

# HMH Teacher Central Lesson Plan for Whole- and Small-Group Instruction

Instructor: **Bjorneby**

Date: **3-4**

Class: **4th**

## Informational Text: **Inspired by Nature** (Day 2)

Workshop 2 Lesson 10

### STANDARDS

CCSS.ELA-LITERACY: RI.1.1, RI.1.10, RI.1.4, RI.1.7, RI.2.1, RI.2.10, RI.2.4, RI.2.7, RI.3.1, RI.3.10, RI.3.4, RI.3.7, RI.4.1, RI.4.10, RI.4.4, RI.4.7, RI.5.1, RI.5.10, RI.5.4, RI.5.7, RF.1.3D, RF.1.4A, RF.1.4B, RF.1.4C, RF.2.3C, RF.2.4A, RF.2.4B, RF.2.4C, RF.3.3C, RF.3.4A, RF.3.4B, RF.3.4C, RF.4.3A, RF.4.4A, RF.4.4B, RF.4.4C, RF.5.4A, RF.5.4B, RF.5.4C, W.1.7, W.1.8, W.2.7, W.2.8, W.3.10, W.3.4, W.3.7, W.3.8, W.4.10, W.4.4, W.4.7, W.4.8, W.4.9A–B, W.5.10, W.5.4, W.5.7, W.5.8, W.5.9A–B, SL.1.1A, SL.1.1B, SL.1.1C, SL.1.4, SL.2.1A, SL.2.1B, SL.2.1C, SL.2.4, SL.3.1A, SL.3.1B, SL.3.1C, SL.3.1D, SL.3.4, SL.4.1A, SL.4.1B, SL.4.1C, SL.4.1D, SL.4.4, SL.5.1A, SL.5.1B, SL.5.1C, SL.5.1D, SL.5.4, L.1.4E, L.1.6, L.2.1D, L.2.6, L.3.1D, L.3.4B, L.3.6, L.4.1B, L.4.4B, L.4.6, L.5.1C, L.5.1D, L.5.4B, L.5.6

### HEADS UP

Word Count: 353

Lexile Measure: 650L

Guided Reading Level: Q

Qualitative Measure: Moderate 1

It's the incredible shrinking car! In the previous lesson, students learned that the design for a car was inspired by the armadillo. Today, they'll learn how the Armadillo-T car rolls! Then, they'll synthesize what they've learned to identify an animal adaptation they would mimic to invent something new.

### MATERIALS

*ReaL Book* pp. 90–91

[Academic Interaction Card](#)

### ACADEMIC VOCABULARY

**flexible (adjective):** able to bend and stretch easily

**sense (verb):** to feel or be aware of something

### ADDITIONAL VOCABULARY

**protect (verb):** to keep someone or something safe

## MEETING INDIVIDUAL NEEDS

- **Beginning Readers:** Multisyllable Words
- **English Learners:** Modal Verbs, Phrasal Verbs, Possessive Nouns
- **Standard Classroom English:** Habitual Actions or States (verb *to be*), Sound Elimination: //, Sound Substitution: Vowels Before *m* and *n*

## RESOURCES FOR DIFFERENTIATED INSTRUCTION

- **Support:** Read Across Texts
- **Extend:** Draw Conclusions
- **Language:** Debate Tracker

[Get Resources](#)

LT: I will synthesis information from multiple sources.  
SC- clearly express opinion- use evidence to support my opinion

## OBJECTIVES

### Primary Goals

**Literacy Goal:** Integrate information from multiple texts to speak and write about a subject knowledgeably.

**Language Goal:** Engage in a collaborative discussion about a text, clearly expressing opinions and building on others' ideas.

### Additional Goals

**Literacy Goal:** Determine key ideas in an informational text using academic vocabulary.

**Language Goal:** Use high-utility academic vocabulary in verbal and written responses.

WHOLE GROUP

## DO NOW!

### Make Predictions

Use the [Do Now](#) routine.

1) Display the Do Now and assign the task.

 **What do you predict is the purpose of the armadillo's adaptation?**

 **I predict that the purpose of the armadillo's adaptation is to \_\_\_\_\_.**

2) Prompt partners to share their responses and restate their partners' ideas using the frames.

🗨️ So your prediction is \_\_\_\_\_.

🗨️ Yes, that's correct.

🗨️ No, what I meant was \_\_\_\_\_.

3) Ask two preselected students to share with the class and guide students to score their own responses.

