



EXPEDITIONARY  
LEARNING

## **Grade 3: Module 2A: Unit 3: Lesson 2**

### **Research Synthesis and Science Talk: Freaky Frog Research Matrix and Science Talk about How Freaky Frogs Survive**



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

I can document what I learn about a topic by taking notes. (W.3.8)

I can effectively participate in a conversation with my peers and adults. (SL.3.1)

**Supporting Learning Targets**

- I can record details about my freaky frog's adaptations into categories on my Freaky Frog Research matrix.
- I can effectively participate in a Science Talk about how my freaky frog survives.
- I can follow our class norms when I participate in a conversation.
- I can ask questions so I am clear about what is being discussed.
- I can ask questions on the topic being discussed.

**Ongoing Assessment**

- Freaky Frog Research matrix
- Science Talk criteria checklist



Agenda	Teaching Notes
<ol style="list-style-type: none"><li>Opening<ol style="list-style-type: none"><li>Engaging the Reader: Science Talks and Unpacking the Learning Targets (5 minutes)</li></ol></li><li>Work Time<ol style="list-style-type: none"><li>Organizing Information in a Freaky Frog Matrix (25 minutes)</li><li>Conducting the Science Talk (25 minutes)</li></ol></li><li>Closing and Assessment<ol style="list-style-type: none"><li>Debrief of Science Talk (5 minutes)</li></ol></li><li>Homework</li></ol>	<ul style="list-style-type: none"><li>This lesson will be students' second Science Talk in this module. Review Lesson 9 in Unit 1 in advance.</li><li>Science Talks provide students the opportunity to collectively theorize and build on each other's ideas. These talks provide a window into students' thinking that can help teachers figure out what students really know and what their misconceptions may be.</li><li>Review Science Talk protocol (See supporting materials).</li><li>During this Science Talk, students will build understandings of how freaky frogs adapt to their environment and make use of their different attributes in order to survive.</li><li>Locate and display the anchor chart entitled "Participating in a Science Talk" from Unit 1, Lesson 9 (or create a new anchor chart if necessary).</li><li>Review Science Talk criteria checklist (from Unit 1, Lesson 9). As students participate in the Science Talk, use this checklist to track students' progress toward the learning targets.</li><li>Organize student materials in advance for easy access.</li><li>In advance: Create a large chart of the Freaky Frog Research matrix and identify one or two categories to fill in as a model for students.</li><li>During Unit 3, students plan and write about their selected "freaky frog." The spadefoot toad is used as the frog for all teacher modeling.</li><li>In Lesson 4, students will find, select, and print images of freaky frogs to use on the Facts and Images side of their trading card. Please see Lesson 3 supporting materials: Websites for Freaky Frog Images Resource Page for sites to bookmark in advance.</li></ul>



**Research Synthesis and Science Talk: Freaky Frog Research Matrix**  
and Science Talk about How Freaky Frogs Survive

Lesson Vocabulary	Materials
matrix, Science Talk, participate, norms, discussion, survive, prepare, evidence	<ul style="list-style-type: none"><li>• Freaky Frog Research Matrix recording form (one per student)</li><li>• Freaky Frog Research Matrix anchor chart (new; teacher-created; see Work Time A)</li><li>• Freaky Frog Reading Recording Forms (completed in Unit 2, Lessons 7–12)</li><li>• Document camera</li><li>• <i>Everything You Need to Know about Frogs and Other Slippery Creatures</i> (book; one per student)</li><li>• Freaky frog texts: “All about the Water-Holding Frog,” “The Amazon Horned Frog,” “Transparent Wonder” or “Poison Dart Frog” (from Lesson 1)</li><li>• Participating in a Science Talk anchor chart (from Unit 1 Lesson 9; see Teaching Notes)</li><li>• Sticky notes (two to three per student)</li><li>• Science Talk Criteria Checklist (from Unit 1, Lesson 9)</li><li>• Science Talk Protocol (for Teacher Reference)</li></ul>



