes that they have added. Using the Listening Closely note-catcher (completed, for teacher reference) as a reference, confirm with the class what should be recorded in the chart on the note-catcher for wasps. 	<ul style="list-style-type: none"> • To further support students, consider rereading pages 16–17 and 19–20 prior to having them review their notes and paraphrase the text with a partner.



Opening (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Next, ask:<ul style="list-style-type: none">* “How would you paraphrase this section of <i>Venom</i>?”• Listen for responses like: “It was about different kinds of wasps and how they use their venom and why bees and wasps have stripes.” If necessary, point out the section titled “Color Me Toxic” and prompt students by asking: “What was this part of the text mostly about?”• Tell students that now you would like them to practice paraphrasing what was read about bees and wasps. Ask them to do the following:<ol style="list-style-type: none">1. Look at your notes for bees and wasps.2. Turn to your partner and verbally paraphrase pages 16–20 of <i>Venom</i>, using their notes as a reference.• Call on a few pairs to share how they paraphrased. Listen for students’ statements to include:<ul style="list-style-type: none">– This section of <i>Venom</i> was about different kinds of bees and wasps.– It explained that bees use chemical signals and stingers for defense.– It explained that wasps also use their venom for defense, but mostly to catch the bugs they eat.– It explained that many bees and wasps have stripes to warn attackers that they can sting.• Point to the question below the table on the graphic organizer—“What is the gist of this section of <i>Venom</i>?” Tell students that whenever they give the gist of a text, they are paraphrasing it. Ask the class to help you generate a gist statement that paraphrases pages 16–17 and pages 19–20 and copy this statement into their note-catchers.• Remind students they will have many more opportunities to read this book, and can read through it on their own during independent reading or in their free time during the school day if they wish.	



Work Time	Meeting Students' Needs
<p>A. A Closer Look at Words: Guided Practice (15 minutes)</p> <ul style="list-style-type: none">Place student with a reading partner and ask them to get out their copies of “Award-Winning Survival Skills” to read along as you reread the opening paragraph of the text.Then review the homework from Lesson 2: “Reread the ‘Award-Winning Survival Skills’ read in today’s lesson. While you read, circle words you do not know the meaning of. Choose one word you circled and try to figure out the meaning of it. Write down how you figured out what the word meant as well.”Invite students to turn and talk, asking:<ul style="list-style-type: none">* “What words did you circle that you didn’t know the meaning of?”Use equity sticks to call on students to share some words. List these words on the board. Students may identify: <i>survive, predator, defense, mimic, trait, reproduce, avoid, elude, marauders, impersonating, impenetrable, audacious, array, possess, and offspring</i>.Ask students to turn their partner and share which word they tried to figure out the meaning of and the strategy they used to do this.Use equity sticks to call on a few pairs to share their words and strategies.Tell students that they have learned a lot about how to figure out new words. Now, they get to use that knowledge. Begin a new Vocabulary Strategies anchor chart. Underneath the title, write: “The ways we make meaning of new words ...” Ask:<ul style="list-style-type: none">* “What strategies have we used to figure out new words in the past?”Give students a moment to think. Then use equity sticks to select students to share their thinking. Record students’ thinking and add your own as necessary. (Some students may say: “Ask my mom,” or “Ask the teacher.” If they do, tell them that this is one good approach, but should not be the first or only strategy they use).The chart should contain something such as:<ul style="list-style-type: none">– read on in the text and infer– think about parts of the word that you know (like word roots)– look in the glossary– look for a text feature that defines the word	<ul style="list-style-type: none">Asking students to identify challenging vocabulary helps them monitor their understanding of a complex text. When students annotate the text by circling these words, it can also provide a formative assessment for the teacher.Step-by-step instructions in an anchor chart assists students in completing independent activities.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">– look in a dictionary– discuss a word with another person (after attempting some of the above strategies)• Use some of the strategies to determine the meanings of the following challenging words from the text. Encourage students to help you.<ul style="list-style-type: none">– <i>elude</i> (avoid or escape): infer from the text– <i>impersonating</i> (to look and act like another person): look for the root word– <i>audacious</i> (to take bold risks): use the dictionary– <i>possess</i> (have or own): infer from the text– <i>traits</i> (physical characteristics): defined in text in parenthesis• Tell students that they now will try some of these strategies while rereading a few sections of “Award-Winning Survival Skills” to determine the meaning of some more challenging words.• Invite students to open to the Animal Defense Mechanisms glossary (pages 24–26 of their Animal Defense research journals) and tell students that they will build their own glossary to keep track of the words they learn related to animal defenses.• Show students the glossary in the back of <i>Venom</i> and remind students that a <i>glossary</i> is a text feature authors often use in nonfiction texts, and they are found at the end of books. Also remind students that they are formatted so the words appear in alphabetical order.• Explain to students that they will add words to the glossary in their research journals throughout the module, and will refer back to it during class discussions and when they plan and write the performance task.• Explain that they will find the word they are defining in the glossary, then write the definition, then write the vocabulary strategy they used to determine the meaning of that word, and then draw a quick sketch or diagram showing what that word means.• Point out the words <i>defenses/defense mechanisms</i> and <i>venom</i> as completed examples in the glossary. Remind students that they have determined the meanings of these words during the reading of <i>Venom</i>. Have them quickly draw a sketch to help remember the meaning of each of these words.	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> Model adding a new word to the glossary using the word <i>survive</i> in the opening of “Award-Winning Survival Skills”: <ul style="list-style-type: none"> Reread the opening paragraph and circle the word <i>survive</i> in the second sentence. Explain that the text makes you think this word means “live,” but that you want to confirm this. Demonstrate using the Vocabulary Strategies anchor chart to select a strategy for determining the word, and tell students that your strategy will be to read the text around the word and infer. Reread the first three sentences of the opening. Think aloud in a way similar to the following: “The first sentence talks about animals eating one another, and the sentence with the word <i>survive</i> talks about avoiding or trying not to become a meal. The third sentence talks about eluding, or getting away from hungry hunters, so what I inferred about the meaning of survival is right. It means to stay alive, in this case by not being eaten.” Ask students to help you find this word in their Animal Defense Mechanisms glossary and complete the entry for this word as a class. Ask if students have any questions about how they should complete word entries in their glossaries. Clarify as necessary. Tell students that now it is their turn to practice determining the meaning of a word with their partners. Explain that they should focus on inferring by using clues in the text, as well as talking with their partners about the meaning of the word. Reread the first three sentences in the opening of the text and ask: <ul style="list-style-type: none"> * “What does the word <i>predator</i> mean?” Allow students a few minutes to talk with their partners, then use equity sticks to call on a few pairs to share how they inferred the meaning of this word. Listen for students to point out the sentence that follows this word and the mention of “hungry hunters” as a clue in the text. Continue by reading the next three sentences of the text: “Animals use some positively award-worthy strategies called defenses. ‘An animal’s defenses are all that stand between being alive and being eaten,’ says biologist Tom Tregenza at the University of Leeds in the UK. The newly discovered mimic octopus, for example, fools marauders by impersonating an entire cast of less tempting prey.” Ask: <ul style="list-style-type: none"> * “What does the word <i>prey</i> mean? What words in these sentences provide clues to this word’s meaning?” Allow students a few minutes to talk with their partners, then use equity sticks to call on a few pairs to share how they inferred the meaning of this word. Listen for students to infer that <i>prey</i> is the name for animals that predators eat. Point out that the word “tempting” is a clue in the text that helps readers infer the meaning of this word. 	<ul style="list-style-type: none"> Defining challenging words as words that are unfamiliar or used in unusual or unfamiliar ways helps student identify both domain and academic vocabulary. It also allows students to feel more comfortable identifying words that are seemingly simple. Support your class in understanding that when familiar words are used in different or unusual ways, they can still pose a challenge for readers.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Tell students to find both of these words in their glossaries and record an entry. Give students 5 minutes to work with their partner. • Call on a few pairs to share their glossary entries and clarify the meaning of these words if necessary. Allow students to revise their entries as needed. Determine whether Work Time B should be more guided practice or independent partner work. 	
<p>B. A Closer Look at Words: Partner Practice (20 minutes)</p> <ul style="list-style-type: none"> • Tell students that you are going to reread two more sections and ask them to circle challenging words. After each section, they will work with their partner to practice using the vocabulary strategies for determining the meaning of some of the words. Then, as a class they will record some of the words into the glossary. • Review the directions posted in advance of the lesson with students: <ol style="list-style-type: none"> 1. Write each of the assigned words on a sticky note. 2. With your partners, reread the section and locate each of the words. 3. Use the vocabulary strategies to determine the meaning of each word and record it on a sticky note. 4. Reread the text with your partners. 5. Discuss the following question: How does understanding these words help you understand the text? • Clarify the directions as needed. • Distribute sticky notes (six per pair of students). Ask students to write the following words on each of their sticky notes: <i>sport</i>, <i>consist</i>, <i>threatened</i>, <i>mimicry</i>, <i>ape</i>, <i>imitate</i>. • Point out that in this text the words <i>sport</i> and <i>ape</i> are used with different meanings than what students are used to, so this is why you have selected these as challenging words, even though they are familiar. • Ask students to follow along as you reread the next two sections of the text, “Best Special Effect: The three-banded armadillo” and “Best Impersonator: The mimic octopus.” As you read, point out the assigned words in the text for students. • Give students 10 minutes to work on determining the meaning of the words. Circulate and support pairs as needed. If necessary, ask questions like: “How did you figure out the meaning of that word?” or “Are there any clues in the article that can help you figure out what that word means?” Listen for students discussing the meanings of the words and using strategies from the Vocabulary Strategies anchor chart when determining the meanings. 	<ul style="list-style-type: none"> • To further support students, give them a hint card with the following tips for determining the meaning of the assigned words: <ul style="list-style-type: none"> – <i>Sport</i>: this word has a different meaning than it usually does; use the text to infer. – <i>Consist</i>: the prefix of this word “con-” means “with or together.” – <i>Threatened</i>: the root of this word is threat, which means something that can hurt. – <i>Mimicry</i>: look for a text feature that defines this word. – <i>Ape</i>: in the text this word is used as a verb (action) and has a different meaning than usual. – <i>Imitate</i>: try inferring this word from the text.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Cold call partners to reread the sentences that contain each word and share definitions they recorded on a sticky note. Clarify the definition of each word if necessary.• Congratulate students on their hard word as word detectives. Ask:<ul style="list-style-type: none">* “How does understanding the meaning of these words help you better understand the text?” Prompt students to give examples from the text.• Explain all of these are important words to know the meanings of, but some they are likely to see again when they read about animal defense mechanisms and they may need to use them later when writing their narratives.• Ask students to find the words <i>threaten</i> and <i>mimic/mimicry</i> in their Animal Defense Mechanisms glossary and record the meanings with their partner.	<ul style="list-style-type: none">• To further support students in sharing how understanding words helps them understand the text, provide a sentence frame: “Now that I know _____ means _____, this helps me understand _____.”



Closing and Assessment	Meeting Students' Needs
<p>A. Introducing the Word Wall (5 minutes)</p> <ul style="list-style-type: none"> Point out the Animal Defense Mechanisms Word Wall to students. Explain that the Word Wall is another place to gather words about the topic they are studying. Explain that students can use their glossaries as individuals, but that the Word Wall is where the class will keep track of vocabulary; this will help during class discussions. Explain the format of the Word Wall—words are grouped alphabetically; only words are displayed, no definitions; words will be added to the Word Wall over the course of the module. Explain that students can refer to the Word Wall during discussions with peers or when writing as a way to use scientific vocabulary when discussing a topic. Show students the new Word Wall cards with the words <i>defense mechanisms</i>, <i>mimicry</i>, <i>predator</i>, <i>prey</i>, <i>survive</i>, <i>threaten</i>, and <i>venom</i> written on each card. Use equity sticks to choose students to add the cards to the Word Wall. Invite students to use the Fist to Five checking for understanding technique to briefly reflect on the learning target: “I can determine the meanings of unfamiliar words to help me better understand ‘Award-Winning Survival Skills,’” with a fist being “I am not confident that I can meet this target on my own” and a five being “I can determine the meaning of an unfamiliar word on my own.” Note students who show a fist, one, or two fingers to provide further support in Lesson 4. Tell students that they will revisit this target and practice using the glossary and Vocabulary Strategies anchor chart in the next lesson and will continue to figure out more about it. 	<ul style="list-style-type: none"> To support ELL students, consider adding visuals for each word on the Word Wall. The class can co-construct these and it will help to make the meanings of these words more memorable for all students.
<p>B. Preparing for Homework (5 minutes)</p> <ul style="list-style-type: none"> Post the homework assignment on the board and review it as needed. Tell students that to help them prepare for the homework, you would like them to read along and circle the assigned words as you read aloud to them. Read the section titled “Best Action Hero: The spiny pufferfish.” Be sure that students have circled the assigned words for their homework. 	<ul style="list-style-type: none"> This homework will act as a formative assessment of RF.4.3 and L4.4. To further support students, have them reread the text with a partner several times before taking it home for homework.
Homework	Meeting Students' Needs
<ul style="list-style-type: none"> Reread the section “Best Action Hero: The spiny pufferfish.” Use the vocabulary strategies to determine the meaning of the following words: <i>habitat</i>, <i>sluggish</i>, and <i>inflates</i>. Write what you think each word means and the strategy you used to find the meaning. Hint: Text features, root words, and inferring are strategies you can use to figure out the meaning of these words. 	



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 3

Supporting Materials



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Vocabulary Strategies Anchor Chart (For Teacher Reference)

Teacher Directions: Write the following underneath on chart paper to create this anchor chart.

Vocabulary Strategies

- read on in the text and infer
- think about parts of the word that you know (like word roots)
- look in the glossary
- look for a text feature that defines the word
- look in a dictionary
- discuss a word with another person (after attempting some of the above strategies)



Animal Defenses Research Journal: Glossary (Pages 24–26)
(Completed, For Teacher Reference)

Word/Phrase	Definition	Vocabulary strategy I used to learn this word:	Sketch/Diagram
defenses/defense mechanisms	traits or behaviors that protect animals	inferred from the text	sword and shield
entrap	to catch something in a trap	think about parts of the word that you know	spider with an enemy on its web
extract	to pull out	think about parts of the word that you know	pulling a plant out of the ground
frantically	to do something wild with fear	think about parts of the word that you know	ants trying to clean off sticky fluid
habitat	a place where an animal lives	inferred from the text	trees and a pond
injecting	to force a liquid into something	think about parts of the word that you know	mosquito stinging a person
living	alive	think about parts of the word that you know	flower growing
mimicry	defense of looking like another animal	defined in the text	octopus and a snake
predator	animal that hunts and eats other animals	inferred from text	wolf
prey	animal that is eaten	inferred from text	rabbit



Animal Defenses Research Journal: Glossary (Pages 24–26)
(Completed, For Teacher Reference)

Word/Phrase	Definition	Vocabulary strategy I used to learn this word:	Sketch/Diagram
prey	animal that is eaten	inferred from text	rabbit
poisonous	having poison; toxic	think about parts of the word that you know	monarch butterfly
quickly	doing something fast	think about parts of the word that you know	rabbit hopping
seizes	grabs, take hold	think about parts of the word that you know	toad catching a millipede
survive	to live	inferred from text	arm with flexed muscle
threaten	in danger	think about parts of the word that you know	scared face
unpleasant	not pleasing	think about parts of the word that you know	frowning face
venom	toxin that is injected with a stinger, fang, or spine	defined in glossary of text	snake with fangs
warning	a sign of something bad coming	think about parts of the word that you know	person calling a warning to someone else

Animal Defense Mechanisms Word Wall: Teacher Directions

Note: This Word Wall will eventually hold words in five categories—general animal defenses (building background knowledge on the topic) and the four expert group animals (independent student research) begun in unit 2.

In this lesson, students will only put words in the “General Animal Defenses” category. Do not yet label the other categories. If students ask about why the Word Wall is divided up, simply respond that they will learn more about this in unit 2.

On a bulletin board that is easily referenced by students and at a level where students can access it, create the following:

Animal Defense Mechanisms Word Wall		
General Animal Defenses	Mimic Octopus Defenses (do not label this until unit 2)	Monarch Defenses (do not label this until unit 2)
	Springbok Gazelle Defenses (do not label this until unit 2)	Three-Banded Armadillo Defenses (do not label this until unit 2)



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 4

A Closer Read for Main Ideas: What Is Important about Animal Defenses?



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

- I can paraphrase portions of a text that is read aloud to me. (SL.4.2)
- I can determine the main idea using specific details from the text. (RI.4.2)
- I can determine the meaning of academic words or phrases in an informational text. (RI.4.4)
- I can determine the meaning of content words or phrases in an informational text. (RI.4.4)

Supporting Learning Targets

- I can paraphrase information presented in a read-aloud on animal defense mechanisms.
- I can determine the main idea of sections of “Award-Winning Survival Skills.”
- I can identify details that support the main idea of sections of “Award-Winning Survival Skills.”

Ongoing Assessment

- Listening Closely note-catcher (page 4 of Animal Defenses research journal)
- Determining the Main Idea note-catcher (pages 5 and 6 of Animal Defenses research journal)



Agenda	Teaching Notes
<ol style="list-style-type: none">Opening<ol style="list-style-type: none">Reviewing Learning Targets (5 minutes)Engaging the Reader: Read-aloud of <i>Venom</i> (10 minutes)Work Time<ol style="list-style-type: none">Determining Main Ideas and Supporting Details: Guided Practice (15 minutes)Determining Main Ideas and Supporting Details: Partner Practice (20 minutes)Ticket: Confirming Inferences from Visuals (5 minutes)Closing and Assessment<ol style="list-style-type: none">Animal Defense Mechanisms: KWL Chart (5 minutes)Homework<ol style="list-style-type: none">Continue your independent reading.	<ul style="list-style-type: none">This lesson opens with the routine of hearing a few pages of <i>Venom</i> read aloud. Students use the Listening Closely note-catcher in the same way as in Lesson 3, completing the table and writing a gist statement after. This allows them to practice paraphrasing the text heard aloud, helping them to work toward meeting the SL.4.2 standard. Repetition of this routine allows students to master this speaking and listening standard.This is the third and final lesson where students read the article “Award-Winning Survival Skills.” In this lesson, students reread the article to determine the main idea of selected sections, first with teacher support, and then with their partners. In the lessons that follow, students will practice these skills in a more independent fashion when they are introduced to the central text, <i>Animal Behavior: Animal Defenses</i>.Note: Students will reread an excerpt of “Award Winning Survival Skills,” called “Best Action Hero: The spiny pufferfish” as a part of their mid and end of unit assessment in Unit 2. Students will need to reference their notes on this section of the text during these assessments, so be sure they hold on to their notes.Collect students’ Animal Defenses research journals at the end of the lesson for formative assessment. In future lessons, students will continue working with the same note-catchers introduced in Lessons 2–4. Review students’ work on the note-catchers to identify any areas that students may need clarification or further explanation.Review: Back-to-Back, Face-to-Face protocol, Fist to Five in Checking for Understanding techniques (see Appendix).Post: Learning targets.



Lesson Vocabulary	Materials
paraphrase, main idea, supporting details; habitat, sluggish, inflate	<ul style="list-style-type: none">• <i>Venom</i> (book for teacher read-aloud, pages 26–27)• Document camera• Animal Defenses Research Journals (from Lesson 1)• Listening Closely note-catcher (page 4 of Animal Defenses research journal; one per student and one to display)• Listening Closely note-catcher (completed, for teacher reference)• Equity sticks• “Award-Winning Survival Skills” (from Lesson 2; one per student and one to display)• Vocabulary Strategies anchor chart (from Lesson 3)• Animal Defense Mechanisms glossary (pages 26–28 Animal Defenses research journal)• Animal Defense Mechanisms Word Wall (from Lesson 3)• Determining the Main Idea note-catcher (pages 5 and 6 of Animal Defenses research journal; one per student and one to display)• Sticky note (one for modeling)• Determining the Main Idea note-catcher (completed, for teacher reference)• Examining Visuals note-catcher (page 2 of Animal Defenses research journal; from Lesson 2; one per student and one to display)• KWL Chart: Animal Defense Mechanisms (page 1 of Animal Defenses research journal; from Lesson 1; one per student and one to display)



Opening	Meeting Students' Needs
<p>A. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Gather students for a round of Back-to-Back, Face-to-Face. Once students are back-to-back with a partner, read the first learning target and ask:<ul style="list-style-type: none">* “What does this learning target mean?”• Call on a few pairs to share their explanations. Clarify the meaning of each target as needed.• Repeat this for the second and third learning targets.	<ul style="list-style-type: none">• Use of protocols like Back-to-Back, Face-to-Face allows for total participation of students. It encourages critical thinking, collaboration, and social construction of knowledge. It also helps students practice their speaking and listening skills.
<p>B. Engaging the Reader: Read-aloud of Venom (10 minutes)</p> <ul style="list-style-type: none">• Display the cover of Venom so all students can see. Open to pages 10 and 11 and ask:<ul style="list-style-type: none">– “What did we learn about animal defense mechanisms when we read aloud Venom yesterday?”• Listen for responses like: “Bees and wasps use venom to protect themselves and their hives.” Validate responses and explain to students that they will be listening to another section of Venom today.• Using a document camera, display a blank Listening Closely note-catcher (page 4 Animal Defenses research journal). Invite students to open to page 4 in their Animal Defenses research journals to view their note-catchers. Remind them that they will be using this note-catcher to record information heard during the read-aloud.• Use equity sticks to call on students. Review how to use the note-catcher by asking:<ul style="list-style-type: none">– “What kind of information do we record in each part of this note-catcher?” Listen for responses like: “How ants protect themselves in the first column, and explain how that helps the ant survive in the second column, and we record other facts about ants in the box below. Then we write a gist statement at the bottom.”• Explain to students that they will listen to a new part of Venom read aloud several times. Remind them that the first time they hear it, they should simply listen to what is being read. The second time they hear it read, they should begin to fill in the table.• Read aloud pages 26 and 27.• Invite students to turn and talk with a neighbor, sharing one interesting thing they heard during the read-aloud. Use equity sticks to call on two students to share what their partners found interesting.	



Opening (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Tell students that they will now hear pages 26 and 27 read aloud a second time. They should now record notes in the note-catcher as you read aloud.• Read aloud pages 26 and 27 in <i>Venom</i>, stopping briefly after each paragraph. If necessary during each short pause, remind students to fill in notes on their note-catchers.• Ask students to Think-Pair-Share about each of the following questions:<ul style="list-style-type: none">* “What is an example of how ants protect themselves?” Listen for responses like: “Some ants sting or spray their enemies.”* “How do those defense mechanisms help ants survive?” Listen for responses like: “Fire ants stings cause their enemies to itch, which lets the ant get away.”• Ask students to paraphrase orally with a partner, then record a gist statement.• Give students a few minutes to work, then use equity sticks to call on pairs to share their gist statements. Listen for responses like: “This section talked about different kinds of ants, but mostly it was about fire ants. It talked about how these ants protect themselves by stinging, biting, and spraying their enemies.”	



Work Time	Meeting Students' Needs
<p>A. Determining Main Ideas and Supporting Details: Guided Practice (15 minutes)</p> <ul style="list-style-type: none"> • Invite students to take out their “Award-Winning Survival Skills” article. Display a copy so all students can see. • Ask students to join their reading partner. Review the homework from the previous lesson: “In the text ‘Award-Winning Survival Skills,’ reread the section ‘Best Action Hero: The spiny pufferfish.’ Use the vocabulary strategies to determine the meaning of the following words: <i>habitat</i>, <i>sluggish</i>, and <i>inflates</i>. Write what you think each word means and the strategy you used to find the meaning. Hint: Text features, root words, and inferring are strategies you can use to figure out the meaning of these words.” • Ask students to share their definitions of words <i>habitats</i>, <i>sluggish</i>, and <i>inflate</i> and how they determined the meanings of these words with their partner. • Use equity sticks to call on pairs to share. As necessary, demonstrate how to determine the meaning of each word: “‘Coral-reef habitats’ suggests that the word <i>habitat</i> is a place, like a coral reef, where this animal lives. So I think <i>habitat</i> means where an animal lives. <i>Sluggish</i> sounds like the word slug and the suffix <i>-ish</i> means like, so I think ‘sluggish swimmer’ means it swims slow, like a slug. When I read the word <i>inflate</i>, I inferred that this word means get bigger, because right after the word, the text says, ‘three times its size.’” • Ask students to find and record the word <i>habitat</i> in their glossaries and add this word to the Word Wall. • Remind students that yesterday and for homework they focused on figuring out the meaning of challenging words, and that has prepared them to reread the text and figure out the main idea of the sections they focused on yesterday (the armadillo, mimic octopus, and pufferfish). • Tell students that the <i>main idea</i> is what a text, or part of a text, is about overall. Explain that this is somewhat different than the gist of the text. Tell students that the gist is what readers think the text is mostly about after a first read. It does not have to be supported with evidence from the text. • Explain that the main idea is different because it is supported with evidence from the text. Explain this evidence is made up of details from the text that support the main idea, these are called <i>supporting details</i>. Explain that readers determine the main idea through careful close reading and that they will have a chance to practice this today with Award-Winning Survival Skills. • Tell students that when a reader is trying to figure out the main idea, one strategy they can use is to read the text paragraph by paragraph, and ask themselves the same question after each paragraph: “What is this text about?” and as they read they revise their answer to this question. 	<ul style="list-style-type: none"> • The teacher may offer selected shorter passages to specific groups based on the readiness and needs of the group. This provides an opportunity for students to read a complex text within the fourth-grade level span, but differentiates the length of the text, not the complexity. • Graphic organizers and recording forms provide the necessary scaffolding that is especially critical for learners with lower levels of language proficiency and/or learning and engage students more actively. For students needing additional support, provide a partially filled-in graphic organizer. • Provide ELLs with a sentence starter or frame to aid in language production. For example: <i>This section is mostly about ...</i>



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Display the text “Award-Winning Survival Skills.” Show the first section that was assigned for homework in Lesson 3, “Best Action Hero: The spiny pufferfish” and a blank copy of the Determining the Main Idea note-catcher (pages 5 and 6 of Animal Defenses research journal). Ask students to get out their copy of the note-catcher.• Model with a think-aloud: “For example, the section of the text you read for homework is titled ‘Best Action Hero: The spiny pufferfish.’ If I asked myself the question, ‘What is this section about?’ my first thought would be that the main idea is going to have something to do with the pufferfish. Let me read the first paragraph, then check my thinking about the main idea.”• Ask students to read along silently as you read aloud the first paragraph of the section titled “Best Action Hero: The spiny pufferfish.”• Continue to think aloud: “Okay, so after reading this paragraph, I am thinking the main idea is that the pufferfish gets really big when something tries to eat it, because the text says ‘the puffer inflates to three times its normal size.’ Now I will check my thinking by reading the last paragraph of this section.”• Write a first draft of the main idea on a sticky note and place it next to the text where students can see it: The main idea is that the pufferfish puffs up to three times its size.• Ask students to read along silently as you read the last paragraph of the section. Then say: “Let’s check my main idea and if it needs any revision.” Read your main idea and ask: “How should I revise my main idea?”• Give students a few minutes to discuss the question with a partner.• Then use equity sticks to hear students’ revision ideas. Listen for main ideas similar to the following: “The pufferfish inflates to defend itself from predators” (see completed version of the Determining the Main Idea note-catcher in the supporting materials). Ask students to record this main idea into their note-catchers as well.• Next, ask students to help you locate two to three details from the text that support this main idea and record these into the right-hand column next to the main idea for this section of the text. Listen for details such as: “It swallows water until it is completely full,” or “sharks have died from a pufferfish inflating in their esophagus.”	



