



EXPEDITIONARY
LEARNING

Grade 5: Module 4: Unit 1: Lesson 5

Synthesizing Information From Texts About Natural Disasters: What Makes An Earthquake A Natural Disaster?



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**Synthesizing Information From Texts About Natural Disasters:
What Makes An Earthquake A Natural Disaster?**

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 determine the meaning of academic words or phrases in an informational text. (RI.5.4)
I can determine the meaning of content words or phrases in an informational text. (RI.5.4)
I can accurately synthesize information from multiple texts on the same topic. (RI.5.9)

Supporting Learning Targets

- I can synthesize information about earthquakes and hurricanes using details from several texts.
- I can determine the meaning of new words about earthquakes and hurricanes through context.

Ongoing Assessment

- Journal (Earthquake and Hurricane Concepts note-catchers, glossaries)
- Earthquake Concepts note-catcher (begun in Lesson 2, added to in Lesson 4 homework)
- Hurricane Concepts note-catcher (begun in Lesson 3, added to in Lesson 4 homework)



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Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Review Homework and Engaging the Reader (7 minutes)B. Review Learning Targets (3 minutes)2. Work Time<ol style="list-style-type: none">A. Rereading and Modeling: Synthesizing Information about Earthquakes (15 minutes)B. Vocabulary to Deepen Understanding: Milling to Music (10 minutes)C. Rereading and Guided Practice: Synthesizing Information about Hurricanes (20 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Debrief and Review Learning Targets (5 minutes)4. Homework<ol style="list-style-type: none">A. Continue reading in your independent reading book for this unit at home. Read for evidence to add to the What Do We Know about Natural Disasters? anchor chart.B. Add to your glossaries any new vocabulary words from today's lesson that you have not already added. Be sure to list the word, what it means, and a visual to help remind you of its meaning.	<ul style="list-style-type: none">• In this lesson, students will practice the skill of synthesizing information read from more than one text, standard RI.5.9. This standard has been taught in previous modules so it is not a new skill for students. However, it is a scaffold for writing the essay that students will be expected to do in the End of Unit 1 assessment in Lesson 7. This is an important pre-writing step to ensure success on the assessment.• During work time, students add to their understanding of the words natural and disaster. Students need to clearly understand the use of both words since these two words are the basis of their end of unit assessment writing. Note that the word natural has two meanings in the context of this module: an event that happens “in the world of nature” and an event that is “normal or typical.” The word disaster, in the context of the phrase “natural disaster,” is when such a normal or natural event causes destruction of the environment, animals, people, or property.• In advance: Write and post the vocabulary words and definitions for students to refer to during Work Time, Part B and in preparation for homework.• Review: Back-to-Back, Face-to-Face, Milling to Music protocols (Appendix 1).



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Lesson Vocabulary	Materials
<p>synthesize;</p> <p>“Earthquakes!” article: apart, rated</p> <p>“How Do Hurricanes Form?” article: converging, rotation, phenomenon, veer, clusters, disturbances, status, subject</p>	<ul style="list-style-type: none">• Earthquake Concepts and Hurricane Concepts note-catchers (from homework)• “Earthquakes!” article (from homework)• Completed Earthquake Concepts note-catcher (for teacher reference, one to display, see Work Time A.)• Vocabulary Strategies anchor chart (from previous lessons)• Journal• “How Do Hurricanes Form?” article (from homework)• Synthesizing Information about Hurricanes task card (one per group of four)• Earthquakes anchor chart (Lesson 1)• Hurricanes anchor chart (Lesson 1)• Evidence flags (three per student)



