

Newark Board of Education

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## **ELA Integrated Science Curriculum- Grade 2**

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Roger León, Superintendent

Nicole T. Johnson, Deputy Superintendent

Dr. Mary Ann Reilly, Assistant Superintendent for Teaching and Learning

2021 - 2022

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# Changes in Planet Earth

In this 3-week unit, students learn that Earth's natural processes change the Earth's surface. Some changes in the Earth's surface happen very quickly, due to incredible forces deep inside the Earth. Some changes in the Earth's surface happen over a long period of time, due to slow processes on the Earth's surface. Through interactive read alouds and shared reading texts students answer the question, "Why does the Earth's surface change?" This unit is aligned to Grade 2 Next generation science standards and ELA standards.

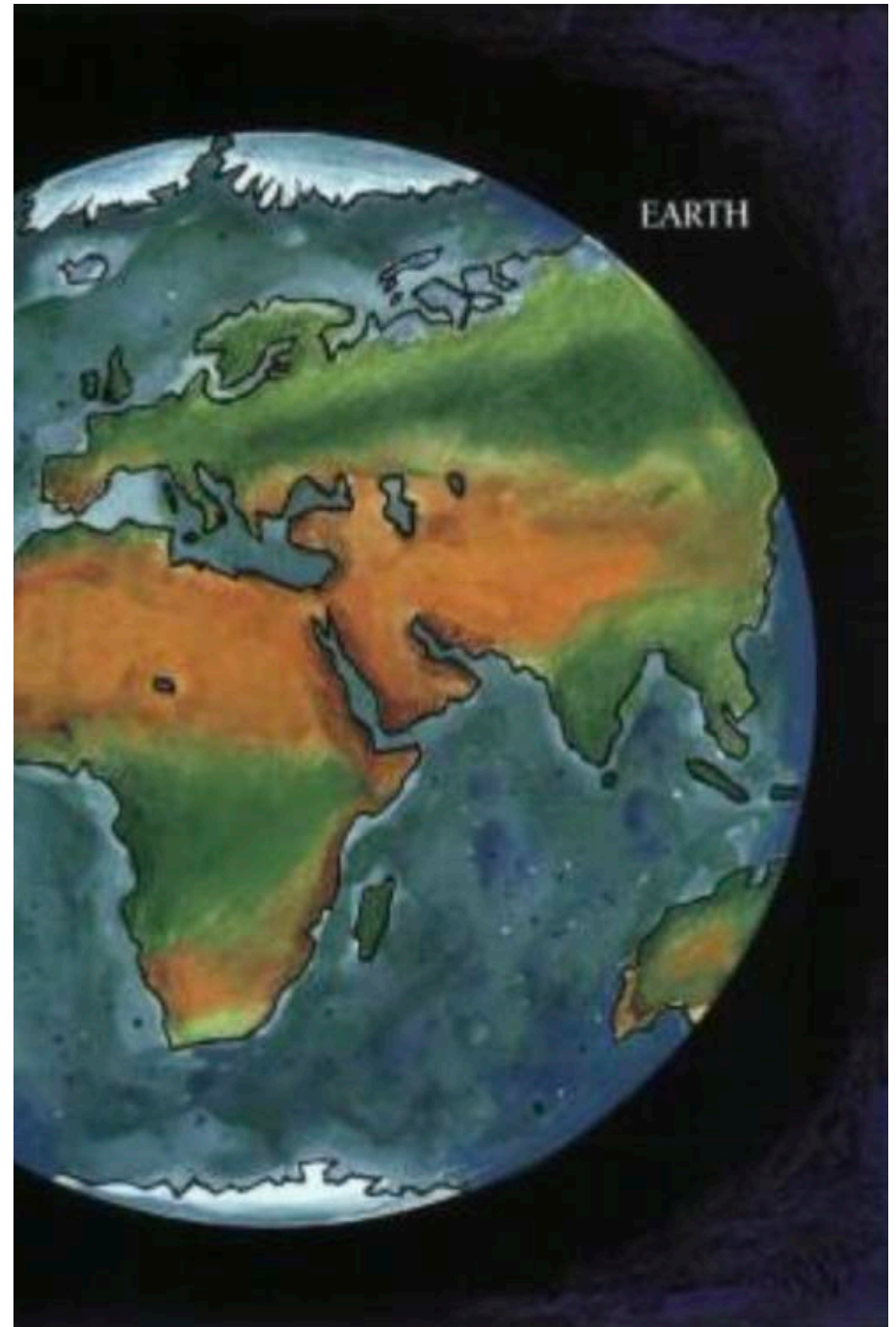
## Books:

### Interactive Read Aloud

1. *Planet Earth/Inside Out* by Gail Gibbons: 6 Classroom copies
2. *Volcanoes* by Seymour Simon: 6 Classroom copies
3. *How Does It Happen? How does a Volcano become an Island?* By Linda Tagliaferro : 6 Classroom copies
4. *Earthquakes* by Franklyn M Branley 6 Classroom copies

### Shared Reading

5. *How Mountains are Made* by Kathleen Weidner Zoehfeld: 1 copy per child



OUTCOMES

# Changes in Earth

LEARNERS WILL...

1. 2.ESS.1.1 - Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
2. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
3. Identify the main topic of a multi-paragraph text as well as the focus of specific paragraphs within a text.
4. Describe the connections between a series of historical events, scientific ideas, or steps in a process in a text.
5. Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
6. =Know and use various text features to locate key facts or information in a text efficiently.
7. =Identify the main purpose of a text, including what an author wants to answer, explain, or describe.
8. =Identify and explain how illustrations and words contribute to and clarify a text.
9. Compare and contrast the most important points presented by two texts on the same topic.

LEARNERS WILL...

1. Know and apply grade-level phonics and word analysis skills in decoding words.
2. Read with sufficient accuracy and fluency to support comprehension.
3. Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a conclusion.
4. Write informative/explanatory texts in which they introduce a topic, use evidence-based facts and definitions to develop points, and provide a conclusion.
5. Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).
6. Recall information from experiences or gather information from provided sources to answer a question.
7. Participate in collaborative conversations with diverse partners.
8. Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
9. Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.
10. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
11. Determine or clarify the meaning of unknown and multiple-meaning words and phrases
12. Demonstrate understanding of figurative language, word relationships and nuances in word meanings.
13. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe .

RI	RF	W	SL	L	SCIENCE
2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9	2.3, 2.4	2.1, 2.2, 2.7, 2.8	2.1, 2.2, 2.6	2.4, 2.5, 2.6	2.ESS.1.1

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
<p><b>Lesson 1: Planet Earth/Inside Out , pp. 1-13</b></p> <p>Preview &amp; Predict, Read Aloud pp. 1-13, Pose Questions While Reading, Create Anchor Chart of the Earth's Layers, Turn and Talk, <b>Daily Instructional Task: Explanatory Writing (2W2)</b></p>	<p><b>Lesson 2: Planet Earth/Inside Out , pp. 14-30</b></p> <p>Read Aloud pp. 14-30, Pose Questions While Reading, Use Anchor Chart, Turn and Talk, Volcano Anchor Chart, <b>Daily Instructional Task: Explanatory Writing (2W2)</b></p>	<p><b>Lesson 3: How Mountains are Made, pp. 1-10</b></p> <p>Teacher Read Aloud and Modeling: Pose and Answer Text-Dependent Questions <b>Daily Instructional Task: Writing an Explanation, Turn and Talk</b></p>	<p><b>Lesson 4: How Mountains are Made, pp. 11-18</b></p> <p>Partner Reading/Buddy Reading, Turn and Talk, Buddy Reading Bookmark, Check for Understanding Card, <b>Daily Instructional Task: Writing an Explanation (RI.2.8, W.2.2)</b></p>	<p><b>Lesson 5 How Mountains are Made, pp. 19-end of book,</b></p> <p>Retell, Interactive Read Aloud, pp. 19-22, Partner Reading/ Buddy Reading, pp. 23-end of book, Buddy Reading Bookmark, Check for Understanding Card, <b>Culminating Task: Writing an Explanation (2.ESS.1.1, RI.2.8, W.2.2)</b></p>
<p><b>Lesson 6: Volcanoes</b></p> <p>Read Aloud pages 1-13, Pose &amp; Answer Text-Dependent Questions (1-16), <b>Daily Instructional Task: Writing an Explanation (RI.2.1, 2.4, W.2.2, 2.8)</b></p>	<p><b>Lesson 7: Volcanoes</b></p> <p>Retell, Read Aloud pages 14-23, Pose &amp; Answer Text-Dependent Questions (1-15), <b>Daily Instructional Task: Writing an Explanation (2.ESS.1.1, RI.2.1, W.2.2)</b></p>	<p><b>Lesson 8: Volcanoes</b></p> <p>Retell, Read Aloud pages 24 to 32, Pose &amp; Answer Text-Dependent Questions (1-15), <b>Culminating Task: Writing an Explanation (2.ESS.1.1, RI.2.1, 2.4, 2.7, W.2.2)</b></p>	<p><b>Lesson 9: "Earth's Systems: Volcanoes"</b></p> <p>Partner/Buddy Reading (RF.2.3, 2.4), Buddy Reading bookmark, Check for Understanding Card, <b>Daily Instructional Task: Writing an Explanation (RI.2.1, 2.2, 2.4, 2.7, W.2.2, 2.5, SL.2.1)</b></p>	<p><b>Lesson 10: How Does a Volcano Become an Island?</b></p> <p>Retell, Read Aloud pages 1-13, Pose &amp; Answer Text-Dependent Questions (1-12), <b>Daily Instructional Task: Writing an Explanation (2.ESS.1.1, RI.2.1, RI.2.9, W.2.2)</b></p>
<p><b>Lesson 11: How Does a Volcano Become an Island?</b></p> <p>Retell, Read Aloud pages 14-29, Pose &amp; Answer Text-Dependent Questions (1-16), Turn and Talk, <b>Culminating Task: Writing an Explanation (2.ESS.1.1, RI.2.1, W.2.2)</b></p>	<p><b>Lesson 12: Earthquakes</b></p> <p>Reread pages 5-31, Pose &amp; Answer Text-Dependent Questions (1-11), <b>Culminating Task: Writing a Letter (2.ESS.1.1, RI.2.1, 2.3, W.2.8, SL.2.1)</b></p>	<p><b>Lesson 13: Earthquakes</b></p> <p>Reread pages 5-31, Pose &amp; Answer Text-Dependent Questions (1-11), <b>Culminating Task: Writing a Letter (2.ESS.1.1, RI.2.1, 2.3, W.2.8, SL.2.1)</b></p>	<p><b>Lesson 14: End of Unit Task: Student Letter (2.ESS.1.1, RI.2.1, 2.3, W.2.8, SL.2.1)</b></p>	