Work Time (continued)	Meeting Students' Needs
<p>B. Determining Main Ideas and Supporting Details: Partner Practice (20 minutes)</p> <ul style="list-style-type: none"> Tell students that they will now reread two more sections of the text to determine the main idea and supporting details with their partner. Point out the sections indicated on the Determining the Main Idea note-catcher “Best Special Effect: The three-banded armadillo” and “Best Impersonator: The mimic octopus.” Give students 15 minutes to reread these sections of the text and determine the main idea and two to three supporting details for each. Circulate and observe students. If you notice a significant portion of your students struggling during this partner work, have your students stop partner work after reading and determining the main idea and supporting details for the first section. Then review their answers as a class and have them make any necessary revisions to their notes. At this point you could release them to continue partner work again or provide additional guided practice and work through the second section as a whole class. After students have finished reading and determining main idea and supporting details for these sections of the text, use equity sticks to have pairs share their work. Clarify as needed and allow students to revise their notes. Use the completed version of the Determining the Main Idea note-catcher to guide your work with students. 	<ul style="list-style-type: none"> For students who struggle, consider providing additional guided practice determining the main idea and supporting details in the text. This can be done in small teacher-led groups using other sections of “Award-Winning Survival Skills” during your class’s guided and independent reading time.
<p>C. Confirming Inferences from Visuals (5 minutes)</p> <ul style="list-style-type: none"> Congratulate students on their close reading of the selected sections of the text. Tell them that you would now like to look back at their Examining Visuals note-catchers (page 3 of Animal Defenses research journal) and display your own copy as well. Tell students that at this point they should be able to fill in the third column of this note-catcher. Review the note-catcher, and ask students to read what they inferred about the three-banded armadillo, the mimic octopus, and the pufferfish. Ask students to work independently and use details in the text to confirm as correct or incorrect what they inferred from the visuals of these animals in the text and record this information on their note-catchers. Quickly model what this might look like with the pufferfish. For example: “When I looked at the pufferfish, I inferred that it just used its spike to protect itself. I did not know that it could puff up to three times its normal size.” Then record these notes on the displayed copy of the note-catcher. Collect students’ Animal Defenses Research Journals after the closing of this lesson to check their Examining Visuals note-catcher as an exit ticket. 	<ul style="list-style-type: none"> This exit ticket acts as an independent comprehension check. If students are still struggling with comprehending the text, they will have difficulty with this task. Use this information to help determine which students may need more support with this text during your guided and independent reading.



Closing and Assessment	Meeting Students' Needs
<p>A. Animal Defense Mechanisms: KWL Chart (5 minutes)</p> <ul style="list-style-type: none">• Invite students to turn to the Animal Defense Mechanisms: KWL chart (page 1 of Animal Defenses research journal). Remind students that researchers always reflect on and record what they've learned.• Invite students to Think-Pair-Share. Ask:<ul style="list-style-type: none">* "Were any of your questions answered after reading 'Award-Winning Survival Skills'?"* "What new information did you learn from this article?"• Tell students to write the answers to any questions they had in the W column in the "I Learned" column, in the "Information" section. Include the name of the article in the "Source" column.• Ask students to also write one new piece of information they learned from the article in the "I Learned" column.• Collect students' Animal Defenses Research Journals to check their Examining Visuals note-catcher completed in Work Time C as an exit ticket.	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Continue your independent reading.	



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 4

Supporting Materials



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Animal Defenses Research Journal:
Listening Closely Note-catcher
(Completed, for Teacher Reference)

Source: *Venom* pages 26–27

Directions: Listen as *Venom* is read aloud. Use the table below to record your notes.

Examples of How Ants Protect Themselves	How This Helps Ants Survive
<i>Venom</i> pages 26–27	
<ul style="list-style-type: none">• some species use their rear ends to sting or spray• fire ants use venom to kill animals for food• fire ants sting with their rear ends when threatened by an enemy	<ul style="list-style-type: none">• fire ant stings cause itchy, burning blisters• fire ant stings aren't usually deadly
Other Facts about Ants <ul style="list-style-type: none">• Ants are social• Female worker ants are wingless• Males and young queens have wings	

Explain in your own words what this section of *Venom* was about:

This section talked about different kinds of ants, but mostly it was about fire ants. It talked about how these ants protect themselves by stinging, biting, and spraying their enemies.



Animal Defenses Research Journal:
Determining Main Ideas
(Completed, for Teacher Reference)

Source: “Award-Winning Survival Skills”

Best Action Hero—The spiny pufferfish

Main Idea:

The pufferfish inflates to defend itself from predators.

Supporting Details:

- “swallows water until its stomach is completely full”
- “skin and stomach are super-stretchable”
- has no rib cage
- “sharks have actually died from a pufferfish inflating in their esophagus”

Best Special Effect—The three-banded armadillo

Main Idea:

Three-banded armadillos curl into completely enclosed balls to protect themselves from predators.

Supporting Details:

- Armadillos have “leathery, armored shells”
- They have body shields made of “bony plates”
- They have “three hinged bands that give them the flexibility to roll themselves up”
- “there’s plenty of room inside to fit a head, legs, and tail”
- “when threatened, armadillos curl up and leave only a tiny peephole from which to peer out at their predator”
- “if touched, they snap totally shut”



Animal Defenses Research Journal:
Determining Main Ideas
(Completed, for Teacher Reference)

Source: “Award-Winning Survival Skills”

Best Impersonator—The mimic octopus

Main Idea:

The mimic octopus protects itself by mimicking other animals.

Supporting Details:

- “the mimic octopus contorts its body and dresses in bright stripes to impersonate the poisonous lionfish” (diagram)
- “this octopus is the only animal we’ve found so far that can mimic more than one animal”
- the octopus mimics at least three animals—“the flatfish, lionfish, and sea snake”
- many octopuses live and hide in reefs or rocks, but the mimic octopus slinks along the seafloor in plain sight so it doesn’t have anywhere to hide
- it has a flexible body and skin cells that have colored pigments that can lighten or darken to change its color



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 5

Reading Scientific Text: Building Expertise on Animal Defense Mechanisms



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can paraphrase portions of a text that is read aloud to me. (SL.4.2)

I can interpret information presented through charts or graphs. I can explain how that information helps me understand the text around it. (RI.4.7)

I can determine the main idea using specific details from the text. (RI.4.2)

Supporting Learning Targets

- I can paraphrase information presented in a read-aloud on animal defense mechanisms.
- I can make inferences about animal defense mechanisms by examining articles that include text and visuals.
- I can determine the main idea of a section of *Animal Behaviors: Animal Defenses*.

Ongoing Assessment

- Listening Closely note-catcher (page 7 of Animal Defenses research journal)
- Examining Visuals note-catcher (page 8 of Animal Defenses research journal)
- Determining Main Ideas note-catcher (pages 9 and 10 of Animal Defenses research journal)
- Observation of participation during Jigsaw



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Engaging the Reader: Read-aloud of <i>Venom</i> (10 minutes)B. Reviewing Learning Targets (5 minutes)2. Work Time<ol style="list-style-type: none">A. Examining Visuals (20 minutes)B. Rereading an Informational Text: Determining the Main Idea (20 minutes)3. Closing and Assessment<ol style="list-style-type: none">C. Animal Defense Mechanisms: KWL Chart (5 minutes)4. Homework<ol style="list-style-type: none">A. Continue your independent reading.	<ul style="list-style-type: none">• During the Opening of this lesson, students listen and take notes as a section in <i>Venom</i> titled, “A Meal to Remember,” is read aloud. Note that in Unit 2 students will reread this excerpt of as a part of their mid and end of unit assessment. Students will need to reference their notes on this section of the text during these assessments, so be sure they keep their notes.• Students begin the same process used in Lessons 2–4 to closely read a section of the central text <i>Animal Behavior: Animal Defenses</i>. They examine a visual and think about how it helps them better understand the text, then read and reread the same section for the main idea and supporting details. This process continues into Lesson 6.• Students will use the Jigsaw protocol to read the predetermined sections in <i>Animal Behavior: Animal Defenses</i>. In Lesson 5, they work with their expert groups to closely examine a visual and determine the main idea of their section. In Lesson 6, they will continue working in these groups to identify details that support that main idea, and then will meet with students who read different sections of the text to share the main idea and supporting details.• The four sections from <i>Animal Behavior: Animal Defenses</i> that students work with in Lessons 5 and 6 were chosen based on the overall structure of the book. By reading these specific sections, students will get a general overview of what animal defense mechanisms are as well as an introduction to several types of defense mechanisms (chemical defenses and warning colors, venom, and mimicry).• Since one section is about venom, which has been discussed in previous lessons, consider assigning this section to students who are struggling. The background knowledge they have built in Lessons 1–4 will support them in tackling this text.• In advance: Determine expert groups for Jigsaw protocol (three groups total).• Review: Jigsaw protocol (see Appendix).• Post: Learning targets.



Lesson Vocabulary	Materials
determine, camouflage, mimicry	<ul style="list-style-type: none">• <i>Venom</i> (book for teacher read-aloud, pages 74–75)• Document camera• Animal Defenses Research Journal (from Lesson 1)• Listening Closely note-catcher (page 7 of Animal Defenses research journal; one per student and one to display)• Listening Closely note-catcher (completed, for teacher reference)• Equity sticks• <i>Animal Behavior: Animal Defenses</i> (one per student and one to display)<ul style="list-style-type: none">– Teacher model—“Avoiding Danger” (pages 7–9, stopping at “Self-Defense”; last 2 paragraphs on page 21; “Escape Artists” first two paragraphs on page 22)– Group 1—“Bad Smells, Bad Tastes, and Powerful Poisons” (page 55–top of 56, stopping at “Poisonous Prey”; pages 58–60)– Group 2—“Venomous Stings and Bites” (page 83; “How Venom Works” box on page 86; “Stinging Tentacles” pages 77–78)– Group 3—“Mimicry” (pages 91–94)• Examining Visuals note-catcher (page 8 of Animal Defenses research journal; one per student and one to display)• Examining Visuals note-catcher (completed, for teacher reference)• Sticky notes• Determining the Main Idea note-catcher (pages 9 and 10 of Animal Defenses research journal; one per student and one to display)• Determining the Main Idea note-catcher (completed, for teacher reference)• Animal Defense Mechanisms: KWL Chart (page 1 of Animal Defenses research journal; from Lesson 1; one per student and one to display)



Opening	Meeting Students' Needs
<p>A. Engaging the Reader: Read-aloud of <i>Venom</i> (10 minutes)</p> <ul style="list-style-type: none"> • Display the cover of <i>Venom</i> so all students can see. Open to pages 26 and 27 and ask: <ul style="list-style-type: none"> * “What did we learn about animal defense mechanisms when we read aloud <i>Venom</i> a few days ago?” • Listen for responses like: “Fire ants sting their enemies to defend themselves.” Validate responses and explain to students that they will be listening to another section of <i>Venom</i> today. • Using a document camera, display blank Listening Closely note-catcher and invite students to open to the next one on page 7 in their Animal Defenses research journals. Remind students that they have been using this note-catcher to record information heard during a read-aloud. • Use equity sticks to call on students. Review how to use the note-catcher by asking: <ul style="list-style-type: none"> * “What kind of information do we record in each part of this note-catcher?” • Listen for responses like: “We record facts about ants in the first column, how ants protect themselves in the middle column, and explain how that helps the ant survive in the right-hand column. We write a gist statement at the bottom.” • Remind students that they will listen to a new part of <i>Venom</i> read aloud several times. Remind them that the first time they hear it, they should simply listen to what is being read. The second time they hear it read, they should begin to fill in the table. • Read aloud the section “A Meal to Remember—If You Live That Long” on pages 74 and 75. Do not read the other sections: “Danger Down Below” or “And Now for Something Completely Different.” • Invite students to turn and talk with a neighbor, sharing one interesting thing they heard during the read-aloud. Use equity sticks to call on two students to share what their partners found interesting. • Tell students that they will now hear pages 74 and 75 read aloud a second time and should now record notes in the note-catcher. • Read aloud pages 74 and 75 in <i>Venom</i>, stopping briefly after each paragraph. If necessary during each short pause, remind students to fill in notes on their note-catchers. • Invite students to turn and talk with a partner. Ask: <ul style="list-style-type: none"> * “What is an example of how pufferfish protect themselves?” 	<ul style="list-style-type: none"> • Whole class discussions encourage respectful and active listening, as well as social construction of knowledge. • Hearing a complex text read slowly, fluently, and without interruption or explanation promotes fluency for students; they are hearing a strong reader read the text aloud with accuracy and expression, and are simultaneously looking at and thinking about the words on the printed page. Be sure to set clear expectations that students read along silently in their heads as you read the text aloud.



Opening (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Listen for responses like: “They inflate themselves so they are too large to swallow.”• Ask:<ul style="list-style-type: none">* “What was the gist of this section?”• Listen for responses like: “This section was mostly about how pufferfish protect themselves by inflating or by their poison.”• Point to the question below the table on the graphic organizer—“Explain in your own words what this section of <i>Venom</i> was about?” Tell students to jot down the gist of this part of the text on these lines. If necessary, prompt students by asking: “What was this part of the text mostly about?”• Remind students they will have many more opportunities to read this book, and can read through it on their own during independent reading or in their free time during the school day if they wish	<ul style="list-style-type: none">• Discussing and clarifying the language of learning targets helps build academic vocabulary.
<p>B. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Use equity sticks to call on a student to read the remaining learning targets:<ul style="list-style-type: none">– “I can paraphrase information presented in a read-aloud on animal defense mechanisms.”– “I can make inferences about animal defense mechanisms by examining articles that include text and visuals.”– “I can determine the main idea of a section of <i>Animal Behaviors: Animal Defenses</i>.”• Tell students that they will begin reading a new text about animal defense mechanisms. Build up the excitement!	<ul style="list-style-type: none">• Discussing and clarifying the language of learning targets helps build academic vocabulary.



Work Time	Meeting Students' Needs
<p>A. Examining Visuals (20 minutes)</p> <ul style="list-style-type: none"> • Distribute copies of <i>Animal Behavior: Animal Defenses</i>. Invite students to flip through the book and Think-Pair-Share, discussing what they notice and wonder about the book. • Use equity sticks to call on students to share their observations and questions. Listen for students sharing observations about the parts of the book like the table of contents, glossary, and index and point out these parts if students do not share them on their own. Only answer clarifying questions for now; for other questions, respond with something like: “You’ll find that out as you read this book and work with it more closely throughout this module.” • Preview Lessons 5 and 6: Tell students that they are going to go through the same process they just went through in reading “Award-Winning Survival Skills” to closely read and reread sections of this book in order to learn more about animal defense mechanisms. Explain that they will begin by examining visuals and reading sections for the gist, and then reread for the main idea and supporting details. They will work in expert groups to read specific sections and then, in the next lesson, share what they have learned from that section in Jigsaw groups. • Tell students that today, they will start by examining a visual in a section of the book using the Examining Visuals note-catcher (page 8 of their research journals) to record information and inferences about the visual their group is examining closely. Remind students that they did this in Lesson 2. Display a copy of the note-catcher and invite students to turn to the Examining Visuals note-catcher on page 8 of their research journals. • Briefly review Steps 1–3 and the first two columns on the note-catcher. Clarify that students will complete only the first two columns prior to reading their section of text. Review Steps 4 and 5 and the heading of the last column (“Details in the Text That Support My Inferences”). Clarify that students will read their section of the text and then complete the last column. • Explain to students that before they break into groups to do this, they will practice while looking at a visual in the text together. • Invite students to turn to page 8 in the book and examine the photograph and caption, thinking about what details they notice. Use equity sticks to call on three to four students to share their observations. Listen for things like: “I noticed that this is also a photograph of a springbok,” or “The springbok bounces into the air with stiff legs to show predators they are hard to catch.” Add students’ observations to the “Details from the Visual” column. Tell students not to write anything on their graphic organizers. • Point to Step 3 on the graphic organizer and explain to students that now they will use the details they observed in the visual and their background knowledge to make inferences about the springbok. 	<ul style="list-style-type: none"> • The teacher may offer selected shorter passages to specific groups based on the readiness and needs of the group. This provides an opportunity for students to read a complex text within the fourth-grade level span, but differentiates the length of the text, not the complexity. • Graphic organizers and recording forms engage students more actively and provide the necessary scaffolding that is especially critical for learners with lower levels of language proficiency and/or learning. For students needing additional support, provide a partially filled-in graphic organizer. • Provide ELLs with a sentence starter or frame to aid in language production. For example: <i>In the visual I see ...</i> • Some students may benefit from having key sections pre-highlighted in their texts. This will help them focus on small sections rather than scanning the whole text for answers.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Invite students to Think-Pair-Share. Ask:<ul style="list-style-type: none">* “What do you infer about the springbok? What details from the visual did you base your inference on?”• Once students have had time to discuss their inferences, use equity sticks to call on students to share an inference. Tell students to use the sentence frame: “We infer _____ because the visual/caption shows/says _____.” Record what students share in the “My Inferences” column on the graphic organizer.• If necessary, model briefly. Say something like: “I infer that the springbok’s jumping shows it’s hard to catch because the predator can see its muscles and see how quick it is. I infer this because the visual shows the springbok’s leg muscles and the caption says ‘hard to catch,’ which means they must be fast.” [Write inference in the “My Inferences” column.]• Point to the note on the graphic organizer and remind students that they will not be filling in the right-hand column yet. Explain that now they will listen to the text read aloud, listening for details that support their inferences.• Read aloud pages 7–9, the last two paragraphs on page 21, and the first two paragraphs on page 22. Invite students to follow along in their copies of the text as you read, placing a sticky note in the text by details that support their inferences.• After reading, ask:<ul style="list-style-type: none">* “What details support our inferences about the springbok?”• Listen for responses like: “On page 8 it says, ‘Their odd jumping behavior, called stotting, signals to the cheetah, ‘We have seen you, so do not bother to chase us—we are strong and healthy and can outrun you.’” Model writing details on the note-catcher, including the page number after each detail.• Tell students that now they will do this in small groups. Break students into three groups. Tell students to circle their group page assignments on the note-catcher for Steps 1 and 4.• Ask students to review what it looks like and sounds like when working in a small group of peers. Listen for responses like: “Wait my turn to speak, so I am heard; don’t shout/speak too loudly; make sure everyone gets a turn to speak; no one person does most/all of the speaking; use information from text to support my ideas.”• Prompt students through the steps by inviting them to turn to the visual for their group (the assigned page in Step 1—group 1 turns to page 59, group 2 turns to page 78, and group 3 turns to page 92).	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Tell students to independently examine the photograph and caption, thinking about what details they notice and writing them in the “Details from the Visual” column on their note-catcher. After several minutes, invite students to share what they wrote in that column with their partners. Listen for students following class norms when working in a group and identifying explicit details from the picture when sharing their notes. Support students who rated themselves with a fist, one finger, or two fingers during the Fist-to-Five for this target in Lesson 2. • After several minutes, point to Step 3 on the graphic organizer and remind students that now they will use the details they observed in the visual and their background knowledge to make inferences about the animal in their group’s visual. • Invite students to think to themselves for a minute before sharing with their group. Ask: <ul style="list-style-type: none"> * “What do you infer about the animal in your visual? What details from the visual did you base your inference on?” • Once students have had some time to discuss their inferences, invite students to write their inferences on their note-catchers. Tell students to use the sentence frame: “We infer _____ because the visual/caption shows/says _____.” Circulate and support students as necessary, paying special attention to students who rated themselves with a fist, one finger, or two fingers during the Fist-to-Five for this target in Lesson 2. • Remind students that they will be filling in the right-hand column after reading their section of the text. • Tell students that the text is challenging and may have many unfamiliar words. Reassure them that just like when they read “Award-Winning Survival Skills,” they are not expected to understand it fully the first time they read it. Remind them that one key to being a strong reader of difficult text is being willing to struggle. • Remind them that when readers read a text, they use many strategies to make sense of what is being read. Ask: <ul style="list-style-type: none"> * “What strategies do readers use to make sense of a text?” • Listen for responses like: “Readers infer,” or “Readers pay attention to what they understand and what they don’t.” Validate responses and write this question on the board: <ul style="list-style-type: none"> * “When you read this text for the first time, what made sense? What didn’t?” • Tell students to jot down their notes about what made sense on a sticky note and what is confusing on another sticky note. • Give students 6–8 minutes to read their section of the text independently. Circulate to support as needed. Probe by asking: “What’s making sense? What is confusing?” and encourage them to persist. Support students who rated themselves with a fist, one finger, or two fingers during the Fist-to-Five for this target in Lesson 2. 	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">After 6–8 minutes, invite students to share initial thinking in their small groups:<ul style="list-style-type: none">* “What makes sense? What is confusing?”Then ask them to reread their section of the text together, looking for details that support their inferences about the visual examined earlier. Ask students to record these details in the right-hand column of their note-catchers, including the page number where they found that detail. Circulate to support as needed. Probe by asking: “What details support your inferences about the visual?” or “How does that detail support your inference?” Support students who rated themselves with a fist, one finger, or two fingers during the Fist-to-Five for this target in Lesson 2.Use the Fist-to-Five Checking for Understanding technique to have students briefly reflect on the learning target: “I can make inferences about animal defense mechanisms by examining an article that includes text and visuals,” with a fist being “I am not confident that I can meet this target on my own” and a five being “I can make inferences about articles that include texts and visuals on my own.” Note students who show a fist, one, or two fingers to provide further support in future lessons.	



Work Time (continued)	Meeting Students' Needs
<p>B. Rereading an Informational Text: Determining the Main Idea (20 minutes)</p> <ul style="list-style-type: none"> Tell students they will now reread their section of <i>Animal Behavior: Animal Defenses</i> a second time to <i>determine</i> the main idea of their section. Invite students to open to pages 9 and 10 in their research journals, to the Determining the Main Idea note-catcher. Explain that students will continue to work with their expert groups and determine the main idea of their section and that in the next lesson, they will reread to identify details that support the main idea of their section. Ask: <ul style="list-style-type: none"> * “How do we determine the main idea of a section of text?” Listen for students describing the process introduced in Lesson 3, saying things like: “We read the text paragraph by paragraph, and after each paragraph ask ourselves, ‘What is this text about?’ We revise our thinking about the main idea as we read.” Tell students they will then write the main idea in the box for their section only. Explain that they should leave the other sections blank for now, and the “Supporting Details” boxes blank for now as well. Review determining the main idea of “Avoiding Danger” (pages 7–9, the last two paragraphs on page 21, and the first two paragraphs on page 22) and going through the process just discussed. Have students turn and talk after each paragraph before discussing the main idea or revised thinking with the whole group. Model recording the main idea in the appropriate box on the Determining the Main Idea note-catcher and ask students to do the same. Review working in a small group by asking: <ul style="list-style-type: none"> * “What does it look like or sound like when working in a small group with your peers?” Listen for responses like: “Wait my turn to speak, so I am heard; don’t shout/speak too loudly; make sure everyone gets a turn to speak; no one person does most/all of the speaking; use information from text to support my ideas.” Give students 15 minutes to work through the steps with their partners to determine the main idea of their section. Circulate and support as needed. Listen for students using the steps to determine the main idea of the text and following class norms when working in a small group. Probe by asking: “What was this section mostly about?” or “How does everything fit together into the one most important idea?” After 15 minutes, invite students to show a thumbs-up if they were able to determine the main idea of their section and a thumbs-down if they were not. Praise students showing a thumbs-up. Be sure to check in with students who gave a thumbs-down during the group work in Lesson 6. 	<ul style="list-style-type: none"> The teacher may offer selected shorter passages to specific groups based on the readiness and needs of the group. This provides an opportunity for students to read a complex text within the fourth-grade level span, but differentiates the length of the text, not the complexity. Graphic organizers and recording forms engage students more actively and provide the necessary scaffolding that is especially critical for learners with lower levels of language proficiency and/or learning. For students needing additional support, provide a partially filled-in graphic organizer. Provide ELLs with a sentence starter or frame to aid in language production. For example: <i>I think this text is about ...</i> Some students may benefit from having key sections pre-highlighted in their texts. This will help them focus on small sections rather than scanning the whole text for answers.



Closing and Assessment	Meeting Students' Needs
<p>A. Animal Defense Mechanisms: KWL Chart (5 minutes)</p> <ul style="list-style-type: none">• Invite students to turn to the Animal Defense Mechanisms: KWL chart in their research journals. Remind students that researchers always reflect on and record what they've learned.• Invite students to Think-Pair-Share. Ask:<ul style="list-style-type: none">* "Were any of your questions answered in the text that you read today?"* "What new information did you learn from your section of the text?"• Tell students to write the answers to any questions they had in the W column in the "I Learned" column, in the "Information" section. Include the name of the book and page number in the "Source" column.• Encourage students to also write one new piece of information they learned from the book in the "I Learned" column.	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Continue your independent reading.	



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 5

Supporting Materials



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Animal Defenses Research Journal:
Listening Closely Note-catcher
(Completed, for Teacher Reference)

Source: *Venom* pages 74–75

Directions: Listen as *Venom* is read aloud. Use the table below to record your notes.

Examples of How Pufferfish Protect Themselves	How This Helps Pufferfish Survive
<i>Venom</i> pages 74–75	
<ul style="list-style-type: none">• Inflates itself• Prickly• Toxic: The fish’s skin, blood, and organs contain tetrodotoxin• Each fish has enough of the stuff to kill thirty people or a dozen elephants	<ul style="list-style-type: none">• Becomes too large for an enemy to swallow• The prickly skin can hurt the pufferfish’s enemy• The poison kills its enemy
Other Facts about Pufferfish <ul style="list-style-type: none">• Humans eat the pufferfish• Special licensed chefs are the only people allowed to prepare it to eat• Their poison is being used as a non-addictive painkiller for patients with cancer and other illnesses	

Explain in your own words what this section of *Venom* was about:

This section of *Venom* was about the pufferfish. Its defense mechanisms are that it can inflate itself and that it is poisonous.



**Animal Defenses Research Journal:
Examining Visuals**

(Completed, for Teacher Reference)

Source: Animal Behaviors: Animal Defenses

1. Look at the visual in your group's section of *Animal Behaviors: Animal Defenses*.
 - Group 1—page 59
 - Group 2—page 88
 - Group 3—page 92
2. In the first column of the graphic organizer below, record three details you see in the visual.
3. In the second column of the graphic organizer, record the inferences you make based on these details.

****NOTE: Do NOT complete the right-hand column of the graphic organizer yet!**

1. Read your group's assigned pages.
 - Group 1—"Bad Smells, Bad Tastes, and Powerful Poisons" (page 55—top of 56, stopping at "Poisonous Prey"; pages 58–60)
 - Group 2—"Venomous Stings and Bites" (page 83; "How Venom Works" box on page 86; "Stinging Tentacles" pages 77–78)
 - Group 3—"Mimicry" (pages 91–94)
2. In the right-hand column of the graphic organizer, record details from your section of the text that support your inferences in the middle column.



Animal Defenses Research Journal:
Examining Visuals
(Completed, for Teacher Reference)

p. 59

Details from the Visual (explicit information)	My Inferences (what I infer about this animal)	Details in the Text That Support My Inferences (confirmed with explicit information)
<ul style="list-style-type: none">• cinnabar caterpillar on a leaf• orange and black stripes• hairs coming off of it• foul-tasting and poisonous• colors keep predators away	<ul style="list-style-type: none">• the colors are of this caterpillar are a defense mechanism because predators see the colors and know it's poisonous, so they stay away	<ul style="list-style-type: none">• “bright colors can also be warning colors” (page 58)• “many animals that are poisonous, bad tasting, or both are clad in warning colors. The colors say to predators, ‘Don’t even think of attacking me. You’ll be sorry.’” (page 58)• “A predator that licks, mouths, or bites an animal with warning colors often drops or spits out its prey.” (page 58)• “the orange-and-black-striped caterpillars of the cinnabar moth are poisonous, too.” (page 59)



Animal Defenses Research Journal:
Examining Visuals
(Completed, for Teacher Reference)

p. 78

Details from the Visual (explicit information)	My Inferences (what I infer about this animal)	Details in the Text That Support My Inferences (confirmed with explicit information)
<ul style="list-style-type: none">• blue sea wasp• four legs or tails• a sting from it can kill a person in less than 5 minutes	<ul style="list-style-type: none">• the sea wasp defends itself by stinging its enemies	<ul style="list-style-type: none">• “A venomous animal has a sting, spines, or specialized teeth attached to venom-making glands” (page 83)• “A group of ocean animals called cnidarians also use stings for predation and self-defense. This group includes corals, jellyfish, and anemones.” (page 87)• “The box jelly, also called a sea wasp, is among the most deadly ... its venom causes extreme pain” (page 87)



Animal Defenses Research Journal:
Examining Visuals
(Completed, for Teacher Reference)

p. 92

Details from the Visual (explicit information)	My Inferences (what I infer about this animal)	Details in the Text That Support My Inferences (confirmed with explicit information)
<ul style="list-style-type: none">• pink flower• black and yellow hover fly on flower• clear wings• hover fly looks just like a bumblebee	<ul style="list-style-type: none">• the hover fly tricks its predators into thinking it's a bumblebee so it doesn't get eaten	<ul style="list-style-type: none">• “to the toad, the insect’s color, sound, and behavior all warn ‘bumblebee.’” (page 91)• “The hover fly is a mimic—an animal that looks like another kind of animal and benefits from this resemblance.” (page 91)• “The hover fly gains protection from predators by looking like a bee” (page 91)



Animal Defenses Research Journal:
Determining the Main Idea
(Completed, for Teacher Reference)

Source: Animal Behaviors: Animal Defenses

Reread the text and identify the main idea for each section of the text.

