

Lesson 11: Preparing for a Text-Based Discussion: Science Talk about Animal Defenses



CCS Standards

- **SL.4.1:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.
- **SL.4.1a:** Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
- **SL.4.1b:** Follow agreed-upon rules for discussions and carry out assigned roles.



Daily Learning Target

- I can prepare for a Science Talk about animal defense mechanisms by using evidence from my research. (SL.4.1)

Ongoing Assessment

- Animal Defense Mechanisms: Preparing for a Science Talk note-catcher (SL.4.1)

Agenda

1. Opening

- A. Research Reading Share (10 minutes)
- B. Reviewing Learning Target (5 minutes)

2. Work Time

- A. What Is a Science Talk? (10 minutes)
- B. Preparing Evidence and Questions for the Science Talk (30 minutes)

3. Closing and Assessment

- A. Reflecting on Learning Target (5 minutes)

4. Homework

- A. Review notes for the Science Talk.
- B. Accountable Research Reading. Select a prompt to respond to in the front of your independent reading journal.

Teaching Notes

Purpose of lesson and alignment to standards:

- In this lesson, students prepare for a Science Talk to help them synthesize their learning about animal defenses from Unit 1 and to make progress toward SL.4.1, which is formally assessed in Module 3.
- Science Talks are discussions about big questions or scientific ideas. They give students the opportunity to collectively theorize and build on each other's ideas. These talks provide a

window into student's thinking and help teachers see what students really know and what their misconceptions may be.

- In Opening A, students share what they have read and learned from their independent reading texts. This sharing is designed as another measure for holding students accountable for their research reading completed for homework. This volume of reading promotes students' growing ability to read a variety of literary and informational texts independently and proficiently. (RI.4.10, RL.4.10, SL.4.1)
- Collect the Summary Writing organizers completed for homework in Lesson 9.

How it builds on previous work:

- Throughout Module 1 and this unit, students have worked in groups of varying size to discuss and share ideas with classmates. This is a more formal and organized discussion, but it builds on the speaking and listening foundations students have already built.
- The research reading students complete for homework helps to build both their vocabulary and knowledge pertaining to animals and specifically animal defense mechanisms. By participating in this volume of reading over a span of time, students will develop a wide base of knowledge about the world and the words that help to describe and make sense of it.
- Continue to use Goals 1 and 2 Conversation Cues to promote productive and equitable conversation.

Areas where students may need additional support:

- Students may require support when preparing questions for the Science Talk.

Assessment Guidance:

- Consider reviewing their independent reading journals while students are completing their Science Talk note-catchers.
- Consider using the Reading: Foundational Skills Informal Assessment: Phonics and Word Recognition Checklist (Grade 4) to informally assess students during the research reading share in Opening A (see Module 1 Appendix).
- Collect in Summary Writing organizer homework (Lesson 9).

Down the road:

- In the next lesson students will participate in a Science Talk. They will be formally assessed on SL.4.1 in Module 3.

In advance:

- Review the Science Talks protocol (see Classroom Protocols).
- Strategically pair students for Work Time B.
- Prepare a research reading share using with the Independent Reading: Sample Plan document, or using your own independent reading routine.
- Post: Learning targets.

- Review the Module Overview document for technology and multimedia that could support students in this lesson.

Supporting English Language Learners

Supports guided in part by CA ELD Standards 4.I.A.1, 4.I.A.3, and 4.I.B.5

Important points in the lesson itself

- The basic design of this lesson supports ELLs by scaffolding opportunities to use oral language in a structured way. This will foster English language development as students struggle to communicate within an authentic and content-rich context.
- ELLs may find the participatory learning approach challenging, especially those who have received schooling in other cultures. As a result, some may be hesitant to participate. Reassure students that speaking up is the best way to learn, without putting them on the spot or forcing them to participate. Some students may also become stressed at the prospect of speaking in front of the group. Point out that making mistakes is an important part of learning. Consider including a norm saying there are no such things as mistakes when we try our best.