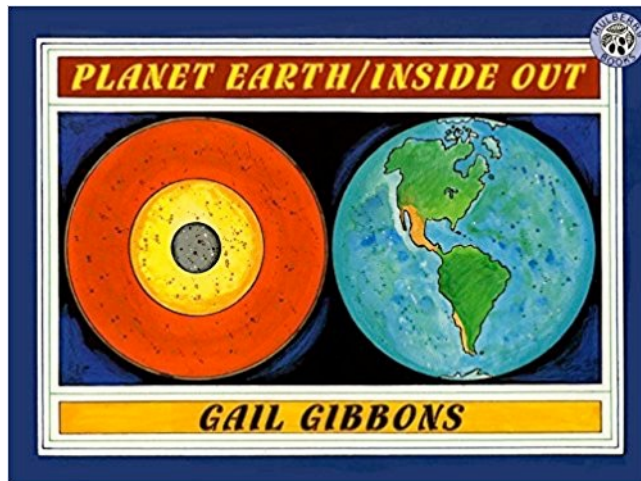
**Lesson 1: Planet Earth/Inside Out - Preview & Predict, Read Aloud pp. 1-13, Pose Questions While Reading, Create Anchor Chart of the Earth's Layers, Turn and Talk, Daily Instructional Task: Explanatory Writing (2W2)**

**Learning Intentions:**

1. I am learning about the layers of the Earth.
2. I am learning to explain each of the layers of the Earth.
3. I am learning how to predict.

**Success Criteria:**

1. I can present reasons and explanations to support my predictions.
2. I can identify each of the layers of the Earth.
3. I can write a composition explaining each of the layers of the Earth.

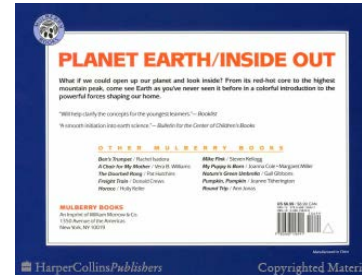


Gibbons, Gail. (1998). *Planet Earth/Inside Out*. New York: HarperCollins. 32 pp.

**Lexile Level: 860, Guided Reading Level: O**

**Part 1: Preview & Predict**

1. Show students the book cover and say the title, Planet Earth/Inside Out and the author/illustrator, Gail Gibbons.

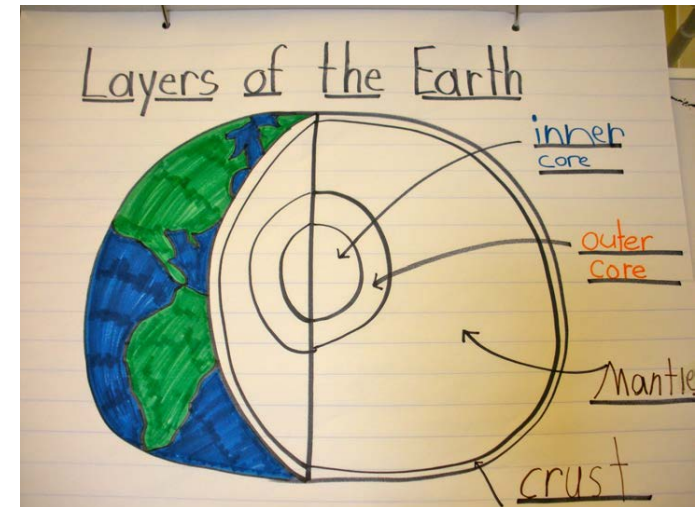


2. Show students the back cover and read the blurb aloud.

3. Ask students to turn and talk with their partner about what this book will likely be about.

**Part 2: Read Aloud, pp. 1-13**

**Note:** Create an anchor chart that labels the layers of the Earth. Students will be asked to use stickie notes to add details about each of the layers.



*Reading Strategies: Making Predictions.* Before I start reading, I like to look ahead quickly at the pages to see what the author will tell me. Usually, I scan the illustrations first. On most of the pages in this book, I see maps and drawings of the Earth. I can see a picture of the globe on the cover, too. I also scan the words to look for important words or words that I see repeated a lot. As I turn the pages, I notice that the word Earth is on almost every page. Can you find the word that I am thinking about? Putting all of this together in my mind, I realize that the Earth is going to be the main topic of this text. When I scan a text, I look for repeated words and illustrations to give me an idea about the text. I don't need to read every word on the page to get this information.



**Read aloud pages 1-3. Then ask these three questions:**

- While there are lots of different ideas about the age of the Earth, I can learn from these pages that the Earth is much older than I am!

**Question 1:** Is that a few years or a lot of years? (Wait for a group answer.) So, does that mean that the Earth is young or old? (Wait for a group answer--old).

- From these pages, I wonder if the Earth has always looked the same or if it has changed over time.

**Question 2:** Do you think the Earth has changed over time?

**Question 3:** How do you think the Earth has changed? **Think, Pair, Share.**

**Read Aloud pages 4-7**

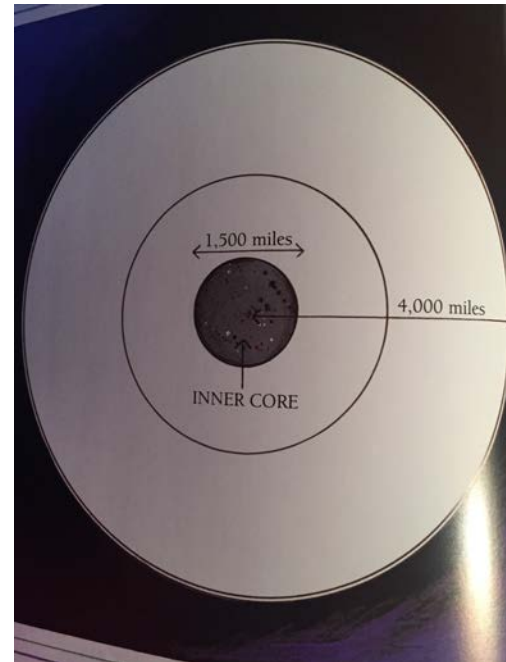
**Question 4:**

Turn and tell your partner what continents are. Use this map to help me name the 7 continents.



**Read Aloud pages 8. Then ask this question:**

- Gail Gibbons shares some fascinating information about our inner core. Remember that the inner core is the central foundation of our Earth. (Use illustration to point to the inner core.)

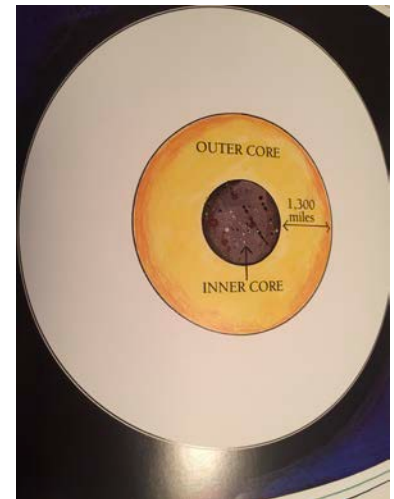


**Question 5:** Thinking about what you have heard about the inner core, please share with your partner at least one fascinating fact. **Think, Pair, Share**

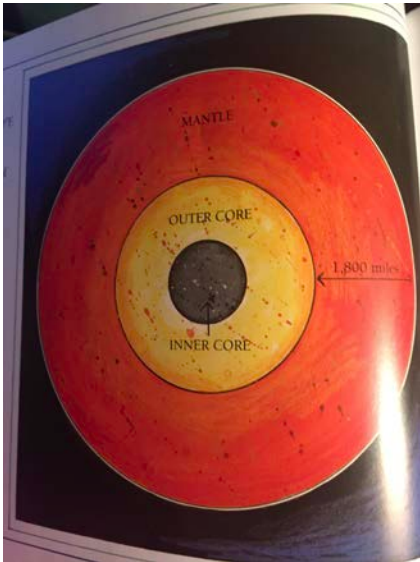
**Read aloud page 9, Then ask these two questions:**

**Question 6:** While the first layer is named the inner core, what is the next layer named?

**Question 7:** Can you share at least one interesting piece of information you learned about the outer core? **Think, Pair, Share.**

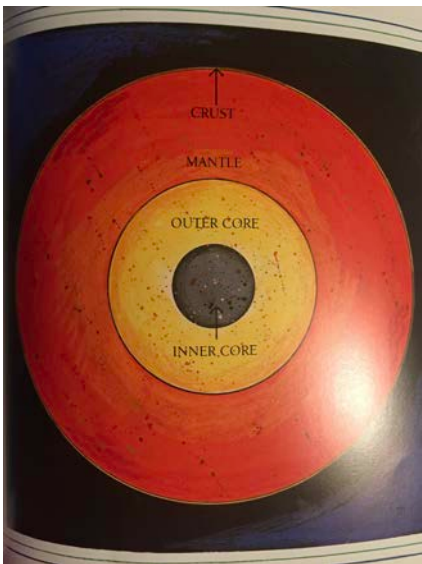


Read aloud pages 10-11, Then ask these two questions:



◦As we get ready to learn about the next layer of the Earth, let's review the layers we have studied. (Have students use their hands to name the layers they have learned. As you review, verbally highlight the specific traits of each layer.)

**Question 8:** Now we know that the mantle and the crust are the last two of Earth's layers. On which layer do we live?



◦(Wait for a group answer. If students have difficulty inferring that they live on the crust, use the illustration to help prompt their thought process.)