<i>“Avoiding Danger”</i> pages 7–9, stopping at “Self-Defense”; last two paragraphs on page 21; and <i>“Escape Artists”</i> first two paragraphs on page 22	
Main Idea: Animals use many behaviors to defend themselves from predators.	Supporting Details:
<i>“Bad Smells, Bad Tastes, and Powerful Poisons”</i> pages 55–56, stopping at <i>“Poisonous Prey”</i>; pages 58–60	
Main Idea: Many animals that protect themselves with chemical defenses are brightly colored to warn predators to stay away.	Supporting Details:
<i>“Venomous Stings and Bites”</i> page 83; <i>“How Venom Works”</i> box on page 86; <i>“Stinging Tentacles”</i> pages 77–78	
Main Idea: Some animals protect themselves by injecting venom into their enemy.	Supporting Details:
<i>“Mimicry”</i> pages 91–94	
Main Idea: Some animals protect themselves by mimicking other animals.	Supporting Details:



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 6

Reading Scientific Text: Reading Closely about Animal Defense Mechanisms



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)	
<p>I can determine the main idea using specific details from the text. (RI.4.2)</p> <p>I can paraphrase portions of a text that are read aloud to me. (SL.4.2)</p> <p>I can document what I learn about a topic by taking notes. (W.4.8)</p>	
Supporting Learning Targets	Ongoing Assessment
<ul style="list-style-type: none">• I can identify details that support the main idea of a section of <i>Animal Behaviors: Animal Defenses</i>.• I can paraphrase and take notes on information presented by my peers in Jigsaw groups.	<ul style="list-style-type: none">• Determining the Main Idea note-catcher (pages 9 and 10 in <i>Animal Defenses</i> research journal)• Observation of participation during Jigsaw



Agenda	Teaching Notes
<ol style="list-style-type: none">Opening<ol style="list-style-type: none">Engaging the Reader: Quiz-Quiz-Trade (15 minutes)Reviewing Learning Targets (5 minutes)Work Time<ol style="list-style-type: none">Rereading an Informational Text: Identifying Supporting Details (25 minutes)Closing and Assessment<ol style="list-style-type: none">Jigsaw Share and Debrief (15 minutes)Homework<ol style="list-style-type: none">Animal Behavior: Animal Defenses Vocabulary	<ul style="list-style-type: none">This is the second lesson where students read sections from <i>Animal Behavior: Animal Defenses</i>. In the previous lesson, students worked in expert groups to examine a visual in their section of the anchor text and determine the main idea of that section. In this lesson, they will continue working in the same groups to identify details that support the main idea.Students will then regroup into Jigsaw triads, with one representative from each expert group in each Jigsaw triad. In triads, they will share the main idea of their section while their partners listen, paraphrase, and take notes on their Determining the Main Idea note-catchers. This provides additional practice in the long-term target “I can paraphrase portions of a text that is read aloud to me” (SL.4.2) as well as the long-term target “I can document what I learn about a topic by taking notes” (W.4.8).You may determine the triad groups in advance and strategically group students. One possible arrangement to consider would be to group ELLs who speak the same home language in the same group, allowing them to have more meaningful discussions and clarify points in their native language.In advance: Determine triad groups.Review: Jigsaw protocol, Quiz-Quiz-Trade, and Fist to Five in Checking for Understanding techniques (see Appendix).Post: Learning targets.



Lesson Vocabulary	Materials
support, alert (7), camouflage (21), self-defense, escape (22), chemical defense (55), irritate, substances (76), paralyze, mimic (91), imitating	<ul style="list-style-type: none">• Vocabulary word cards (for teacher use; see Teaching Notes)• <i>Animal Behavior: Animal Defenses</i> (one per student and one to display)<ul style="list-style-type: none">– Teacher model—“Avoiding Danger” (pages 7–9, stopping at “Self-Defense”; last two paragraphs on page 21; “Escape Artists” first two paragraphs on page 22)– Group 1—“Bad Smells, Bad Tastes, and Powerful Poisons” (page 55–top of 56, stopping at “Poisonous Prey”; pages 58–60)– Group 2—“Venomous Stings and Bites” (page 73; “How Venom Works” box on page 76; “Stinging Tentacles” pages 77–78)– Group 3—“Mimicry” (pages 91–94)• Animal Defenses Research Journal (from Lesson 1)• Determining the Main Idea note-catcher (pages 9 and 10 of Animal Defenses research journal; one per student and one to display)• Determining the Main Idea note-catcher (completed, for teacher reference)



Opening	Meeting Students' Needs
<p>A. Engaging the Reader: Quiz-Quiz-Trade (15 minutes)</p> <ul style="list-style-type: none"> Explain to students that you would like them to do a short activity called Quiz-Quiz-Trade using words from the Word Wall to help build their understanding of these words. Post the following directions for students: Quiz-Quiz-Trade: <ol style="list-style-type: none"> Find a partner. Read definition—Read your word's definition to your partner. Allow him or her to guess the word or ask for a hint. Give a hint—If your partner needs a hint, say one thing that helps you remember the meaning of this word. Allow your partner to guess and share your word. Switch—Have your partner read his or her definition and let you guess or receive a hint. Trade cards, and find a new partner. Repeat Steps 2 through 5. Review the directions and clarify or model process if necessary. Distribute Vocabulary word cards. Point out to students that the word is on one side of the card and the definition is on the other, and that there are several new words added from today's reading. Tell them to be sure to cover the word so their partner cannot see it when trying to guess the word. Give students 8 minutes to quiz and trade. Collect the word cards. 	
<p>B. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none"> Invite students to read the learning targets: <ul style="list-style-type: none"> “I can identify details that support the main idea of a section of <i>Animal Behaviors: Animal Defenses</i>.” “I can paraphrase and take notes on information presented by my peers in Jigsaw groups.” Underline the phrase <i>main idea</i>. Ask students to turn and talk with a partner, discussing: <ul style="list-style-type: none"> * “What is the main idea of a text?” Listen for responses like: “It's the most important idea from the text.” Circle the word <i>support</i> and ask them to share with their partner what they think the word <i>determine</i> means. Listen for responses like: “It means to give evidence for or verify.” Tell students that they will find details that support, or verify, the main idea of their section of the text. 	<ul style="list-style-type: none"> Discussing and clarifying the language of learning targets helps build academic vocabulary.



Work Time	Meeting Students' Needs
<p>A. Rereading an Informational Text: Identifying Supporting Details (25 minutes)</p> <ul style="list-style-type: none"> Remind students that they have been working with a section of <i>Animal Behavior: Animal Defenses</i> to determine the main idea. Explain that they will now have a chance to reread their section of the text with their expert groups to find details that support the main idea of their section. Invite students to gather into their expert groups and turn and talk about the following question: <ul style="list-style-type: none"> * “What is the main idea of your expert group’s section of <i>Animal Behavior: Animal Defenses</i>?” Tell students to open to pages 9 and 10 of their Animal Defenses Research Journal to the Determining the Main Idea note-catcher. Ask: <ul style="list-style-type: none"> * “How do we identify details that support the main idea of a section of the text?” Listen for students describing the process discussed in Lesson 4, saying something like: “We reread the text paragraph by paragraph, thinking about the main idea and looking for facts or details that the author used to explain that idea.” Tell students they should write the supporting details for their section only. Explain that they should leave the other sections blank for now. Review identifying details that support the main idea of “Avoiding Danger” (pages 7–9, the last two paragraphs on page 21, and the first two paragraphs on page 22) and going through the steps just discussed. Have students turn and talk after each step before discussing the step with the whole group. Model recording the supporting details in the appropriate box on the Determining the Main Idea note-catcher and ask students to do the same. Give students 15 minutes to work through the steps with their partners to identify details that support the main idea of their section. Circulate and support as needed. Listen for students using the steps and following class norms when working in a small group. Probe by asking: “How does that detail support the main idea?” or “Why does this detail better support the main idea than that detail?” Be sure to check in with students who gave a thumbs-down at the end of Work Time Part B in Lesson 5 and who expressed that they did not feel confident in meeting the target discussed in the Closing and Assessment of Lesson 4. After 15 minutes, invite students to show a thumbs-up if they were able to identify details that support the main idea of their section and a thumbs-down if they were not. Praise students showing a thumbs-up. Check in with students who gave a thumbs-down during the closing of the lesson. 	<ul style="list-style-type: none"> Consider offering selected shorter passages to specific groups based on the readiness and needs of the group. This provides an opportunity for students to read a complex text within the fourth-grade level span, but differentiates the length of the text, not the complexity. Graphic organizers and recording forms engage students more actively and provide the necessary scaffolding that is especially critical for learners with lower levels of language proficiency and/or learning. For students needing additional support, provide a partially filled-in graphic organizer. Provide ELLs with a sentence starter or frame to aid in language production. For example: <i>One idea that is repeated again and again is ...</i> or <i>A detail that supports the main idea of our section is ...</i> Some students may benefit from having key sections pre-highlighted in their texts. This will help them focus on small sections.



Closing and Assessment	Meeting Students' Needs
<p>A. Jigsaw Share and Debrief (15 minutes)</p> <ul style="list-style-type: none">• Explain to students that they will now regroup into triads, with one person from each expert Jigsaw group in each triad. Tell students they will be sharing the main idea of their section as well as the details their group identified as best supporting the main idea.• Invite students to use the following steps to share:<ol style="list-style-type: none">1. Group 1 representative starts. Group 2 and 3 representatives listen.2. Group 1 representative tells partners the main idea of his or her section. Group 2 and 3 representatives paraphrase the main idea.3. Group 2 and 3 representatives write the main idea of that section in the appropriate spot on their Determining the Main Idea note-catchers.4. Group 1 representative shares supporting details. Group 2 and 3 representatives paraphrase the supporting details.5. Group 2 and 3 representatives write the supporting details for that section in the appropriate spot on their note-catchers.6. Repeat the process for Group 2 representative's share and Group 3 representative's share.• Circulate and support as needed. Use this as an opportunity for formative assessment for the targets "I can paraphrase portions of a text that is read aloud to me," (SL.4.2) and "I can document what I learn about a topic by taking notes" (W.4.8).• Debrief using the Jigsaw protocol.• Use the Fist to Five Checking for Understanding technique to ask students to rate their participation in the Jigsaw. Tell students to show a fist if they did not participate, did not add to their group's conversation, or did not follow class norms. Tell students to show a five if they consistently participated, added to their group's conversation, stayed on task, and followed class norms.• Inform students that they will continue working with this article in the next lesson.	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Reread your section of <i>Animal Behavior: Animal Defenses</i> read in today's lesson. While you read, write down words that you do not know the meaning of. Choose one word you circled and try to figure out the definition of it. Write down how you figured out what the word meant as well.	



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 6

Supporting Materials



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Vocabulary Word Cards (Front):
Animal Defense Words

Teacher Directions: Type in six words and definitions that your class has recorded on the Word Wall or in the vocabulary section of the Animal Defenses research journal into the following template and make enough copies so that each student will have a card (most likely two or more sets).



Vocabulary Word Cards (Back):
Animal Defense Words Definitions

Teacher Directions: Type in six words and definitions that your class has recorded on the Word Wall or in the vocabulary section of the Animal Defenses research journal into the following template and make enough copies so that each student will have a card (most likely two or more sets).

Animal Defenses Research Journal:
Determining Main Ideas
(Completed, for Teacher Reference)

Source: Animal Behavior: Animal Defenses

Reread the text and identify the main idea for each section of the text.

“Avoiding Danger” (pages 7–9, stopping at “Self-Defense”; last two paragraphs on page 21; and “Escape Artists” first two paragraphs on page 22)

Main Idea:

Animals use many behaviors to defend themselves from predators.

Supporting Details:

“The black bands that run down the gazelles’ sides quiver, passing along the message: ‘Danger!’” (page 7)
 “being alert is the first step an animal takes to defend itself.” (page 9)
 “Most animals are born ‘knowing’ how to defend themselves.” (page 9)
 “Hiding, camouflage, and masking help animals avoid predators.” (page 21)
 “For many animals, this defense is escape.” (page 22)

“Bad Smells, Bad Tastes, and Powerful Poisons” (pages 55–56, stopping at “Poisonous Prey”; pages 58–60)

Main Idea:

Many animals that protect themselves with chemical defenses are brightly colored to warn predators to stay away.

Supporting Details:

“these chemicals may have a bad taste, a terrible smell, or both. They may irritate the skin as well as the senses. They also may be poisonous.” (page 55)
 “bright colors can also be warning colors ... the colors say to predators, ‘Don’t even think of attacking me. You’ll be sorry.’” (page 58)
 “the predator learns that it is a bad idea to attack this sort of prey. It is unlikely to go after another animal that looks like this disastrous meal.” (page 58)
 “ladybugs with bright red shells and black dots are also wearing warning colors. The bright pattern signals that the ladybug may sicken or kill a small animal that eats it.” (page 59)
 “Moths, butterflies, and caterpillars that are poor-tasting or poisonous have warning colors as well.” (page 60)

Animal Defenses Research Journal:
Determining Main Ideas
(Completed, for Teacher Reference)

Source: Animal Behavior: Animal Defenses

Reread the text and identify the main idea for each section of the text.

“Venomous Stings and Bites” (page 73; “How Venom Works” box on page 76; “Stinging Tentacles” pages 77–78)	
<p>Main Idea: Some animals protect themselves by injecting venom into their enemy.</p>	<p>Supporting Details: “a venomous animal has a sting, spines, or specialized teeth attached to venom-making glands” (page 73) “some venomous animals use venom to catch their own prey” (page 73) “many venomous animals ... are camouflaged. This helps them sneak up on prey.” (page 73) “the body of a venomous animal uses energy to make venom ... even an animal that makes venom only for self-defense is usually slow to use it. It is more likely to hide, flee, or warn a predator to stay away.” (page 76) “when an animal—either predator or prey—comes in contact with a tentacle with venomous nematocysts, the nematocysts launch their harpoons.” (page 77) </p>
“Mimicry” (pages 91–94)	
<p>Main Idea: Some animals protect themselves by mimicking other animals.</p>	<p>Supporting Details: “mimicry includes sounding, smelling, acting, or otherwise resembling another animal” (page 91) “an insect that looks and acts like a bee ... is not hiding. It is imitating a living thing that a predator could eat. At the same time, it warns the predator not to attack.” (page 91–92) “animals mimic their prey in order to hunt them” (page 93) “venomous animals mimic less harmful animals” (page 92) “other animals mimic to live inside other animals’ nests” (page 92) </p>



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 7

Mid-Unit Assessment: Reading about Caterpillars, Answering Questions, and Determining the Main Idea



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)	
<p>I can determine the main idea using specific details from the text. (RI.4.2)</p> <p>I can interpret information presented through charts or graphs. I can explain how that information helps me understand the text around it. (RI.4.7)</p> <p>I can determine the meaning of academic words or phrases in an informational text. (RI.4.4)</p> <p>I can determine the meaning of content words or phrases in an informational text. (RI.4.4)</p>	
Supporting Learning Targets	Ongoing Assessment
<ul style="list-style-type: none">• I can make inferences about caterpillar defense mechanisms by examining articles that include text and diagrams.• I can determine the main idea of a text on caterpillar defense mechanisms.• I can find the meanings of unfamiliar words to help me better understand “Award-Winning Survival Skills: How Animals Elude Prey.”	<ul style="list-style-type: none">• Mid-Unit 1 Assessment• Animal Defenses research journal glossary



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Reviewing Learning Targets (5 minutes)2. Work Time<ol style="list-style-type: none">A. Mid-Unit 1 Assessment: Answering Questions and Determining the Main Idea of a Text about Caterpillars (30 minutes)B. Rereading an Informational Text: A Closer Look at Words (15 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Reflect on Learning Targets: Tracking My Progress (10 minutes)4. Homework<ol style="list-style-type: none">A. Continue your independent reading.	<ul style="list-style-type: none">• This is the third lesson where students reread sections from <i>Animal Behavior: Animal Defenses</i>. In the previous lessons, students worked in expert Jigsaw groups to examine a diagram in their section of the anchor text, determine the main idea of their section, and identify details that support the main idea. In this lesson, students make meaning of unfamiliar words in their section of the text.• Students work in partners while figuring out the meaning of unknown words. You may wish to determine the partnerships in advance and strategically group students. One possible arrangement you may consider would be to partner ELLs who speak the same home language in the same group, allowing them to have more meaningful discussions and clarify points in their native language. Or, you may partner students who have demonstrated proficiency with this target with students who have been struggling so the proficient students may support the students who struggle.• In advance: Determine partnerships.• Post: Learning targets.



Lesson Vocabulary	Materials
progress, track, reflect	<ul style="list-style-type: none">• Mid-Unit 1 Assessment: Reading about Caterpillars, Answering Questions, and Determining the Main Idea (one per student)• Mid-Unit 1 Assessment: Reading about Caterpillars, Answering Questions, and Determining the Main Idea (answers, for teacher reference)• <i>Animal Behavior: Animal Defenses</i> (one per student)<ul style="list-style-type: none">– Teacher model—“Avoiding Danger” (page 7–9, stopping at “Self-Defense”; last two paragraphs on page 21; “Escape Artists” first two paragraphs on page 22)– Group 1—“Bad Smells, Bad Tastes, and Powerful Poisons” (page 55–top of 56, stopping at “Poisonous Prey”; pages 58–60)– Group 2—“Venomous Stings and Bites” (page 73; “How Venom Works” box on page 76; “Stinging Tentacles” pages 77–78)– Group 3—“Mimicry” (pages 91–94)• Close Readers Do These Things anchor chart (from Module 1, Unit 1, Lesson 3; or re-created in this module, Lesson 2)• Vocabulary Strategies anchor chart (from Lesson 3)• Equity sticks• Animal Defenses research journal (from Lesson 1; one per student)• Animal Defense Mechanisms glossary (page 26 of Animal Defenses research journal; from Lesson 3; one per student and one to display)• Sticky notes (two per student)• Animal Defense Mechanisms Word Wall (from Lesson 3)• Blank Word Wall cards (one index card for every two students)• Tracking My Progress, Mid-Unit 1 recording form (one per student and one to display)



Opening	Meeting Students' Needs
<p>A. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Tell students that today they will complete a formal assessment in which they will do on their own much of what they have been practicing:<ul style="list-style-type: none">– Examine and make inferences about a diagram in an informational text.– Read an informational text.– Identify and record the main idea in the graphic organizer.– Answer questions that are dependent on the text.• Remind them that they will need to refer to the text in order to answer the questions thoroughly.• Encourage the students to do their best. Let them know that this is a chance to show what they know and how much effort they are making to read carefully and identify important details in an informational text. This also is an opportunity to discover even more about animal defense mechanisms.• Ask the students to read the first two learning targets silently:<ul style="list-style-type: none">* “I can make inferences about caterpillar defense mechanisms by examining articles that include text and diagrams.”* “I can determine the main idea of a text on caterpillar defense mechanisms.”• Have them give a thumbs-up if they are clear on what they will be expected to do, a thumbs-sideways if they understand part but not all of what to do, and a thumbs-down if they are very unsure about what they should do. Address any clarifying questions before beginning the assessment.	<ul style="list-style-type: none">• Discussing and clarifying the language of learning targets helps build academic vocabulary.



Work Time	Meeting Students' Needs
<p>A. Mid-Unit 1 Assessment: Answering Questions and Determining the Main Idea of a Text about Caterpillars (30 minutes)</p> <ul style="list-style-type: none">• Distribute the Mid-Unit 1 Assessment: Reading about Caterpillars, Answering Questions, and Determining the Main Idea to each student. Address any clarifying questions.• Give students 30 minutes to complete the assessment.• While students are taking the assessment, circulate to monitor their test-taking skills. This is an opportunity to analyze students' behaviors while taking an assessment. Document strategies students are using during the assessment. For example, look for students annotating their text, using their graphic organizer to take notes before answering questions, and referring to the text as they answer questions.	<ul style="list-style-type: none">• If students receive accommodations for assessments, communicate with the cooperating service providers regarding the practices of instruction in use during this study as well as the goals of the assessment.• For some students, this assessment may require more than the 30 minutes allotted. Consider providing students time over multiple days if necessary.• Asking students to identify challenging vocabulary helps them monitor their understanding of a complex text. When students annotate the text by circling these words, it can also provide a formative assessment for the teacher.
<p>B. Rereading an Informational Text: A Closer Look at Words (15 minutes)</p> <ul style="list-style-type: none">• Explain to students that they will now have a chance to reread their section from <i>Animal Behavior: Animal Defenses</i> again and practice figuring out the meaning of challenging words. Remind and point out on the Close Readers Do These Things anchor chart that close readers read and reread texts many times in order to deeply understand a text.• Review the Vocabulary Strategies anchor chart and use equity sticks to call on students to read the strategies listed in the previous lesson. Invite students to turn and talk, asking:<ul style="list-style-type: none">* “What strategy do you use most often trying to figure out what a word means?”	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Cold call two or three students to share their partner's response.• Tell students that they now are going to practice some of these strategies while rereading <i>Animal Behavior: Animal Defenses</i> to determine the meaning of some challenging words.• Invite students to take out their homework from Lesson 6—a list of words that you do not know the meaning of, the definition of one word from that list, and an explanation for how you figured out what the word meant. Explain to students that they will choose at least three of these words to define and record in their Animal Defenses research journals.• Invite students to open to the Animal Defense Mechanisms glossary on page 26 in the back of their research journals. Remind students that glossaries are a text feature authors often use in nonfiction texts, and that they are found at the end of books. Also remind students that they are formatted so the words appear in alphabetical order. Ask:<ul style="list-style-type: none">* “What do we do when recording a word into the glossary of our research journals?”• Listen for responses like: “We will find the word we are defining in the glossary, then write the definition, then write the vocabulary strategy we used to determine the meaning of that word, and then draw a quick sketch or diagram showing what that word means.”• Explain that with a partner from their expert Jigsaw group, students will reread the text after they have determined and recorded the definitions of these words and talk with their partners about their understanding of the words. Post the following directions:<ol style="list-style-type: none">1. Find the meaning of at least three words you recorded for homework after Lesson 6.2. With your partners, determine the meaning of each word.3. Find the word in your glossary and write the definition, the strategy you used to figure out the meaning, and a sketch representing the word.4. Reread the text with your partners.5. Discuss the following questions: How has your understanding of these words changed? Which words are still confusing for you and why? Record your questions on a sticky note.	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• If necessary, review Steps 1 and 2 briefly by saying: “Let’s review how we did this with the word ‘predator.’ First we flipped through the glossary until we found it. Remember, it’s set up so the words are in alphabetical order, so since that starts with the letter P, it was toward the middle of the glossary. Then we wrote the definition of the word. We figured out that it meant an animal that lives by killing and eating another animal, so that’s what we wrote in the definition box. Then we thought about what vocabulary strategy we used to figure out the meaning of that word. We read on in the article and did some inferring to figure out what it meant. So I wrote ‘reading on in the text and infer’ in the ‘Vocabulary Strategy I Used to Learn This Word’ box. The last thing we did was a quick sketch showing what this word meant. I drew a sketch of an armadillo and a jaguar since that was an example from the article, and I drew an arrow pointing to the jaguar since that’s the predator in the sketch.”• Give students 10 minutes to look at least three words from their lists, record their definitions, strategy used, and sketch, and discuss their understanding. Circulate and support pairs as needed. Remind them to record their words at the end of their glossaries. If necessary, ask questions like: “How did you figure out the meaning of that word?” or “Are there any clues in the article that can help you figure out what that word means?” Listen for students discussing the meanings of the words and using strategies from the Vocabulary Strategies anchor chart when determining the meanings.• Cold call partners to share their definitions and visuals/notes for each word. Clarify the definition of each word if necessary.• Point out the Animal Defense Mechanisms Word Wall to students. Distribute one blank Word Wall card (index card) to each pair. Invite student pairs to choose a word they discussed to write on their Word Wall card and post to the Word Wall.	



Closing and Assessment	Meeting Students' Needs
<p>A. Reflect on Learning Targets: Tracking My Progress (10 minutes)</p> <ul style="list-style-type: none">• Congratulate students on their hard work on the assessment. Distribute the Tracking My Progress, Mid-Unit 1 recording form. Remind students that successful learners keep <i>track</i> and <i>reflect</i> on their own learning. Point out that students have been doing this informally during debriefs when they consider how well they are progressing toward targets.• Review Step 1 in the self-assessment and remind students that this is where you would like them to explain what the target means to them. For example, the first target uses the phrase “determine the main idea using specific details.” They should write what the target means “in their own words” by explaining what it means to figure out the main idea of a text and how details are used to support it.• Point out the second step, and explain that this is similar to the thumbs-up, -sideways, or -down that they have used in previous lessons. They should also explain why they think they “need more help,” “understand some,” or are “on the way,” and give examples. Consider giving students an example such as: “I circled that I need more help, because I can’t remember what the word <i>determine</i> means.”• Collect students’ self-assessments to use as formative assessment to guide instructional decisions.	<ul style="list-style-type: none">• Developing self-assessment and reflection supports all students, but research shows it supports struggling learners most.
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Continue your independent reading.	



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 7

Supporting Materials



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Hanging by a Thread

Hanging by a Thread

By Sharon T. Pochron, Ph.D.
Photos by Ignacio Castellanos, Ph.D.
Art by Linda Weller

**Caterpillars have
a trick to get out
of danger.**

**How do
they know
when to use it?**

A wasp crept toward a caterpillar on a leaf. Dr. Ignacio Castellanos of Mexico watched. He knew the wasp was a caterpillar predator, which meant it ate caterpillars. He wondered what the caterpillar would do. Would it do anything?