## SHARE TODAY'S GOALS

### Primary Goals

Introduce the Literacy and Language Goals. *Today we'll learn more about how animal adaptations inspire inventors. Then we'll think back on what we've learned in the Workshop and put it all together to see how nature inspires us!*

🗨️ **Literacy Goal: Combine information from multiple texts to speak and write about a topic.**

🗨️ **Language Goal: Share opinions and build on others' ideas when discussing a text.**

## BUILD VOCABULARY AND KNOWLEDGE

### Teach Academic Vocabulary: *flexible*

Teach the Academic Vocabulary word *flexible* using the [Vocabulary](#) routine.

1) Pronounce the word and have students repeat it twice.

2) Clarify the part of speech. *Flexible is an adjective, a word that describes a noun.*

3) Rate word knowledge if time permits by having students write a rating (1–4) next to the word.

4) Explain the meaning of the word.

- Provide a brief example to help students connect to the word. *Action figures often have flexible arms.*
- Display and read aloud the meaning of *flexible*.
- Guide students in completing the blanks in their *Real Books*.
- Make connections with your prior example. *If you can bend or stretch the arms of an action figure, then its arms are flexible.*
- Point out that the word *flexible* has more than one meaning. *Flexible is a multiple-meaning word. It can also be used to describe someone who is willing to change or something that can change easily. For example, "I can be flexible about when we meet for lunch—either noon or 1 p.m. is fine with me." Remember to look for context clues to figure out which meaning of a multiple-meaning word is used in a text.*

5) Discuss the example.

- Read aloud the example question and model one or two responses while pointing out the grammar target. *I need a noun that names a sport to complete the sentence. I know that gymnasts have to be very flexible, so I'll write "gymnastics."*
- Give students time to think of a response. *What is another sport that requires you to be flexible?*

- Have partners share ideas twice and select one to record. Direct students to read their sentence and then say it with expression. Have students restate their partner’s idea using a frame from the [Academic Interaction Card](#).
- Facilitate whole-group reporting using varied techniques.

6) Deepen understanding by providing an additional example as time permits.


 **What is one material that is *flexible*?**


 **(flexible) One material that is *flexible* is \_\_\_\_\_.** (e.g., rubber; thin wire; fabric)

### Teach Academic Vocabulary: *sense*

Teach the Academic Vocabulary word *sense* using the [Vocabulary](#) routine.

- 1) Pronounce the word and have students repeat it twice.
- 2) Clarify the part of speech. *Sense is a verb, an action word.*
- 3) Rate word knowledge if time permits by having students write a rating (1–4) next to the word.
- 4) Explain the meaning of the word.
  - Provide a brief example to help students connect to the word. *My dog can sense when I have food.*
  - Display and read aloud the meaning of *sense*.
  - Guide students in completing the blanks in their *Real Books*.
  - Make connections with your prior example. *Even if I am in another room, my dog is aware, or can sense, that I have food and she comes running to me.*
- 5) Discuss the example.
  - Read aloud the example question and model one or two responses while pointing out the grammar target. *It is usually cloudy when it rains, so I’ll write “the sky gets cloudy.” Notice that my response is a noun phrase. “Sky” is the noun, and adding words that tell about the sky—“gets cloudy”—makes my response a phrase.*
  - Give students time to think of a response. *What are other ways you can sense that rain is coming?*
  - Have partners share ideas twice and select one to record. Direct students to read their sentence and then say it with expression. Have students restate their partner’s idea using a frame from the [Academic Interaction Card](#).
  - Facilitate whole-group reporting using varied techniques.
- 6) Deepen understanding by providing an additional example as time permits.
 

 **How can you sense that your friend is happy about something?**

 **(sense) I can *sense* that my friend is happy when (he/she) \_\_\_\_\_.**  
(e.g., smiles; laughs; sings)

**Anticipate Challenges** Clarify that *sense* can be a noun or a verb. Explain that the noun form of *sense* names any of the five ways an animal or human perceives their surroundings, such as using their “sense of sight” or “sense of sound.” The verb form of *sense* describes the action of using the senses to feel or be aware of something, such as “I could sense that someone had walked up behind me.”

## Teach Additional Vocabulary

Teach an additional academic vocabulary word as time permits: *protect*.

 **protect (verb)**

 **Meaning:** to keep someone or something safe


 **Example:** The playground has a rubber mat to *protect* kids who fall off the jungle gym.

## Establish Context

Remind students about prior reading. *The last lesson ended with just a little bit of information about a car that was inspired by the armadillo. Today we'll learn more about how the armadillo inspired the car's design.*

- Use **Think (Write)-Pair-Share** to have students share responses about what they already know about the car.

 **What did you learn about the Armadillo-T car in the previous lesson?**

 **In the previous lesson, I learned that the Armadillo-T car has \_\_\_\_\_ that allows it to \_\_\_\_\_.** (e.g., a body structure/fold up)

## CLOSE READING

### First Read | Key Idea

Introduce the Key Idea question and read aloud the text.

- Read aloud the Key Idea question, and remind students to be prepared to answer the question after reading. *Listen for the benefits of the Armadillo-T car. If you hear a benefit, underline it.*
- Read aloud the text using **Oral Cloze 1**, leaving out the words in blue boxes for students to chime in chorally. *Follow along as I read the text aloud. Occasionally, I will leave out a word. When this happens, read the missing word aloud.*
- During reading, clarify the meaning of the word *armor*.
- Read aloud the descriptions in the diagrams “Armadillo-T” and “Armadillo vs. Armadillo-T Car” using echo-reading.
- After reading, use **Think (Write)-Pair-Share** to have students write and share responses to the Key Idea question.

**Expect More—Get More** Follow strong responses with a challenge to elaborate on the benefit. For example: *That's right! You've accurately identified that the Armadillo-T car can fold up to fit into tiny spaces. Can you tell more about how this benefits people? What problems do people face when they can't find a parking space? How would a car that folds up help solve these problems?*

## BUILD FLUENCY AND COMPREHENSION

### Second Read | Review Key Idea

Review student responses to the Key Idea question. Provide additional support during the second read for students who have incomplete or inaccurate responses. For students who accurately completed the Key Idea question, encourage them to elaborate on their response by adding another benefit, such as how the car uses less energy than regular cars. *We are looking for a benefit of the Armadillo-T car. Listen carefully as we reread the text, including the descriptions for the diagrams. Put your thumb up when you hear a benefit mentioned.*

- Read aloud the text again using [Oral Cloze 2](#), increasing the pace slightly and omitting different words.
- Support students in revising or adding to their responses.
- Have students share revised or new responses with the group.

 I revised my response to be \_\_\_\_\_.

 I added \_\_\_\_\_ to my response.

**Make Connections** Point out that the descriptions in paragraph 7 of the armadillo curling up are shown in the images of the armadillo in the “Armadillo vs. Armadillo-T Car” sidebar. *Which image shows that the armadillo’s “armor is made up of two rounded pieces” that are connected by “three hard bands and flexible skin”?* *Which image shows that the armadillo’s “body parts fit together like a puzzle”?*

**Review Foundational Skills: VCe Words** Point out examples of words with a vowel-consonant-e (VCe) pattern as you reread the text. Have students say each word and underline the vowel-consonant-e pattern in each word. (Paragraph 6: *unlike*; Paragraph 7: *like, made, inside*; Paragraph 8: *make*)

### Stretch

Read the task aloud and explain how to combine information from more than one source to form an idea. Tell students that combining information from different sources to form an idea means thinking about the facts and details that they have learned about a topic from more than one text, and then drawing on that knowledge to come up with something new. *To complete this task, you’ll need to think about the different adaptations you’ve learned about from the Workshop texts and the Anchor Video. But first, let’s revisit page 90 of our Real Books to refresh our memories about how inventors are inspired by animal adaptations.*

- Have students use [Partner Cloze](#) to reread paragraphs 7 and 8.

**Ramp Up the Routines** Introduce [Partner Cloze](#) by explaining that students will read a section of the text aloud and leave out words for their partners to chime in out loud. Then assign partners (A/B) and sections of the text. Direct students to read silently and circle a few words to leave out when they read the text aloud. Monitor as partners take turns reading and omitting words.

- Use text details to reinforce students’ understanding of how animal adaptations inspire inventors. *Paragraph 7 describes how an armadillo’s armor fits into itself when the armadillo curls up. Paragraph 8 explains that scientists saw how small the armadillo could become when it curled up, and so they decided to copy the way its armor folds up. This helps me understand that inventors are inspired by animal adaptations by observing or looking at them very closely and then thinking about how they can make something useful that is similar.*

- Model combining information to come up with an idea. *First, I'll think about all the adaptations we've learned about. After picking one, I'll think about how I could use the adaptation to invent something. In the Anchor Video, we saw how fast a cheetah can run. That was cool! So I would invent sneakers that mimic or copy the same kinds of padding as a cheetah's foot to help people run faster.*
- Display a list of the animal adaptations discussed in the Anchor Video. Call on volunteers to add to the list with adaptations they read about in the Workshop texts. Keep the list displayed for students to refer to as they complete the task.
- Have students independently complete the task. As needed, help students find and review the relevant text for the adaptation they select.
- Use the **Academic Discussion** routine to structure student interaction as they report and elaborate on ideas.

 **I was inspired by the \_\_\_\_\_.** (e.g., walking stick)

 **I would use the adaptation of \_\_\_\_\_ to invent \_\_\_\_\_.** (e.g., camouflage/clothing you could wear to fade into a forest or jungle background)

 **My invention would help people by \_\_\_\_\_.** (e.g., letting them visit forests and jungles without being attacked by bears and tigers)

FORMATIVE ASSESSMENT	
<p><b>LITERACY GOAL:</b> Integrate information from multiple texts to speak and write about a subject knowledgeably.</p> <p><b>Observe</b> Review students' written responses to the Stretch item. As students share ideas, listen for an animal adaptation from the Workshop texts or the Anchor Video and a knowledgeable answer that integrates information.</p>	
Monitor Progress	Adapt Instruction/Strategies
<p><b>Nearly There</b> Students select an animal adaptation but may have difficulty forming an idea based on their knowledge.</p>	<p>Have partners who picked the same adaptation discuss how it might be used in an invention. Ask questions to guide partners' discussions:</p> <ul style="list-style-type: none"> <li>• <i>What does that adaptation allow animals to do?</i></li> <li>• <i>How could you use that adaptation to invent something new?</i></li> <li>• <i>How would the invention help people?</i></li> </ul> <p>If students have difficulty narrowing down their ideas for what to invent based on the adaptation, keep a brainstorming list. Guide students to chose one idea to complete the task.</p>

<p><b>Not Yet</b> Students have difficulty selecting an adaptation.</p>	<p>To help students choose an adaptation, return to specific examples of animal adaptations in each text and the video. As relevant examples are identified, have students note them on a list. Guide students to identify what is special about the adaptation and tell how an inventor might copy it when designing something new.</p> <p>For example: <i>What do the suckers help the goby fish do? Can you think of anything to invent that uses suckers? How would it help people?</i> If students identify an invention, have them add it to their list next to the animal/adaptation.</p> <p>After students have identified two or three animals/ideas for inventions, guide them as they select one to focus on for completing the task.</p>
<p><b>On Track</b> Students combine information to come up with an invention based on an animal adaptation.</p>	

<p style="text-align: center;"><b>FORMATIVE ASSESSMENT</b></p>	
<p><b>LANGUAGE GOAL:</b> Engage in a collaborative discussion about a text, clearly expressing opinions and building on others' ideas.</p>	
<p><b>Observe</b> Listen as students report and elaborate on ideas about their inventions with the group.</p>	
<p style="text-align: center;"><b>Monitor Progress</b></p>	<p style="text-align: center;"><b>Adapt Instruction/Strategies</b></p>
<p><b>Nearly There</b> Students share their ideas, but may not actively participate in a collaborative discussion.</p>	<p>Pair students to discuss and question each other about how their inventions work and would benefit people. Provide frames, if needed:</p> <p><input type="checkbox"/> <b>How would your invention work?</b></p> <p><input type="checkbox"/> <b>My invention would work by _____.</b></p> <p><input type="checkbox"/> <b>How would your invention benefit people?</b></p> <p><input type="checkbox"/> <b>My invention would benefit people by _____.</b></p> <p><input type="checkbox"/> <b>That is (similar to/different from) my idea. My idea is to invent _____.</b></p>



<p><b>Not Yet</b> Students do not share their ideas or build on others' ideas.</p>	<p>Provide additional frames to help students build on others' ideas:</p> <p><input type="checkbox"/> <b>My idea for an invention is _____.</b> What's your idea?</p> <p><input type="checkbox"/> <b>Your idea for _____ is really strong because it would help people _____.</b></p> <p><input type="checkbox"/> <b>It could also help them _____.</b></p>
<p><b>On Track</b> Students express their ideas clearly and build on others' ideas.</p>	

**The Takeaway**

Reflect on the relevance of “Inspired by Nature” by leading students in a collaborative discussion. *The way scientists, inventors, and engineers have been inspired by nature is amazing! Some trains are quieter because they have fronts shaped like a bird's beak. Football players use gloves that have a strong grip like a gecko's. A car even folds up like an armadillo! Why do you think scientists, inventors, and engineers look to nature for inspiration?*

**Scientists, inventors, and engineers look to nature because \_\_\_\_\_.** (e.g., animals have been adapting for millions of years; animals have become amazing at doing certain things; seeing animals do things helps scientists, inventors, and engineers solve problems)

**WHOLE GROUP**

**WRAP UP**

**Extend Knowledge**

Guide students to share their responses to the Wrap Up question with a partner.

**What aspect of biomimicry would you like to learn more about?**

**I'd like to learn more about \_\_\_\_\_ because \_\_\_\_\_.**