**Question 9:** How would you describe the Earth's crust?

◦(Again, have students use their hands to name the layers of the Earth. As you review, have the students share specifics they have unearthed.)

Read aloud pages 12-13, Then ask these two questions:

**Question 10:** What is the difference between the oceanic and the continental crusts?

- (The oceanic crust lies below oceans, forming the ocean floors. The continental crust forms the land above sea level.)

**Question 11:** What are plates? Listen as I reread:

- (Have this quote on chart paper.)

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*"Plates are made up of thin portions of the crust and a thicker portion of the outer mantle that lies beneath them. These plates slowly move, because they float on top of partially molten rock. Earth's plates are about forty miles thick under the oceans and sixty miles thick under the continents" (p. 13).*

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Turn and tell your partner what plates are.

**Question 12:** How do plates affect the earth? If you have an inference, turn and tell your partner.

### Part 3: Daily Instructional Task: Explanatory Writing (2W2)

1. After students add to each of the layers using sticky notes, they will use the anchor chart to complete the following writing prompt:

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*What makes each layer of the earth unique?*

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2. Remind students to **introduce the topic, use facts from the text to describe each layer, and provide a concluding statement or section.**

**Teacher Note:** Read students’ writing and respond. Address students’ misconceptions and errors. See rubric.

### Student Exemplar:

The earth has four layers. In the center of the Earth is the inner core. The inner core is very hot and is made of solid rock. The outer core is the next layer. The outer core moves slowly around the inner core. This gives Earth its magnetic core. The mantle is the thickest layer. It is made of partially molten rock. Earth’s crust is the last layer. Humans live on this layer. All of the layers of the earth are unique.

**Assignment:** Invite students to create their own anchor chart of the Earth’s Layers.

	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Accuracy	The writing is accurate.	The writing is mostly accurate.	The writing is not accurate
Organization	Well organized with a logical sequence, beginning & ending.	Organized, but a weak beginning or ending.	Not organized; no beginning or ending.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			

**Lesson 2: Planet Earth/Inside Out - Read Aloud pp. 14-30, Pose Questions While Reading, Use Anchor Chart, Turn and Talk, Volcano Anchor Chart, Create a Vocabulary Anchor Chart, Daily Instructional Task: Explanatory Writing (2W2)**

**Learning Intentions:**

1. I am learning key terms that will build my knowledge.

**Success Criteria:**

1. I can explain in writing the Earth's events.
2. I can use the text and images to answer text-dependent questions.

**Part 1: Read Aloud pp. 14 - 30, Pose Questions While Reading, Use Anchor Chart, Turn and Talk**

We learned about plates yesterday. Let's reread our definition. (Create a vocabulary chart.) Now Look at this map on page 13. Turn and explain to your partner what the map shows.

**Question 1:** Can you locate which plate we are on. (North American Plate)



Pose a focus question before reading for students to use as a guide to their task. Students can then add sticky notes to an anchor chart with the question.

Focus Question: What Earth events occur slowly and quickly?

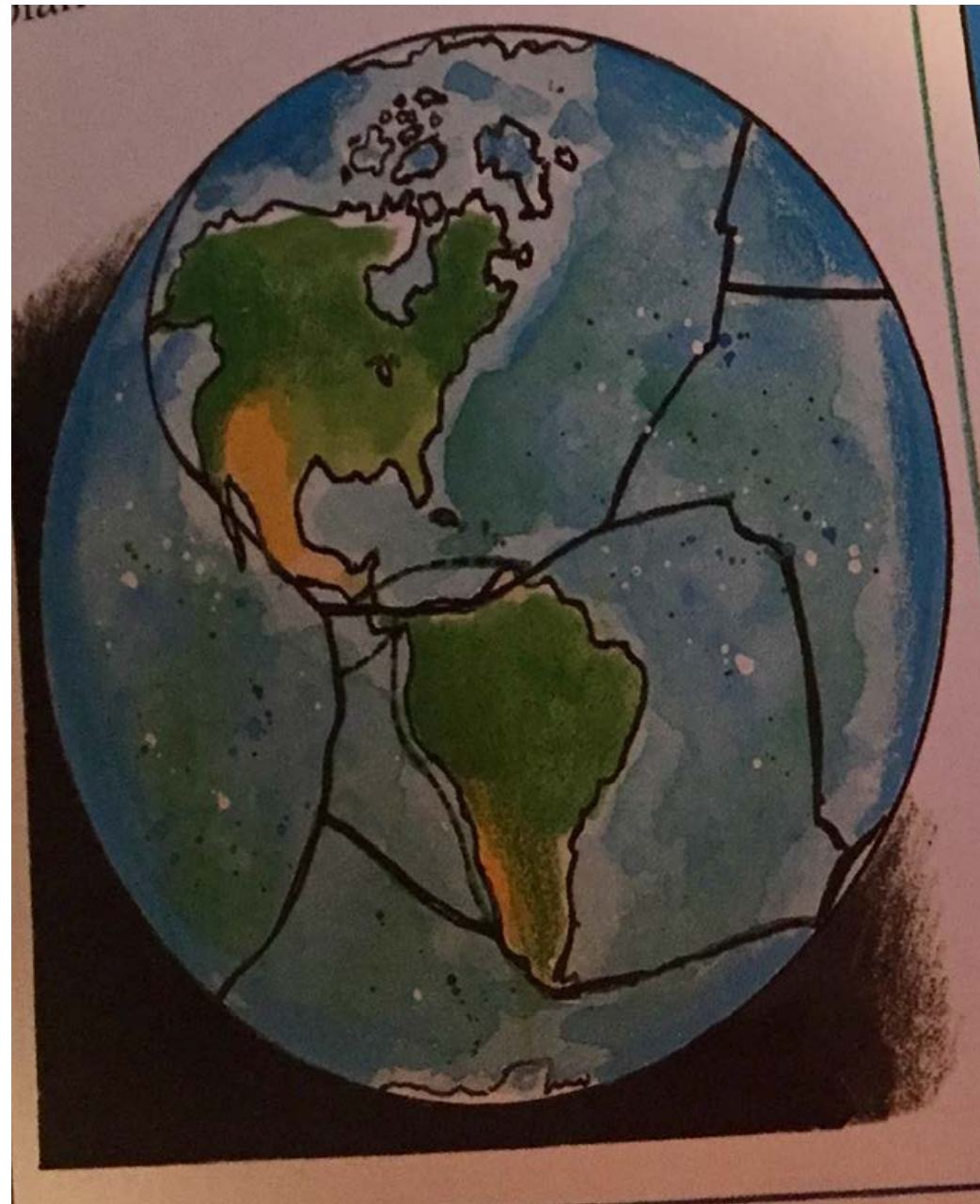
**Read page 14.**

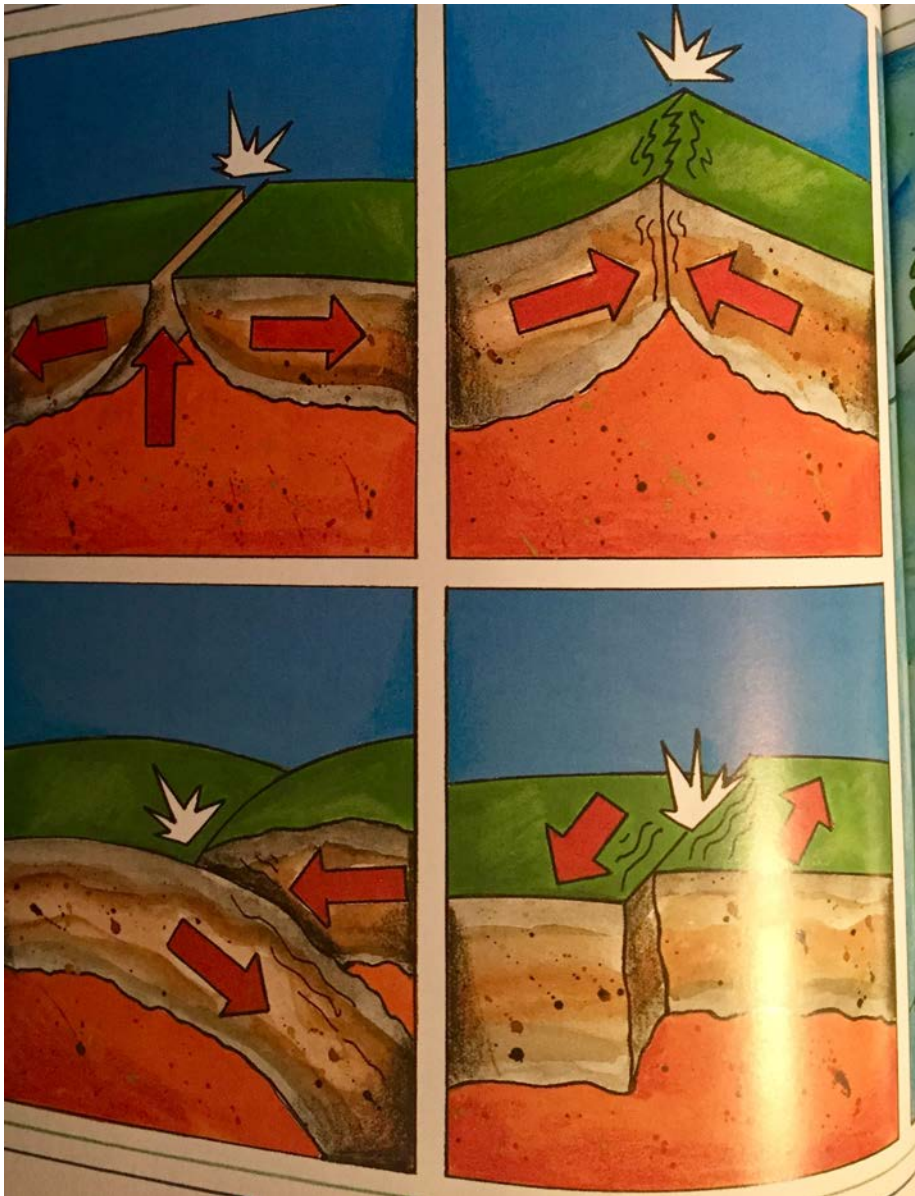
**Question 2:** Why is the planet Earth considered a living planet?  
Think, Pair, Share

Let's take a moment and look at the illustrations on this page. They show some of the ways the Earth is always in motion.