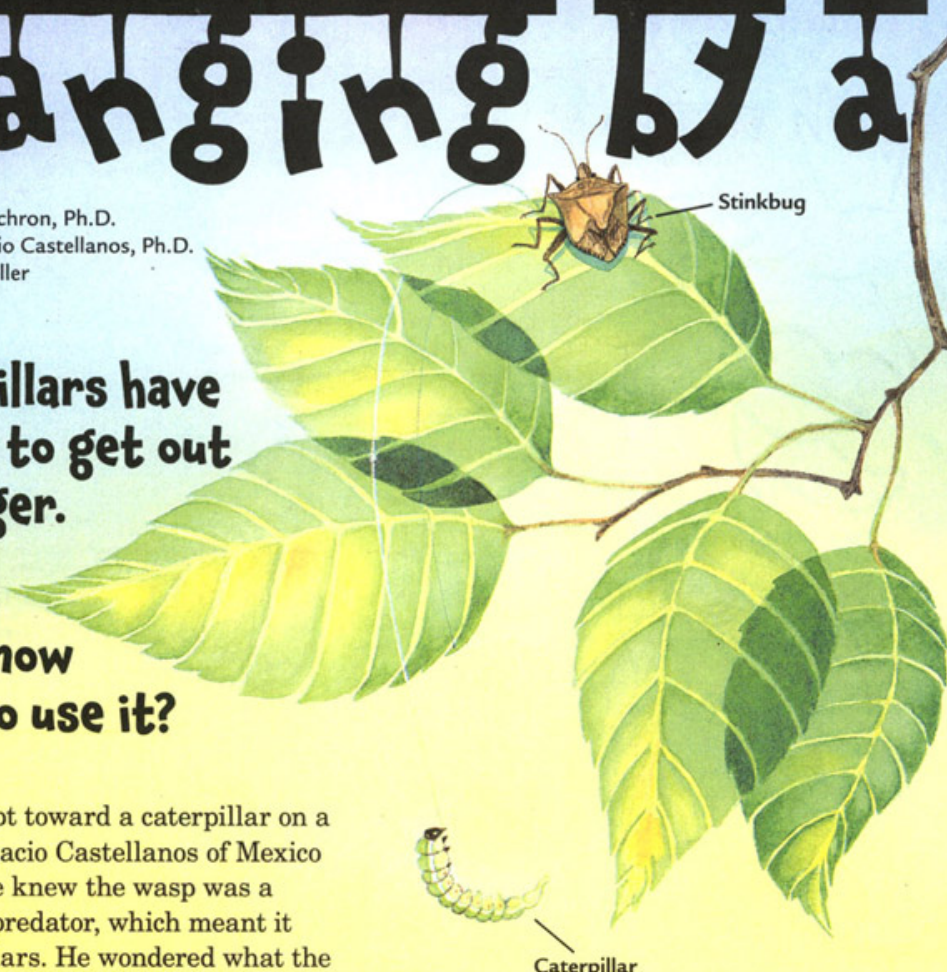
As the predator walked closer to the caterpillar, the caterpillar spun a silk thread and jumped. It hung from the leaf by its thread. The wasp did not know where the caterpillar went. The caterpillar was safe!

Knowing Without Seeing

Caterpillars cannot see, hear, or smell very well. Castellanos wondered how the caterpillar knew the predator was

approaching. He and Dr. Pedro Barbosa of Maryland wanted to find out. They thought that maybe the caterpillar could feel the leaf wiggle, or vibrate.

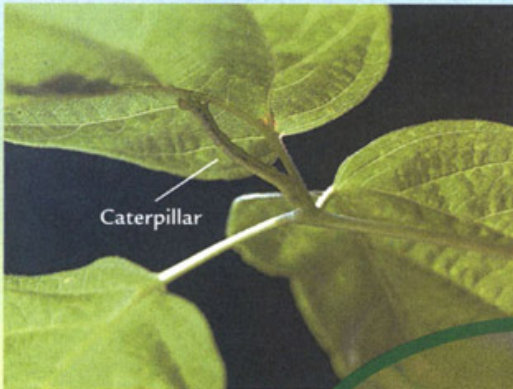
Wasps and stinkbugs eat caterpillars. When these insects walk on a leaf to eat a caterpillar, the leaf wiggles. But the wind, falling sticks, and insects that do not eat caterpillars might also wiggle the leaf. Could caterpillars tell the difference between something safe and something





Hanging by a Thread

Thread



The caterpillar above is walking normally. But when a wasp shakes the leaf, the caterpillar knows it must get away—fast!



dangerous? Or did they hang from a thread every time the leaf wiggled?

The scientists wanted to make the leaf vibrate and watch what the caterpillar did. First, they needed to know how to make the leaf vibrate. They used a special machine to record vibrations. The scientists noticed that wasps made one kind of vibration. Insects that do not eat caterpillars made another kind of vibration. Wind, falling twigs, and dropping water each made a different kind of vibration.

Caterpillars Are Wiggle-Wise


The scientists put caterpillars on leaves and used another machine to make the leaves vibrate. When the leaves shook the way a predator would shake them, caterpillars behaved as if a real predator were on the leaf. They spun threads and hung.

When the leaves shook as if the wind were blowing or rain were falling, caterpillars did nothing. When the leaves shook as if insects that do not eat caterpillars were walking on the leaves, the caterpillars ignored the shaking.

The scientists also found that caterpillars could tell the difference between kinds of predators. Both stinkbugs and wasps have to be very close to a

caterpillar to see it, but stinkbugs must be even closer.

So when stinkbugs were on the leaf, caterpillars could hang from short threads and not be noticed. When wasps were on the leaf, caterpillars spun longer threads to hang farther down—and out of sight.

So now we know that caterpillars can tell dangerous wiggles from other kinds of wiggles. People might have to pay attention to what's in front of their nose, but caterpillars have to pay attention to what vibrates under their feet. 

NOVEMBER 2009

Highlights

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**Mid-Unit 1 Assessment: Reading about Caterpillars,
Answering Questions, and Determining the Main Idea**

Name:

Date:

Learning Targets Assessed:

I can determine the main idea using specific details from the text. (RI.4.2)

I can interpret information presented through charts or graphs. I can explain how that information helps me understand the text around it. (RI.4.7)

I can determine the meaning of academic words or phrases in an informational text. (RI.4.4)

I can determine the meaning of content words or phrases in an informational text. (RI.4.4)

Part 1: Use the text to answer the questions below.

1. Look at the diagram on the first page of “Hanging by a Thread.”
2. In the first column of the graphic organizer below, record three details you see in the diagram.
3. In the second column of the graphic organizer, record the inferences you make based on these details.

****NOTE: Do NOT complete the right-hand column of the graphic organizer yet!**



Mid-Unit 1 Assessment: Reading about Caterpillars,
Answering Questions, and Determining the Main Idea

****NOTE: Do NOT complete the right-hand column of the graphic organizer yet!**

Details from the Diagram (explicit information)	My Inferences (what I infer about caterpillars)	Details in the Text That Support My Inferences (confirmed with explicit information) <small>*NOTE: Do NOT complete this right-hand column of the graphic organizer until you have done Steps 1–3 and have read the text in Part 2</small>
1.)	1.)	1.)
2.)	2.)	2.)
3.)	3.)	3.)

Mid-Unit 1 Assessment: Reading about Caterpillars,
Answering Questions, and Determining the Main Idea

Part 2

Directions

1. Read “Hanging by a Thread” for the gist.
2. In the right-hand column of the graphic organizer above, record details from the text that support your inferences in the middle column.
3. Reread the text to answer the following questions.

1. According to “Hanging by a Thread,” how do caterpillars know to spin a thread and jump off a leaf?
 - a. Caterpillars see the leaf wiggle from the predator moving.
 - b. Caterpillars hear the leaf wiggle from the predator moving.
 - c. Caterpillars smell their predators on the leaf.
 - d. Caterpillars feel the leaf wiggle from the predator moving.
2. According to “Hanging by a Thread,” what best describes what Dr. Castellanos and Dr. Barbosa did to find out how caterpillars knew the predator was approaching?
 - a. They observed wasps approach caterpillars.
 - b. They recorded leaves vibrating.
 - c. They put caterpillars on leaves and used a machine to make the leaves vibrate in different ways.
 - d. They observed stinkbugs approach caterpillars.
3. Which line from the text is the best evidence to support the answer to Question 2?
 - a. “So when stinkbugs were on the leaf, caterpillars could hang from short threads and not be noticed.”
 - b. “When the leaves shook the way a predator would shake them, caterpillars behaved as if a real predator were on the leaf.”
 - c. “First, they needed to know how to make the leaf vibrate.”
 - d. “He knew the wasp was a caterpillar predator, which meant it ate caterpillars.”



**Mid-Unit 1 Assessment: Reading about Caterpillars,
Answering Questions, and Determining the Main Idea**

4. In the section “Knowing without Seeing,” the text says, “The scientists wanted to make the leaf vibrate and watch what the caterpillar did.” Which word is a synonym for the word *vibrate*?
- a. shake
 - b. hang
 - c. dangerous
 - d. be still
5. Which line from the text is the best evidence to support the answer to Question 4?
- a. “It hung from the leaf by its thread.”
 - b. “When these insects walk on a leaf to eat a caterpillar, the leaf wiggles.”
 - c. “Could caterpillars tell the difference between something safe and something dangerous?”
 - d. “They used a special machine to record vibrations.”



Mid-Unit 1 Assessment: Reading about Caterpillars,
Answering Questions, and Determining the Main Idea

**Part 3: Reread the text and determine the main idea for each section of the text.
Identify two details that support the main idea for each section.**

<i>Opening</i>	
Main Idea:	Supporting Details:
<i>Knowing without Seeing</i>	
Main Idea:	Supporting Details:
<i>Caterpillars Are Wiggle-Wise</i>	
Main Idea:	Supporting Details:

**Mid-Unit 1 Assessment: Reading about Caterpillars,
Answering Questions, and Determining the Main Idea**
(Answers, for Teacher Reference)

Learning Targets Assessed:

I can determine the main idea using specific details from the text. (RI.4.2)

I can interpret information presented through charts or graphs. I can explain how that information helps me understand the text around it. (RI.4.7)

I can determine the meaning of academic words or phrases in an informational text. (RI.4.4)

I can determine the meaning of content words or phrases in an informational text. (RI.4.4)

Part 1: Use the text to answer the questions below.

1. Look at the diagram on the first page of “Hanging by a Thread.”
2. In the first column of the graphic organizer below, record three details you see in the diagram.
3. In the second column of the graphic organizer, record the inferences you make based on these details.

****NOTE: Do NOT complete the right-hand column of the graphic organizer yet!**

Details from the Diagram (explicit information)	My Inferences (what I infer about caterpillars)	Details in the Text That Support My Inferences (confirmed with explicit information) <small>*NOTE: Do NOT complete this right-hand column of the graphic organizer until you have done Steps 1–3 and have read the text in Part 2</small>
<p>1.) A stinkbug is on the leaf.</p> <p>2.) A caterpillar is on the leaf.</p> <p>3.) A white thread hanging from leaf to caterpillar</p>	<p>1.) The stinkbug wants to eat the caterpillar.</p> <p>2.) The stinkbug is a caterpillar’s predator.</p> <p>3.) Caterpillars swing from a white thread to get away from predators.</p>	<p>1.) “the caterpillar spun a silk thread and jumped. It hung from the leaf by its thread.”</p> <p>2.) “the caterpillar was safe!”</p> <p>3.) “they spun threads and hung”</p>



Mid-Unit 1 Assessment: Reading about Caterpillars,
Answering Questions, and Determining the Main Idea
(Answers, for Teacher Reference)

Part 2

Directions

1. Read “Hanging by a Thread” for the gist.
2. In the right-hand column of the graphic organizer above, record details from the text that support your inferences in the middle column.
3. Reread the text to answer the following questions.

1. According to “Hanging by a Thread,” how do caterpillars know to spin a thread and jump off a leaf?
 - a. Caterpillars see the leaf wiggle from the predator moving.
 - b. Caterpillars hear the leaf wiggle from the predator moving.
 - c. Caterpillars smell their predators on the leaf.
 - d. Caterpillars feel the leaf wiggle from the predator moving.**
2. According to “Hanging by a Thread,” what best describes what Dr. Castellanos and Dr. Barbosa did to find out how caterpillars knew the predator was approaching?
 - a. They observed wasps approach caterpillars.
 - b. They recorded leaves vibrating.
 - c. They put caterpillars on leaves and used a machine to make the leaves vibrate in different ways.**
 - d. They observed stinkbugs approach caterpillars.
3. Which line from the text is the best evidence to support the answer to Question 2?
 - a. “So when stinkbugs were on the leaf, caterpillars could hang from short threads and not be noticed.”
 - b. “When the leaves shook the way a predator would shake them, caterpillars behaved as if a real predator were on the leaf.”**
 - c. “First, they needed to know how to make the leaf vibrate.”
 - d. “He knew the wasp was a caterpillar predator, which meant it ate caterpillars.”



**Mid-Unit 1 Assessment: Reading about Caterpillars,
Answering Questions, and Determining the Main Idea**
(Answers, for Teacher Reference)

4. In the section “Knowing without Seeing,” the text says, “The scientists wanted to make the leaf vibrate and watch what the caterpillar did.” Which word is a synonym for the word *vibrate*?
- a. shake**
 - b. hang
 - c. dangerous
 - d. be still
5. Which line from the text is the best evidence to support the answer to Question 4?
- a. “It hung from the leaf by its thread.”
 - b. “When these insects walk on a leaf to eat a caterpillar, the leaf wiggles.”**
 - c. “Could caterpillars tell the difference between something safe and something dangerous?”
 - d. “They used a special machine to record vibrations.”

Mid-Unit 1 Assessment: Reading about Caterpillars,
Answering Questions, and Determining the Main Idea
(Answers, for Teacher Reference)

**Part 3: Reread the text and determine the main idea for each section of the text.
Identify two details that support the main idea for each section.**

<i>Opening</i>	
Main Idea: Dr. Ignacio Castellanos observed what a caterpillar did to avoid a wasp.	Supporting Details: <ul style="list-style-type: none"> • Dr. Ignacio Castellanos of Mexico watched.” • “As the predator walked closer to the caterpillar, the caterpillar spun a silk thread and jumped
<i>Knowing without Seeing</i>	
Main Idea: Scientists wondered if caterpillars can feel leaves vibrate when a predator comes close and hang from a thread to protect themselves.	Supporting Details: <ul style="list-style-type: none"> • “Caterpillars cannot see, hear, or smell very well.” • “The scientists wanted to make the leaf vibrate and watch what the caterpillar did.”
<i>Caterpillars Are Wiggle-Wise</i>	
Main Idea: Caterpillars can tell what is making the leaf shake from the way it vibrates.	Supporting Details: <ul style="list-style-type: none"> • “When the leaves shook the way a predator would shake them, caterpillars behaved as if a real predator were on the leaf.” • “The scientists also found that caterpillars could tell the difference between kinds of predators.”

Tracking My Progress Mid-Unit 1

Name: _____

Date: _____

Learning target: I can determine the main idea using specific details from the text.

1. The target in my own words is:

2. How am I doing? Circle one.

I need more help to learn this



I understand some of this



I am on my way!



3. The evidence to support my self-assessment is:



Tracking My Progress Mid-Unit 1

Learning target: I can interpret information presented through charts or graphs. I can explain how that information helps me understand the text around it.

1. The target in my own words is:

2. How am I doing? Circle one.

I need more help to learn this



I understand some of this



I am on my way!



3. The evidence to support my self-assessment is:



Tracking My Progress Mid-Unit 1

Learning target: I can determine the meaning of unfamiliar words in an informational text.

1. The target in my own words is:

2. How am I doing? Circle one.

I need more help to learn this



I understand some of this



I am on my way!



3. The evidence to support my self-assessment is:



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 8

Preparing for a Text-Based Discussion: Science Talk about Animal Defenses



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)	
I can effectively engage in discussions with diverse partners about fourth-grade topics and texts. (SL.4.1) <ul style="list-style-type: none">a. I can prepare myself to participate in discussions.a. I can draw on information to explore ideas in the discussion.	
Supporting Learning Targets	Ongoing Assessment
I can effectively participate in a Science Talk about animal defense mechanisms. <ul style="list-style-type: none">a. I can prepare for the Science Talk by using evidence from animal defense mechanism texts.	<ul style="list-style-type: none">• Animal Defense Mechanisms: Preparing for a Science Talk note-catcher



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Engaging the Reader: Quiz-Quiz-Trade (15 minutes)2. Work Time<ol style="list-style-type: none">A. What Is a Science Talk? (10 minutes)B. Preparing Evidence and Questions for the Science Talk (30 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Reflecting on the Learning Targets (5 minutes)4. Homework<ol style="list-style-type: none">A. Review notes for the Science Talk.	<ul style="list-style-type: none">• In this lesson, students prepare for the first of two Science Talks in this unit. This series of Science Talks helps students make progress towards SL.4.1, which is formally assessed in Module 3.• Science Talks are discussions about big questions or scientific ideas. They provide students the opportunity to collectively theorize and build on each other's ideas. These talks provide a window on student's thinking that helps teachers figure out what students really know and what their misconceptions may be.• Students will need graphic organizers and texts from Lessons 2–7 to prepare for the Science Talk.• In the opening of this lesson, students use the Quiz-Quiz-Trade protocol to interact with the vocabulary words from this unit in a new way. This routine will be repeated throughout the module for students to deepen their understanding of important vocabulary they will use in their performance task.• In advance:<ul style="list-style-type: none">– Review Science Talks, Quiz-Quiz-Trade protocol, and Fist to Five in Checking for Understanding techniques (see Appendix).– Prepare sets of Vocabulary word cards using Word Wall words (see supporting materials) so every student has a card.– Hang chart paper for Science Talk Norms anchor chart.• Post: Learning targets.

Lesson Vocabulary	Materials
Science Talk, effectively, participate, prepare, evidence	<ul style="list-style-type: none">• Vocabulary word cards (see Teaching Notes and supporting materials)• Science Talk Norms anchor chart (new; teacher-created)• Preparing for a Science Talk note-catcher (page 11 of the Animal Defenses research journal; one per student and one to display)• Preparing for a Science Talk note-catcher (completed, for teacher reference)



Opening	Meeting Students' Needs
<p>A. Engaging the Reader: Quiz-Quiz-Trade (15 minutes)</p> <ul style="list-style-type: none">• Tell students that today they will discuss the question: “How do animals’ bodies help them survive?” Explain that now that they have read about animal defense mechanism, they should have new thoughts or ideas related to this question. Explain that today they will prepare for this talk by reviewing the vocabulary that they have collected related to animal defenses. Remind students that they have been recording vocabulary words into their Animal Defenses research journals and that the class has also been building a Word Wall with these terms.• Tell students they will do a short activity called Quiz-Quiz-Trade using words from the Word Wall to help build their understanding of these words. Remind students that they practiced vocabulary with this activity in Lesson 6. Review the directions: Quiz-Quiz-Trade:<ol style="list-style-type: none">1. Find a partner.2. Read definition—Read your word’s definition to your partner. Allow him or her to guess the word or ask for a hint.3. Give a hint—If your partner needs a hint, say one thing that helps you remember the meaning of this word. Allow your partner to guess and share your word.4. Switch—Have your partner read his or her definition and let you guess or receive a hint.5. Trade cards and find a new partner. Repeat Steps 2 through 5.• Ask students to read directions and clarify or model the process if necessary. Distribute Vocabulary word cards. Point out to students that the word is on one side of the card and the definition is on the other. Tell them to be sure to cover the word so their partner cannot see it when trying to guess the word.• Give students 8 minutes to quiz and trade. Collect the Vocabulary word cards (which will be used in a different way in Lesson 9).	



Work Time	Meeting Students' Needs
<p>A. What Is a Science Talk? (10 minutes)</p> <ul style="list-style-type: none">• Post and read the learning targets:<ul style="list-style-type: none">* “I can effectively participate in a Science Talk about animal defense mechanisms.”* “I can prepare for the Science Talk by using evidence from animal defense mechanism texts.”• Introduce the Science Talk by saying that researchers share information they have learned with others and ask questions of other experts. This helps experts build their understanding by sharing their own thoughts as well as learn from what others say. Experts in the real world talk all the time to expand their thinking.• Remind students of all the learning they have done so far about animals and their defense mechanisms. Tell them that they will have the opportunity to use what they’ve learned in a Science Talk. Share today’s first learning target for the Science Talk. “I can effectively participate in a Science Talk about animal defense mechanisms.” Ensure that students understand the meaning of the words <i>effectively</i> and <i>participate</i>.• Inform students that a Science Talk is a discussion about big or important questions scientists have. While scientists discuss these big questions with one another, it is important for them to create a set of rules, or norms, that they will all follow so everyone’s ideas can be heard and considered.• Start a Science Talk Norms anchor chart. Focus students’ attention on the phrase <i>effectively participate</i>. Ask students what it looks/sounds like to effectively participate with peers, listening for ideas such as: “Wait my turn to speak, so I am heard; don’t shout/speak too loudly; make sure everyone gets a turn to speak; no one person does most/all of the speaking; use information from text to support my ideas,” etc. Add students’ ideas to the anchor chart.	<ul style="list-style-type: none">• Science Talks help your ELLs process their thinking verbally and learn from others’ thoughts.• Encourage students to agree or disagree using thumbs-ups or thumbs-down. This can help students who struggle with language to process what their peers are saying.• Consider drawing visuals next to each norm, giving ELLs another access point to understand the text. Providing visual models of academic vocabulary supports language development and comprehension.



Work Time (continued)	Meeting Students' Needs
<p>B. Preparing Evidence and Questions for the Science Talk (30 minutes)</p> <ul style="list-style-type: none"> • Ask the class the Science Talk question: “How do animals’ bodies help them survive?” During this talk, students will begin to deepen their understanding of how animals’ bodies and behaviors help them survive. • Refer to the second learning target for today: “I can prepare for the Science Talk by using evidence from animal defense mechanism texts” and explain the importance of experts sharing specific evidence from texts in their discussions with others. • Show the Preparing for a Science Talk note-catcher on page 11 of their research journals and invite students to open to it. Point out the different sections for recording notes on this page. Indicate to students that they will only be taking notes on the first section (T-chart) of the recording form labeled “Preparation.” The last three sections will be saved for the actual Science Talk as well as for teacher feedback and goal setting when the Science Talk is over. • Briefly model how to fill in the left column titled “When I read or see that (evidence) ...” and use evidence from texts used in learning about animal defense mechanisms. Say something like: “We’ll use our Animal Defenses research journal and the texts we’ve read in this unit to collect evidence that answers the Science Talk question. I’ll start by flipping to the first Listening Closely note-catcher” (turn to page 2 of the research journal). “I’ll skim this page to see if there is any evidence I can use that will answer the Science Talk question. I remember that this text was about how spiders use venom to survive—I’ll write it in the first box of my note-catcher: ‘most spiders are venomous.’ I’ll also note where I found this information—it was on page 8 of <i>Venom</i>, so I’ll write that after my note.” • Explain to students that the right column labeled “It makes me think that animals’ bodies help them survive by ...” is a space for them to justify their facts from the left column. Again, briefly model how to record an example of what could be written in the right column. Say something like: “So, how does the venom help spiders survive? I think that it paralyzes or kills the spiders’ prey and its enemies. So I’ll write that in this box.” • Remind students that they will only be recording important facts about their animal’s body that help it survive and why they think the fact is accurate in the T-chart in the first section of the Preparing for a Science Talk note-catcher. Explain that the second section, “My Science Talk Notes: Ideas and Questions,” will be used during the Science Talk and needs to be left blank until the class begins the discussion in Lesson 9. • Give students 20 minutes to complete their first section of the Preparing for a Science Talk note-catcher. Confer with the class as necessary, and remind them to use specific evidence from the text to support their thinking. 	<ul style="list-style-type: none"> • When reviewing the graphic organizers or recording forms, consider using a document camera to visually display the document for students who struggle with auditory processing. • Providing models of expected work supports all students, especially challenged learners. • During Work Time B, you may want to pull a small group of students to support in finding evidence from their notes. Some students will need more guided practice before they are ready for independent work. • Allow ELLs and other students to use pictures and symbols as necessary on their recording forms.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Circulate and check in with students as they work independently. To ensure that students use specific evidence from texts they've read, ask them questions like: "Where in the text did you find that fact?" or "How do you know that fact helps answer our question, 'How do animals' bodies help them survive?'" Encourage them to record page numbers and text titles with their evidence so they can easily refer to it if needed during the Science Talk.	
Closing and Assessment	Meeting Students' Needs
<p>A. Reflecting on the Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Invite students to gather together with their Preparing for a Science Talk note-catcher. Ask them to look over their notes and decide how prepared they feel for tomorrow's Science Talk using the Fist to Five assessment strategy.<ul style="list-style-type: none">– Fist—"I am completely confused about what I'm supposed to do and am not prepared at all!"– One finger—"I kind of know what I'm doing but still need more support and/or time."– Two fingers—"I'm getting there. I know what I need to do, I just need a little more support and/or time."– Three fingers—"I'm almost there."– Four fingers—"I'm feeling really good about tomorrow's Science Talk."– Five fingers—"I'm ready to do the Science Talk right now! Let's go!"	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Review notes for the Science Talk.<ul style="list-style-type: none">– If you rated yourself at a three or less on the Fist to Five, reread your note-catchers and add more information in your Preparing for a Science Talk note-catcher in order to be better prepared for the Science Talk.– If you rated yourself at a four or five on the Fist to Five, take some time tonight to review your notes on Preparing for a Science Talk note-catcher for the Science Talk.	



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 8

Supporting Materials



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Vocabulary Word Cards (Front):
Animal Defense Words

Teacher Directions: Copy the following words and their definitions front to back and make enough copies so that each student will have a card (3 to 4 sets).

defense mechanism	mimicry
predator	threaten
prey	venom
habitat	survive



Vocabulary Word Cards (Back):
Animal Defense Words

Teacher Directions: Copy the following words and their definitions front to back and make enough copies so that each student will have a card (3 to 4 sets).

-traits or behaviors that protect animals	-defense of looking like another animal
-to pull out	-in danger
to do something wild with fear	-toxin that is injected with a stinger, fang, or spine
-a place where an animal lives	-to live



Animal Defenses Research Journal:
Preparing for a Science Talk
(Completed, for Teacher Reference)

Question: How do animals' bodies help them survive?

Preparation: Look back in your Animal Defenses research journal and texts about animal defense mechanisms to find evidence to help you answer the Science Talk question.

When I read or see that (evidence) ...	It makes me think that animals' bodies help them survive by ...
(Example) most spiders are venomous (<i>Venom</i> page 8)	(Example) I think that the venom paralyzes or kills the spider's prey and enemies.
the mimic octopus mimics other creatures to turn off predators ("Award-Winning Survival Skills: How Animals Elude Prey")	I think that since the mimic octopus can change to look like other dangerous animals, its enemies probably stay away from them because they think the octopus is dangerous and will poison or hurt them.
the three-banded armadillo rolls into a ball ("Award-Winning Survival Skills: How Animals Elude Prey")	I think that it rolls into a ball to protect the parts of its body that don't have a shell—its head, legs, and tail. By rolling into a ball, these parts are under its hard armor and protected from its enemies.
"bright colors can also be warning colors" (<i>Animal Behavior: Animal Defenses</i> page 58)	I think that the colors warn predators that the animal is dangerous, so they learn to stay away from it.



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 9

Text-Based Discussion: Science Talk about Animal Defenses



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can effectively engage in discussions with diverse partners about fourth-grade topics and texts. (SL.4.1)

- a. I can draw on information to explore ideas in the discussion.
- b. I can follow our class norms when I participate in a conversation.
- c. I can ask questions that are on the topic being discussed.
- c. I can connect my questions and responses to what others say.

Supporting Learning Targets

- I can effectively participate in a Science Talk about animal defense mechanisms.
 - b. I can ask questions so I am clear about what is being discussed.
 - c. I can ask questions on the topic being discussed.
 - d. I can follow our class norms when I participate in a conversation.
- I can observe others participating in a Science Talk.