Opening	Meeting Students' Needs
<p><b>A. Engaging the Reader: Science Talks and Unpacking the Learning Targets (5 minutes)</b></p> <ul style="list-style-type: none"><li>• Remind students of all they have worked on so far as they have been learning about freaky frogs. Tell them that today they will have the opportunity to use what they've learned in a Science Talk.</li><li>• Remind students about the Science Talk they engaged in during Unit 1. Tell students that today they will share information they have learned about a freaky frog with others and ask questions of other students. Just like experts in the real world, they will participate in a conversation to expand their thinking about how freaky frogs <i>survive</i>, or live.</li><li>• To prepare for the Science Talk, they will first complete a <b>Freaky Frog Research matrix recording form</b> about the expert freaky frog they selected in the previous lesson. Refer to the first learning target and review that the word matrix is "a tool to organize information." Students used this <i>matrix</i> for their work with bullfrogs in Unit 1.</li><li>• Share today's second learning target: "I can effectively participate in a Science Talk about how my freaky frog survives." Invite students to identify the key words in the supporting targets. Guide them toward the words <i>norms</i> (rules or expectations), <i>prepare</i> (get ready for), <i>evidence</i> (proof from reading), and <i>topic</i> (the subject of the conversation). Ensure that students understand the meaning of <i>effectively</i> and <i>participate</i>.</li></ul>	<ul style="list-style-type: none"><li>• Making connections between past and present learning helps students solidify understandings.</li><li>• Provide nonlinguistic symbols to support students' understanding of words in the targets (i.e., a <i>question mark</i> for question).</li></ul>



Work Time	Meeting Students' Needs
<p><b>A. Organizing Information in a Freaky Frog Matrix (25 minutes)</b></p> <ul style="list-style-type: none"> <li>• Display the large <b>Freaky Frog Research matrix anchor chart</b>. Remind students that they have worked with the matrix during Unit 1. But in this lesson, they will complete the matrix based on the expert freaky frog they selected in the previous lesson (glass frog, water-holding frog, Amazon horned frog, or poison dart frog).</li> <li>• Ask them to turn and tell a partner what they remember about the chart. Solicit a few ideas from students. If students have not already noticed, identify the familiar language of the category labels: They have been working with this key vocabulary throughout the module (for example, <i>habitat</i> is “where something lives”). Also review the phrase <i>vivid words and phrases</i>.</li> <li>• Remind students that a matrix is a way to organize information and today they are going to organize the most important information they have learned about their expert freaky frog, just like they did with bullfrogs in Unit 1.</li> <li>• Briefly model based on the spadefoot toad. A conversation might sound like: “I know the spadefoot toad digs underground, so I’m going to write that in the category called <i>Behaviors</i>. In the next box over, I’m going to try to brainstorm vivid and precise words to describe this behavior. I know that a vivid word for dig is <i>burrow</i>, so I will write ‘burrows beneath the earth’s surface.’</li> <li>• Briefly review the other categories on the matrix so students are clear about what information they should write about their freaky frog. Ask students to Think-Pair-Share one column of the matrix that they already would be able to fill in about their freaky frog. Cold call a few students to share their thinking.</li> <li>• Check for understanding: Ask students to show how well they understand the task with a thumbs-up, thumbs-sideways, or thumbs-down. Clarify the task as necessary.</li> <li>• Remind students that they have three resources to refer to if they need more information: <ul style="list-style-type: none"> <li>– Their <b>Freaky Frog reading recording forms</b> (completed in Unit 2, Lessons 7–12)</li> <li>– The text <b>Everything You Need to Know about Frogs and Other Slippery Things</b></li> <li>– Their <b>Freaky Frog texts</b> (from Lesson 1).</li> </ul> </li> <li>• Distribute the Freaky Frog Research matrix to each student. Give students 20 minutes to work on their matrix. Students may work with a partner who has selected the same expert frog. Confer with students and provide guidance as needed.</li> </ul>	<ul style="list-style-type: none"> <li>• Allow ELLs and other students to use pictures and symbols as necessary on their recording forms.</li> <li>• Add nonlinguistic symbols to the Freaky Frog Research matrix to help clarify the categories.</li> <li>• Consider allowing students to work with a partner who selected the same expert freaky frog while planning and choosing details. Each student should complete their own organizer and write their own list of facts in the next session, but the thinking work could be done in pairs.</li> </ul>