*Reading Strategies: Taking Notes on NonFiction*

I'm going to read and take notes on the information about the Earth's events that can be caused quickly or slowly. As we read and stop to answer the question, I will add the information to my sticky notes. On pages 16 and 17, I learn about mountain ranges. I can add this information to my sticky note as an event that takes millions of years to form. On pages 18 and 19, I learn about earthquakes. I can add this information to my sticky note as an event that happens quickly.





**Question 3:** How is the Earth in motion in the first image? What did you use to help you know its direction of movement? What do you

think will happen because of this motion? (Quickly continue this cycle with at least two images.)

- o It is amazing to think that our Earth is in constant motion. I am excited to learn more about what happens when our living planet moves as we learn throughout this unit!

**Read pages 16-17**

**Question 4:** Let's add the term, **fault**, to our vocabulary chart. Faults are cracks in Earth's crust.

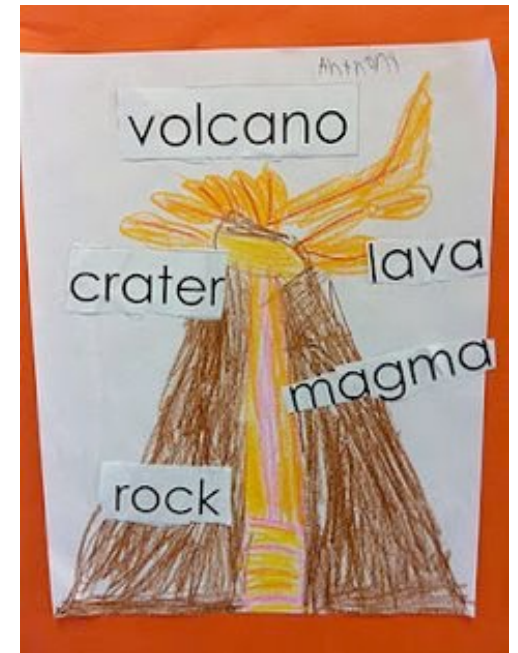
**Question 5:** What causes earthquakes?

**Question 6:** Can you think of any other natural disasters that may be caused by the movement of plates?

**Read pages 18-19**

**Question 7:** What natural disaster in addition to earthquakes are caused by pressure that builds up when plates collide? (Volcano)

**Question 8:** Let's use this drawing of a volcano so that we can better understand and label the parts: crater, lava, magma, rock, volcanic ash.



**magma**

**volcanic  
ash**

**volcanic  
eruption**

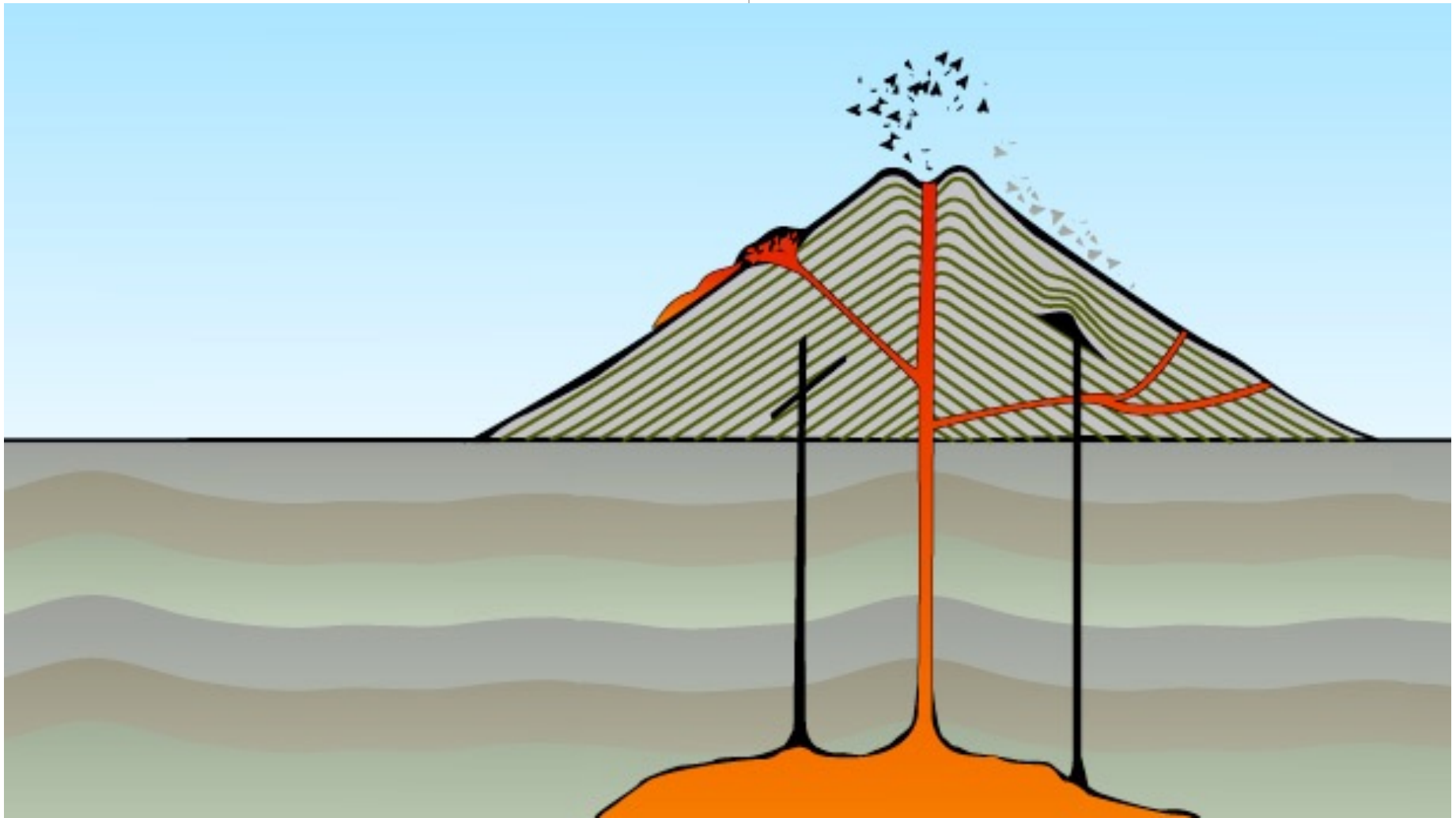
**active  
volcano**

**crater**

**dormant  
volcano**

**lava**

See diagram on next page.



Read pages 20-21

**Question 9:** How are islands formed? Think, Pair, Share.

Read pages 22-23

**Question 10:** Did the shape of the land on Earth today form quickly or slowly? **Think, Pair, Share.** Which sentence on page 22 is evidence? (“Most of these changes happen too slowly for people to see.”)



**Question 11:** How are mountains formed? **Think, Pair, Share**

**Read pages 24-25**

**Question 12:** What are **fossils**? Why do scientist study fossils?  
**Think, Pair, Share**

**Question 13:** What are some **natural resources** shown in the illustration that we use? (Water, rocks, earth())

**Read pages 26-27**

**Question 14:** While our text tells that the Earth has changed during our lifetime, we as humans can do some things to help. How we can help the Earth. **Think, Pair, Share**

1. It will be helpful to have discussions around the illustrations on this page to foster conversation.
2. (Save pages 28-30 for a different discussion)

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**Part 3: Daily Instructional Task: Explanatory Writing (2W2)**

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*Based on the text, what Earth events occur quickly or very slowly? Provide evidence from the book, Planet Earth/Inside Out, to support each event.*

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1. Write an explanation to the question: **What information from Planet Earth/Inside Out provides evidence that Earth events can occur quickly or very slowly? Select one Earth event that happens quickly. Select a different Earth event that occurs very slowly.**
2. Remind students to **introduce the topic, use facts from the text to describe each layer, and provide a concluding statement or section.**

**Teacher Note:** Read students' writing and respond. Address students' misconceptions and errors. See rubric.

	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Accuracy	The writing is accurate.	The writing is mostly accurate.	The writing is not accurate
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Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			

### Student Exemplar:

Earth events happen quickly and very slowly. For example, when plates shift and apply pressure at fault lines, an earthquake can quickly happen. Earthquakes happen quickly and for a very brief amount of time. Usually they last from a few seconds to a few minutes. In contrast, mountains have taken millions of years to form. The process of plates crashing into one another creates folds and buckles that across millions of years form mountain ranges. Some Earth events happen quickly, while others take a long time to occur.

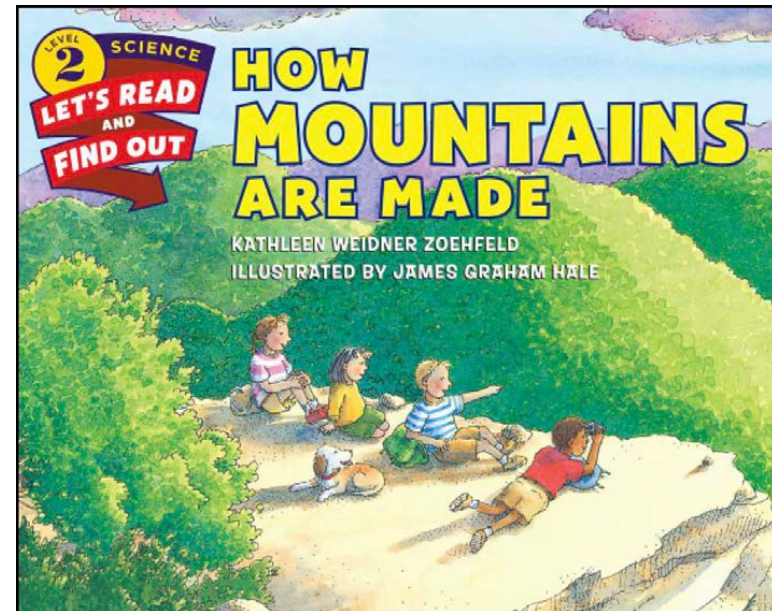
- Lesson 3: SHARED READING: *How Mountains are Made* - pp. 1-10; Teacher Read Aloud and Modeling: Pose and Answer Text-Dependent Questions Daily Instructional Task: Writing an Explanation (RI.2.1., RI.2.4.)