Ongoing Assessment

- Preparing for a Science Talk note-catcher



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Engaging the Reader: Connecting Key Vocabulary: Interactive Word Wall (10 minutes)B. Reviewing Learning Targets (5 minutes)2. Work Time<ol style="list-style-type: none">A. Preparing for a Science Talk (10 minutes)B. Conducting the Science Talk—Round 1 (15 minutes)C. Conducting the Science Talk—Round 2 (15 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Debrief and Review Homework (5 minutes)4. Homework<ol style="list-style-type: none">A. Complete the K and W columns of the Millipede Defense Mechanisms: KWL chart on page 13 of your research journal.	<ul style="list-style-type: none">• Science Talks provide students the opportunity to collectively theorize and build on each other's ideas. These talks provide a window on student's thinking that can help teachers figure out what students really know and what their misconceptions may be.• Because this lesson is an introduction to the Science Talk for students, it may take longer than 60 minutes to establish norms for the Science Talk, as well as complete both rounds of the Science Talk protocol. Consider breaking this lesson into two class periods if your students need more time to complete each round of the protocol.• The structure of this Science Talk follows the Fishbowl protocol with two concentric circles, one observing the other as they participate in the Science Talk. The students are paired with a Science Talk partner. Consider intentionally partnering students in heterogeneous partnerships.• Students will need access to all graphic organizers and texts from Lessons 2–7 to use during the protocol as they justify their answers with evidence from their research. In Lesson 8, students were asked to record the specific texts connected with the facts on their Preparing for a Science Talk graphic organizer as they prepared for the Science Talk. However, some students may need to refer to the actual text during the protocol as questions arise during the discussion.• At the conclusion of the Science Talk, students set goals teacher feedback from their peers and the teacher to set goals. In Lesson 13, students will use your feedback on their performance during the Science Talk (written on their note-catchers) to improve their performance during their next Science Talk. Be sure to complete feedback on this Science Talk for students by Lesson 13.• This lesson opens with a vocabulary activity called Interactive Word Wall, sometimes called vocabulary concept mapping. In this activity, students make connections and explain relationships between different vocabulary words they have studied on a given topic. This helps them to better understand the meaning of the individual words and continue to build broader conceptual understanding of the topic.• Students will be in groups of four to participate in the Interactive Word Wall portion of this lesson.• In advance: Make enough complete sets of the Vocabulary Note cards (from Lesson 6) so that each group can have a complete set. Also write the directions listed in the supporting materials of this lesson on a piece of chart paper or on the board.• Review: Science Talk, Interactive Word Wall, and Fishbowl protocols (see Appendix).• Post: Learning targets.



Lesson Vocabulary	Materials
effectively, participate	<ul style="list-style-type: none">• Vocabulary word cards (from Lesson 8; one set per group of four)• Interactive Word Wall Directions (for teacher reference)• Document camera• Interactive Word Wall symbols (one set per group of four)• Equity sticks• Science Talk Norms anchor chart (from Lesson 8)• Preparing for a Science Talk note-catcher (page 11 of the Animal Defenses research journal; from Lesson 8; one per student and one to display)• Preparing for a Science Talk Notes and Goals sheet (page 12 of the Animal Defenses research journal; one per student and one to display)• Participating in a Science Talk anchor chart (new; teacher-created)• Sticky notes (three to four per student)• Science Talk Criteria checklist (one for teacher reference)• Millipede Defense Mechanisms: KWL chart (one per student and one to display; page 13 in Animal Defenses research journal)



Opening	Meeting Students' Needs
<p>A. Engaging the Reader: Connecting Key Vocabulary: Interactive Word Wall (10 minutes)</p> <ul style="list-style-type: none">• Tell students they will use the Vocabulary word cards (from Lesson 8) they used in the previous lesson for Quiz-Quiz-Trade to participate in an activity called Interactive Word Wall. Explain further that the purpose of this activity is to help them make connections between the meanings of vocabulary words related to animal defense mechanisms.• Place students in groups of four. Post or display and review the Interactive Word Wall directions:<ol style="list-style-type: none">1. Place vocabulary word cards and arrows face-up in the middle of your group space.2. Take turns selecting one word to connect with another.3. Explain your connection to the group each time you take a turn.4. It is fine to move words or connect more than one word with another.5. Continue taking turns until you have connected every word to some other word.• Briefly model for students how to make and explain a connection. Use the document camera (or magnets on the board) to model something like the following: “I am going to connect the word <i>alert</i> to the word <i>escape</i>, because if an animal is alert and hears a predator coming, it has time to escape.” Emphasize each step of the directions, and be sure that students understand that words can be connected in multiple ways.• Distribute a set of Vocabulary word cards with Interactive Word Wall symbols to each group. Give groups 10 minutes to make connections. If they finish early, encourage them to start again and try to make new connections with their words.• Ask each group to share one connection they made between words and why. Ask: “Why is it important for readers to make connections between words? How does it help us to become better readers?” Have groups discuss briefly. Then use equity sticks to cold call a few students to share out.• Collect Vocabulary word cards.	<ul style="list-style-type: none">• For ELLs and other students needing additional support, consider predetermining the words and giving students time to discuss with a partner what they will say during a protocol-based conversation.• Consider underlining or drawing a box around the vocabulary words in the learning targets to help struggling readers focus on those key words.



Opening (continued)	Meeting Students' Needs
<p>B. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Ask students to read the first learning target: “I can effectively participate in a Science Talk about animal defense mechanisms.” Focus students’ attentions on the phrase <i>effectively participate</i>. Ask students what it looks/sounds like to effectively participate with peers, listening for ideas such as: “Wait my turn to speak, so I am heard; don’t shout/speak too loudly; make sure everyone gets a turn to speak; no one person does most/all of the speaking; use information from text to support my ideas,” etc. Add students’ ideas to a Science Talk Norms anchor chart.• Ask the students to read the first two supporting targets for today’s lesson: “I can ask questions so I am clear about what is being discussed.” and “I can ask questions on the topic being discussed.” Ask students what they think is the difference between these two targets. Listen for things like: “The first one is asking me to make sure I’m understanding what is being talk about by everyone during the Science Talk,” and “The second one is asking me to ask questions during the Science Talk, not just listen to other people talk.”	



Work Time	Meeting Students' Needs
<p>A. Preparing for a Science Talk (10 minutes)</p> <ul style="list-style-type: none">• Remind students that a Science Talk is a discussion about big or important questions scientists have. While scientists discuss these big questions with one another, it is important for them to create a set of rules, or norms, that they will all follow so everyone's ideas can be heard and considered.• Explain that before they can participate in the Science Talk today, they need to spend a few minutes reviewing the notes they made on their Preparing for a Science Talk note-catcher in Lesson 8. Give the students 3–5 minutes to review their notes for the Science Talk on page 12 of their research journals.	<ul style="list-style-type: none">• Science Talks help your ELLs process their thinking verbally, and learn from the thoughts of others.• When reviewing the graphic organizers or recording forms, consider using a document camera to display the document for students who struggle with auditory processing.• Encourage students to agree or disagree using thumbs-ups or thumbs-down. This can help students who struggle with language to process what their peers are saying.• Consider drawing visuals next to each norm, giving ELLs another access point to understand the text.



Work Time (continued)	Meeting Students' Needs
<p>B. Conducting the Science Talk—Round 1 (15 minutes)</p> <ul style="list-style-type: none"> • Gather students on the rug. Remind them to bring their research journals with the Preparing for a Science Talk note-catcher and the Preparing for a Science Talk Notes and Goals sheet on pages 9 and 10. Display the Participating in a Science Talk anchor chart for students to see. Briefly review the anchor chart with students, and answer any clarifying questions. • Explain that they today they will talk to each other about what they have been learning. Explain that this will not be the same kind of conversation that they might have on the playground or in other times during the day. Ask: <ul style="list-style-type: none"> * “Why might this conversation be different?” • Listen for responses like: <ul style="list-style-type: none"> – “We’ll have to be more formal with each other and talk to each other like we would talk to an adult.” • Ask the students to find the second section of their note-catcher labeled “My Science Talk Notes: Ideas and Questions.” Explain that this is where they will take notes during the Science Talk if they think of an idea or question they would like to share while waiting their turn to speak. • Distribute several sticky notes to each student in the outside circle to record observations of Science Talk Norms. Be explicit with students that they are recording evidence of the norms of the whole group, not individual students and that these comments should be kind, helpful, and specific, so that the group can improve their performance in future class discussions. • Briefly review the Science Talk Norms (from Lesson 8) and explain that their feedback should be based on these norms. • Provide a brief example of what students should write down on their sticky notes by saying something like: “Pay attention to the group you are observing and notice how they use the norms of a Science Talk. You might write down something on your sticky note like: ‘Most students used evidence from <i>Animal Behavior: Animal Defenses</i> to support their thinking..’” • Direct students to begin the Science Talk. Use the Science Talk Criteria checklist during this time to monitor student progression toward the learning targets. Quickly redirect and support students as needed, but avoid leading the conversation. Remind students that their questions and comments should be directed to one another, not the teacher. 	<ul style="list-style-type: none"> • Providing visual models of academic vocabulary supports language development and comprehension. • Provide sentence frames for students to use as they participate in the Science Talk: “When I saw/heard _____, I learned _____” and “I wonder _____.”



Work Time (continued)	Meeting Students' Needs
<p>C. Conducting the Science Talk—Round 2 (15 minutes)</p> <ul style="list-style-type: none">• Ask students to switch places with their partners so that those students who were sitting in the outside circle are now sitting in the inside circle.• Review the Science Talk Norms and invite students to help you give feedback to the exiting group. Consider using the following prompt:<ul style="list-style-type: none">* What are two things this group did really well?* What is one thing they could work on next time?• Discuss strategies that might help the next group be more successful in this area.• Distribute several sticky notes to each student in the outside circle in order to record observations of Science Talk Norms.• As you circulate and note which students are speaking and what ideas are being shared, make sure to record these observations on sticky notes. Refer back to these in future lessons.• Direct students to begin the Science Talk. Use the Science Talk Criteria checklist during this time to monitor student progression toward the learning targets. Quickly redirect and support students as needed, but avoid leading the conversation. Remind students that their questions and comments should be directed to one another, not the teacher. Briefly review the Science Talk Norms anchor chart.	<ul style="list-style-type: none">• Provide sentence frames for students to use as they participate in the Science Talk: “When I saw/heard _____, I learned _____” and “I wonder _____.”



Closing and Assessment	Meeting Students' Needs
<p>A. Debrief and Review Homework (5 minutes)</p> <ul style="list-style-type: none"> Read aloud the learning target: “I can effectively participate in a Science Talk about animal defense mechanisms.” Ask students to use thumbs-up if they met the target or thumbs-down if they still need to work on the target. Cold call using the equity sticks on several students to share why they gave themselves a thumbs-up or thumbs-down, prompting them to refer to the norms they determined for the Science Talk Norms anchor chart as a way to support their self-assessment. Review the homework assignment for tonight. Explain to students that they will now be shifting their research on animal defense mechanisms and focus specifically on the millipede’s defense mechanisms. Invite students to open to page 13 of their research journals to the Millipede Defense Mechanisms: KWL chart. Explain that they will be using this chart like they used the Animal Defense Mechanisms: KWL chart. Tell students that for homework, they should start thinking about what they already know about the millipede and what they want to know about it, noting their thinking in the K and W columns of the chart. 	<ul style="list-style-type: none"> Allowing students to work in small groups provides the opportunity for all students to share their voices.
Homework	Meeting Students' Needs
<ul style="list-style-type: none"> Complete the K and W columns of the Millipede Defense Mechanisms: KWL Chart on page 13 of your research journal. <p><i>Note: Students will need specific feedback from this Science Talk in order to reflect on and set goals before they participate in the next Science Talk in Lesson 13. Write feedback on the teacher feedback sections on their Preparing for a Science Talk note-catcher.</i></p> <p><i>Focus the feedback on the learning targets that was emphasized in this lesson: “I can ask questions so I am clear about what is being discussed” and “I can ask questions on the topic being discussed.” Also give suggestions to any students who may need more coaching in order to follow the Science Talk norms created in this lesson. Keep feedback focused, brief, and encouraging. For example: “I noticed that you recorded three pieces of evidence from the text on your form. Great! During next Science Talk, be sure to mention the text during the class the discussion.” Or “I noticed you were able to use evidence from the text when sharing your ideas during the Science Talk. Good work! One thing you should focus on for our next Science Talk is waiting your turn to speak.”</i></p>	



EXPEDITIONARY
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Grade 4: Module 2B: Unit 1: Lesson 9

Supporting Materials



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Interactive Word Wall:
Directions For Teacher Reference

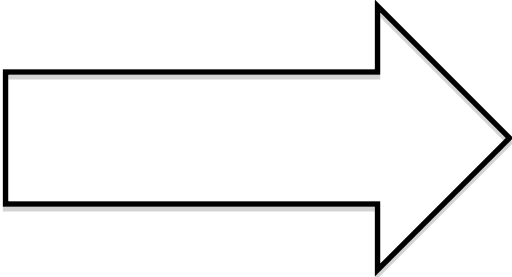
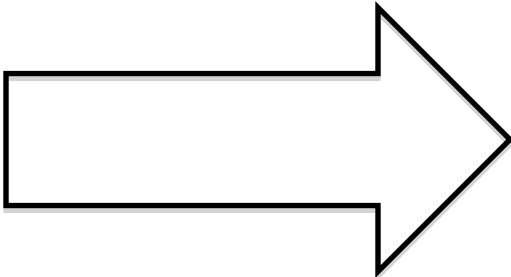
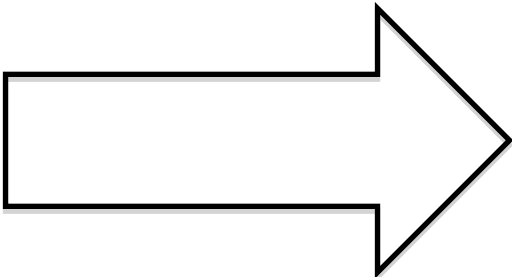
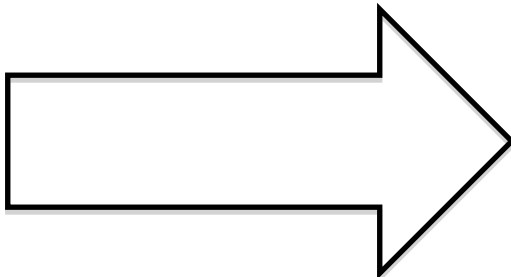
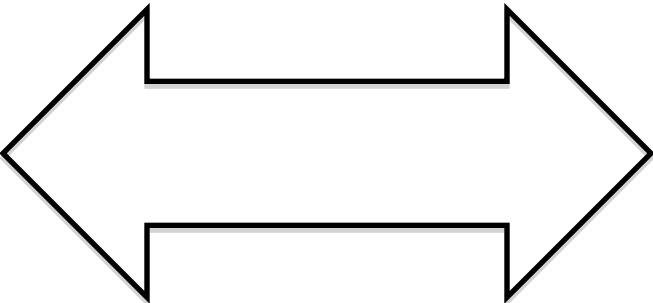
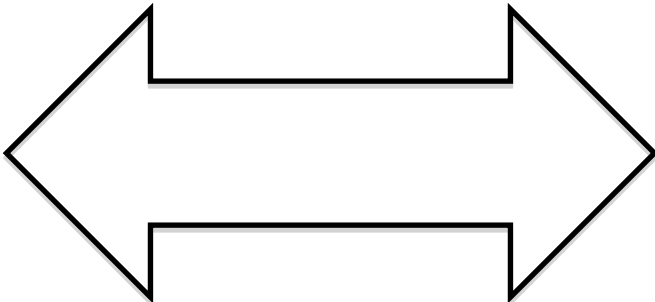
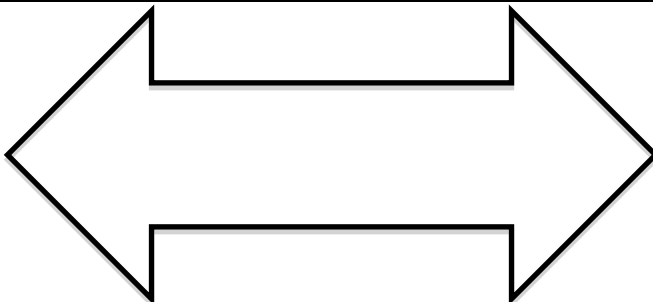
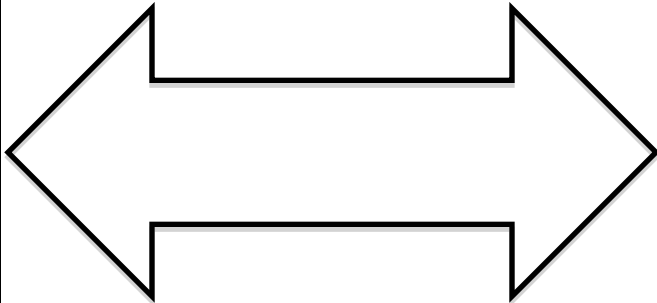
Teacher Directions: Write these directions on a piece of chart paper or on the board prior to beginning this lesson with students.

Interactive Word Wall Directions

1. Place vocabulary word cards and arrows face up in the middle of your group space.
2. Take turns selecting one word to connect with another.
3. Explain your connection to the group each time you take a turn.
4. It is fine to move words or connect more than one word with another.
5. Continue taking turns until you have connected every word to some other word.



Interactive Word Wall:
Symbols



Participating in a Science Talk
Anchor Chart
(for Teacher Reference)

- Discussing a question you are researching with your peers can help you understand what you have read in your research of the topic.
- Think about the question: How do animals' bodies and behaviors help them survive?
- Revisit the text and gather evidence to support your thinking.
- Find a Science Talk Partner and number off, 1 and 2.
- Gather in two circles on the floor with your Preparing for a Science Talk note-catcher. Partner 1 sits in the inside circle facing in. Partner 2 sits directly behind their partner.
- Inside circle:
 - * Take turns sharing your thinking about the question. Be sure to reference the evidence you gathered from the texts you read and recorded in your note-catcher.
 - * As you listen to the conversation, record any new ideas or questions you would like to share with the group as you wait to speak.
 - * Respond to others and build on their ideas.
 - * Follow Science Talk Norms.
- Outside circle:
 - * Observe the inside group silently, looking for evidence of how they are following the Science Talk Norms.
 - * Record your observations on sticky notes. Be specific about what you see.
- Outside partner gives feedback to the inside partner about how well the group followed the Science Talk Norms.



Science Talk Criteria Checklist

Teacher directions: List each student's name. Add any norms your class has agreed on. In the columns, note how well each student demonstrates the norms and meets the learning targets listed in the heading columns.

Learning Target: I can effectively participate in a Science Talk about animal defense mechanisms.

- b. I can ask questions so I am clear about what is being discussed.
- c. I can ask questions on the topic being discussed.
- d. I can follow our class norms when I participate in a conversation.

Student name	Prepares with evidence	Norms	Asks questions related to topic	Responds to and builds on other's ideas/questions	Teacher comments



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 10

Determining Main Idea and Summarizing: Reading Closely about Millipedes



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)	
I can paraphrase portions of a text that is read aloud to me. (SL.4.2) I can determine the main idea using specific details from the text. (RI.4.2) I can summarize informational text. (RI.4.2)	
Supporting Learning Targets	Ongoing Assessment
<ul style="list-style-type: none">• I can determine the main idea of a section of <i>Venom</i>.• I can summarize a section of <i>Venom</i> using the main idea and supporting details found in the text.	<ul style="list-style-type: none">• Listening Closely note-catcher (page 14 of Animal Defenses Research Journal)• Determining the Main Idea note-catcher (page 15 of Animal Defenses Research Journal)



Agenda	Teaching Notes
<ol style="list-style-type: none">Opening<ol style="list-style-type: none">Reviewing Learning Targets (5 minutes)Engaging the Reader: Read-aloud of <i>Venom</i> (10 minutes)Work Time<ol style="list-style-type: none">Reading an Informational Text: Determining the Main Idea and Identifying Supporting Details (20 minutes)Guided Practice: Writing a Summary (15 minutes)Closing and Assessment<ol style="list-style-type: none">Exit Ticket: KWL: Millipede Defense Mechanisms (10 minutes)Homework<ol style="list-style-type: none">Continue your independent reading.	<ul style="list-style-type: none">This lesson marks a transition in Unit 1 from a general overview of animal defense mechanisms to a deeper study of millipede defense mechanisms. This study of the millipede is designed to be a model of what students will later do when researching in their animal expert groups.The opening of this lesson is slightly different from prior lessons. Students begin by reviewing the learning targets instead of with an “engaging the reader” activity. This brings awareness to students about the shift in their focus of study from general defense mechanisms to those of the millipede.The Determining the Main Idea note-catcher supplied in the supporting materials of this lesson has an intentional strike-through of the first bullet point. You may wish to use this detail to model choosing details that are from the text but don’t directly support the main idea.This lesson builds on previous lessons focused on determining the main idea by teaching students to write a summary of the text. In this lesson, the summary is written with students. Students practice summarizing again in Lesson 12, and are assessed on this skill in the End of Unit 1 Assessment in Lesson 14. They continue to practice summarizing in Unit 2.



Lesson Vocabulary	Materials
summarize, index, source; exoskeleton , toxin , ooze (15)	<ul style="list-style-type: none">• Equity sticks• Document camera• <i>Venom</i> (book for teacher read-aloud, page 15)• Listening Closely note-catcher (page 14 of Animal Defenses research journal; one per student and one to display)• Listening Closely note-catcher (completed, for teacher reference)• Animal Defenses research journals (from Lesson 1; one per student)• Copy of Page 15 of <i>Venom</i>, “They Have Legs and They Know How to Use Them” (one per student)• Determining the Main Idea note-catcher (page 15 of Animal Defenses research journal; one per student and one to display)• Determining the Main Idea note-catcher (completed, for teacher reference)• Summarizing Informational Text anchor chart (new; co-created with students during Work Time Part B)• Millipede Defense Mechanisms: KWL chart (page 13 Animal Research Journal; from Lesson 9; one per student))



Opening	Meeting Students' Needs
<p>A. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Remind students that they have completed the first go-through of the Animal Defenses research journal, researching and collecting information about general animal defense mechanisms. They now will continue learning about animal defense mechanisms and research the millipede. Explain that the process will be the same—they will listen to texts about the millipede, read and reread for main idea and vocabulary. Tell students this work is leading up to their own research of different animals in expert groups to prepare for the final performance task.• Use equity sticks to call on students to read the learning targets:<ul style="list-style-type: none">* “I can determine the main idea of a section of <i>Venom</i>.”* “I can summarize a section of <i>Venom</i> using the main idea and supporting details found in the text.”• Remind students that the first and third targets should be familiar to them. Focus on the second target by circling the word <i>summarize</i> and asking:<ul style="list-style-type: none">* “What does it mean to summarize?”• Listen for responses like: “It’s when you tell the big ideas of a text.” Clarify as needed. Explain to students that they will be using their understanding of how to determine the main idea and identify supporting details to summarize a text about millipedes.	<ul style="list-style-type: none">• Discussing and clarifying the language of learning targets helps build academic vocabulary.



Opening (continued)	Meeting Students' Needs
<p>B. Engaging the Reader: Read-aloud of <i>Venom</i> (10 minutes)</p> <ul style="list-style-type: none">Using a document camera, display the cover of <i>Venom</i> so all students can see. Open to pages 74 and 75 and ask:<ul style="list-style-type: none">* “What did we learn about animal defense mechanisms when we last read aloud from <i>Venom</i>?”Listen for responses like: “Bees use stingers to protect themselves.” Validate responses and explain to students that they will be listening to another section of <i>Venom</i> today. Tell students they will then use this text to determine the main idea and summarize later in the lesson.Inform students that they will start their study of the millipede and its defense mechanisms. Model using the index in <i>Venom</i> to find information about the millipede. Point out that the <i>index</i> is in the back of the book, is organized alphabetically, and that the numbers indicate the page number with information about the topic it is next to. Also point out the distinction between “millipede” and “yellow spotted millipede”—note for students that in this case, there is a specific kind of millipede that is mentioned in this book in addition to general information about millipedes. This is important to note for students because when they study their expert group animals, some groups will be studying specific kinds of butterflies, octopuses, or armadillos, so they will need to recognize the distinction between the general animal group and the specific species in the index.Display the blank Listening Closely note-catcher and invite students to open to the next one on page 14 in their Animal Defenses research journals. Ask:<ul style="list-style-type: none">* “How do we use this graphic organizer to help us understand a text read aloud?”Use equity sticks to call on students. Listen for responses like: “We record the animal protects itself in the left column and explain how that helps the animal survive in the right column. We write a gist statement at the bottom.”Remind students that they will listen to a new part of <i>Venom</i> read aloud several times. Remind them that the first time they hear it read aloud, they should simply listen to what is being read. The second time, they should begin to fill in the table.Read aloud page 15 as students read along.Invite students to turn and talk with a neighbor, sharing one interesting thing they heard during the read-aloud. Use equity sticks to call on two students to share what their partners found interesting.Tell students that they will now hear page 15 read aloud a second time and should now record notes in the note-catcher as you read aloud.	



Opening (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Read aloud page 15 in <i>Venom</i> again, stopping briefly after each paragraph. If necessary during each short pause, remind students to fill in notes on their note-catchers.• Invite students to turn and talk with a partner. Ask:<ul style="list-style-type: none">* “What is an example of how millipedes protect themselves?” Listen for responses like: “Millipedes roll into tight balls.”* “How do those defense mechanisms help millipedes survive?” Listen for responses like: “Their exoskeleton makes it hard to hurt the millipede’s body when it’s curled into a ball.”* “What was the gist of this text?” Listen for responses like: “The main message of this text was how centipedes and millipedes protect themselves. Some are harmless and some are poisonous.”• Point to the question below the table on the graphic organizer—“What is the gist of this section of <i>Venom</i>?” Invite students to jot down the gist of this part of the text on these lines. If necessary, prompt students by asking: “What is your initial sense of what this part of the text was mostly about?”• Remind students they will have many more opportunities to read this book, and can read through it on their own during independent reading or in their free time during the school day if they wish.	



Work Time	Meeting Students' Needs
<p>A. Reading an Informational Text: Determining the Main Idea and Identifying Supporting Details (20 minutes)</p> <ul style="list-style-type: none"> Distribute a copy of page 15 of <i>Venom</i>, “They Have Legs and They Know How to Use Them” to each student. Invite students to turn to page 15 of their research journals to the Determining the Main Idea note-catcher. Explain that they will now have a chance to work closely with the text they just listened to, to determine the main idea and find details that support the main idea of that page. Point out the “Source” box in the upper right-hand corner. Explain that whenever they are researching, they should record the source, or where the information is coming from, in their notes. Ask: <ul style="list-style-type: none"> * “What is the source we are using in this lesson? Where is our information coming from?” Listen for students to respond with: “<i>Venom</i>.” Prompt them to include the page number and author, and invite them to write it in the “Source” box on the note-catcher. Review determining the main idea by asking: <ul style="list-style-type: none"> * “How do we determine the main idea of a section of text?” Listen for students describing the process introduced in Lesson 3, saying things like: “We read the text paragraph by paragraph, and after each paragraph ask ourselves, ‘What is this text about?’ We revise our thinking about the main idea as we read.” Review identifying supporting details by asking: <ul style="list-style-type: none"> * “How do we identify details that support the main idea of a section of the text?” Listen for students describing the process discussed in Lesson 4, saying something like: “We reread the text paragraph by paragraph, thinking about the main idea and looking for facts or details that the author used to explain that idea.” Invite students to Think-Pair-Share and reread page 15 of <i>Venom</i> independently to determine the main idea of that page. Tell them to write the main idea in the appropriate box on their note-catcher. Once students have shared out whole group, invite students to Think-Pair-Share and reread page 15 of <i>Venom</i> independently to identify details that support the main idea. Tell them to write at least three supporting details in the appropriate box on their note-catcher. 	<ul style="list-style-type: none"> The teacher may offer selected shorter passages to specific groups based on the readiness and needs of the group. This provides an opportunity for students to read a complex text within the fourth-grade level span, but differentiates the length of the text, not the complexity. Graphic organizers and recording forms engage students more actively and provide the necessary scaffolding that is especially critical for learners with lower levels of language proficiency and/or learning. For students needing additional support, provide a partially filled-in graphic organizer. Provide ELLs with a sentence starter or frame to aid in language production. For example: <i>One idea that is repeated again and again is ...</i> or <i>A detail that supports the main idea of our section is ...</i> Some students may benefit from having key sections pre-highlighted in their texts. This will help them focus on small sections rather than scanning the whole text for answers.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> If necessary, model finding a detail that does not support the main idea by saying something like: "Here's a detail about millipedes from <i>Venom</i>: (point to this sentence in the third paragraph on page 15 and write it on the note-catcher) 'Millipedes, relatives of the centipedes, have 20 to 100 body segments, most with two pairs of legs each.' That detail is about millipedes. Does it support the main idea of this page, though? The main idea is that centipedes and millipedes have many defense mechanisms. This detail is about what the millipede looks like, and not its defense mechanisms. So, I'm going to cross this out because, though it's a detail, it's not a detail that supports the main idea." 	
<p>B. Guided Practice: Writing a Summary (15 minutes)</p> <ul style="list-style-type: none"> Explain to students that they will use their notes on the main idea and supporting details to write a short summary of page 15 of <i>Venom</i>. Invite students to Think-Pair-Share to discuss the following: <ul style="list-style-type: none"> * "What is a summary?" * "How might a summary be different from identifying the main idea or writing a gist statement?" Listen for responses like: "A summary tells the main points of a text," "A summary is a longer than saying the main idea or a gist statement," or "A summary includes the main idea and adds on a little bit more to it." Ask students to quickly turn and talk about the summary writing they have already practiced this year. (Listen for them to remember the paragraphs they wrote from their research notes during Module 1 about the Iroquois.) Remind them as needed. On chart paper, begin a new Summarizing Informational Text anchor chart. Write the word <i>summary</i> on the chart and a simple definition such as "when you tell the main points of a text." Tell students that writing a summary will help them to better understand the text they are reading. Invite students to look at the second page of their Determining the Main Idea note-catchers. Point out Reading and Writing Like a Researcher section. Have students read the prompt. Tell them that a good summary of text usually includes the main idea of the text and details that support the main idea. Add the following to the anchor chart in bullet points: <ul style="list-style-type: none"> – What big idea is explained in this text? – What facts or examples in this text help us understand the big idea? 	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Invite students to think about when they have determined the big idea of the text they read today, and when they found facts or examples. Listen for students to notice that they did this in Work Time A.• Tell students that they can use the notes they took in Work Time A to write a summary paragraph. Model how to write this information in paragraph form and display for students. (A possible summary for this text might be: "Centipedes and millipedes have many defense mechanisms. For example, the 12-inch-long rainforest centipede has claws called prehensors, which can deliver painful stings. The millipede has a tough exoskeleton and curls into a hard, protective ball when threatened. Some, like the yellow-spotted millipede, are poisonous and emit a toxin to repel predators. As humans we might find these features 'creepy,' but they keep centipedes and millipedes safe!")• Key points to attend to during the modeling:<ul style="list-style-type: none">– Remind students of the structure of a good paragraph (topic sentence, details, and concluding sentence).– Tell students that they will need to include information from each column of their note-catcher to make it a good summary.– Model checking off notes on the note-catcher as you write the information in your sentences.• On the Summarizing Informational Text anchor chart, record the following in your own or students' words:<ul style="list-style-type: none">– Good summary paragraphs have a topic sentence, details, and concluding sentence.– They explain the big idea and share facts and examples that help us understand the big idea.• Tell students that they will have a chance to practice summarizing again later in the unit, with a different text.	