Work Time (continued)	Meeting Students' Needs
<p><b>B. Conducting the Science Talk (25 minutes)</b></p> <ul style="list-style-type: none"><li>• Invite students to bring their Freaky Frog Research Matrix and gather in a circle on the floor or in chairs. Students should be in two concentric circles: an inner circle of students facing an outer circle, so each student has a partner. Be sure students can easily see and hear other students.</li><li>• Display the Science Talk protocol for students to see. Briefly review the <b>“Participating in a Science Talk” anchor chart</b> with students and answer any clarifying questions. Tell students that after each conversation with a new partner, they will write one new fact they learned on a sticky note. Distribute 2 or 3 <b>sticky notes</b> to each student.</li><li>• Display and review the suggested sentence frames to support students in their conversations. Instruct students to use their notes on their matrix to support their comments and questions. Remind students that they should direct their questions and comments to one another, not the teacher.</li><li>• Direct students to begin the science talk by posing the question: “How does your freaky frog survive?”</li><li>• Use the <b>science talk criteria checklist</b> during this time to monitor student progression towards the learning targets. Redirect and support students briefly if needed, but avoid leading the conversation. Encourage students to use the sentence frames to help clarify their thinking and enhance their communication skills.</li><li>• After 4-5 minutes with their first partner, direct students to write down a new fact they learned on a sticky note.</li><li>• Then ask them to rotate and begin a conversation with a new partner as directed by the teacher. Repeat this a couple of times as time permits.</li></ul>	<ul style="list-style-type: none"><li>• Provide sentence frames for students to use as they participate in the Science Talk: “When I saw/heard _____, I learned _____.” and “I wonder _____.”</li></ul>



Closing and Assessment	Meeting Students' Needs
<p><b>A. Science Talk Debrief (5 minutes)</b></p> <ul style="list-style-type: none"><li>Refer back to the learning targets for the Science Talk. Ask students:<ul style="list-style-type: none"><li>* "What new information did you learn from other experts today?"</li><li>* "Based on our targets, what would you work on to improve your participation in our next Science Talk?"</li></ul></li><li>Allow students to share out with a peer sitting next to them, then cold call a few students to share with the whole class.</li></ul>	<ul style="list-style-type: none"><li>Allowing students to share in small groups provides the opportunity for all students to share their voices.</li></ul>
Homework	Meeting Students' Needs
<ul style="list-style-type: none"><li>Continue reading in your independent reading book for this unit. Students should be reading a text from the recommended text list for the module.</li></ul> <p><i>Note: Prepare technology for Lesson 4:</i></p> <ul style="list-style-type: none"><li>A few days from now, students will need access to computers and printers for this lesson. To prepare for this lesson, begin to arrange for computer access for students to search for freaky frog images.</li><li>Figure out a system for students to print their freaky frog images.</li><li>Consider bookmarking key research websites, with strong images, ahead of time for students. Please see supporting materials in Lesson 3 for a list of websites to consider.</li><li>Water-Holding Frog: <a href="http://www.animalsandearth.com/docs/thumb/59/19261-water-holding-frog-cyclorana-platycephala-underground-in-skin-before-rain-central-australia.jpg">www.animalsandearth.com/docs/thumb/59/19261-water-holding-frog-cyclorana-platycephala-underground-in-skin-before-rain-central-australia.jpg</a>; <a href="http://en.wikipedia.org/wiki/File:Cyclorana_platycephala.jpg">http://en.wikipedia.org/wiki/File:Cyclorana_platycephala.jpg</a></li><li>Amazon Horned Frog: <a href="http://www.flickr.com/photos/11014423@N07/8358293886/in/photolist-dJARzh-dJuZmM">http://www.flickr.com/photos/11014423@N07/8358293886/in/photolist-dJARzh-dJuZmM</a></li><li>Poison Dart Frog: <a href="http://bit.ly/1gO3Owk">http://bit.ly/1gO3Owk</a>; <a href="http://bit.ly/1fbdReX">http://bit.ly/1fbdReX</a></li><li>Glass Frog: <a href="http://commons.wikimedia.org/wiki/File:Flickr_-_ggallice_-_Glass_frog_(4).jpg">http://commons.wikimedia.org/wiki/File:Flickr_-_ggallice_-_Glass_frog_(4).jpg</a>; <a href="http://bit.ly/1eJIHYP">http://bit.ly/1eJIHYP</a></li></ul>	





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## Supporting Materials



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Freaky Frog Research Matrix Recording Form

Category	My freaky frog is the: _____	Vivid Words and Phrases
Habitat		
Life Cycle		
Predators and Prey		
Behaviors		
Physical Attributes		

**Science Talk Protocol**  
For Teacher Reference

Tell students they are now going to participate in a Science Talk, just as real scientists do.

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.

Pose the question: “How does your freaky frog survive?”

Invite students to begin the Science Talk.

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.

Ask these new pairs to discuss the same question.

Students will move three times, so they have the opportunity to discuss the question, and make notations, with three of their peers.

As students talk in their pairs, circulate to note which students are speaking and what ideas they are sharing. Record on sticky notes any particularly intriguing comments made by students and additional questions that may arise during student discussions. Refer back to these in future lessons.