### Learning Intentions:

1. I am learning how to ask and answer questions to demonstrate understanding.
2. I am learning how to determine the meaning of words and phrases in a text.

### Success Criteria:

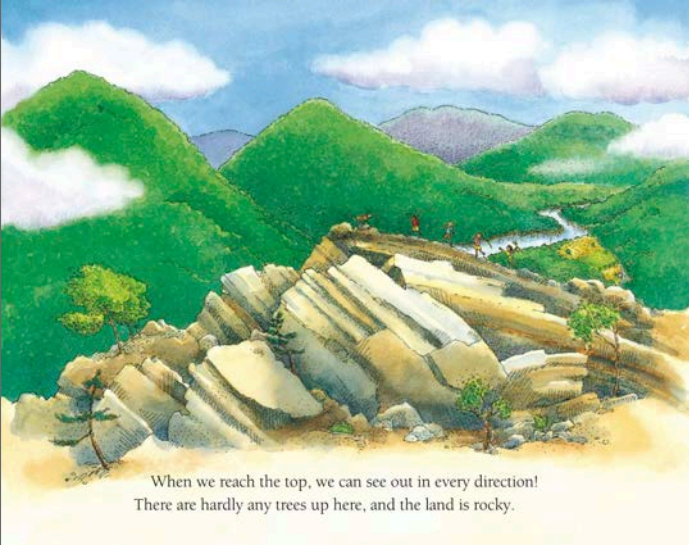
1. I can write a composition explaining how fossils of sea animals appeared at the top of the mountains.

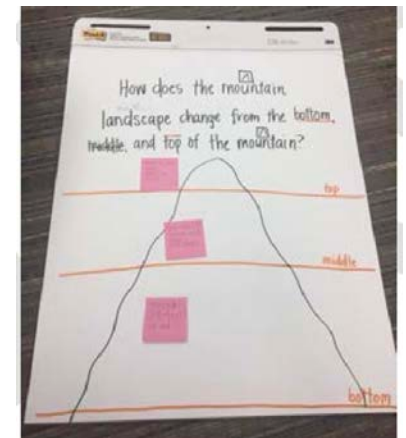





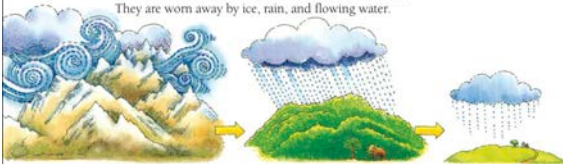

Zoehfeld, Kathleen Weidner. (2015). *How Mountains are Made*. Illustrated by New York: HarperCollins. **Lexile Level: 620L**

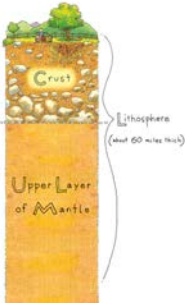
## Teacher Read Aloud and Modeling: Pose and Answer Text-Dependent Questions

Teachers reads text aloud (pp. 1- 10 ) and models comprehension and vocabulary problem solving and word solving strategies.

PAGES		TASK/QUESTION
1-5		<p>Read aloud the text. Model how to read with expression. After reading the first five pages, ask students to return the text and notice to the illustrations.</p> <p><b>Question 1:</b> What is happening to the land as the students climb the mountain? What was it first like at the start? What did the land look like next? What about at the top of the mountain? Turn and tell your partner what you noticed as you reread and studied those illustrations.</p> <p><b>Question 2:</b> What specific words help you to understand the differences between the bottom, middle and top of the mountain. Work with your partner to select those words. (2R4, 2L4)</p> <p><b>Task:</b> Based on student responses create an anchor chart <b>that</b> illustrates the changes in landscape from the bottom, middle, and top of the mountain.</p> <p>Bottom: thick forest, not very steep</p> <p>Middle: Becomes steeper, rock ledges, forest begins to thin out, steeper slope</p> <p>Top: rocky land, few if any trees</p>



PAGES		TASK/QUESTION
6	<p>We spend a long time looking at the rocks. Here's one with the shape of a seashell in it.</p>  <p>Fossils are the remains of animals that lived millions of years ago.</p>	<p>Read aloud the text. Read with expression. Ask students to listen for an explanation as to how a fossil of a sea animal could end up on top of a mile-high mountain.</p> <p><b>Task:</b> Let's add the definition for <b>fossil</b> to our chart.</p> <p><b>Question 3:</b> How did fossils of sea animals get on top of a mountain that is nearly a mile high? If you have an inference turn and tell your partner.</p>
7-8	<p>The highest mountain in the world is Mount Everest, in Nepal. It is 29,028 feet high. That's almost five and a half miles. But fossil seashells have been found on Mount Everest, too.</p>  <p>Millions of years ago Mount Everest was not a mountain at all. It was part of a flat plain under an ocean.</p>  <p>Our mountain was part of a flat plain under an ocean, too. All sorts of sea animals lived right here. But that was a long, long time ago. Many changes have happened since then.</p>	<p>Read aloud the text. Read with expression. Ask students to listen for an explanation as to how a fossil of a sea animal could end up on top of a mile.</p> <p><b>Question 4:</b> What explanation did the author provide that explains how fossils of sea animals could be found on top of a mountain?</p> <p>Do you have additional questions that author did not answer?</p>
9	<p>The earth is always changing. Old mountains disappear. They are worn away by ice, rain, and flowing water.</p>  <p>New mountains form where there were no mountains before.</p>  <p>We can't see the changes happening, though. Mountains are built up and worn down gradually, over hundreds of millions of years.</p>	<p><b>Question 5:</b> The author uses the word “gradually” to explain how mountains are built up and worn down. What other text evidence helps you understand if this means a slow or fast change?</p> <p><b>Question 6:</b> What are some ways the Earth is always changing? What text evidence proves your thinking?</p>

PAGES	GRAPHIC	TASK/QUESTION
10		<p><b>Question 7:</b> In the last book we read, <i>Planet Earth/Inside Out</i>, we learned about the mantle and the crust. What new information about the mantle and crust did we learn? (if students don't see the term, <b><u>lithosphere</u></b>, point it out via the graphic and make sure students now what it means.can explain to one another what the term means. Add it to the vocabulary chart.)</p>

### Part 2: Daily Instructional Task: Writing an Explanation

1. How did fossils of sea animals end up on top of a mountain? What reason did the author give?
2. Turn and talk with your partner. Use the book to help you recall what the author wrote.
3. Write an explanation that answers the questions: How did fossils of sea animals end up on top of a mountain? What reason did the author give? Include a beginning and ending, and use text evidence for your answer. (RI.2.8, W.2.2)

**Teacher Note:** Read students' writing and respond. Address students' misconceptions and errors. See rubric.

	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Accuracy	The writing is accurate.	The writing is mostly accurate.	The writing is not accurate
Organization	Well organized with a logical sequence, beginning & ending.	Organized, but a weak beginning or ending.	Not organized; no beginning or ending.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			

**Lesson 4: SHARED READING: *How Mountains are Made*, pp. 11-18, Partner Reading/Buddy Reading, Buddy Reading Bookmark, Check for Understanding Card, Daily Instructional Task: Writing an Explanation (RI.2.8, W.2.2)**

**Learning Intentions:**

1. I am learning how mountains are formed.
2. I am learning how to use the pictures and text to explain and speculate on the text.
3. I am learning how to make logical connections of how reasons support specific points the author makes in a text.

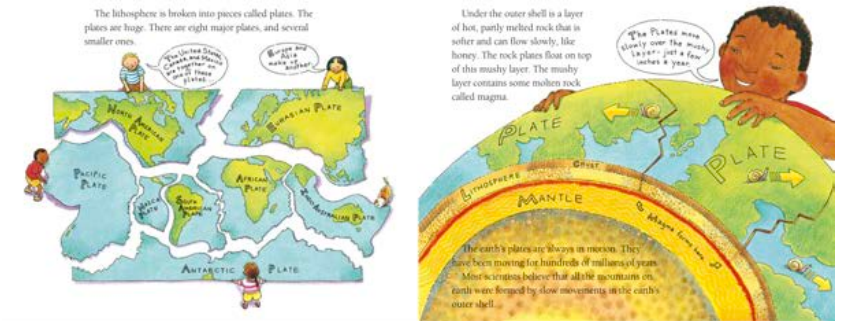
**Success Criteria:**

1. I can partner read a complex text.
2. I can listen to my partner and offer support and feedback.
3. I can increase comprehension by using check for understanding card during peer reading.