Closing and Assessment	Meeting Students' Needs
<p>A. Exit Ticket: KWL: Millipede Defense Mechanisms (10 minutes)</p> <ul style="list-style-type: none">For an exit ticket, ask students to write the answers to any questions they had in the W column in the “I Learned” column, in the “Information” section. Include the name and page number of the text in the “Source” column. Add any new questions they have to the W column and write one new piece of information they learned from the text read in today’s lesson in the “I Learned” column.Collect students Animal Defenses Research Journals and look at students’ entries on page 13 as an exit ticket and formative assessment.	<ul style="list-style-type: none">Collect Animal Defenses research journals for formative assessment.
Homework	Meeting Students' Needs
<ul style="list-style-type: none">Continue your independent reading.	



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 10

Supporting Materials



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Animal Defenses Research Journal:
Millipede Defense Mechanisms
Listening Closely Note-catcher
(Completed for Teacher Reference)

Source: *Venom* page 15

Directions: Listen as *Venom* is read aloud. Use the table below to record your notes.

Examples of How Millipedes Protect Themselves	How This Helps Millipedes Survive
<i>Venom</i> page 15	
<ul style="list-style-type: none">• Have a tough exoskeleton• Roll into a tight, hard ball• Some are poisonous• Release an acid or liquid hydrogen cyanide to repel predators• The poisons don't hurt people	<ul style="list-style-type: none">• Exoskeleton makes it hard for predators to hurt the millipede's body• Poison makes predator sick
Other Facts about Centipedes and Millipedes <ul style="list-style-type: none">• Centipedes are not insects• Centipedes and millipedes have many body segments and many legs• Some millipede predators are ants and toads• Black lemurs rub millipedes on themselves to use the poison to repel pests	

Explain in your own words what this section of *Venom* was about:

The main message of this text was how centipedes and millipedes protect themselves. Some are harmless and some are poisonous.



Animal Defenses Research Journal:
Millipede Defense Mechanisms
Determining the Main Idea
(Completed, for Teacher Reference)

Source: _____

Reread the text and identify the main idea for each section of the text.

Main Idea:	Supporting Details: <i>Explicit information from text</i>
Centipedes and millipedes have many defense mechanisms.	<ul style="list-style-type: none">• The rainforest centipede has claws called prehensors that can deliver painful stings• “Millipedes have twenty to one hundred body segments, most with two pairs of legs each”• “They have a tough exoskeleton”• “Their main defense is to roll into a tight, hard ball.”• Yellow-spotted millipedes “emit acid or liquid hydrogen cyanide...to repel predators, such as ants or toads”

Reading and Writing Like a Researcher:

Summarize page 15 of *Venom*. Use details from the text to support your explanation.

Centipedes and millipedes have many defense mechanisms. For example, the twelve-inch-long rainforest centipede has claws called prehensors, which can deliver painful stings. The millipede has a tough exoskeleton and curls into a hard, protective ball when threatened. Some, like the yellow-spotted millipede, are poisonous and emit a toxin to repel predators. As humans we might find these features “creepy,” but they keep centipedes and millipedes safe!



Summarizing Informational Text Anchor Chart

Teacher Directions: Write the following underneath on chart paper to create this anchor chart during Work Time Part B.

Summarizing Informational Text

- What big idea is explained in this text?
- What facts or examples in this text help us understand the big idea?

Good summary paragraphs have a topic sentence, details, and concluding sentence.

They explain the big idea and share facts and examples that help us understand the big idea.



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 11

Close Reading: Learning About Poisonous Animals



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can explain what a text says using specific details from the text. (RI.4.1)

I can make inferences using specific details from text. (RI.4.1)

I can interpret information presented through charts or graphs. I can explain how that information helps me understand the text around it. (RI.4.7)

I can determine the meaning of academic words or phrases in an informational text. (RI.4.4)

I can determine the meaning of content words or phrases in an informational text. (RI.4.4)

Supporting Learning Target

- I can make inferences based on information from pictures and text in a section of *Animal Behavior: Animal Defenses*, “Poisonous Prey”.
- I can support my inferences with details and examples from pictures and texts in a section of *Animal Behaviors: Animal Defenses*, “Poisonous Prey”.
- I can find the meanings of unfamiliar words to help me better understand a section of *Animal Behaviors: Animal Defenses*, “Poisonous Prey”.

Ongoing Assessment

- Listening Closely note-catcher (page 16 of Animal Defenses research journal)
- “Poisonous Prey” note-catcher (pages 17-23 Animal Defenses research journal)



Agenda	Teaching Notes
<ol style="list-style-type: none"> 1. Opening <ol style="list-style-type: none"> A. Engaging the Reader: Read-aloud of “Poisonous Prey” (10 minutes) B. Reviewing Learning Targets (5 minutes) 2. Work Time <ol style="list-style-type: none"> A. Close Reading of “Poisonous Prey”: Reading for the Gist (10 minutes) B. Close Reading of “Poisonous Prey”: How Do Animals Use Poison to Survive? (30 minutes) 3. Closing and Assessment <ol style="list-style-type: none"> A. Share and Debrief (5 minutes) 4. Homework <ol style="list-style-type: none"> A. “Poisonous Prey” Vocabulary 	<ul style="list-style-type: none"> • Today’s lesson begins a two-lesson close read of the section “Poisonous Prey” in the anchor text <i>Animal Behavior: Animal Defenses</i>. Students begin with the routine of using the Listening Closely note-catcher in their Animal Defenses research journals while hearing a read-aloud of the section. Note that they do not listen for or write the gist of this section after hearing it read aloud; students reread the section for gist independently during Work Time A. • In Lessons 5–7, some students read the section before “Poisonous Prey” (page 55–top of 56) and the section after (“Warning Colors,” pages 58–60). Since students shared details from these parts of the text during Lesson 6 (using the Jigsaw protocol), all students should have some background knowledge coming into this lesson. • The close reading process is meant to help students deeply understand a section of the text. Students read and reread in order to deconstruct the meaning of the text, and then reconstructing the meaning using evidence from the text. The teacher uses questioning geared toward a focus question to make the text accessible to students. • The “Poisonous Prey”: Close Reading guide (page 15-20 Animal Research Journal) is meant to be discussion-based; the teacher can choose to invite students to work independently or in pairs or small groups when thinking about different questions, but the teacher should guide the whole class in a discussion of each section of the using the question in the guide, before moving on to the next section. This guide is not meant to be a worksheet that is assigned to students or partnered pairs to complete on their own. • This close read sequence is designed as two lessons, however depending on the needs of your class, you may choose to split this close reading into three lessons. • The end goal of Lessons 11 and 12 is for students to be able to answer the focus question posed during Work Time A. Students are given the opportunity to do so in Lesson 12. • Review: Fist to Five in Checking for Understanding techniques (see Appendix). • Post: Learning targets.



Lesson Vocabulary	Materials
index predator (56), prey, retch, entrap, ooze, affect, toxic (57), excrete	<ul style="list-style-type: none">• <i>Animal Behavior: Animal Defenses</i> (book; one per student and one for display; “Poisonous Prey,” pages 56–58)• Document camera• Listening Closely note-catcher (page 16 of Animal Defenses research journal; one per student and one to display)• Listening Closely note-catcher (completed, for teacher reference)• Animal Defenses research journals (from Lesson 1)• Equity sticks• Close Readers Do These Things anchor chart (from Module 1, Unit 1, Lesson 3; or recreated in Lesson 2 of this module)• “Poisonous Prey” note-catcher (pages 17–23 of Animal Defenses research journal; one per student and one to display)• “Poisonous Prey” Close Reading Guide (for teacher reference)



Opening	Meeting Students' Needs
<p>A. Engaging the Reader: Read-aloud of “Poisonous Prey” (10 minutes)</p> <ul style="list-style-type: none"> Remind students that they’ve been learning about millipedes’ defense mechanisms. Invite students to take out <i>Animal Behavior: Animal Defenses</i>. Remind students that this book is another source they can use for their research. Ask: <ul style="list-style-type: none"> * “Where can we find more information about millipedes in this book?” Give students a couple minutes to flip through their books, looking for more information. Invite students to share pages where they found some more information about millipedes. As students share, ask: <ul style="list-style-type: none"> * “How did you find this part of the text that had more information about millipedes?” Listen for students to point out using the table of contents or the index. If students do not point out using the index, model by saying something like: “We could use the index, which is a list of topics in the back of a book with page numbers showing the page where that topic appears. It’s in alphabetical order, which makes it easier to find the topic you might be looking for. If we want to find out more about millipedes, we would flip to the index and go to the M section. These pages all have information about millipedes. Let’s flip to page 53, since that’s the first page listed. We’ll skim the page, looking for information about the millipede [model scanning]. This page doesn’t have much information, so I’ll go back to the index to see what’s next. Pages 56–57 have some more information, according to the index. Those will be the pages we’ll focus on.” Tell students that they will be listening to a section from <i>Animal Behavior: Animal Defenses</i>. Tell students they will then use this text to determine the main idea later in the lesson. Using a document camera, display a blank Listening Closely note-catcher and invite students to open to the next one on page 16 in their Animal Defenses research journals. Ask: <ul style="list-style-type: none"> “How do we use this graphic organizer to help us understand a text read aloud?” Use equity sticks to call on students. Listen for responses like: “We record facts about animals in the left-hand column, how the animal protects itself in the middle column, and explain how that helps the animal survive in the right-hand column. We write a gist statement at the bottom.” Remind students that they will listen to a new part of <i>Animal Behavior: Animal Defenses</i> read aloud several times. The first time they hear it read aloud, they should simply listen. The second time, they should begin to fill in the table. Tell students you will read the section “Poisonous Prey” on pages 56–58 aloud, and remind them that they should just listen to what is being read. Read aloud pages 56–58. 	<ul style="list-style-type: none"> Whole class discussions encourage respectful and active listening, as well as social construction of knowledge. Hearing a complex text read slowly, fluently, and without interruption or explanation promotes fluency for students; they are hearing a strong reader read the text aloud with accuracy and expression, and are simultaneously looking at and thinking about the words on the printed page. Set clear expectations that students read along silently in their heads as you read the text aloud.



Opening (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Invite students to turn and talk with a neighbor, sharing one interesting thing they heard during the read-aloud. Use equity sticks to call on two students to share what their partners found interesting.• Explain to students that they will now hear pages 56–58 read aloud a second time. Tell students they should now record notes in the note-catcher as you read aloud.• Read aloud “Poisonous Prey,” stopping briefly after each paragraph. If necessary during each short pause, remind students to fill in notes on their note-catchers.• Invite students to turn and talk with a partner. Ask:<ul style="list-style-type: none">* “What is one fact you wrote down about millipedes?”<ul style="list-style-type: none">• Listen for responses like: “Pill millipedes are poisonous.”* “What is an example of how millipedes protect themselves?”<ul style="list-style-type: none">• Listen for responses like: “They ooze sticky droplets when attacked.”* “How do those defense mechanisms help millipedes survive?”<ul style="list-style-type: none">• Listen for responses like: “The drops make the predator sticky which slows it down and lets the millipede escape.”• Use equity sticks to call on a student to share his or her partner’s response.• Remind students they will have many more opportunities to read this book, and can read through it on their own during independent reading or in their free time during the school day if they wish.	



Opening (continued)	Meeting Students' Needs
<p>B. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Use equity sticks to call on students to read the learning targets:<ul style="list-style-type: none">* I can make inferences based on information from pictures and text in a section of Animal Behavior: Animal Defenses, “Poisonous Prey”.* I can support my inferences with details and examples from pictures and texts in a section of Animal Behaviors: Animal Defenses, “Poisonous Prey”.* I can find the meanings of unfamiliar words to help me better understand a section of Animal Behaviors: Animal Defenses, “Poisonous Prey”.• Ask students to Think-Pair-Share on the following question:<ul style="list-style-type: none">* “What does it mean to make an inference?”• Listen for responses like: “Making an inference is when a reader thinks about something an author isn’t explicitly saying in the text.”<ul style="list-style-type: none">* “What are some strategies you have been using to determine the meaning of unfamiliar words?”• Listen for responses like: “I reread the text and infer.”	<ul style="list-style-type: none">• Discussing and clarifying the language of learning targets helps build academic vocabulary.



Work Time	Meeting Students' Needs
<p>A. Close Reading of “Poisonous Prey”: Rereading for the Gist (10 minutes)</p> <ul style="list-style-type: none"> Explain to students that they will be rereading “Poisonous Prey” from <i>Animal Behavior: Animal Defenses</i> several times over the next two lessons. Tell students they will be reading the text closely in order to learn more about animal defense mechanism. Display Close Readers Do These Things anchor chart and remind students that they will be doing all of these things to closely read this text: <ul style="list-style-type: none"> Read small chunks of text slowly and think about the gist. Reread each passage one sentence at a time. Underline things that you understand or know about. Circle or underline words that you do not know. Talk with your partners about all of your good ideas. State the gist or message of the paragraph in the margin. Listen to the questions. Go back to the text in order to find answers to questions. Talk with your partners about the answers you find. Invite students to find the “Poisonous Prey” note-catcher on page 15 of their research journal. Tell them that they will be using this note-catcher to help them think and take notes about this section of <i>Animal Behavior: Animal Defenses</i>. Use equity sticks to call on a student to read the focus question at the top of the note-catcher, to keep in mind as they work: <ul style="list-style-type: none"> * “How do animals use poison to survive?” Point out the bullet points about gist on the Close Readers Do These Things anchor chart. Invite students to reread “Poisonous Prey” for gist, writing their gist statements in the first box of the note-catcher. Give students 5 minutes to do so independently. Circulate and support as needed. If necessary, prompt students by asking: “What is this section mostly about?” After 5 minutes, bring students back together. Ask: 	<ul style="list-style-type: none"> The teacher may offer selected shorter passages to specific groups based on the readiness and needs of the group. This provides an opportunity for students to read a complex text within the fourth-grade level span, but differentiates the length of the text, not the complexity. Graphic organizers and recording forms engage students more actively and provide the necessary scaffolding that is especially critical for learners with lower levels of language proficiency and/or learning. For students needing additional support, provide a partially filled-in graphic organizer. Provide ELLs with a sentence starter or frame to aid in language production. For example: <i>This section is mostly about ...</i>



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">* “What was the gist of this text?”• Listen for responses like: “This section was about how some animals use poison to protect themselves.”	
<p>B. Close Reading of “Poisonous Prey”: How Do Animals Use Poison to Survive? (30 minutes)</p> <ul style="list-style-type: none">• Remind students that close readers reread the texts they are analyzing paragraph by paragraph, sentence by sentence. Explain to students that they will now reread this section closely to think carefully about the focus question:<ul style="list-style-type: none">* “How do animals use poison to survive?”• Tell students they will be doing this by rereading paragraphs on their own and with a partner and discussing the text as they read. Using the “Poisonous Prey” Close Reading guide, guide students through rereading the text, inviting them to Think-Pair-Share and discuss the prompts as necessary. Stop students at the tenth row with the prompt: “Reread the fifth paragraph on page 56 (continued on page 57) silently. Then use details from the text to answer the question on the right” Tell students that they will continue rereading the rest of the text in the next lesson.	<ul style="list-style-type: none">• Some students may benefit from having key sections pre-highlighted in their texts. This will help them focus on small sections rather than scanning the whole text for answers.



Closing and Assessment	Meeting Students' Needs
<p>A. Share and Debrief (5 minutes)</p> <ul style="list-style-type: none">• Bring students back together. Invite students to use the Fist to Five checking for understanding technique, showing how confident they are in answering the focus question for this section of the text, showing a fist for completely unsure of how animals use poison, or a five, meaning they can share several ways animals use poison to survive. Be sure to check in with students showing a fist, one, or two fingers during the close read in Lesson 12.• Using the Back-to-Back, Face-to-Face protocol, ask:<ul style="list-style-type: none">* “What is one way animals use poison to survive?” Listen for responses like: “Poison can make an animal’s enemy sick.”* “How is this process helping you to better understand this text?” Listen for responses like: “By rereading, I can think carefully about the meaning of words I don’t know, like ‘retch.’”• Explain to students that they will continue rereading “Poisonous Prey” closely in the next lesson.	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• “Poisonous Prey” Vocabulary: Reread “Poisonous Prey.” While you read, write down words that you do not know the meaning of. Choose one word you wrote down and try to figure out the definition of it. Write down the definition and how you figured out what the word meant as well.	



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 11

Supporting Materials



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Animal Defenses Research Journal:
Millipede Defense Mechanisms
Listening Closely Note-catcher
(Completed for Teacher Reference)

Source: "Poisonous Prey" Animal Defenses: Animal Behaviors p.56-58

Directions: Listen as the text is read aloud. Use the table below to record your notes.

Examples of How Millipedes Protect Themselves	How This Helps Millipedes Survive
<ul style="list-style-type: none">• oozes sticky droplets when attacked• droplets are poison	<ul style="list-style-type: none">• This traps its attackers so it can get away.• This protects the millipede from future attacks.
<p>Other Interesting Things:</p> <ul style="list-style-type: none">• Pill millipedes are poisonous• Poison dart frogs are blue.	

Animal Defenses Research Journal:
 “Poisonous Prey” Close Reading Guide
 (For Teacher Reference)

Note to Teachers: Rows 1-7 are completed in Lesson 11 and Rows 8-17 in Lesson 12.

Source: *Animal Behavior: Animal Defenses*—“Poisonous Prey” page 56–58

Focus question: How do animals use poison to survive?

<p>1. What is the gist of this section of the text?</p>	<p>Ask: What is this text mostly about?</p> <p>Listen for: This text is about how animals use poison to survive.</p>
<p>2. Read Paragraph 1 aloud to a partner. Then use the glossary in the back of <i>Animal Behavior: Animal Defenses</i> to answer the questions on the right.</p>	<p>Ask: What does the word “predator” mean? Listen for: an animal that eats other animals</p> <p>Ask: What does the word “prey” mean? Listen for: “an animal that is eaten by other animals”</p> <p>Ask: Who is usually poisonous, the predator or the prey? Listen for “the prey”</p> <p>Additional Prompts: Ask students how they know this, since it is not directly stated in the text. Students might think it is the predator since that is the animal that eats other animals, thinking it uses poison to kill its prey. Clarify as necessary</p>



Animal Defenses Research Journal:
“Poisonous Prey” Close Reading Guide
(For Teacher Reference)

<p>3. Now, reread the first paragraph on page 56 silently. Then use details from the text to answer the questions on the right.</p>	<p>Ask: What is a poisonous animal? How is a poisonous animal different from a venomous animal?</p> <p>Listen for: A poisonous animal has poison in its body. It’s different from a venomous animal because venomous animals inject their poison into its victim. A predator comes in contact with the poison of a poisonous animal if it touches or eats the animal.</p> <p>Note: This is a subtle distinction. You may also refer to page 4 of <i>Venom</i> to clarify this for students.</p> <p>Ask: What is the purpose of this paragraph? What sentence in the text makes you think so?</p> <p>Listen for: The purpose of this paragraph is to tell the reader what a poisonous animal is and to introduce the topic of the section. “A poisonous animal has poison in its body.”</p> <p>Note: This question appears several times throughout this note-catcher. In each case, there are other sentences that students may choose that help them understand the purpose of the paragraph. Guide students to choose the first sentence in each paragraph as the sentence that best shows the purpose of the paragraph. This will help them understand that topic sentences, which are usually the first sentence of a paragraph, can help them to determine the main idea of a paragraph. This is debriefed and students should draw this conclusion about expository paragraph structure at the end of this process.</p>
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Animal Defenses Research Journal:
“Poisonous Prey” Close Reading Guide
(For Teacher Reference)

<p>4. Take turns reading the second and third paragraphs on page 56 to your partner. Then, working together, use details from the text to answer the questions on the right.</p>	<p>Ask: The text says, “If the bird swallows the monarch, it regrets it.” What do you think “regrets” means? Listen for: “When you wish you didn’t do something”</p> <p>Ask: What line in the text helps you infer the meaning of this word? Listen for: “The next sentence where it says the bird gets sick and throws up and then it remembers this lesson.”</p>
<p>5. Look carefully at the following quote: “Scientists have found that the mere sight of a monarch can cause these ‘educated’ birds to gag and retch, as if they were about to be sick.” (page 56) Together, use this quote to answer the questions on the right.</p>	<p>Ask: What do you think “retch” means? What words in the text make you think so? Listen for: “throw up”, or “gag,” or “make the bird feel sick and throw up”</p> <p>Ask: Why is the word <i>educated</i> in quotation marks? Listen for: “The bird is learns about monarchs and their poison; birds can’t really be educated because they don’t go to school, so it’s in quotation marks because of that”</p> <p>Ask: What does an “educated” bird know? Listen for: it knows not to eat a monarch</p> <p>Ask: How does poison help the monarch to survive? Listen for: “It makes its predator sick and the predator learns to avoid it”</p>



Animal Defenses Research Journal:
“Poisonous Prey” Close Reading Guide
(For Teacher Reference)

<p>6. Reread the focus question. Using evidence from the text, write one way animals use poison to survive in the box on the right. Write the answer to this question with your red pencil.</p>	<p>Possible answer:</p> <p>One way animals use poison to survive is to make their enemies sick.</p> <p>I think this because the monarch butterfly makes its enemies throw up and the enemy learns to stay away from it.</p>
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Animal Defenses Research Journal:
“Poisonous Prey” Close Reading Guide
(For Teacher Reference)

<p>7. Listen as your teacher reads the fourth paragraph on page 56 aloud. Your teacher will help you to choose the right strategy to use in answering the questions on the right.</p>	<p>Ask: What familiar word do you recognize in “entrap”? Listen for: “trap”</p> <p>Note: Using prefixes and suffixes to determine the meaning of unknown words is discussed in depth at the end of Lesson 12.</p> <p>Ask: What do you think “entrap” means? Listen for: “trick or capture”</p> <p>Ask: What do you think “oozes” means? What words in the text make you think so? Listen for: “to flow or leak slowly” or “produce”</p> <p>Ask: What do you think “affect” means? What words in the text make you think so? How is this different from the meaning of the word “effect”? Use a dictionary to help you figure out the difference.</p> <p><u>Listen for: “to change” or “paralyzed”</u></p> <p>Prompt students to notice: “affect” is a verb, “effect” is a noun</p> <p>Ask: What is the purpose of this paragraph? What sentence in the text makes you think so? Listen for: “This paragraph gives examples about how animals use poison to trap their enemies. ‘Many poisonous animals produce foul fluids that cling to the predator or entrap it.’”</p> <p>Note: Guide students to identify the first sentence of the paragraph.</p>
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Animal Defenses Research Journal:
“Poisonous Prey” Close Reading Guide
(For Teacher Reference)

8. Using evidence from the text, sketch what the pill millipede does when attacked by a predator.	Look for: Sketches should show the droplets oozing from the millipede and sticking to its predator.
9. Reread the focusing question. Using evidence from the text, write another way animals use poison to survive in the box on the right. Write the answer to this question with your red pencil.	Possible Answer: Another way animals use poison to survive is to trap their enemies. I think this because the pill millipede traps its predator with sticky droplets that it oozes from its body.
STOP HERE: Continue with the questions below in Lesson 12.	
10. Reread the fifth paragraph on page 56 (continued on page 57) silently. Then use details from the text to answer the question on the right.	Ask: What is the purpose of this paragraph? Listen for: This paragraph gives examples of how animals use poison to kill their enemies. Ask: What sentence in the text makes you think so? Listen for: “Some animals’ poison can kill predators.” Note: Guide students to identify the first sentence of the paragraph, though other sentences may help them figure out the purpose.



Animal Defenses Research Journal:
“Poisonous Prey” Close Reading Guide
(For Teacher Reference)

11. Read the second paragraph on page 57 to a partner. Look carefully at the following quote and use it to answer the questions on the right:

“Poison dart frogs (also called poison arrow frogs), which live in Central and South America, excrete a poisonous, foul-tasting fluid from their skin when threatened.” (page 57)

Ask: What is another name for “poison dart frogs”? How do you know?
Listen for: “poison arrow frogs; it’s in parentheses after poison dart frogs on page 57”

What do you think “**toxic**” means? What words in the text make you think so?

Listen for: “deadly or poisonous”; “ the words poison and kill”

Ask: The dash “-” in this quote is called a hyphen. Authors sometimes use a hyphen to join two or more words together to make a new word, called a “compound word.” What two words are joined together with a hyphen in this quote? Why do you think the author did this?

Listen for: “foul-tasting”, “Because it describes how the fluid would taste if an predator tried to eat it.”

CHALLENGE QUESTION: What part of speech is the compound word “foul-tasting” in this sentence?

Listen for or explain: “It’s an adjective”

Note: The actual rule is that you can use a hyphen when you combine two words to become an adjective before a noun. This isn’t a teaching point in fourth grade, but it is something you might mention.

Ask: The foul-tasting fluid helps the frog survive in two ways. What are they?

Listen for: The poison can kill its enemy. It also tastes bad, so the enemy may spit it out and learn to stay away from the frogs.

Note: The first way, that it can kill, is explicit in the text. Students will need to infer that it tastes bad and what happens as a result of that. If necessary prompt students with this information.