Opening	Meeting Students' Needs
<p>A. Engaging the Reader (5 minutes)</p> <ul style="list-style-type: none"> Ask students to take out the Earthquake Concepts and Hurricane Concepts note-catchers from homework. Using the Back-to-Back, Face-to-Face protocol, have students share the information they added to their note-catchers using evidence from the two articles they read for the Mid-Unit 1 Assessment. Review the steps for the protocol: <ol style="list-style-type: none"> Find a partner and stand “back-to-back” with him/her. Think about what it is you want to share from your note-catcher. When you hear “face-to-face,” turn, face your partner, and decide who will share first. Listen carefully when your partner is speaking and be sure to give him/her eye contact. When you hear “find a new partner,” stand “back-to-back” and wait to be told to stand “face-to-face.” Repeat this process twice so students can share from both note-catchers. Circulate among the partners to listen in on the discussions, noting any students who were not able to add any new information to their note-catchers or added incorrect information. Be sure to meet with those students later to check in individually about their confusion. Allow a few minutes for students to revise their note-catchers if they wish, given what they heard from their partners. 	<ul style="list-style-type: none"> Write and post the directions for the Back-to-Back, Face-to-Face protocol for students to refer to as they do the protocol. Intentionally partner students who struggle with complex text with stronger readers to share evidence gathered from the two new texts. Consider providing to students who struggle with complex text a partially filled-in note-catcher with new information from the texts or the texts highlighted with information that students should add to their note-catchers.
<p>B. Review Learning Targets (3 minutes)</p> <ul style="list-style-type: none"> Remind students of the work they have done so far in this unit reading to understand relationships between science concepts, specifically how earthquakes and hurricanes are formed. Tell them that they will now practice <i>synthesizing</i> information they have read in order to explain how earthquakes and hurricanes are a natural disaster. Ask a student to read aloud the first learning target: <ul style="list-style-type: none"> “I can synthesize information about earthquakes and hurricanes using details from several texts.” Focus the class on <i>synthesize</i>. Invite students to share with a partner what they know about synthesizing. Ask a few students to share their thoughts aloud. Listen for: “Synthesizing is when you take, combine, or put together all the information you know or learned about something.” 	<ul style="list-style-type: none"> Provide a nonlinguistic symbol for synthesizing (a picture of two different sets of items coming together to form one group of items).



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Work Time	Meeting Students' Needs
<p>A. Rereading and Modeling: Synthesizing Information about Earthquakes (15 minutes)</p> <ul style="list-style-type: none">• Ask students to take out the article “Earthquakes!” (which they read during the previous lesson and reread for homework).• Ask them to take about 5 minutes to reread the article with this question in mind:<ul style="list-style-type: none">* “What makes an earthquake a natural disaster?”• After 5 minutes, invite students to turn to a partner and share their thinking about this question.• Cold call on a few partners to share their discussion. Listen for: “Earthquakes happen naturally because the forces in the Earth cause them. Earthquakes can be a disaster when they cause a lot of destruction to the environment and people.”• Remind students that they have now looked at several images (during the Gallery Walk) and read two articles about earthquakes. They have a lot of information (details) from these texts that will help them explain how an earthquake is a natural disaster.• Display the completed Earthquake Concepts note-catcher (for teacher reference) and ask students to look again at their own Earthquake Concepts note-catcher (from Lesson 2, which they added to for Lesson 4 homework). Have students discuss with their partner:<ul style="list-style-type: none">* “Which details from the note-catcher help to support the idea that an earthquake is a natural disaster?”• Remind the class that <i>natural</i> is a normal event that happens in the natural world, the world of nature. Such a normal event becomes a <i>disaster</i> when it results in destruction of the environment, animals, people, or property.• Invite a few students to share aloud their ideas. Listen for and indicate on the displayed note-catcher with an “N” for “Natural” or a “D” for “Disaster.”	<ul style="list-style-type: none">• Chart all questions posed to students and their answers for students to refer to throughout the lesson.• Assign a color for “N” and another for “D.” Use these two colors to highlight the information on the note-catcher that corresponds to those detail letters.



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Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• For “Natural”:<ul style="list-style-type: none">– Plates naturally and continually move.– They glide smoothly.– Plates catch in places.– Pressure builds up.– Pressure becomes too strong, and plates suddenly shift.– There is a main shock.– Tectonic plates move apart, bump into, or slide under one another.– Waves of energy are released in concentric circles.– Waves travel.– The surface of the Earth tears apart or crunches up.– A tsunami forms.– Waves lose energy as they travel.– There are aftershocks.• For “Disaster”:<ul style="list-style-type: none">– Buildings fall down.– Trees break in half.– Dishes and windows break.– People are killed.– People are frightened.	



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Add any other details students may have on their note-catchers that are not on the displayed one. • Remind students that in order to form a synthesis, they need to use some of the details they have marked. Ask them to think about and discuss with their partner: <ul style="list-style-type: none"> * “What makes an earthquake a natural disaster?” • Have partners join another pair of students and share their synthesis about earthquakes as natural disasters. • Invite a few groups to share aloud with the class. Listen for statements that specifically use several details from the note-catcher that were marked. • Tell students that in the next lesson they will expand on their thinking about earthquakes as a natural disaster as they do some shared writing as a class. 	
<p>B. Vocabulary to Deepen Understanding: Milling to Music (10 minutes)</p> <ul style="list-style-type: none"> • Call on a student to read aloud the second learning target: <ul style="list-style-type: none"> – “I can determine the meaning of new words about earthquakes and hurricanes through context.” • Remind students that they have been working on this learning target all year. Ask them to share with a partner one strategy they are comfortable using to determine the meaning of new words in context. Encourage them to refer to the Vocabulary Strategies anchor chart posted. • Post and focus students on the list of vocabulary for this lesson. Assign each pair of students two or three words from the list, ensuring that all words are assigned. As in previous lessons, ask students to work with their partner to find each assigned word in the texts and underline or circle it. Then, using strategies listed on the anchor chart, determine the meaning of each word in context. Remind students to write the word, what it means, and a visual in the appropriate Glossary section of their journal. • Allow partners 4 or 5 minutes to determine the meaning of their words. Circulate to offer support and redirect as needed. • Using the Milling to Music protocol, have students meet with other students to share and exchange their words and the meanings they determined. Repeat two or three times, reminding students to meet with others who have a word they do not have yet when the music stops. • Ask students to return to their seats and call on members of the class to share aloud their words and what they think it means in context. Write the meaning next to the words posted for students. 	<ul style="list-style-type: none"> • Some students may need a review of how to use some of the strategies listed on the anchor chart. Consider conducting a mini lesson on particular strategies that need more reinforcement. • Consider assigning students who struggle with language only one of the vocabulary words or intentionally assign those students words whose meaning is easily determined based on context clues in the text



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Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Academic Words: <ul style="list-style-type: none"> – <i>apart</i>: away from – <i>rated</i>: ranked or classified – <i>converging</i>: coming together or close to – <i>rotation</i>: turn or bend in a circular motion – <i>phenomenon</i>: something that happens rarely or not often – <i>veer</i>: turn or bend – <i>clusters</i>: group – <i>status</i>: rank or classification – <i>subject</i>: bound by or affected by • Science Words: <ul style="list-style-type: none"> – <i>disturbances</i>: group of thunderstorms • Have students return to their Earthquake and Hurricane Concepts note-catchers and revise any details they may have a new understanding of now that they have reviewed vocabulary. • If there is time, remind students to add these words to their glossaries, or they may do so for homework. 	<ul style="list-style-type: none"> • Consider providing a list of the words and the definitions or synonyms defined by the class to students who would have difficulty copying them themselves from the posted list.
<p>C. Rereading and Guided Practice: Synthesizing Information about Hurricanes (20 minutes)</p> <ul style="list-style-type: none"> • Place students in groups of four. Ask them to take out the article “How Do Hurricanes Form?” as well as the Hurricane Concepts note-catcher in their journals. • Distribute the Synthesizing Information about Hurricanes Task Card and review the instructions with students. Clarify any questions. • Give groups 10 to 12 minutes to work together on the task card. Circulate to each group to clarify or redirect as necessary. • Call on each group to share aloud their synthesis about how a hurricane is a natural disaster. Listen for specific details from their note-catchers about the natural causes of hurricanes and their impact on the environment and people. 	<ul style="list-style-type: none"> • Consider providing a text that is pre-highlighted to students who struggle reading complex text in order to help them focus on important evidence



Closing and Assessment	Meeting Students' Needs
<p>A. Debrief and Review Learning Targets (5 minutes)</p> <ul style="list-style-type: none">Remind students that today they have been working on these learning targets:<ul style="list-style-type: none">* "I can synthesize information about earthquakes and hurricanes using details from several texts."* "I can determine the meaning of new words about earthquakes and hurricanes through context."Invite students to share with their partner how their work today has helped them meet these learning targets.Focus the class on the Earthquakes and Hurricanes anchor charts. Ask students to skim the statements about what they have learned and the questions they still have. Invite them to share with their partner:<ul style="list-style-type: none">* "What new information have you learned about earthquakes and hurricanes?"* "What questions can we cross off because we now have the answer?"* "What new questions do you have?"Call on several students to share aloud their answers to those questions. Be sure to add any new information to the "What We Have Learned" columns, cross off any questions they have answers for from the "Questions We Still Have" column, and add any new questions to the same column.Collect students' Earthquake Concepts and Hurricane Concepts note-catchers. Distribute three evidence flags to each student.	<ul style="list-style-type: none">For students who struggle with sharing aloud, let them know before the debrief that they will be called upon to share their thinking; this will give them time to prepare what they will say. Consider helping them craft a sentence and write it down.
Homework	Meeting Students' Needs
<ul style="list-style-type: none">Continue reading in your independent reading book for this unit at home. Read for evidence to add to the What Do We Know about Natural Disasters? anchor chart.Add to your glossaries any new vocabulary words from today's lesson that you have not already added. Be sure to list the word, what it means, and a visual to help remind you of its meaning. <p><i>Note: Review the students' Earthquake Concepts and Hurricane Concepts anchor charts. Note any students who have irrelevant information in specific columns or lack information. Be sure to meet with those students individually or in small groups to clarify misconceptions or reteach as necessary.</i></p>	<ul style="list-style-type: none">Provide audio recordings of independent reading books for those students who struggle with reading books independently.For students who struggle with language, narrow the list of vocabulary words to four or five that they must add to their glossaries.



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Supporting Materials



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Earthquakes Concepts Note-Catcher
For Teacher to Display

Earthquake Concepts:					
What happens before an earthquake?	What causes an earthquake?	What happens during an earthquake Chain of Events			What happens after an earthquake?
	Event/cause	Effect (what happens next) This, then, causes...	Effect (what happens next) This, then, causes...	Effect (What happens last)	
<ul style="list-style-type: none"> Plates naturally and continually move. They glide smoothly 	<ul style="list-style-type: none"> Plates catch in places 	<ul style="list-style-type: none"> Pressure builds up Buildings fall down Trees break in half Dishes and windows break 	<ul style="list-style-type: none"> Pressure becomes too strong, and plates suddenly shift. Main shock Tectonic plates move apart, bump into, or slide under each other People are killed People are frightened 	<ul style="list-style-type: none"> Waves of energy are released in concentric circles Waves travel The surface of the Earth tears apart or crunches up A tsunami forms 	<ul style="list-style-type: none"> Waves lose energy as they travel Aftershocks



Synthesizing Information About Hurricanes Task Cards

With your group, complete the following:

1. On your own, reread the article “How Do Hurricanes Form?”
Think about this question: “What makes a hurricane a natural disaster?”
2. With your group members, take turns sharing what you think about how hurricanes are a natural disaster.
3. On your own, mark the details on your Hurricane Concepts note-catcher with an “N” next to the details that would support how a hurricane is a natural event and a “D” next to the details that would support how a hurricane can be a disaster.
4. With your group members, take turns sharing the details you marked on your note-catcher. Be sure that everyone gets a turn to share and that all details that are marked are shared.
5. On your own, think about how you can use the details you marked to synthesize what you know about what makes a hurricane a natural disaster.
6. As a group, determine what you will share with the whole class using some of the details you marked on your note-catchers about what makes a hurricane a natural disaster.