



EXPEDITIONARY  
LEARNING

# Grade 5: Module 2A: Unit 1: Lesson 10

## Science Talk



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Science Talk

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

I can explain what a text says using quotes from the text. (RI.5.1)  
I can prepare myself to participate in discussions. (SL.5.1)  
I can draw on information to explore ideas in the discussion. (SL.5.1)  
I can follow our class norms when I participate in a conversation. (SL.5.1)  
I can ask questions that are on the topic being discussed. (SL.5.1)  
I can connect my questions and responses to what others say. (SL.5.1)  
After a discussion, I can explain key ideas about the topic being discussed. (SL.5.1)  
I can write an opinion piece and identify reasons to support my opinion. (W.5.1)

Supporting Learning Targets

- I can ask questions that are relevant to rainforest research.
- I can share my ideas with my peers during a Science Talk about rainforests.
- I can use the ideas of my peers in order to help inform my ideas about the rainforests.
- I can gather quotes from informational texts as evidence in order to prepare for a Science Talk about rainforests.
- I can synthesize my ideas about rainforests after the Science Talk.

Ongoing Assessment

- Science Talk (observations/notes)
- Journal: synthesis statement



Science Talk

Agenda	Teaching Notes
<ol style="list-style-type: none"><li><b>Opening</b><ol style="list-style-type: none"><li>Engaging the Reader: Communicating Like Scientists (2 minutes)</li><li>Review Learning Targets (8 minutes)</li></ol></li><li><b>Work Time</b><ol style="list-style-type: none"><li>Establishing Norms for a Science Talk (10 minutes)</li><li>Participating in a Science Talk (20 minutes)</li><li>Synthesizing Information from a Science Talk (10 minutes)</li></ol></li><li><b>Closing and Assessment</b><ol style="list-style-type: none"><li>Debrief (5 minutes)</li><li>Exit Discussion (5 minutes)</li></ol></li><li><b>Homework</b></li></ol>	<ul style="list-style-type: none"><li>Become familiar with the Science Talk protocol (see Appendix.) Consider the suggested compelling questions in the lesson; feel free to craft a different question if students have become interested in some other compelling angle on this topic. Just be sure that the question is provocative and open-ended.</li><li>Be sure to envision the process for Work Time, Part B: Orchestrating a Science Talk can be a bit complex the first time. Students begin in two concentric circles (an inner circle of students facing an outer circle).</li></ul>

Lesson Vocabulary	Materials
relevant, quotes, my ideas, ideas of peers, inform, synthesize, details	<ul style="list-style-type: none"><li>Science Talk Norms anchor chart (new; teacher created; see Work Time A)</li><li>Science Talk Note-catcher (one per student)</li><li>Sticky notes</li><li>Rainforest KWL anchor chart (from Lesson 1)</li></ul>



Science Talk

Opening	Meeting Students' Needs
<p><b>A. Engaging the Reader: Communicating like Scientists (2 minutes)</b></p> <ul style="list-style-type: none"><li>• Congratulate students on all the learning they have done about rainforests. Remind them that they have also been focusing on how scientists communicate their findings.</li><li>• Tell students that today they are going to learn more about how scientists think and discuss, or communicate, their ideas with other scientists by participating in a Science Talk. Say: "Now we are going to do what scientists do when they get together."</li></ul>	
<p><b>B. Review Learning Targets (8 minutes)</b></p> <ul style="list-style-type: none"><li>• Introduce the learning target: "I can ask questions that are relevant to rainforest research," and focus students' attention on the word <i>relevant</i>. Ask students what it means to ask <i>relevant</i> questions about rainforest research. Listen for students to share ideas like: "related to what we have read/viewed," "connected to the rainforest," "important to help us understand more about rainforest research," etc.</li><li>• Ask students to join a partner, and refer back to their journals (begun in Lesson 1) and the informational texts they have read/viewed in order to identify the <i>relevant</i> questions scientists they have been learning about asked. Ask several students to share out, listening for examples such as: "Bryson Voirin wanted to know why sloths are so slow or if the algae in their fur helps them in some way," "The scientists in the Happy Face Spider article wanted to know if its marking keep predators away," "Eva Nilson wanted to know if the environment was changing/harmful to people, based on how frogs' skin changed," or other examples.</li><li>• Ask students to Think-Pair-Share how these questions were <i>relevant</i>. Listen for students to refer back to the meaning of the word <i>relevant</i>. "Knowing if algae helps sloths may help us discover ways algae can help people; knowing if frogs' skin is changing/they are disappearing will tell us if the environment is becoming harmful to us/we can take steps to clean up the environment," or similar connections.</li></ul>	<ul style="list-style-type: none"><li>• ELL language acquisition is facilitated by interacting with native speakers of English who provide models of language.</li></ul>



Science Talk

Work Time	Meeting Students' Needs
<p><b>A. Establishing Norms for a Science Talk (10 minutes)</b></p> <ul style="list-style-type: none"><li>• Say to students: “A Science Talk is a discussion about a <i>relevant</i>, or ‘big,’ question 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.”</li><li>• Introduce the learning targets: “I can share my ideas with my peers during a Science Talk about rainforests,” and “I can use the ideas of my peers in order to help inform my ideas about the rainforests.”</li><li>• Start a <b>Science Talk Norms anchor chart</b> and focus students’ attention on the phrases: <i>share my ideas</i> and <i>use the ideas of my peers to . . . inform</i>. Ask students what it looks/sounds like to share ideas with peers, listening for responses 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.</li><li>• Then ask students what it looks/sounds like to use the ideas of my peers to inform their ideas, listening for students to share thoughts like: “not thinking I have the one/right answer to the question,” “listening to what other people say,” “consider evidence others use when discussing question and whether it makes me think about the question differently,” or similar suggestions. Record students’ ideas on the anchor chart.</li><li>• Give students a moment to read over the norms listed on the anchor chart, then consider which one they think will be most useful during a Science Talk with their peers, and why. Ask students to turn to a partner and share their thinking, then invite several students to share with the whole group.</li></ul>	<ul style="list-style-type: none"><li>• Provide nonlinguistic symbols (e.g., two people talking for <i>share</i>, a lightbulb for <i>main idea</i>, an eye for <i>looks like</i>, an ear for <i>sounds like</i>) to assist ELLs and other struggling readers in making connections with vocabulary. These symbols can be used throughout the year. Specifically, they can be used in directions and learning targets.</li></ul>



Science Talk

Work Time (continued)	Meeting Students' Needs
<p><b>B. Participating in a Science Talk (20 minutes)</b></p> <ul style="list-style-type: none"><li>• Introduce the learning target: "I can gather quotes from informational texts as evidence in order to prepare for a Science Talk about rainforests." Invite several students to define the word <i>quotes</i> (what someone actually says, surrounded by quotation marks in written text) and share some examples of quotes from scientists they read/viewed in the informational texts.</li><li>• Remind students that they can refer to the Facts/Quotes Note-catcher in their journals for ideas. Make sure students have access to all the informational texts used within this unit, for reference.</li><li>• Tell students they are now going to participate in a Science Talk, like real scientists do. Refer students back to the Science Talk Norms anchor chart, and remind students to refer back to these norms as they participate in a Science Talk with their peers to ensure all ideas are heard.</li><li>• Have students gather in two concentric circles on the floor, with their journals. Be sure each student in the inner circle is facing a partner in the outer circle.</li><li>• Distribute the <b>Science Talk Note-catcher</b> to students (students will need to paste these into their journals). Point out the three columns they will need to make notations in during the Science Talk:<ul style="list-style-type: none"><li>* Question: Record the question you are discussing.</li><li>* Quotes: Record the quotes, from articles and/or journal notes, you refer to during the discussion of the question (various quotes from articles).</li><li>* Gist: Write a brief statement of what your partner said.</li></ul></li><li>• Pose a compelling question, and post it in an area visible to all students:<ul style="list-style-type: none"><li>* "Why is biodiversity important?"</li></ul></li><li>• Ask students to write the question on their Science Talk Note-catchers.</li><li>• Remind students that as they discuss their ideas about the question, they will need to use quotes from the scientists, in their informational texts, to support their thinking.</li><li>• Invite students to begin the Science Talk.</li></ul>	<ul style="list-style-type: none"><li>• For students needing additional supports producing language, consider offering a sentence frame, sentence starter, or cloze sentence to provide the structure required.</li><li>• Students needing additional supports may benefit from partially filled-in Note-catchers.</li><li>• Consider partnering an ELL with a student who speaks the same L1 when discussion of complex content is required. This can let students have more meaningful discussions and clarify points in their L1.</li></ul>



Science Talk

Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"><li>• Approximately every 5 minutes, ask students in the inner circle to move two places to the left. They now will be facing a new partner.</li><li>• Ask these new pairs to discuss the same question.</li><li>• Students will move three times, so they have the opportunity to discuss the question, and make notations, with three of their peers.</li><li>• As students talk in their pairs, circulate to note which students are speaking and what ideas they are sharing. Record on <b>sticky notes</b> any particularly intriguing comments made by students and additional questions that may arise during student discussions. These will be used during Step C of Work Time, and added to the class <b>Rainforest KWL anchor chart</b>.</li><li>• If specific pairs are losing momentum, offer additional “probing questions” to ensure that they remain on topic and explore the question fully. For example:<ul style="list-style-type: none"><li>* “How do the diverse species in rainforests depend on one another?”</li><li>* “How is life on earth dependent upon biodiversity?”</li></ul></li></ul>	<ul style="list-style-type: none"><li>•</li></ul>



Science Talk

Work Time (continued)	Meeting Students' Needs
<p><b>C. Synthesizing Information from a Science Talk (10 minutes)</b></p> <ul style="list-style-type: none"><li>Place students in triads. Introduce the learning targets: “I can synthesize my ideas about rainforests following the Science Talk.” Focus students’ attention on the words <i>synthesize</i> and <i>details</i>. Invite students to share what they remember about the meaning of these words from previous lessons, and listen for students to share ideas such as:<ul style="list-style-type: none"><li>* <i>synthesize</i>—put all the ideas together; summarize ideas/thoughts/information</li><li>* <i>details</i>—specific parts/ideas; quotes; facts; information</li></ul></li><li>Say to students: “You just had an opportunity to participate in a Science Talk around one of our big questions about rainforests. Here are some of the ideas I heard from the class . . .” (Read aloud the intriguing questions/comments recorded on sticky notes while listening to student conversations during the Science Talk.) As each comment/question is read aloud, ask students why it is a compelling comment/question, and place sticky notes on the class Rainforest KWL anchor chart in the appropriate column (W or L), for ongoing reference throughout this module.</li><li>Ask students to discuss the following questions with their triad partners:<ul style="list-style-type: none"><li>* “What answers to the question did you and your peers discuss?”</li><li>* “What details and quotes, from the informational texts, did you and/or your peers use to support your thinking?”</li></ul></li><li>After 5 minutes, invite triads to share out with the whole group.</li><li>Ask students to start a new page in their journals. Tell them that they will write a synthesis statement responding to the big question they discussed during the Science Talk. For this statement, they are to write their answer to “Why is biodiversity important?” using evidence and details from the discussions they just had during the Science Talk. They will have an opportunity to continue synthesizing, or thinking about all that they have learned, in future lessons as well.</li><li>Invite several students to share their synthesis statements with the whole group.</li></ul>	<ul style="list-style-type: none"><li>Consider allowing students who struggle with language to dictate their synthesis statement to a partner or the teacher.</li></ul>





Science Talk

Closing and Assessment	Meeting Students' Needs
<b>A Debrief (5 minutes)</b> <ul style="list-style-type: none"><li>• Read aloud the learning target: "I can share my ideas with my peers during a Science Talk about rainforests." Ask students to use thumbs-up to show if they met the target; or thumbs-down to show they still need to work on the target. Call 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.</li><li>• Repeat for the second target: "I can use the ideas of my peers in order to help inform my ideas about the rainforests."</li></ul>	
<b>B. Exit Discussion (5 minutes)</b> <ul style="list-style-type: none"><li>• Invite students to Think-Pair-Share: "How did participating in a Science Talk support me as a learner?"</li><li>• Cold call several students to share out with the class.</li></ul>	<ul style="list-style-type: none"><li>• Some students may need the question for the exit discussion written so they can see them.</li></ul>
Homework	Meeting Students' Needs
<ul style="list-style-type: none"><li>• None.</li></ul>	



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## Supporting Materials



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Science Talk Note-catcher

**Question:**

<b>QUOTES</b> From informational texts	<b>GIST</b> What my partner said...