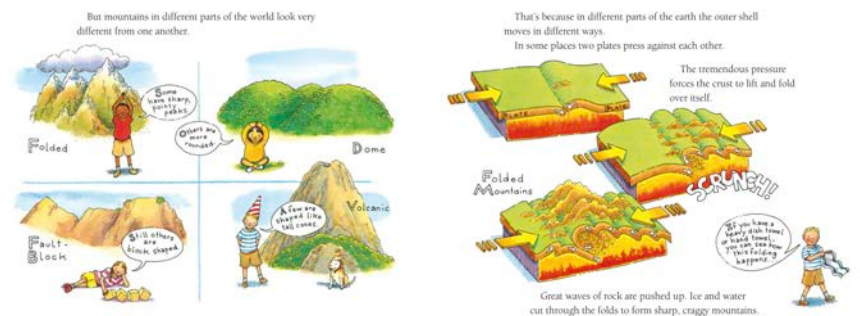
**Part 1: Partner Reading/Buddy Reading**

1. Ask students to take out their copy of *How Mountains Are Formed*. Give them a Buddy Reading bookmark and a Check for Understanding Card
2. Explain to students that they will be working with their partner to read the text. They will be reading it two times.
3. Have each member of the teacher-assigned pair take turns being "Coach" and "Player." **Note: It is important to monitor and support students as they work together.**
4. Ask the stronger reader to begin this activity as the "Player" and to read **PAGES 11 AND 12.**

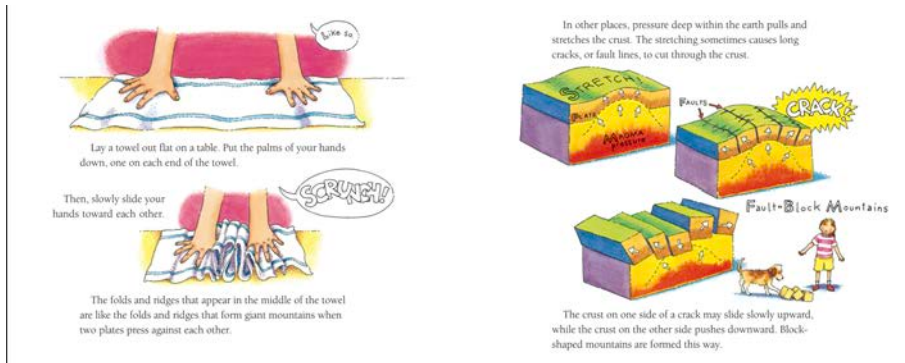
*Reading Strategies: Asking Questions* - This book has been so interesting so far. As I am reading I want to be able to ask questions to help me figure out what the author is trying to present. I will look closely at the illustrations to help me better understand what the text is explaining and gives us multiple sources to find why? answers. After reading the text and identifying new information I continue to grow as a reader. My experiences with the text and understanding increases my interest and I have more questions. I am noticing that as the events continue to occur my questions continue to develop. When I feel puzzled I ask other questions and use what I already know to gather more information to make sense of the text.



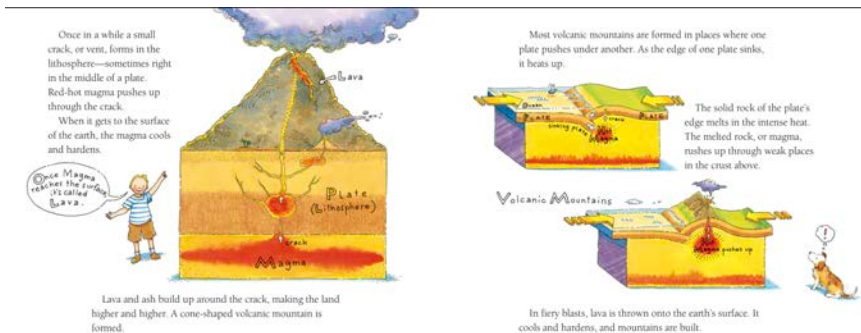
5. Have the "Coach" follow along and prompt peer to correct mistakes when necessary, using the Buddy Reading bookmark.
6. Have the pair switch roles and ask the weaker reader to become the "Player." The "Player" rereads the same passage and the "Coach" provides feedback. At the end of each two-page spread, the students can use the Check for Understanding card to prompt comprehension,
7. Repeat the process reading pages 13-14.



8. Then repeat the process reading pages 15-16. It would help students in small dish towels were available to use when reading page 16.



9. Then repeat the process reading pages 17-18.



10. Remind students that they should sit side-by-side, read with soft voices, and take time to discuss what they have read.

**Note:** Is this task is too difficult for some students bring them into a small group and treat this as shared reading with the teacher reading first and the students following along. Read the text first to them and then ask them to reread it and conduct the group as guided reading.

## Buddy Reading



My partner is stuck on a word.  
What will I do?

- Count to 5.
- Say "Do you need more time or coaching?"



- What word makes sense?
- **Cross Check:** Does it look right? Sound right? Make sense?



- Go back and reread. Get your lips ready for the first sound.
- Stretch out the word slowly.
- Chunk sounds together. Say quick/ly.
- Do the pictures have clues?
- Flip the sounds.
- Does it look like a word you know?
- Skip the word and come back.

"I will sound out the word with you"  
"I will tell you the word."

## Check for Understanding

- Who did you just read about?
- What just happened?
- What feelings are being shown?
- What can you tell from the pictures?
- Why?

If details are left out or your partner can not remember ask

- What will you do now?

If your partner has a good understanding, you might also ask:

- What do you think will happen next?

Well done! Keep up the great reading!

### Part 2: Daily Instructional Task: Writing an Explanation (RI.2.8, W.2.2)

1. How do scientists believe mountains were formed? What information did the author give?
2. Turn and talk with your partner. Use the book to help you recall what the author wrote.
3. Write an explanation that answers the questions: How do scientists believe mountains were formed? What information did the author give?
4. Include a beginning and ending, and use text evidence for your answer. (RI.2.8, W.2.2)

**Teacher Note:** Read students' writing and respond. Address students' misconceptions and errors. See rubric.



	3	2	1
<b>Task</b>	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Accuracy	The writing is accurate.	The writing is mostly accurate.	The writing is not accurate
Organization	Well organized with a logical sequence, beginning & ending.	Organized, but a weak beginning or ending.	Not organized; no beginning or ending.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			

### Answer

Most scientists believe that all mountains on Earth were formed by slow movements in the Earth's outer shell. Mountains can be formed when pressure below the Earth causes plates to move, so the ground is pushed up. Another way mountains are formed is underwater in the ocean when magma becomes solid, and mountains are built up.

The text also tells us that fossils were buried in the ocean before the mountain was born. That's how the fossils were found at the top of the mountain today.

**Lesson 5: *How Mountains are Made*, pp. 19-28, Retell, Interactive Read Aloud, pp. 19-22, Partner Reading/Buddy Reading, pp. 23-end of book, Buddy Reading Bookmark, Check for Understanding Card, Culminating Task: Writing an Explanation (2.ESS.1.1, RI.2.8, W.2.2)**

Learning Intentions:

I am learning how mountains get worn out over time.

I am learning how to use the pictures and text to explain and speculate on the text.

I am learning how to make logical connections of how reasons support specific points the author makes in a text.

Success Criteria:

I can listen to my partner and offer support and feedback.

I can increase comprehension by using check for understanding card during peer reading.

### **Part 1: Retelling**

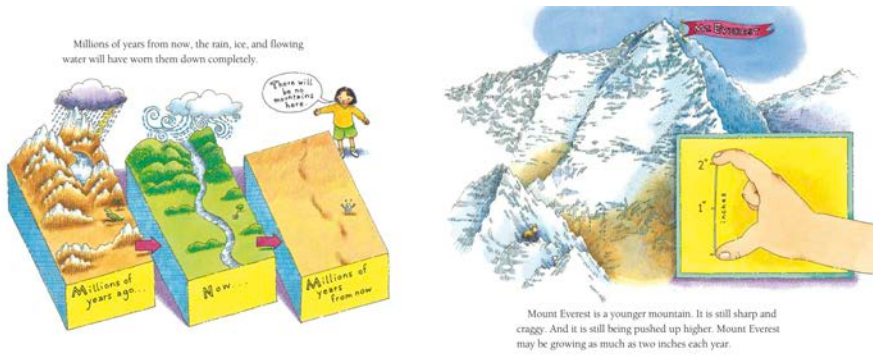
1. Ask students to take out their copy of *How Mountains Are Formed*. Ask them to take out their Buddy Reading bookmark and a Check for Understanding Card.
2. Ask students to summarize what they learned the day before. Prompt the retell by asking these questions:
  - How do scientists believe mountains were formed?
  - Why do mountains look different?

### **Part 2: Interactive Read Aloud, pp. 19-22**

3. Read pages 19-22. Ask students to pay attention to this question: What text evidence do we have about the age of the Earth, fossils, and mountains?
4. After finishing page 21, ask: **Turn & Talk:** What evidence does the author present that shows the age of the Earth, fossils, and mountains?' (Some mountains are being built now, but some are hundreds of millions of years old. We know this because of the age of the fossils found on mountains.)

**Part 3: Partner Reading/Buddy Reading, pp. 22-End of Book.**

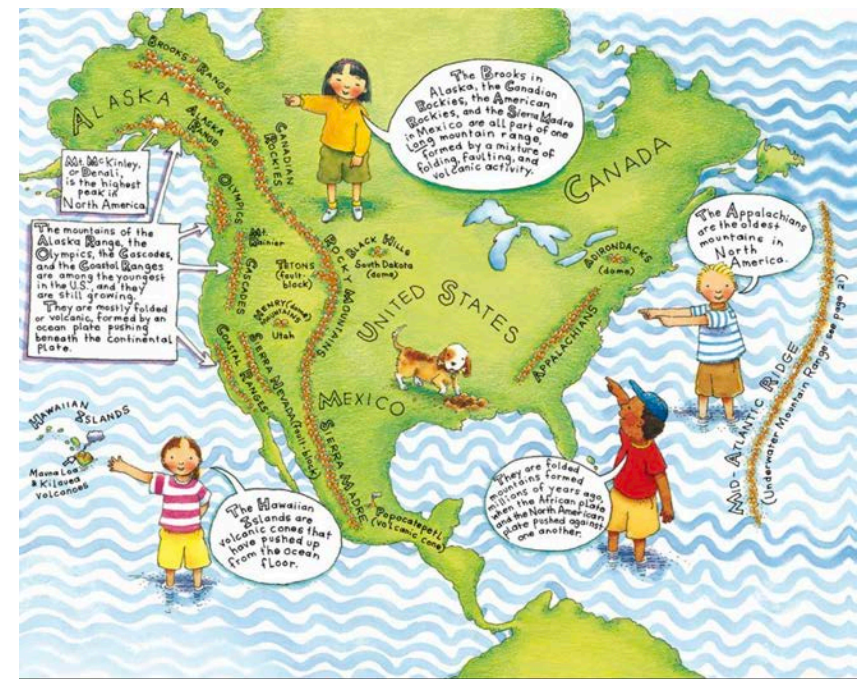
5. Explain to students that they will be working with their partner to read the rest of the book. They will be reading it two times.
6. Have each member of the teacher-assigned pair take turns being "Coach" and "Player." **Note: It is important to monitor and support students as they work together.**
7. Ask the stronger reader to begin this activity as the "Player" and to **read pages 22 AND 23.**



8. Have the "Coach" follow along and prompt peer to correct mistakes when necessary using the Buddy Reading bookmark.
9. Have the pair switch roles and ask the weaker reader to become the "Player." The "Player" rereads the same passage and the "Coach" provides feedback. At the end of each two-page spread, the students can use the Check for Understanding card to prompt comprehension,
10. Repeat the process **reading pages 24-25.**



11. Then repeat the process reading pages 26.



12. Remind students that they should sit side-by-side, read with soft voices, and take time to discuss what they have read.