Animal Defenses Research Journal:
“Poisonous Prey” Close Reading Guide
(For Teacher Reference)

<p>12. Think back to the focus question. Using evidence from the text, write one way animals use poison to survive in the box on the right.</p> <p>Write the answer to this question with your red pencil.</p>	<p>Possible Answer:</p> <p>Another way animals use poison to survive is to kill its enemy. I think this because some millipedes ooze a poison gas that can kill more than six mice and a drop of the poison dart frog’s poison can kill thousands of mice.</p>
<p>13. Examine the photo and caption on page 57. Use details from the text to answer the questions on the right.</p>	<p>Ask: Read the caption and look carefully at the photo. What single word in the caption best describes what the photo is meant to show us? Listen for: skin</p> <p>Ask: What defense mechanism does the poison dart frog use to help it to survive? Listen for: poison</p> <p>Ask: What do you think “excrete” means? What words in the text make you think so? Listen for: ooze, make; “from its skin,” “produce”</p> <p>Ask: What do poison dart frogs excrete? Use exact words from the text. Listen for: “a poisonous, foul-tasting fluid”</p>



Animal Defenses Research Journal:
“Poisonous Prey” Close Reading Guide
(For Teacher Reference)

14. Reread the first paragraph on page 58 silently. Then use details from the text to answer the questions on the right.

“Of course, if a poisonous animal had a choice, it would rather not be attacked in the first place. It is better for it to stop an attack before it starts.”
(page 58)

In the boxes below, draw a picture of each of the ways the text tells us that poisonous animals “stop an attack before it starts.” Be sure to label each picture with words from the text.

sketch of an animal using warning colors as a defense mechanism

sketch of an animal using foul tastes as a defense mechanism

sketch of an animal using bad smells as a defense mechanism

sketch of an animal using irritating chemicals as a defense mechanism

sketch of an animal using sounds as a defense mechanism



Animal Defenses Research Journal:
“Poisonous Prey” Close Reading Guide
(For Teacher Reference)

Pulling it all together ...

WORD MEANING

15. Reread this note-catcher, noticing the words in bold print. Turn and talk with a partner about three ways you might figure out the meaning of an unknown word. Then, follow the directions on the right.

Choose three words in bold print on this note-catcher in addition to “predator” and “prey.” Add the definitions of these words to the glossary of your Animal Defenses research journal.

Note: Students should choose from the following words: retch, entrap, oozes, affect, toxic, excrete

SENTENCE MEANING

16. Look back at the answers you wrote in red.
What do you notice about sentences that tell the purpose of a paragraph? Hint: You may need to look for these sentences in the text to see a pattern.

Ask: What do you notice about sentences that tell the purpose of a paragraph? Hint: You may need to look for these sentences in the text to see a pattern.

Listen for: **The sentences are the first sentence of the paragraph they appear in.**

Note: Guide students in drawing the conclusion about expository text structure—that the topic sentence of a paragraph usually tells the main idea and the purpose of the paragraph.

THE BIG IDEA

17. Use the evidence you recorded on this sheet, as well as additional evidence from the text, to answer the question below in a well-written paragraph.

Ask: Based on your observations about the paragraphs in this text, what will be important to consider when writing the first sentence of your own paragraph?
Listen for: The first sentence should tell the main idea of my paragraph.



Animal Defenses Research Journal:
“Poisonous Prey” Close Reading Guide
(For Teacher Reference)

Synthesize!

Explain how animals use poison to survive (remember to use key words from the focus question in your response):

Possible Answer: Animals use poison to survive in many ways. They use it to make their enemy sick. The monarch butterfly makes a bird throw up if the bird eats it. Some animals use poison to trap their enemy. The pill millipede oozes sticky droplets that the predator gets stuck in. While the predator tries to clean off the drops, the millipede can escape. Other animals use poison to kill their enemy. Some millipedes release gas that can kill more than six mice. A drop of the poison dart frog’s poison can kill thousands of mice.



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 12

Close Reading Continued: Learning About Poisonous Animals



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

- I can explain what a text says using specific details from the text. (RI.4.1)
- I can make inferences using specific details from text. (RI.4.1)
- I can determine the meaning of academic words or phrases in an informational text. (RI.4.4)
- I can determine the meaning of content words or phrases in an informational text. (RI.4.4)
- I can use a variety of strategies to read words. (RF.4.3)
- I can use a variety of strategies to determine the meaning of words and phrases. (L.4.4)

Supporting Learning Target

- I can make inferences based on information from pictures and text in a section of *Animal Behavior: Animal Defenses*, “Poisonous Prey”.
- I can support my inferences with details and examples from pictures and texts in a section of *Animal Behaviors: Animal Defenses*, “Poisonous Prey”.
- I can find the meanings of unfamiliar words to help me better understand a section of *Animal Behaviors: Animal Defenses*, “Poisonous Prey”.

Ongoing Assessment

- “Poisonous Prey” note-catcher (continued from Lesson 11; pages 17-23 *Animal Defenses* research journal)



Agenda	Teaching Notes
<ol style="list-style-type: none"> 1. Opening <ol style="list-style-type: none"> A. Engaging the Reader and Reviewing Learning Targets (5 minutes) 2. Work Time <ol style="list-style-type: none"> A. Close Reading of “Poisonous Prey” Continued: How Do Animals Use Poison to Survive? (35 minutes) B. Rereading an Informational Text: A Closer Look at Words (15 minutes) 3. Closing and Assessment <ol style="list-style-type: none"> A. Review Homework (5 minutes) 4. Homework <ol style="list-style-type: none"> A. Review your Preparing for a Science Talk note-catcher. 	<ul style="list-style-type: none"> • This is the second lesson where students closely read the section “Poisonous Prey” in the central text <i>Animal Behavior: Animal Defenses</i>. Students continue discussing and analyzing this section, ending with synthesizing their understanding of the text by answering the focus question: How do animals use poison to survive? • The close reading process is meant to help students deeply understand a section of the text. Students read and reread in order to deconstruct the meaning of the text, and then reconstructing the meaning using evidence from the text. Using questioning geared toward a focus question helps to make the text accessible to students. • The “Poisonous Prey” note-catcher (pages 17-23 Animal Research Journal) is meant to be discussion-based; the teacher can choose to invite students to work independently or in pairs or small groups when thinking about different questions, but the teacher should guide the whole class in a discussion of each section of the using the question in the guide, before moving on to the next section. This guide is not meant to be a worksheet that is assigned to students or partnered pairs to complete on their own. • This close read sequence is designed as two lessons. However depending on the needs of your class, you may choose to split this close reading into three lessons. • At the end of Lessons 11-12, the end goal is for students to be able to answer the focus question posed during Work Time A. Students are given the opportunity to do so in Lesson 12. • Recognizing and using parts of words is the vocabulary strategy focused on in this lesson. You may have students familiarize themselves with common affixes and roots by giving them a list of common prefixes and suffixes and asking them to build and define nonsense words with them (for example, the nonsense word <i>unjumping</i> could be defined as not jumping). This allows students to play with the parts of words in an engaging way to build confidence in using this strategy within the lesson. • In advance: <ul style="list-style-type: none"> – Review Ink-Pair-Share protocol (see Appendix). – Create “Poisonous Prey” Vocabulary poster. – Create Word Wall cards on index cards for the following words: entrap, poisonous, injecting, seizes, unpleasant, frantically, living, quickly, threatened, extract, warning (one word per index card) • Post: Learning targets.



Lesson Vocabulary	Materials
affix, prefix, root, suffix; poisonous (56), injecting, seizes, unpleasant, entrap, frantically, living, quickly, threatened, extract (57)	<ul style="list-style-type: none">• Close Readers Do These Things anchor chart (from Module 1, Unit 1, Lesson 3; or from Lesson 2 of this module)• “Poisonous Prey” note-catcher (page 17 of Animal Defenses research journal; from Lesson 11; one per student and one to display)• “Poisonous Prey” Close Reading guide (from Lesson 11; for teacher reference))• <i>Animal Behavior: Animal Defenses</i> (book; one per student and one for display; “Poisonous Prey,” pages 56–58)• Equity sticks• Vocabulary Strategies anchor chart (from Lesson 2)• “Poisonous Prey” Vocabulary poster (teacher-created; see supporting materials)• Common Affixes handout (one per student and one to display)• Animal Defense Mechanisms glossary (page 26–28 of Animal Defenses research journal; one per student and one to display)• Animal Defense Mechanisms glossary (completed, for teacher reference, from Lesson 3)• Sticky notes (several for each student)• Animal Defense Mechanisms Word Wall (from Lesson 3)• Word Wall cards (see Teaching Notes)• Millipede Defense Mechanisms: Preparing for a Science Talk note-catcher (page 24 of Animal Defenses research journal; one per student and one to display)



Opening	Meeting Students' Needs
<p>A. Engaging the Reader and Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Tell students they will continue to closely read “Poisonous Prey,” picking up where they left off in Lesson 11.• Invite students to use do a quick go 'round to respond to this question (students may pass if they choose):<ul style="list-style-type: none">* “What is one new fact you learned after reading ‘Poisonous Prey’ in our previous lesson?”• Focus students on the learning targets. Ask students to find a partner and explain in their own words the meanings of all three targets. Have pairs share their explanations and clarify as necessary. Students should have a good understanding of these targets from Lesson 11. Tell students that they will continue rereading “Poisonous Prey” today, making inferences and figuring out the meanings of words they might not know.	<ul style="list-style-type: none">• Discussing and clarifying the language of learning targets helps build academic vocabulary.



Work Time	Meeting Students' Needs
<p>A. Close Reading of “Poisonous Prey” Continued: How Do Animals Use Poison to Survive? (35 minutes)</p> <ul style="list-style-type: none"> • Display Close Readers Do These Things anchor chart and remind students that they will do all of these things to closely read this text: <ul style="list-style-type: none"> – Read small chunks of text slowly and think about the gist. – Reread each passage one sentence at a time. – Underline things that you understand or know about. – Circle or underline words that you do not know. – Talk with your partners about all of your good ideas. – State the gist or message of the paragraph in the margin. – Listen to the questions. – Go back to the text to find answers to questions. – Talk with your partners about the answers you find. • Invite students to open to their “Poisonous Prey” note-catchers on pages 17-23 of their Animal Defenses research journal and to take out their copies of Animal Behavior: Animal Defenses, opening to page 56. Remind students that they have been using this close reading guide to help them think and take notes about this section of <i>Animal Behavior: Animal Defenses</i>. • Use equity sticks to call on a student to read the focus question at the top of the close reading guide, and keep in mind as they work: <ul style="list-style-type: none"> * “How do animals use poison to survive?” • Using the “Poisonous Prey” Close Reading guide (from Lesson 11), support students in rereading and discussing the remainder of the text, inviting them to Think-Pair-Share and discuss the prompts as necessary. Start the tenth row at the prompt: “Reread the fifth paragraph on page 56 (continued on page 57) silently. Then use details from the text to answer the question on the right • Using the Ink-Pair-Share protocol, allow students to independently answer the focus question at the end of the close reading guide and share their responses. Listen for responses that include the three reasons outlined in “Poisonous Prey” Close Reading guide. 	<ul style="list-style-type: none"> • The teacher may offer selected shorter passages to specific groups based on the readiness and needs of the group. This provides an opportunity for students to read a complex text within the fourth-grade level span, but differentiates the length of the text, not the complexity. • Graphic organizers and recording forms engage students more actively and provide the necessary scaffolding that is especially critical for learners with lower levels of language proficiency and/or learning. For students needing additional support, provide a partially filled-in graphic organizer. • Provide ELLs with a sentence starter or frame to aid in language production. For example: <i>This section is mostly about ...</i> • Some students may benefit from having key sections pre-highlighted in their texts. This will help them focus on small sections rather than scanning the whole text for answers.



Closing and Assessment	Meeting Students' Needs
<p>B. Rereading an Informational Text: A Closer Look at Words (15 minutes)</p> <ul style="list-style-type: none">• Tell students that they have had a lot of practice with using different strategies to figure out vocabulary words that they don't know. Point to "think about parts of the word that you know" on the Vocabulary Strategies anchor chart. Explain that today, they are going to focus on using <i>prefixes</i>, <i>roots</i>, and <i>suffixes</i> to determine word meaning for some words from "Poisonous Prey."• Display the "Poisonous Prey" Vocabulary poster. Explain that these words all have something in common. Point out that the words have parts underlined. Invite students to examine the words and notice any patterns or themes. Listen for students observing things like the underlining at the beginning of words is in red and the underlining at the end of words is in green, the endings that appear more than once (-ous, s).• Define key terms and orient students to the poster:<ul style="list-style-type: none">– the <i>affixes</i> have been underlined in these words; tell students that affixes are a letter or group of letters that are added to a word to change its meaning.– <i>prefixes</i> are a type of affix that you add to the beginning of a word to change or add to its meaning. Ask students to examine the words on the poster and identify a prefix.– <i>suffixes</i> are a letter/groups of letters that you add to the end of a word to change its meaning or part of speech. Ask students to examine the words on the poster and identify a suffix.– <i>roots</i> are what you have left over when you take away any prefixes or suffixes. The root indicates the word's basic meaning. Ask students to examine the words on the poster and identify a root.• Tell students that knowing the way an affix changes the meaning of a root can help a reader figure out the meaning of a word they don't know. Display and distribute Common Affixes handout. Write <i>entrap</i> on the board. Explain that this word is probably one that they haven't seen before this unit. Model breaking it down by prefix/suffix and determining the meaning while using the handout. Say something like: "The root word jumps right out at me for this word—<i>trap</i> (circle root word). I can figure out the meaning of this word by looking more closely at the prefix. En- is the prefix (underline in red). I see on my handout that 'en' can mean 'cause to.' <i>Trap</i> means to catch something, so <i>entrap</i> must mean to cause something to be trapped. Let's try to use that word in a sentence: A spider uses a web to <i>entrap</i> its enemy."	<ul style="list-style-type: none">• Asking students to identify challenging vocabulary helps them monitor their understanding of a complex text. When students annotate the text by circling these words, it can also provide a formative assessment for the teacher.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Invite students to add the word <i>entrap</i> the Animal Defense Mechanisms glossary. • Invite students to form triads. Tell students that they get to choose three words from the “Poisonous Prey” Vocabulary poster and think about the word parts to determine the meaning of those words. Then, they will reread the text. Post directions: <ol style="list-style-type: none"> 1. Find the meaning of the following words using word parts: poisonous, injecting, seizes, unpleasant, frantically, living, quickly, threatened, extract, warning 2. With your partners, determine the meaning of each word by thinking about the word parts. 3. Find the word in your glossary and write the definition, the strategy you used to figure out the meaning, and a sketch representing the word. 4. Reread the text with your partners. 5. Discuss the following questions: How has your understanding of these words changed? Which words are still confusing for you and why? Record your questions on a sticky note. • Give students 10 minutes to look up the words, record their definitions, strategy used, and sketch, and discuss their understanding. Circulate and support as needed. Remind them that the words are listed alphabetically in the glossary of their research journals. If necessary, ask questions like: “How did you figure out the meaning of that word?” or “Are there any clues in the article that can help you figure out what that word means?” Listen for students to discuss the meanings of the words and using strategies from the Vocabulary Strategies anchor chart to determine meanings. • Cold call triads to share their definitions and visuals/notes for each word. Clarify the definition of each word if necessary. • Point out the Animal Defense Mechanisms Word Wall to students. Remind students that the Word Wall is a place to gather words about the topic they are studying. • Show students the new Word Wall cards with one word on each card: <i>entrap, poisonous, injecting, seizes, unpleasant, frantically, living, quickly, threatened, extract, warning</i>. Use equity sticks to choose students to add the cards to the Word Wall. • Invite students to use Fist to Five to briefly reflect on the learning target: “I can find the meanings of unfamiliar words to help me better understand ‘Poisonous Prey,’” with a fist being “I am not confident that I can meet this target on my own” and a five being “I can determine the meaning of an unfamiliar word on my own.” • Tell students that they will revisit this target and continue to practice using the glossary and Vocabulary Strategies anchor chart to figure out more about it. 	



Closing and Assessment	Meeting Students' Needs
<p>A. Review Homework (5 minutes)</p> <ul style="list-style-type: none">• Invite students to open to the Millipede Defense Mechanisms: Preparing for a Science Talk note-catcher on page 24 of the research journal. Explain to students that in the next lesson, they will have a Science Talk discussing the following Science Talk question:<ul style="list-style-type: none">* “Which millipede defense mechanism is most important? Why?”• Explain to students that for homework, they should use the notes in their research journals to complete the first column of this note-catcher, “When I read or saw that (evidence) ...” recording evidence that answers the Science Talk question.• If necessary, model briefly saying something like: “I remember reading in <i>Venom</i> that they have a tough exoskeleton. I wrote notes about this on the Listening Closely note-catcher from Lesson 10.” (Show note-catcher, pointing to the notes about this.) “I’ll write ‘they have a tough exoskeleton’ in the first row. This is an example piece of evidence someone would choose if they think the exoskeleton is the millipede’s most important defense mechanism.”• Tell students they should only fill in the first column of this note-catcher. Explain that they will work through the rest of it in the next lesson, before they begin the Science Talk.	
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Review your Preparing for a Science Talk note-catcher.	



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 12

Supporting Materials



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“Poisonous Prey” Vocabulary Poster

Teacher Directions: Copy the following text onto a large piece of chart paper for all the students to see. Underline prefixes in red and underline suffixes in green.

poisonous	injecting	seizes
unpleasant	entrap	frantically
living	quickly	excrete
threatened	extract	warning



Common Affixes

Prefix: letter groups added to the beginning of a word that change or add to the meaning

Suffix: letter groups added to the end of a word that show the part of speech and/or add meaning

Prefix	Meaning	Example
dis-	not, opposite of	<u>dis</u> cover, <u>dish</u> onest
en-	cause to	<u>en</u> joy, <u>en</u> trap
ex-	out	<u>ex</u> it, <u>ex</u> crete
in-, im-	not, opposite of	<u>in</u> dependent, <u>im</u> possible
in-, im-	in or into	<u>in</u> side, <u>im</u> migrate
inter-	between, among	<u>inter</u> national, <u>inter</u> rupt
mid-	middle	<u>mid</u> semester, <u>mid</u> night
mis-	wrongly	<u>mis</u> take, <u>mis</u> behave
non-	not, opposite of	<u>non</u> fiction, <u>non</u> stop
over-	too much, above	<u>over</u> grown, <u>over</u> due
pre-	before	<u>pre</u> school, <u>pre</u> pare
re-	again, back	<u>re</u> turn, <u>re</u> do, <u>re</u> fect
sub-	under, lower	<u>sub</u> marine, <u>sub</u> merge
super-	above, beyond	<u>super</u> market, <u>super</u> man
un-	not, opposite of	<u>un</u> happy, <u>un</u> comfortable
under-	too little, below	<u>under</u> fed, <u>under</u> ground



Common Affixes

Suffix	Meaning	Example
-ed	past-tense verbs	jump <u>ed</u> , smile <u>d</u>
-er	comparative	bigger <u>er</u> , smarter <u>er</u>
-er, -or	person connected with	teacher <u>er</u> , doctor <u>or</u>
-est	comparative	biggest <u>est</u> , softest <u>est</u>
-ful	full of	cheer <u>ful</u> , care <u>ful</u>
-ible, -able	can be done	like <u>able</u> , comfort <u>able</u>
-ing	verb form	play <u>ing</u> , sing <u>ing</u>
-ion, -tion, -ation, -ition	act, process	act <u>ion</u> , attent <u>ion</u>
-ity, -ty	state of	activ <u>ity</u> , honest <u>ty</u>
-ive, -ative, -itive	adjective form of a noun	attent <u>ive</u> , talkat <u>ive</u>
-less	without	help <u>less</u> , care <u>less</u>
-ly	characteristic of	friendl <u>ly</u> , motherl <u>ly</u>
-ment	action or process	enjoy <u>ment</u> , experim <u>ent</u>
-ness	state of, condition of	happi <u>ness</u> , darkn <u>ess</u>
-ous, -eous, -ious	having the qualities of	seriou <u>s</u> , poisonou <u>s</u>
-s, -es	plurals	boy <u>s</u> , milliped <u>es</u>
-y	characterized by	funny, rainy



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 13

Science Talk: Synthesizing What We Know about Millipedes



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can effectively engage in discussions with diverse partners about fourth-grade topics and texts. (SL.4.1)

- a. I can prepare myself to participate in discussions.
- a. I can draw on information to explore ideas in the discussion.
- b. I can follow our class norms when I participate in a conversation.
- c. I can ask questions that are on the topic being discussed.
- d. I can connect my questions and responses to what others say.

I can accurately synthesize information from two texts on the same topic. (RI 4.9)

Supporting Learning Targets

- I can effectively participate in a Science Talk about millipede defense mechanisms.
 - a. I can prepare for the Science Talk by using evidence from animal defense mechanism texts.
 - b. I can ask questions so I am clear about what is being discussed.
 - c. I can ask questions on the topic being discussed.
 - d. I can follow our class norms when I participate in a conversation.

Ongoing Assessment

- Preparing for a Science Talk note-catcher (page 22 Animal Defenses research journal)
- Observation of Science Talk



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Engaging the Reader: Quiz-Quiz-Trade (10 minutes)B. Reviewing Learning Targets (5 minutes)2. Work Time<ol style="list-style-type: none">A. Preparing for a Science Talk (15 minutes)B. Conducting the Science Talk (15 minutes)C. KWL: Millipede (5 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Exit Ticket (10 minutes)4. Homework<ol style="list-style-type: none">A. Continue reading your independent reading book for this unit.	<ul style="list-style-type: none">• This is the second of two Science Talks in this unit. This series of Science Talks helps students make progress toward SL4.1, which is formally assessed in Module 3.• When students prepare for the Science Talk during Work Time A, they use the teacher feedback from the Science Talk in Lesson 9. Be sure to give feedback and return to students by this lesson.• Part of the Science Talk preparation was assigned for homework after Lesson 12. Check that students have completed this; give time for them to complete it before this lesson if necessary.• The preparation for the Science Talk focuses on students making inferences and paraphrasing information researched in Lessons 10–12. This helps students make progress toward SL4.2, which is formally assessed in the end of unit assessment in Lesson 14.• The exit ticket is broken into two parts. The first part asks students to reflect on one of the guiding questions for the module. The second part asks students to rank the choices for expert group animals. Use these rankings to form the groups, which students begin working in during Lesson 1 of Unit 2.• In advance: Display the Science Talk Norms and Participating in a Science Talk anchor charts (from Lessons 8 and 9).• Review: Science Talk (see Appendix).• Post: Learning targets.



Lesson Vocabulary	Materials
goals, evidence, paraphrase	<ul style="list-style-type: none">• Additional Vocabulary word cards (see Teaching Notes and supporting materials)• Vocabulary word cards (from Lesson 8)• Equity sticks• Science Talk Notes and Goal sheet (page 12 of Animal Defenses research journal; from Lesson 8; one per student)• Preparing for a Science Talk note-catcher (page 24 of Animal Defenses research journal; one per student and one to display)• Preparing for a Science Talk note-catcher (completed, for teacher reference)• <i>Venom</i> (book; one per student; page 15)• <i>Animal Behavior: Animal Defenses</i> (one per student; “Poisonous Prey,” pages 56–58)• Science Talk Norms anchor chart (teacher-created; from Lesson 8)• Participating in a Science Talk anchor chart (teacher-created; from Lesson 9)• Science Talk Criteria checklist (one for teacher)• Millipede Defense Mechanisms: KWL chart (page 13 Animal Defenses research journal; from Lesson 9; one per student)• Exit tickets (one per student)



Opening	Meeting Students' Needs
<p>A. Engaging the Reader: Quiz-Quiz-Trade (10 minutes)</p> <ul style="list-style-type: none">• Tell students that today they will be discussing the question: “Which millipede defense mechanism is most important? Why?” Explain that now that they have read about millipede defense mechanisms, they should have new thoughts or ideas related to this question. Explain that today they will prepare for the Science Talk by reviewing the vocabulary that they have collected related to millipede defenses. Remind students that they have been recording vocabulary words into their Animal Defenses research journals and that the class has been building a Word Wall with these terms.• Explain that you would like them to do a short activity called Quiz-Quiz-Trade using words from the Word Wall to help build their understanding of these words. Post the following directions: Quiz-Quiz-Trade:<ol style="list-style-type: none">1. Find a partner.2. Read definition—Read your word’s definition to your partner. Allow him or her to guess the word or ask for a hint.3. Give a hint—If your partner needs a hint, say one thing that helps you remember the meaning of this word. Allow your partner to guess and share your word.4. Switch—Have your partner read his or her definition and let you guess or receive a hint.5. Trade cards and find a new partner. Repeat Steps 2–5.• Review the directions and clarify or model the process if necessary. Distribute the Additional Vocabulary word cards and the Vocabulary word cards (from Lesson 8). Explain that some they have played Quiz-Quiz Trade with some of these words, but that others are new from their recent reading about the millipede.• Point out to students that the word is on one side of the card and the definition is on the other. Tell them to be sure to cover the word so their partner cannot see it when trying to guess the word.• Give students 8 minutes to quiz and trade.• Collect the Vocabulary word cards.	<ul style="list-style-type: none">• Guiding questions provide motivation for student engagement in the topic, and give a purpose for reading a text closely.• Discussing and clarifying the language of learning targets helps build academic vocabulary.



Opening (continued)	Meeting Students' Needs
<p>B. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Use equity sticks to call on students to read the learning targets:<ul style="list-style-type: none">– I can effectively participate in a Science Talk about millipede defense mechanisms.– I can prepare for the Science Talk by using evidence from animal defense mechanism texts.– I can ask questions so I am clear about what is being discussed.– I can ask questions on the topic being discussed.– I can follow our class norms when I participate in a conversation.• Invite students to turn to the Science Talk Notes and Goal sheet on page 12 in their Animal Defenses research journals and reread the feedback given by the teacher and the goal they set for themselves after the first Science Talk.• Use a Think-Pair-Share:<ul style="list-style-type: none">* “What is the purpose of a Science Talk?”<ul style="list-style-type: none">• Listen for responses like: “To discuss big ideas, which helps us to better understand a topic.”:* “What goals did you set for yourself after the last Science Talk?”<ul style="list-style-type: none">• Listen for responses like: “I want to be sure to use evidence from my research to support what I say.”* “Based on the teacher feedback and your goal from last Science Talk, what is one thing you are going to try to do in today’s Science Talk?”<ul style="list-style-type: none">• Listen for responses like: “The teacher suggested I should ask clarifying questions when I don’t understand what someone else is saying, so I’m going to be sure to ask a question like, ‘What did you mean when you said not all spiders are poisonous?’”	