Levels of support

For lighter support:

- Buy or ask for large paint chips from a local hardware or paint store or print them online. Write the words *participate*, *join*, and *get a turn*, each one on a different shade of the paint chip. Place them on the wall and discuss the shades of meaning in relation to the Science Talk.
- Invite students to brainstorm the cultural nuances of disagreeing with someone in English. Norms for disagreeing can vary across languages, so encourage students to make a list of the language they know for disagreeing, and ask them to rank it according to politeness. How could they make an impolite disagreement more polite? Why is important to disagree politely in the U.S.?
- As students prepare for the Science Talk, build enthusiasm and reduce anxiety by providing a quick model of a Science Talk with two students. Take two or three minutes to sit in a circle with the two students, sharing how animals' bodies help them survive. As you model, note any helpful formal phrases you or the students use and write the phrases on the board. Examples:
 - “I was interested to read that snakes protect themselves by ____.”

- “I read the same information. And I also think that the armadillo’s defense mechanism helps it ____.”
- “Colorful wings is one defense that ____.”

For heavier support:

- Some students may still be confused as to what a Science Talk is after the explanation in the Opening. Display a video or briefly Fishbowl an example of an effective Science Talk to provide a clear model.
- Because formal language will be the norm for the Science Talks, have students categorize the differences between formal and informal language. Example:

formal	informal
“That’s a great point. Venom is actually a kind of saliva. It protects by helping the snake paralyze its prey.”	“You know, venom. Cause it, like, paralyzes. So nasty.”
mostly complete sentences	more fragments
precise descriptions	slang
very polite, friendly	polite, friendly

- Allow students to practice expressions for initiating a conversation and for politely taking a turn in the conversation. Examples:
 - “The most interesting information I read was that ____.”
 - “That’s a great point. I’d add that ____.”
 - “Let me add that ____.”
 - “Your idea is fascinating because _____. Also, another defense mechanism is _____.”

Universal Design for Learning

- **Multiple Means of Representation:** In this lesson, students prepare evidence and questions for a Science Talk. To be successful in these efforts, they will need to generalize the skills that they learned from previous lessons in this unit. Activate prior knowledge by recalling the learning targets from the previous lessons and how this work supports them as they prepare evidence and questions for the Science Talk.
- **Multiple Means of Action & Expression (MMAE):** Consider providing a partially completed note-catcher for students who may struggle to organize their ideas in writing. For instance, providing the citation of where to find the evidence will guide them toward truly useful evidence to think about. Providing the actual evidence will save them an entire step, giving them more time to think about what that evidence tells them about how their animal survives. If there are students who need more practice searching a text to find evidence, consider providing the right-hand column and asking them to go back to the text and find the evidence that matches the provided statement.
- **Multiple Means of Engagement (MME):** Since some students may have completed some of the prompts in their independent reading journal orally with a family member or friend, it will be important that these students have some notes to use for this sharing time. Consider meeting with them in advance to prep them for the research reading share.

Vocabulary

Key:

(L): Lesson-Specific Vocabulary

(T): Text-Specific Vocabulary

(W): Vocabulary used in writing

- effectively, Science Talk, evidence (L)

Materials

- ✓ Working to Become Ethical People anchor chart (from Module 1)
- ✓ Independent Reading: Sample Plan (see Module 1 Appendix; for teacher reference)
- ✓ Discussion Norms anchor chart (from Module 1)
- ✓ Animal Defense Mechanisms: Preparing for a Science Talk note-catcher (one per student and one to display)
- ✓ Animal Defenses research notebook (from Lesson 1; one per student)

Opening

A. Research Reading Share (10 minutes)

- Focus students on the **Working to Become Ethical People anchor chart**. Remind students of: I behave with integrity. This means I am honest and do the right thing, even when it's difficult, because it is the right thing to do.
- Remind them that this includes doing homework even when there may be other things they want to do after school. Remind them that the purpose of research reading is to build background knowledge and vocabulary on a topic so that they can gradually read more and more complex texts on that topic.
- Refer to the **Independent Reading: Sample Plan** to guide students through a research reading review, or use your own routine.

Meeting Students' Needs

- For ELLs: Repeat the question, "From which text did you learn it?". Rephrase the question: "Where did you read the information you learned?"
- For ELLs and students who may need additional support with organizing ideas for verbal expression: Offer sentence frames to bolster participation for students who need heavier support:
 - "I learned ____."
 - "I read about it in the ____ text."
 - "One new word I learned is _____. It means ____" (MMAE)

Opening

B. Reviewing Learning Target (5 minutes)

- Direct students' attention to the posted learning targets and ask for volunteers to read them aloud:

"I can prepare for a Science Talk about animal defense mechanisms by using evidence from my research."

- Underline the words *Science Talk*. Inform students that a Science Talk is a discussion about big or important questions scientists have. Tell students that researchers frequently share information they learn with others and ask questions of other experts. This helps experts to build their understanding and expand their thinking.
- Underline the word *evidence*. Ask students to discuss with an elbow partner, then select students to share out:

"What is evidence?" (Evidence is proof that what you are suggesting is/might be correct.)

"Where can you find evidence?" (in texts)

"Why do you need evidence?" (so that people take you seriously and to prove to those who may doubt that what you are suggesting is correct)

- If productive, cue students to listen carefully and seek to understand:

"Who can tell us what your classmate said in your own words?" (Responses will vary.)

Meeting Students' Needs

- For ELLs: Ask:

"What does evidence mean?" (Something that gives proof.)

"We often say:

- collect evidence
- use evidence from
- supported by evidence
- provide evidence
- discover evidence
- solid evidence
- hard evidence
- supporting evidence
- flimsy evidence

There are other common forms of the word:

- *evidence* (verb/action)
- *evident* (adjective)

How do you use evidence in a class discussion?"

- Allow students to add this word to the Word Wall and their vocabulary log.

Work Time

A. What Is a Science Talk? (10 minutes)

- 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.
- Tell students that 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 that everyone's ideas can be heard and considered.
- Focus students on the **Discussion Norms anchor chart** from Module 1. Ask them what it looks/sounds like to effectively participate with peers, listening for ideas such as: Wait my turn to speak, so I am heard, or Don't shout/speak too loudly, or Make sure everyone gets a turn to speak, or No one person does most/all of the speaking, or Use information from the text to support my ideas, etc.
- If productive, cue students to listen carefully and seek to understand:
"Who can tell us what your classmate said in your own words?" (Responses will vary.)
- Add students' ideas to the anchor chart.

Meeting Students' Needs

- For ELLs and students who may need additional support with comprehension: Consider drawing visuals next to each norm, giving students another access point to understand the text. Providing visual models of academic vocabulary supports language development and comprehension. (MMR)

Work Time

B. Preparing Evidence and Questions for the Science Talk (30 minutes)

- Ask the class the Science Talk question: "How do animals' bodies help them survive?"
- Display and distribute the **Animal Defense Mechanisms: Preparing for a Science Talk note-catcher** and point out the different sections. Indicate to students that they will be taking notes only on the first section (T-chart) of the recording form, labeled "Preparation." The last three sections will be saved for during and after the Science Talk.
- 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.
- Model skimming the note-catchers in the **Animal Defenses research notebook** for evidence that will answer the Science Talk question and record it in the first box of the displayed note-catcher with the text and page number: Example: "Most spiders are venomous" (Page 8 of *Venom*).
- Explain to students that the right-hand 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 spider's prey and its enemies. So I'll write that in this box."

- Remind students that they will record only 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.
- Pair students up and invite them to complete the first section of the Preparing for a Science Talk note-catcher. Remind them to use specific evidence from the text to support their thinking.
- Circulate to check in on students' independent reading journals.

Meeting Students' Needs

- For students who may need additional support with writing fluency: Consider providing a partially completed note-catcher. Providing the citation of where to find the evidence will guide them toward truly useful evidence to think about. Providing the actual evidence will save them an entire step, giving them more time to think about what that evidence tells them about how their animal survives. If there are students who need more practice searching a text to find evidence, consider providing the right-hand column and asking them to go back to the text and find the evidence that matches the provided statement. (MMAE)
- For ELLs: Allow students to use pictures and symbols as necessary on their recording forms.
- For ELLs: If helpful, offer rephrased categories in the T-chart:

defense mechanism from animal's body (cite evidence from text)	How does the animal's body help it survive?
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Closing and Assessment

A. Reflecting on Learning Target (5 minutes)

- Invite students to gather together with their Animal Defense Mechanisms: Preparing for a Science Talk note-catcher.
- Focus students on the learning target. Read it aloud and use a checking for understanding protocol for students to reflect on their comfort level with or show how close they are to meeting it. Make note of students who may need additional support with each of the learning targets moving forward.

Homework

A. Review notes for the Science Talk.

B. Accountable Research Reading. Select a prompt to respond to in the front of your independent reading notebook.

Meeting Students' Needs

- For ELLs and students who may need additional support with reading and writing: Refer to the suggested homework support in Lesson 1. (MMAE, MMR)