**Note:** Is this task is too difficult for some students bring them into a small group and treat this as shared reading with the teacher reading first and the students following along. Read the text first to them and then ask them to reread it and conduct the group as guided reading.



**Part 2: Culminating Task: Writing an Explanation (2.ESS.1.1, RI.2.8, W.2.2)**

1. Why will the mountains be worn down completely? Will this be a quick or slow change? What information did the author give?
2. Turn and talk with your partner. Use the book to help you recall what the author wrote.
3. Write an explanation that answers the questions: Why will the mountains be worn down completely? Will this be a quick or slow change? What information did the author give?
4. Include a beginning and ending, and use text evidence for your answer. (2.ESS.1.1, RI.2.8, W.2.2)

Reading Strategy: Evaluating NonFiction

Teacher Model:

Overall, I liked this book for a few different reasons. The illustrations, maps and diagrams gave me a clear idea of the Earth’s mountains. The captions and labels pointed out details in the illustrations that helped me understand important information. The one thing I felt was missing was information about the author. I like to know facts about the author so that I can decide whether the person is an expert on the topic and why she wrote the book. Based on the strengths and weaknesses, I would choose this as a good book to read if I wanted to write a report about how mountains are formed.

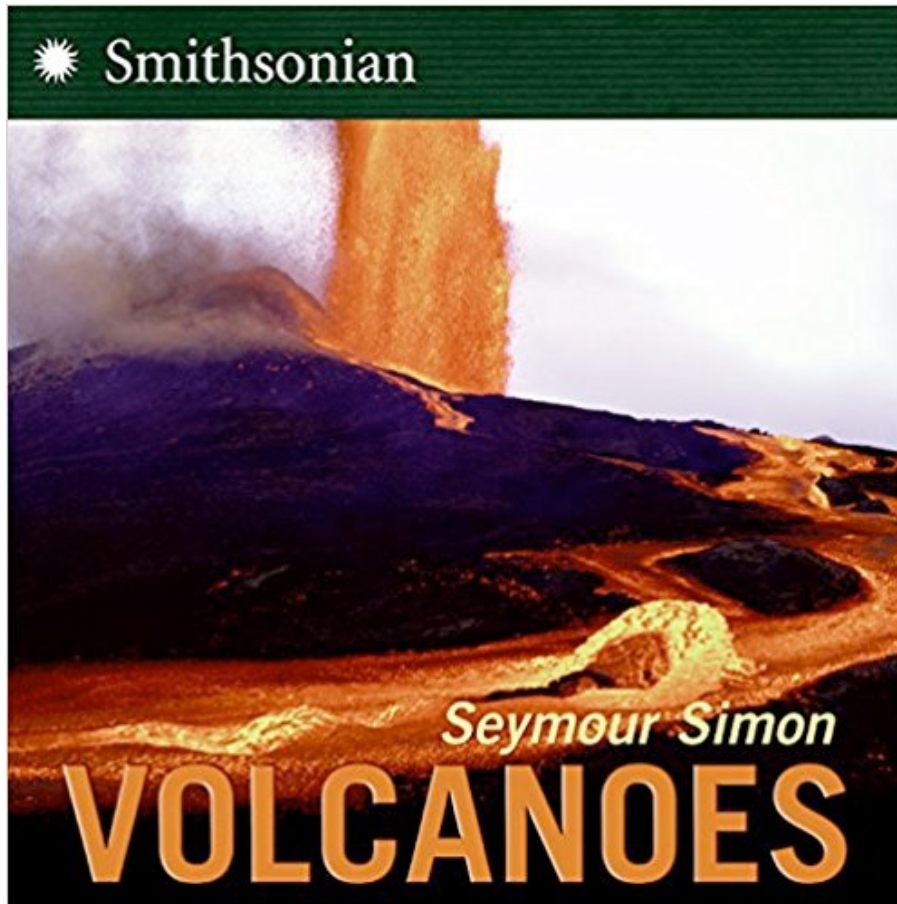
	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
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Total			

**Answer**

In the text the author says rain, wind, and ice will have worn down the mountains. We also can see in the illustration that is labeled “millions of years from now,” there are no mountains. This tells us that the process will be very slow.

**Teacher Note:** Read students’ writing and respond. Address students’ misconceptions and errors. See rubric

**Lesson 6: *Volcanoes* - Read Aloud pages 1-13, Pose & Answer Text-Dependent Questions (1-16), Daily Instructional Task: Writing an Explanation (RI.2.1, 2.4, W.2.2, 2.8)**



Simon, Seymour. (2006). *Volcanoes*. New York: HarperCollins.

**Lexile Level: 880**

**Learning Intentions:**

I am learning how to ask and answer questions to demonstrate understanding.

I am learning how to determine the meaning of words and phrases in a text.

**Success Criteria**

I can write a composition that explains how a volcano forms and erupts.




**Part 1: Read Aloud pages 1-13, Pose & Answer Text-Dependent Questions (1-16)**




1. Read aloud and stop at these pages and pose these questions/tasks. Suggested responses are provided.
2. It is important for teachers to model responses if students are having difficulty.
3. Think aloud where needed.

**Reading Strategy: Identifying and Using Nonfiction Features and Structures**

**Teacher models:**

I noticed that the pictures on several pages make some of the descriptions on these pages interesting. But even though I like these photographs and think it makes the book more fun to read, I think the text would have still made sense to me if I didn't look at the photograph. Let's look at some of the pages...

PAGE	IMAGE	QUESTION/TASK	ANSWERS
6	<p>In early times, no one knew how volcanoes formed or why they spouted red-hot molten rock. In modern times, scientists began to study volcanoes. They still don't know all the answers, but they know much about how a volcano works.</p> <p>Our planet is made up of many layers of rock. The top layers of solid rock are called the crust. Deep beneath the crust is the mantle, where it is so hot that some rock melts. The melted, or molten, rock is called magma.</p> <p>Volcanoes are formed when magma pushes its way up through the cracks in Earth's crust. This is called a volcanic eruption. When magma pours forth on the surface, it is called lava. In this photograph of an eruption, you can see great fountains of boiling lava forming fiery rivers and lakes. As lava cools, it hardens to form rock that is also called lava.</p>	<p><b>Question 1:</b> Using what we just read, and what you know from reading Planet Earth: Inside Out, what is the earth made of?</p> <p><b>Question 2:</b> What is the difference between magma and lava?</p> <p><b>Question 3:</b> How is a volcano formed? What is a volcanic eruption?</p>	<p>Some rocks inside the center of Earth are so hot they are melted. Magma is the melted (molten) rock deep inside of Earth and a volcano.</p> <p>We know magma is the melted rock inside a volcano. When the magma comes out of the volcano, it's called lava.</p> <p>A volcano is formed when magma pushes its way up through cracks in the earth's crust. When the hot lava comes out of the surface of the earth, it's called a volcanic eruption.</p>
7		<p><b>Question 4:</b> What do you see in this picture?</p> <p><b>Question 5:</b> Why does the author include photographs of different volcanoes and the large cloud of ashes?</p> <p><b>Question 6:</b> What does that picture tell you about the effect of a volcanic eruption on animals, plants, and people?</p>	<p>I see hot lava came out of one volcano, and one volcano shot hot ashes all through the air with lots of force.</p> <p>The author puts photographs in the book to help us understand that all volcanoes don't look alike. He showed us how hot lava came out of one volcano, and one volcano shot hot ashes all through the air with lots of force.</p> <p>Volcanoes can shoot out different things. Seeing how red hot it was made me think the hot lava would burn and destroy any plants it touches. It would also kill animals and people it touched, because it would burn them. Since there are different kinds of volcanic eruptions, I can see how people would be hurt and covered by hot ashes too.</p>
8	<p>A volcano is a hill or mountain formed by erupted material that piles up around the vent. Mount Rainier in the state of Washington is an ice-covered volcano that last erupted in the nineteenth century.</p> 	<p><b>Question 7:</b> What does vent mean in this context? (Share the definition if students don't answer.)</p> <p><b>Question 8:</b> How is a volcano formed?</p>	<p>The vent is the crack in the crust where magma bursts out.</p> <p>A volcano is formed by erupted material that piles up around the vent.</p>
9-10	 <p>Not far from Mount Rainier and another volcano, Mount St. Helens (top right) in Mount St. Helens National Volcanic Monument and early workers in the Northwest had seen Mount St. Helens puff out white ash, steam, and lava at the summit. The far shore shows a cinder cone, the mountain's second peak and summit.</p>	<p><b>Question 10:</b> On page 9, the author says, "[...] settlers had seen Mount St. Helens puff out some ash, steam, and lava [...]." What does puff out mean?</p>	<p>Using clues from the sentence and what I already know, I think puff means "bursts out." The author is telling us that ash, steam, and lava were bursting out of Mount St. Helens.</p>