Work Time	Meeting Students' Needs
<p>A. Preparing for a Science Talk (15 minutes)</p> <ul style="list-style-type: none"> Invite students to open to the Preparing for a Science Talk note-catcher on page 24 of their Animal Defenses research journals. Post and remind students of the Science Talk question: <ul style="list-style-type: none"> * “Which millipede defense mechanism is most important? Why?” Remind students that they prepared for the Science Talk on their own for homework after the last lesson by recording evidence that answers the Science Talk question in the first column of the note-catcher. Explain to students that before they participate in the Science Talk, they will have a chance to add to their notes. Tell them they will be adding notes into the right-hand column, “I think that the most important millipede defense mechanism is ... because ...” Explain that the notes will be information <i>paraphrased</i> from their research, as well as inferences made from their research. Model paraphrasing and making an inference with the example evidence included on the note-catcher in the left-hand column: “They have a tough exoskeleton.” Say something like: “This is an example piece of evidence someone would choose if they think the exoskeleton is the millipede’s most important defense mechanism. We want to paraphrase and make an inference about it when we write our notes in the right-hand column. We’ve been paraphrasing what we’ve listened to throughout this unit when we listen closely to texts read to us. Paraphrasing is when you say something you read or listened to in your own words. So if we want to paraphrase this evidence, we’d say millipedes have a hard shell. Now we need to make an inference about this piece of evidence; we’ll think about how the tough exoskeleton or hard shell helps the millipede survive. Since the shell is hard, I think the exoskeleton protects the millipede’s body from predators—it’s like an armor that a knight would wear. So I’ll write that in the box next to the evidence: ‘I think that the most important millipede defense mechanism is its hard shell because it’s hard and protects its body from predators.’ I combined the evidence I paraphrased with the inference I made to write my notes.” Invite students to Think-Pair-Share, using the following steps to record inferences in the right-hand column: <ol style="list-style-type: none"> Reread the evidence in the left-hand column. Paraphrase the evidence. Make an inference by asking yourself, “How does this help the millipede survive?” Write your notes in the right-hand column. 	<ul style="list-style-type: none"> Graphic organizers and recording forms engage students more actively and provide the necessary scaffolding that is especially critical for students with lower levels of language proficiency and/or learning. For students needing additional support, you may want to provide a partially filled-in graphic organizer. Step-by-step instructions help students complete independent activities.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Be sure students have access to their texts: Venom (page 15) and Animal Behavior: Animal Defenses (pages 56–58) and the note-catchers used in Lessons 10–12, and remind students to refer to these resources if needed. Ask students to add to their note-catchers based on their conversations with their partners. Review the recording form briefly if needed. • Bring students back together. Tell students to think back to their goal they shared with a peer in the opening. Have them look over the evidence they recorded on their note-catchers for homework. Ask students to Think-Pair-Share: <ul style="list-style-type: none"> * “What is something new you now know about millipede defense mechanisms you might want to mention in today’s science talk?” * “Is there anything you can add to your note-catcher that will help you meet your goal?” • Circulate to confer as necessary, and remind students to use specific evidence from text to support their thinking. 	
<p>B. Conducting the Science Talk (15 minutes)</p> <ul style="list-style-type: none"> • Post the Science Talk Norms anchor chart and review as a class. Ask each student to turn to a partner and point out one norm the class might need to focus on after their last Science Talk. Have pairs share and discuss or clarify norms as necessary. • Remind students that good discussions help you to think about topics in a new way. In order to help them expand their understanding of millipede defense mechanism, they will need to ask one another questions and build on one another’s ideas about which millipede defense mechanism is most important. • Write a few sentence stems to help students during the upcoming discussion—for example: <ul style="list-style-type: none"> – “I wonder if _____?” – “I wonder why _____?” – “I agree and I also think _____. I disagree because _____.” – “That’s a good question. I think _____.” • Gather students whole group in a circle. Remind them to bring their journals. Display the Participating in a Science Talk anchor chart for the class to see. Briefly review the anchor chart with students and answer any questions. Explain that for this Science Talk, they will all participate in one talk rather than having a Fishbowl and two rounds. 	<ul style="list-style-type: none"> • Provide ELLs with additional sentence starters or frames to aid in language production. For example: “[Classmate’s name] said ... and this makes me think ...” or “I think the most important millipede defense mechanism is ... because ...”



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Direct students to begin the Science Talk. Use the Science Talk Criteria checklist or begin a new one with the new blank form in this lesson's supporting materials to monitor student progression toward the learning targets. Quickly redirect and support students as needed, but avoid leading the conversation. Remind students that their questions and comments should be directed to one another, not the teacher.• Ask students to return to their seats. Invite them to reread the goals they wrote on the bottom of page 11 in their Animal Defenses research journals. Have them reflect on the following questions with a partner: "What progress did you make on your Science Talk goal today? What can you continue to work on?" Encourage students to base their discussion on their written goals and this lesson's learning targets. Listen for students to state their goals and reference the learning targets as they share.• Collect students' Animal Defenses research journals. Use page 19 and the Science Talk Criteria checklist to assess individual students' progress toward SL.4.1 and record feedback in the appropriate spot on students' note-catchers.	
<p>C. KWL: Millipede (5 minutes)</p> <ul style="list-style-type: none">• Invite students to turn to the Millipede Defense Mechanisms: KWL chart in their Animal Defenses research journals. Remind them that scientists always reflect on and record what they've learned.• Invite students to Think-Pair-Share. Ask:<ul style="list-style-type: none">* "Were any of your questions about millipedes answered in the Science Talk today?"* "What new information did you learn from the Science Talk?"• Tell students to write the answers to any questions they had in the W column in the "I Learned" column, in the "Information" section. Invite students to add any new questions to the W column as well.• Tell students to write one new piece of information they learned in the "I Learned" column.	



Closing and Assessment	Meeting Students' Needs
<p>A. Exit Ticket (10 minutes)</p> <ul style="list-style-type: none">• Distribute exit tickets to students. Explain that the first part asks students to answer one of the guiding questions for this module.• Explain to students that in Part 2, they will be ranking the four animal choices for the expert groups. Tell students that the animal they are assigned to research will be the animal they write their narratives about, so they should think carefully about how they rank their choices.• Circulate and support as needed. If necessary, prompt students by asking questions like: “Can you give an example of how an animal that we’ve read about uses defenses to survive?” Collect exit slips once students have completed them.	<ul style="list-style-type: none">• Using entrance/exit tickets allows you to get a quick check for understanding of the learning target so that instruction can be adjusted or tailored to students’ needs during the lesson or before the next lesson. Pairing entrance tickets with exit tickets allows both teachers and students to track progress from the beginning to the end of the lesson.
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Continue reading your independent reading book for this unit.	



EXPEDITIONARY
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Grade 4: Module 2B: Unit 1: Lesson 13

Supporting Materials



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Additional Vocabulary Word Cards (Front):
Animal Defense Words

Teacher Directions: Prepare a set of these additional cards and add these to the word cards from Lesson 8.

retch	entrap
affect	toxic
excrete	poisonous
injecting	seizes
unpleasant	frantically
living	quickly
warning	extract



Additional Vocabulary Word Cards (Back):
Animal Defense Word Definitions

throw up	causes something to be trapped
to change	deadly or poisonous
ooze, make	having poison
to put into something	grabs, take hold
not pleasing	out of control
alive	doing something fast
a sign of something bad coming	to pull out

Animal Defenses Research Journal:
Preparing for a Science Talk
(Completed, for Teacher Reference)

Question: Which millipede defense mechanism is most important? Why?

Preparation: Look back in your Animal Defenses research journal and texts about animal defense mechanisms to find evidence to help you answer the Science Talk question.

When I read or see that (evidence) ...	It makes me think that animals' bodies help them survive by ...
(Example) most spiders are venomous (<i>Venom</i> page 8)	(Example) I think that the venom paralyzes or kills the spider's prey and enemies.
the mimic octopus mimics other creatures to turn off predators ("Award-Winning Survival Skills: How Animals Elude Prey")	I think that since the mimic octopus can change to look like other dangerous animals, its enemies probably stay away from them because they think the octopus is dangerous and will poison or hurt them.
the three-banded armadillo rolls into a ball ("Award-Winning Survival Skills: How Animals Elude Prey")	I think that it rolls into a ball to protect the parts of its body that don't have a shell—its head, legs, and tail. By rolling into a ball, these parts are under its hard armor and protected from its enemies.
"bright colors can also be warning colors" (<i>Animal Behavior: Animal Defenses</i> page 58)	I think that the colors warn predators that the animal is dangerous, so they learn to stay away from it.



Animal Defenses Research Journal:
Science Talk Notes and Goals
(Completed for Teacher Reference)

My Science Talk Notes: Ideas and Questions

- **Do different kinds of millipedes emit different poisons?**
- **Is the poison dangerous to other millipedes, or just to predators?**

Now that I have heard everyone's reasons and their evidence, the millipede defense mechanism I think is most important is its poisonous gas because it is the most deadly and kills the

millipede's enemy the fastest.

My teacher's feedback:

My goals for the next Science Talk:

For the next Science Talk, I will try to build on my classmates' ideas more by saying things like, "To build on what so and so said ..." and "So and so said ... and that makes me think that ..."



Science Talk Criteria Checklist

I can effectively participate in a Science Talk about millipede defense mechanisms.

- a. I can prepare for the Science Talk by gathering evidence from scientific texts about simple machines.
- b. I can ask questions about the topic being discussed.
- c. I can build on other's ideas when responding to their statements and questions.
- d. I can follow our class norms when I participate in a conversation.

Student name	Prepares with evidence	Norms	Asks questions related to topic	Responds to and builds on others' ideas/questions	Teacher comments



Exit Ticket

Name: _____

Date: _____

Part 1:

How do animals' bodies and behaviors help them survive? Use evidence from your research and from today's Science Talk to support your answer.

Part 2:

Which animal would you like to research and write about for the performance task? Rank the following four choices, using a 1 for the animal you are most interested in researching and a 4 for the animal you are least interested in researching.

_____ Monarch butterfly

_____ Three-banded armadillo

_____ Mimic octopus

_____ Gazelle



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 14

End of Unit 1 Assessment: Answering Questions and Summarizing Texts about Animal Defense Mechanisms



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can explain what a text says using specific details from the text. (RI.4.1)
I can make inferences using specific details from text. (RI.4.1)
I can determine the main idea using specific details from the text. (RI.4.2)
I can summarize informational or persuasive text. (RI.4.2)
I can paraphrase portions of a text that is read aloud to me. (SL.4.2)

Supporting Learning Targets

- I can paraphrase information read aloud about animal defense mechanisms.
- I can determine the main idea of “Hearing Sounds through the Ground.”
- I can summarize “Hearing Sounds through the Ground” using the main idea and supporting details found in the text.

Ongoing Assessment

- End of Unit 1 Assessment
- Tracking My Progress, End of Unit 1 recording form



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Reviewing Learning Targets (5 minutes)2. Work Time<ol style="list-style-type: none">A. End of Unit 1 Assessment: Answering Questions and Summarizing Texts about Animal Defense Mechanisms (50 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Reflecting on Learning Targets—Tracking My Progress (5 minutes)4. Homework<ol style="list-style-type: none">A. Continue reading your independent reading book for this unit.	<ul style="list-style-type: none">• In Part 1 of this assessment, students listen to a transcript (from a video about animal defense mechanisms) that is read aloud by the teacher. Since this is part of an assessment of speaking and listening standards, do not distribute this text to students.• The learning target “I can summarize informational or persuasive text” (RI.4.2) will be assessed again in Unit 2; use the End of Unit 1 Assessment as a formative assessment of students’ current mastery of that standard, and to inform Unit 2 instruction.

Lesson Vocabulary	Materials
Do not preview vocabulary for this assessment lesson.	<ul style="list-style-type: none">• End of Unit 1 Assessment: Answering Questions and Summarizing Texts about Animal Defense Mechanisms (one per student)• End of Unit 1 Assessment: Answering Questions and Summarizing Texts about Animal Defense Mechanisms (answers, for teacher reference)• Transcript of “Masters of Disguise” video (one for teacher read-aloud)• Tracking My Progress, End of Unit 1 recording form (one per student and one to display)



Opening	Meeting Students' Needs
<p>A. Reviewing Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Tell students that today they will complete a formal assessment in which they will do on their own much of what they have been practicing:<ul style="list-style-type: none">– Read an informational text.– Identify and record the main idea in the graphic organizer.– Answer questions that are dependent on the text.– Paraphrase information after listening to a text being read aloud.• Remind them that they will need to refer to the text in order to answer the questions thoroughly. Encourage the students to do their best. Let them know that this is a chance to show what they know and how much effort they are making to read carefully and identify important details in an informational text. This also is an opportunity to discover even more about animal defense mechanisms.• Ask students to read the learning targets silently:<ul style="list-style-type: none">– “I can determine the main idea of ‘Hearing Sounds through the Ground.’”– “I can summarize ‘Hearing Sounds through the Ground’ using the main idea and supporting details found in the text.”– “I can paraphrase information presented in a video on animal defense mechanisms.”• Have students give a thumbs-up if they are clear on what they will be expected to do, a thumbs-sideways if they understand part but not all of what to do, and a thumbs-down if they are very unsure about what they should do. Address any clarifying questions before beginning the assessment.	<ul style="list-style-type: none">• Discussing and clarifying the language of learning targets helps build academic vocabulary.



Work Time	Meeting Students' Needs
<p>A. End of Unit 1 Assessment: Answering Questions and Summarizing Texts about Animal Defense Mechanisms (50 minutes)</p> <ul style="list-style-type: none">• Distribute the End of Unit 1 Assessment: Answering Questions and Summarizing Texts about Animal Defense Mechanisms.• Explain to students that for the first part of the assessment, they will be listening to a transcript from a video—"Masters of Disguise" and that after hearing it read aloud twice they will paraphrase it.• Tell them that the first time it is read they should just listen.. The second time, they should complete Part 1 of the assessment.• Read the transcript of "Masters of Disguise" video to students.• Tell students that they will now listen to the text a second time. Tell them they should now complete Part 1 of the assessment. Explain that when they complete that part, they may move on and continue to work on the remainder of the assessment.• Read the transcript of "Masters of Disguise" a second time.• Let students know that once they are finished with Part 1, they, may move on and work on the remainder of the assessment.• While students are taking the assessment, circulate to monitor their test-taking skills. Prompt students throughout the assessment, letting them know how much time they have left and encouraging them to continue working. This is an opportunity to analyze students' behaviors while taking an assessment. Document strategies students are using during the assessment. For example, look for students annotating their text, using their graphic organizer to take notes before answering questions, and referring to the text as they answer questions.	<ul style="list-style-type: none">• If students receive accommodations for assessments, communicate with the cooperating service providers regarding the practices of instruction in use during this study as well as the goals of the assessment.• For some students, this assessment may require more than the 50 minutes allotted. Consider providing students time over multiple days if necessary.



Closing and Assessment	Meeting Students' Needs
<p>A. Reflecting on Learning Targets—Tracking My Progress (5 minutes)</p> <ul style="list-style-type: none">• Congratulate students on their hard work on the end of unit assessment. Distribute the Tracking My Progress, End of Unit 1 recording form. Remind students that successful learners keep <i>track</i> and <i>reflect</i> on their own learning. Point out that they have been doing this informally all year during debriefs, when they consider how well they are progressing toward the learning targets.• Review Step 1 in the self-assessment and remind students that this is where you would like them to explain what the target means to them. For example, the first target uses the phrase “determine the main idea using specific details.” They should write what the target means in their own words, by explaining what it means to figure out the main idea of a text and how details are used to support it.• Point out the second step and explain that this is similar to the thumbs-up, -sideways, or -down that they have used in previous lessons. They should also explain why they think they “need more help,” “understand some,” or are “on the way,” and give examples. Consider giving students an example such as: “I circled that I need more help because I can’t remember what the word ‘determine’ means.”• Collect students’ self-assessments to use as a formative assessment to guide instructional decisions during Units 2 and 3.	<ul style="list-style-type: none">• Developing self-assessment and reflection supports all students, but research shows it supports struggling learners the most.
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Continue reading your independent reading book for this unit.	



EXPEDITIONARY
LEARNING

Grade 4: Module 2B: Unit 1: Lesson 14

Supporting Materials



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Transcript from “Masters of Disguise” Video

Teacher Directions: Read this transcript aloud twice for students to paraphrase on part 1 of their assessment.

NARRATOR: Have you ever wanted to be invisible? Camouflage means disguise. Animals, from insects to mammals, use camouflage to blend into their surroundings, to hide from predators or to catch a meal.

A flounder hides easily on the sandy ocean floor. Only its eyes and gills move. When it swims to a place that looks different, it can change color to blend in again.

A crab decorates itself with bits of shell and rock. Such a costume helps it look like what it isn't...part of the ocean floor.

An alligator snapping turtle lives in the swamps of Florida. Its gray, brown, or black shell and skin match the color of the mud, making it very hard to see.

A horned lizard blends into the gravel of the anthill. It is almost invisible as it sticks out its tongue, lapping up ants as they hurry by.

There is an insect called a walkingstick, and you can see why. When the green walkingstick moves, it looks like a twig shaking in the wind. Where its leg joins the body seems like any stem on the bush. Even the head of the walkingstick looks like a small bud.

Caterpillars are a favorite food for many birds. Birds look for leaves with bite marks, because there might be juicy caterpillars nearby. The most common caterpillar defense is not being seen at all. Being a careful eater is an advantage for a hornworm caterpillar. It covers its tracks by chewing the leaf evenly and quickly.

Then there's the dagger moth caterpillar. It actually hides behind a leaf as it eats. When most of the leaf is gone, the caterpillar chews through the stem, getting rid of the evidence. The leaf falls to the ground...joining the leftovers of other caterpillars in the area.



End of Unit 1 Assessment:
Answering Questions and Summarizing Texts about Animal Defense Mechanisms

Name: _____

Date: _____

Long-Term Learning Targets Assessed:

I can paraphrase portions of a text that is read aloud to me. (SL.4.2)

I can explain what a text says using specific details from the text. (RI.4.1)

I can make inferences using specific details from text. (RI.4.1)

I can determine the main idea using specific details from the text. (RI.4.2)

I can summarize informational or persuasive text. (RI.4.2)

Part 1: Listen to the narrator in the video. Complete the graphic organizer to paraphrase what you hear.

More Facts about Camouflage as an Animal Defense Mechanism

Animals That Use Camouflage	Examples of How Camouflage Is Used	How This Helps Animals Survive



End of Unit 1 Assessment:

Answering Questions and Summarizing Texts about Animal Defense Mechanisms

Explain in your own words what this video was about.



End of Unit 1 Assessment:

Answering Questions and Summarizing Texts about Animal Defense Mechanisms

Part 2: Read “Hearing Sounds through the Ground” for the gist. Then reread the text and use it to answer the questions below.



End of Unit 1 Assessment:

Answering Questions and Summarizing Texts about Animal Defense Mechanisms

Hearing SOUNDS Through the GROUND

By Sharon T. Pochron, Ph.D.

Elephants talk to each other. They trumpet, growl, moan, bellow, and squeal. Elephants rumble to each other, too.

In fact, the rumbling is so low that humans can't hear it. But elephants can hear it, and the deep sounds go farther than the higher-pitched sounds that we can hear.

Elephants rumble to warn other elephants that something dangerous is near. When elephant herds hear this rumbling sound, they do things to keep their babies safe. They clump into a tight group to keep their babies close. The entire elephant family turns toward the source of rumbling. Then the elephants slowly leave, as if the rumbling were a warning.

An elephant's rumbling feels strange to humans. It is such a deep, low sound that the ground actually shakes. A team of scientists led by Dr. Caitlin O'Connell-Rodwell of Stanford University wondered if the ground-shaking part of this sound was important to elephants. The scientists thought it was



Elephant rumbles make the ground vibrate.

An earth-shaking discovery about elephants.

possible that elephants might "listen" to the earth shaking beneath their feet.

To find out, the scientists studied wild elephants in Namibia, Africa. They used a machine to

record the shaking that happens when elephants give their rumble call, the same machine scientists use to measure earthquakes. Then the scientists used another machine to shake the ground exactly as if an elephant were rumbling—but without the sound. The scientists played the noiseless shaking to the elephants and watched what the elephants would do.

When the elephants felt the ground rumble, they clumped into a group, they all turned to face in the same direction, and then they left—even though they did not hear the rumble call with their ears.

No one knows how elephants use these earth-shaking sounds in everyday life. Do they rely on sounds through the ground when changing weather blocks their usual calls? Can these vibrations carry a message even farther than rumblings through the air? Scientists have many more questions to answer as they work to learn how elephants talk to one another . . . and what they're saying.

Scientists made the ground shake.



Dr. Caitlin O'Connell-Rodwell led an experiment to see what elephant families do when the ground shakes with elephant rumbles.

Photo (top) courtesy of Dr. Caitlin O'Connell-Rodwell; (bottom) by Max Salomon.



1. The third paragraph says, “Elephants rumble to warn other elephants that something dangerous is near. When elephant herds hear this rumbling sound, they do things to keep their babies safe. They clump into a tight group to keep their babies close. The entire elephant family turns toward the source of rumbling. Then the elephants slowly leave, as if the rumbling were a warning.”

What is the main idea of this paragraph?

- a. Elephant rumbling keeps elephant babies safe.
 - b. Elephant rumbling increases the chances of survival for the entire elephant herd.
 - c. Rumbling is a signal of danger.
 - d. When elephants hear rumbling, they leave.
2. Which line from the text is the best evidence to support the answer to Question 1?
 - a. “Elephants rumble to warn other elephants that something dangerous is near.”
 - b. “They clump into a tight group to keep their babies close.”
 - c. “The entire elephant family turns toward the source of the rumbling.”
 - d. “Then the elephants slowly leave.”



End of Unit 1 Assessment:

Answering Questions and Summarizing Texts about Animal Defense Mechanisms

3. Read the following sentence from Paragraph 5 of the text.

“The scientists played the noiseless shaking to the elephants and watched what the elephants would do.”

Which explanation is most appropriate for why scientists played noiseless shaking to the elephants?

- a. To determine if elephants might “listen” to the rumbling
- b. To see how elephants protect their babies
- c. To warn the elephants of danger
- d. To cause the elephants to move to a new location

4. Which line from the text best explains why scientists still have more questions about how elephants talk to one another?

- a. “An elephant’s rumbling feels strange to humans.”
- b. “The scientists thought it was possible that elephants ‘listen’ to the earth shaking beneath their feet.”
- c. “When elephants felt the ground rumble, they clumped into a group ... even though they did not hear the rumble call with their ears.”
- d. “No one knows how elephants use these earth-shaking sounds in everyday life.”

5. In the third paragraph, the text says, “The entire elephant family turns toward the source of rumbling.” What is the best definition of the word *source* as used in the context of this sentence?

- a. thing from which something arises; origin
- b. manufacturer
- c. start of a stream or river
- d. supplier of information



End of Unit 1 Assessment:
Answering Questions and Summarizing Texts about Animal Defense Mechanisms

6. Select one sentence from the text that shows a similarity between elephants and humans. Record the sentence below.

7. List one detail from the text that supports the conclusion that rumbling serves as an elephant defense mechanism.

Part 3: Reread the text and determine the main idea of the text. Identify three details that support the main idea.

<i>Hearing Sounds through the Ground</i>	
Main Idea:	Supporting Details:



End of Unit 1 Assessment:
Answering Questions and Summarizing Texts about Animal Defense Mechanisms

Part 4: Summarizing the Text: After thinking more closely about this text, summarize what you think this reading is mostly about. Use several specific details from the text in your summary.



End of Unit 1 Assessment:
Answering Questions and Summarizing Texts about Animal Defense Mechanisms
(Answers, for Teacher Reference)

Long-Term Learning Targets Assessed:

I can paraphrase portions of a text that is read aloud to me. (SL.4.2)

I can explain what a text says using specific details from the text. (RI.4.1)

I can make inferences using specific details from text. (RI.4.1)

I can determine the main idea using specific details from the text. (RI.4.2)

I can summarize informational or persuasive text. (RI.4.2)

Part 1: Listen to the narrator in the video. Complete the graphic organizer to paraphrase what you hear.

More Facts about Camouflage as an Animal Defense Mechanism

Animals That Use Camouflage	Examples of How Camouflage Is Used	How This Helps Animals Survive
Possible answers: Flounder Crab Alligator Horned lizard Walking stick	Possible answers: <ul style="list-style-type: none">• Only gills and eyes of flounder move, allowing it to blend in with the ocean floor• Walking stick mimics a twig shaking in the wind	Possible answer: <ul style="list-style-type: none">• The predator thinks the walking stick is a twig, so instead of eating it, it keeps going looking for food.

Explain in your own words what this video was about.

Camouflage means disguise. Many animals use camouflage to protect themselves or catch food.



End of Unit 1 Assessment:
Answering Questions and Summarizing Texts about Animal Defense Mechanisms
(Answers, for Teacher Reference)

1. The third paragraph says, “Elephants rumble to warn other elephants that something dangerous is near. When elephant herds hear this rumbling sound, they do things to keep their babies safe. They clump into a tight group to keep their babies close. The entire elephant family turns toward the source of rumbling. Then the elephants slowly leave, as if the rumbling were a warning.”

What is the main idea of this paragraph?

- a. Elephant rumbling keeps elephant babies safe.
 - b. **Elephant rumbling increases the chances of survival for the entire elephant herd.**
 - c. Rumbling is a signal of danger.
 - d. When elephants hear rumbling, they leave.
2. Which line from the text is the best evidence to support the answer to Question 1?
- a. **“Elephants rumble to warn other elephants that something dangerous is near.”**
 - b. “They clump into a tight group to keep their babies close.”
 - c. “The entire elephant family turns toward the source of the rumbling.”
 - d. “Then the elephants slowly leave.”



End of Unit 1 Assessment:
Answering Questions and Summarizing Texts about Animal Defense Mechanisms
(Answers, for Teacher Reference)

3. Read the following sentence from Paragraph 5 of the text.

“The scientists played the noiseless shaking to the elephants and watched what the elephants would do.”

Which explanation is most appropriate for why scientists played noiseless shaking to the elephants?

- a. **To determine if elephants might “listen” to the rumbling**
- b. To see how elephants protect their babies
- c. To warn the elephants of danger
- d. To cause the elephants to move to a new location

4. Which line from the text best explains why scientists still have more questions about how elephants talk to one another?

- a. “An elephant’s rumbling feels strange to humans.”
- b. “The scientists thought it was possible that elephants ‘listen’ to the earth shaking beneath their feet.”
- c. “When elephants felt the ground rumble, they clumped into a group ... even though they did not hear the rumble call with their ears.”
- d. **“No one knows how elephants use these earth-shaking sounds in everyday life.”**

5. In the third paragraph, the text says, “The entire elephant family turns toward the source of rumbling.” What is the best definition of the word *source* as used in the context of this sentence?

- a. **thing from which something arises; origin**
- b. manufacturer
- c. start of a stream or river
- d. supplier of information

End of Unit 1 Assessment:
Answering Questions and Summarizing Texts about Animal Defense Mechanisms
(Answers, for Teacher Reference)

6. Select one sentence from the text that shows a similarity between elephants and humans. Record the sentence below.

Possible sentence choices:

- “Elephants talk to each other.”
- “They do things to keep their babies safe.”
- “Elephants ... warn other elephants that danger is near.”

7. List one detail from the text that supports the conclusion that rumbling serves as an elephant defense mechanism.

Possible details: “When they felt the ground rumble, they clumped into a group”; “They all turned to face the same direction”; “Then they left.”

Part 3: Reread the text and determine the main idea of the text. Identify three details that support the main idea.

<i>Hearing Sounds through the Ground</i>	
<p>Main Idea:</p> <p>Possible answer: Elephants using rumbling to warn one another of danger and communicate to the whole herd.</p>	<p>Supporting Details:</p> <p>Possible answers:</p> <ul style="list-style-type: none"> • Rumbles are so low that they shake the ground. • When one elephant rumbles, the herd groups together, protects the babies, and moves to safety. • Scientists studied the rumbles and the ground-shaking to decide why they are important.



End of Unit 1 Assessment:
Answering Questions and Summarizing Texts about Animal Defense Mechanisms
(Answers, for Teacher Reference)

Part 4: Summarizing the Text: After thinking more closely about this text, summarize what you think this reading is mostly about. Use several specific details from the text in your summary.

Possible Answer:

Elephants communicate with one another through rumblings, deep sounds that human ears cannot hear. These rumblings are so low that they shake the ground! Elephants use rumbling to as a defense mechanism to warn one another about coming danger. When one elephant rumbles, the herd forms a tight clump with the babies at the center. They slowly leave the area together, all facing the same direction. Scientists conducted an experiment to determine if elephants used the ground-shaking as a defense the way they use the rumbling. They discovered that even without the sound, the reaction of the elephants was similar. This left scientists wondering why and how elephants use both the rumbling and the ground-shaking in their daily lives.

Tracking My Progress End of Unit 1

Name: _____

Date: _____

Learning target: I can determine the main idea using specific details from the text

1. The target in my own words is:

2. How am I doing? Circle one.

I need more help to learn this



I understand some of this



I am on my way!



3. The evidence to support my self-assessment is:



Tracking My Progress End of Unit 1

Name:

Date:

Learning target: I can summarize a text using the main idea and supporting details found in the text.

1. The target in my own words is:

2. How am I doing? Circle one.

I need more help to learn this



I understand some of this



I am on my way!



3. The evidence to support my self-assessment is:



Tracking My Progress End of Unit 1

Name:

Date:

Learning target: I can paraphrase information presented in a text read aloud to me.

1. The target in my own words is:

2. How am I doing? Circle one.

I need more help to learn this



I understand some of this



I am on my way!



3. The evidence to support my self-assessment is:
