

## Lesson 9: Preparing for a Text-Based Discussion: Science Talk about Why Scientists Study the Rainforest



### CCS Standards

- **SL.5.1:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
- **SL.5.1a:** 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.5.1b:** Follow agreed-upon rules for discussions and carry out assigned roles.



### Daily Learning Target

- I can prepare for a Science Talk about why scientists study the rainforest by identifying appropriate evidence from texts about the rainforest. (SL.5.1a, SL.5.1b)

### Ongoing Assessment

- Why Scientists Study the Rainforest: Preparing for a Science Talk note-catcher (SL.5.1)

### Agenda

#### 1. Opening

- A. Reviewing the Learning Target (10 minutes)

#### 2. Work Time

- A. What Is a Science Talk? (10 minutes)
- B. Preparing Evidence and Questions for the Science Talk (35 minutes)

#### 3. Closing and Assessment

- A. Reflecting on Learning (5 minutes)

#### 4. Homework

- A. Review your Why Scientists Study the Rainforest: Preparing for a Science Talk note-catcher.
- 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, during which they will synthesize their learning about the rainforest from the first half of Unit 1 to answer the question: “Why do scientists study the rainforest?” This discussion will provide formative assessment data on students' progress toward SL.5.1, which is formally assessed on the End of Unit 1 Assessment.
- Science Talks are discussions about big questions or scientific ideas. They allow students to collectively theorize and build on each other's ideas. These talks provide a window

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

- The research reading that students complete for homework helps build both their vocabulary and knowledge pertaining to the rainforest, specifically rainforest species and research. By participating in this volume of reading over time, students will develop a wide base of knowledge about the world and the words that help describe and make sense of it. Inviting students to share what they have been learning through independent reading holds them accountable.
- In this lesson, the habit of character focus is working to become an effective learner. The characteristic students are reminded of specifically is collaboration, as they work in pairs.

**How it builds on previous work:**

- Throughout the first half of this unit, students learned about the rainforest through texts, including *The Most Beautiful Roof in the World*. This is a more formal and organized discussion, but it builds on the speaking and listening foundations students have already begun.
- Continue to use Goals 1 and 2 Conversation Cues to promote productive and equitable conversation.

**Areas in which students may need additional support:**

- Some students may require additional support when preparing questions for the Science Talk.

**Assessment guidance:**

- Consider reviewing students' independent reading journals while they are completing the Why Scientists Study the Rainforest: Preparing for a Science Talk note-catcher.

**Down the road:**

- In the next lesson, students will participate in a Science Talk. They will be formally assessed on SL.5.1 on the End of Unit 1 Assessment in Lesson 13.

**In advance:**

- Strategically pair students for Work Time B.
- Review the Science Talk protocol. See Classroom Protocols.
- Post: Learning targets, Discussion Norms anchor chart, and Working to Become Effective Learners anchor chart.

#### Technology & Multimedia

- Work Time B: For students who will benefit from hearing the text read aloud multiple times, consider using a text-to-speech tool like Natural Reader ([www.naturalreaders.com](http://www.naturalreaders.com)), SpeakIt! for Google Chrome, or the Safari reader. Note that to use a web-based text-to-speech tool like SpeakIt! or Safari reader, you will need to create an online doc, such as a Google Doc, containing the text.
- Work Time B: Students' Preparing for a Science Talk note-catcher could be completed online, on Google Docs, for example.
- Work Time B: Students could complete their note-catchers in a word-processing document, such as a Google Doc, using speech-to-text facilities activated on devices or using an app or software such as Dictation.io (<https://dictation.io/speech>).

### Supporting English Language Learners

Supports guided in part by CA ELD Standards 5.I.A.1, 5.I.A.3, and 5.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, contribute, and involve yourself, 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.?

*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.
- Provide a partially completed note-catcher. (Example: Providing the citation of where to find the evidence will guide students toward useful evidence.)

- Allow students to practice expressions for initiating a conversation and politely taking a turn in the conversation. Examples:

“The most interesting information I read was that \_\_\_\_.”

“That’s a great point. I would add that \_\_\_\_.”

“Your idea is fascinating because \_\_\_\_.”

### Universal Design for Learning

- **Multiple Means of Representation:** Students who may need additional support with expressive or receptive language may benefit from physical engagement in the Science Talk. Consider developing a set of nonverbal signals that the class uses during a Science Talk or other academic conversations. This will allow all students to participate in the conversation in multiple ways (see Meeting Students’ Needs).
- **Multiple Means of Action and Expression:** Students who may need additional support organizing their ideas in writing may benefit from a partially completed Preparing for a Science Talk note-catcher. If some students need more practice searching a text to find evidence, consider completing 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:** Build excitement about the Science Talk by reflecting on all the knowledge that the students have gained and how they now get to be experts, just like scientists. Consider sharing short biographies of famous scientists who study the rainforest to make the Science Talk more relevant to students who may not personally know a scientist.

### Vocabulary

#### Key:

(L): Lesson-Specific Vocabulary

(T): Text-Specific Vocabulary

(W): Vocabulary Used in Writing

- *effectively, Science Talk, evidence (L)*

### Materials

- ☑ Vocabulary logs (from Unit 1; one per student)
- ☑ Discussion Norms anchor chart (begun in Module 1)
- ☑ Why Scientists Study the Rainforest: Preparing for a Science Talk note-catcher (one per student and one to display)
- ☑ *The Most Beautiful Roof in the World* (from Lesson 1; one per student)
- ☑ Unit 1 texts (one per student)
  - “Rainforests and Why They Are Important” (from Lesson 3)
  - “Effects of Studying Rainforests” (from Lesson 7)
  - “Saving an Important Resource” (assessment text; see Assessment Overview and

Resources)

- “Natural Events and the Rainforest” (assessment text; see Assessment Overview and Resources)

Working to Become Effective Learners anchor chart (begun in Module 1)

### Opening

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#### A. Reviewing the Learning Target (10 minutes)

- Direct students’ attention to the posted learning target and select volunteers to read it aloud:
  - “I can prepare for a Science Talk about why scientists study the rainforest by identifying appropriate evidence from texts about the rainforest.”
- Underline the words Science Talk. Inform students that a Science Talk is a discussion about big or important questions scientists have. Tell them 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.
- Using a total participation technique, invite responses from the group:
  - “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)*
- Record new words on the Academic Word Wall and invite students to add translations in home languages. Invite students to record new vocabulary in their **vocabulary logs**.

#### Meeting Students’ Needs

- For ELLs: Point out that talk in Science Talk is a noun, even though talk is also a verb. Say: “Talk can be a verb, as in ‘Let’s talk to each other.’ But talk can also be a noun. It means the same thing as discussion. So a Science Talk is a discussion about science.”
- For ELLs and students who may need additional support with new vocabulary: Discuss the word evidence and practice using it. Say: “If you told me it was Monday and I didn’t believe you, what evidence would you show me? (My evidence would be ... the calendar, the newspaper, a smartphone.)” “Right, you would need to show me something that is written down, from a place that I trust. It is the same with a Science Talk.” (MMR)
- Build excitement for the learning target by introducing some biographies of real scientists who study the rainforest. (MME)

### Work Time

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

- Remind students of all the learning they have done so far about the rainforest. Tell them that they will 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.
- Direct students’ attention to the **Discussion Norms anchor chart** from Module 1.
- Invite students to Think-Pair-Share:
 

*“What does it look and sound like to effectively participate with your peers?” (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 the text to support my ideas, etc.)*
- If productive, cue students to listen carefully:
 

*“Who can repeat what your classmate said?” (Responses will vary.)*
- As students share out, capture any new ideas on the Discussion Norms anchor chart.

### Meeting Students’ Needs

- For ELLs and students who may need additional support with comprehension: Draw visuals next to each norm to provide another access point to understand the text. (Example: Sketch an icon of a clock next to “wait my turn.”) (MMR)
- For ELLs and students who may need additional support with expressive language: Write lines of dialogue on the Collaborative Discussion anchor chart to illustrate what effective participation “sounds like.” (Example: “I read \_\_\_\_\_ in the text, so that makes me think \_\_\_\_\_.”) (MMR)

## Work Time

### B. Preparing Evidence and Questions for the Science Talk (35 minutes)

- Tell students they will discuss the Unit 1 guiding question during the Science Talk in the next lesson: “Why do scientists study the rainforest?”
- Distribute and display the **Why Scientists Study the Rainforest: Preparing for a Science Talk note-catcher** and point out the different sections. Indicate that students will take notes only on the first section (T-chart) of the recording form, Preparation. The last three sections will be completed during and after the Science Talk.
- Briefly model how to complete the note-catcher using evidence from texts read during the unit:
  - Model skimming the “Out of the Shadow and into the Light” chapter in *The Most Beautiful Roof in the World* to identify quotes that might provide evidence to answer the Science Talk question.
  - Record those quotes in the first box of the displayed note-catcher with the text and page number. Refer to the example already recorded on the note-catcher to show students how to record their evidence.
  - Explain that the right-hand column provides space to justify the evidence provided in the left column. Again, refer students to the example already recorded on the note-catcher to see how to record their evidence.

- Move students into predetermined pairs.
- Tell students they can use the excerpts of *The Most Beautiful Roof in the World* read so far and the other **Unit 1 texts** they have read to complete the Preparing for a Science Talk note-catcher. Remind them to use specific evidence from the text to support their thinking.
- Focus students on the **Working to Become Effective Learners anchor chart** and remind them specifically of the collaboration criteria. Remind them that because they will be working together in pairs, they need to be conscious of working effectively with others.
- Invite students to begin working.

### Meeting Students' Needs

- For ELLs and students who may need additional support with writing: Before pairing students for independent work, complete a few items on the model note-catcher as an interactive writing experience. Call on students to help find evidence and write it on the note-catcher. This will prepare them to work independently. (MMR)
- Provide differentiated mentors by purposefully preselecting partners. Consider meeting with the mentors in advance to encourage them to share their thought processes with their partner. (MMAE)
- For students who may need additional support with fine motor skills: Include lines on the Preparing for a Science Talk note-catcher to make it easier for students to write neatly. (MMR, MME)
- For ELLs and students who may need additional support planning their writing: Model doing quick sketches within the Preparing for a Science Talk note-catcher as placeholders for information. Say: "You can sketch first so that you don't forget the information you want to add. Then you may go back later and write." (MMR, MMAE)

## Closing and Assessment

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### A. Reflecting on Learning (5 minutes)

- Invite students to gather together with their Why Scientists Study the Rainforest: Preparing for a Science Talk note-catcher.
- Tell them they are going to reflect on today's learning target and consider how prepared they feel for tomorrow's Science Talk.
- Read the learning target aloud and invite students to look over their note-catchers.
- Ask students to give a thumbs-up, a thumbs-down, or a thumbs-sideways to show how prepared they feel for tomorrow's Science Talk.
- Repeat, inviting students to self-assess against how well they collaborated in this lesson.

### Meeting Students' Needs

- For ELLs and students who may need additional support with comprehension: Check for comprehension by asking students to summarize and then to personalize what they accomplished during the lesson. Ask:

*“What is some evidence you collected? How do you feel about the Science Talk tomorrow?” (MMR)*

## Homework

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**A. Review your Why Scientists Study the Rainforest: Preparing for a Science Talk note-catcher.**

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

### 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)