PAGE	IMAGE	QUESTION/TASK	ANSWERS
10	 <p>In March 1980, Mount St. Helens awakened from its long sleep. First there were a few small earthquakes that shook the mountain. Then, on March 27, Mount St. Helens began to spout ash and steam. Each day brought far more earthquakes, and by mid-May more than ten thousand small earthquakes had been recorded. The mountain began to swell up and crack.</p> <p>On May 18, disaster struck and chaos. The mountain seemed much the same as it had been for the past month, but today, at 8:32 A.M., Mount St. Helens erupted with incredible force. The energy released in the eruption was equal to ten million tons of dynamite.</p>	<p><b>Question 11:</b> On page 10, the author says, “[...] Mount St. Helens began to spout ash and steam.” What does spout mean?</p> <p><b>Question 12:</b> Why does an author use different language/words to tell us the information?</p> <p><b>Question 13:</b> Using information from the text and from the illustration, explain how the eruption of Mount St. Helens impacted the earth’s surface.</p>	<p>Now the author is describing how Mount St. Helen spouted ash and steam. Since I know that this is the same mountain and it is doing something to ash and steam, I think spout means burst out, just like puff.</p> <p>When I read the words spout and puff, I liked the author using different words because I don’t want him to repeat the same words over and over. This would be boring. I think good writers use different words to make this stuff interesting.</p> <p>The eruption of Mount St. Helens impacted the earth’s surface by causing earthquakes and by spouting steam and ash into the air and onto the land. The mountain also swelled and cracked because of the volcanic eruption.</p>
12	 <p>The eruption of Mount St. Helens was the most destructive in the history of the United States. Sixty people lost their lives. Measurable ash fell over a huge area of more than 75,000 square miles. Hundreds of houses and cabins were destroyed, leaving many people homeless. Miles of highways, roads, and railways were badly damaged. The force of the eruption was so great that entire forests were blown down like rows of matchsticks.</p>	<p><b>Question 14:</b> What does destructive mean?</p> <p><b>Question 15:</b> How was the eruption of Mount St. Helens destructive? Turn and tell your partner.</p>	<p>Destructive is a description of how much damage something causes. Something that is destructive means it harms or breaks something.</p> <p>The eruption of Mount St. Helens killed and hurt people, animals, and plants.</p>
13	<p>Compare the way Mount St. Helens looked before and after the eruption. The top of the volcano and a large segment of its north face slid away. In its place is a huge volcanic crater. In 1982, the mountain and the area around it were dedicated as the Mount St. Helens National Volcanic Monument. Visitor centers allow people to view the actively growing lava dome that now partially fills the crater.</p> 	<p><b>Question 16:</b> How is Mount St. Helens different after it erupted?</p>	<p>The eruption changed the life of living things on and around the mountain, and it changed the shape of it.</p>

**Part 2: Daily Instructional Task: Writing an Explanation (RI.2.1, 2.4, W.2.2, 2.8, SL.2.1)**

1. Using details from the text, illustrations, and content-specific vocabulary, **draw a picture of a volcano** and **explain, in writing, the formation and eruption process of a volcano.**
2. Remind students to introduce their topic, to use facts and details from the text, and to include a concluding statement.
3. When students finish, have them share their illustration and writing with a partner.

**Teacher Note:** Read students’ writing and respond. Address students’ misconceptions and errors. See rubric.

	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Accuracy	The writing is accurate.	The writing is mostly accurate.	The writing is not accurate
Organization	Well organized with a logical sequence, beginning & ending.	Organized, but a weak beginning or ending.	Not organized; no beginning or ending.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			

**Student Exemplar**

A volcanic eruption occurs when magma pushes up through the holes or cracks in Earth’s surface. Once magma comes out, it’s called lava. The eruption is when lava comes out of the vent and piles up around the vent. The eruptions cause the Earth’s surface to change, because it has a bunch of energy and causes destruction all around. Ash spouts into the air and settles on the ground. The eruption can cause earth’s surface to swell and crack.



**Lesson 7: Volcanoes - Retell, Read Aloud pages 14-25, Pose & Answer Text-Dependent Questions (1-15), Daily Instructional Task: Writing an Explanation**

**Learning Intention:**

I am learning how to ask and answer questions to demonstrate understanding.

**Success Criteria**

I can write a composition explaining how volcanoes change the earth's surface.

**Reading Strategy: Summarizing and Retelling**

**Teacher Model:**

I am going to review what we wrote and discussed about the text. I can use the words or phrases I wrote to expand into a complete sentence or thought. This helps to remember what I already learned about in previous sections/events of the text. This is how we review the text we have already read.

**Part 1: Retell**

Before reading on in the text, stop and ask students these two questions:

1. What is the main purpose of this text?




**I think the author wants us to tell us what scientists know about volcanoes**


2. What does the author want to explain or describe to you? (the audience) Turn and tell your partner,



**Mr. Simon wants to explain and describe the two main types of Hawaiian lava and how islands are formed. The author also wants us to know that very tall underwater volcanoes can form islands. Because the author wants us to learn this information, he used different words to make learning fun.**

**Part 2: Read Aloud pages 14-25, Pose & Answer Text-Dependent Questions (1-13)**

1. Read aloud and stop at these pages and pose these questions/tasks. Suggested responses are provided.
2. It is important for teachers to model responses if students are having difficulty.
3. Think aloud where needed.

PAGE	IMAGE	QUESTION/TASK	ANSWERS
14	<p>Volcanoes don't just happen anywhere. Earth's crust is broken into large sections like a giant cracked eggshell. The pieces of the crust are called plates. The United States, Canada, Mexico, some of Russia, and the western half of the North Atlantic Ocean are all on the North American plate. Most of the world's volcanoes erupt in places where two plates meet.</p> <p>Down the middle of the North Atlantic Ocean, two plates are slowly moving apart. Hot magma pushes up between</p> 	<p><b>Question 1:</b> Where do volcanoes erupt?</p> <p><b>Question 2:</b> What is a plate?</p>	<p>They can erupt anywhere, but mostly they erupt where two plates meet.</p> <p>A plate is a term we use to explain the large sheets of rock on the outer crust of earth. The author describes the huge sections or sheets of rock like a cracked eggshell.</p>
15	<p>A chain of underwater volcanoes runs along the line where the two plates meet. Some of the underwater volcanoes have grown so high that they rise from the ocean floor to above sea level as islands.</p> <p>Iceland is a volcanic island in the North Atlantic. In 1963, an area of the sea near Iceland began to boil and churn. An undersea volcano was exploding and a new island was being formed. The island was named Surtsey, after the ancient Norse god of fire.</p> 	<p><b>Question 3:</b> What is the ocean floor? What is "above sea level?"</p> <p><b>Question 4:</b> How do underwater volcanoes impact the earth's surface? How do you know?</p> <p><b>Question 5:</b> What does the author mean when he says, "Iceland is a volcanic island?"</p>	<p>The ocean floor is the bottom of the ocean. Sea level is the level of the surface of the sea. So, above sea level means above the surface of the sea.</p> <p>Underwater volcanoes impact the earth's surface by creating islands. This happens when the volcanoes grow so high that they rise from the ocean floor to above sea level.</p> <p>Underwater volcanoes form islands that we can see above the water.</p> <p>The author is telling us the long ago, Iceland was formed by an underwater volcano.</p>
17	<p>Compare the way Mount St. Helens looked before and after the eruption. The top of the volcano and a large segment of its north face slid away. In its place is a huge volcanic crater. In 1982, the mountain and the area around it were dedicated as the Mount St. Helens National Volcanic Monument. Visitor centers allow people to view the actively growing lava dome that now partially fills the crater.</p> 	<p><b>Question 6:</b> How did this volcano impact the people of Heimaey?</p> <p><b>Question 7:</b> How did this volcano impact the earth's surface?</p>	<p>It destroyed the town, because hundreds of buildings burned down or were buried in lava.</p> <p>The volcano made the earth change shapes.</p>

PAGE	IMAGE	QUESTION/TASK	ANSWERS
18	<p><b>M</b>any volcanoes and earthquakes are located along the margins of the large Pacific plate. Volcanoes and earthquakes are so numerous that these margins are called the "Ring of Fire." But a few volcanoes are not on the edge of a plate. The volcanoes in the Hawaiian Islands are in the middle of the Pacific plate.</p> <p>These volcanoes have grown, one after another, as the Pacific plate slowly moves to the northwest to form the Hawaiian volcanic chain. Each volcano grew from the deep Pacific seafloor over several million years. Eruption followed eruption, and little by little, thin layers of lava hardened, one atop another. Thousands of eruptions were needed to build mountains high enough to reach from the deep sea bottom and appear as islands.</p> <p>The largest Hawaiian volcano is Mauna Loa. It is seventy miles long and rises thirty thousand feet from the ocean floor. It is still growing and is one of Hawaii's most active volcanoes.</p>	<p><b>Question 8:</b> What does the author mean by the word, margin?</p> <p><b>Question 9:</b> How is the location of the volcanoes in the Hawaiian Islands different from the more typical volcanoes that are part of the Pacific plate?</p> <p><b>Question 10:</b> Did the Hawaiian volcanoes form slowly or quickly?</p> <p><b>Question 11:</b> How were the Hawaiian volcanoes formed?</p>	<p>The edges or borders of something.</p> <p>The volcanoes in the Hawaiian Islands are located in the middle of the Pacific plate, not on one of its edges.</p> <p>They formed slowly. "Each volcano grew from the deep Pacific seafloor over several million years."</p> <p>The Hawaiian Islands are a chain of volcanoes formed over millions of years. They've developed as the Pacific Plate slowly moves northwest over a stationary hot spot of magma under the earth's surface. They were formed by thousands of eruptions that gradually built thin layers or hardened lava high enough to reach from the sea bottom to above the sea level.</p>
20	<p><b>H</b>awaiian lava usually gushes out in red-hot fountains a few hundred feet high that feed lava rivers or lakes. Hawaiian volcanoes erupt much less violently than did Surtsey or Mount St. Helens. Only rarely does a Hawaiian volcano throw out rock and high clouds of ash.</p> 	<p><b>Question 12:</b> How does the photograph help you to understand the written text on this page?</p>	<p>I can see the red hot lava. It reminds me of a fountain that has lava gushing out of it instead of water.</p>

PAGE	IMAGE	QUESTION/TASK	ANSWERS
21	 <p data-bbox="260 716 674 854"><b>S</b>tream clouds billow as a flow of hot lava enters the sea. Hawaii is constantly changing as frequent eruptions of the Mauna Loa and Kilauea volcanoes add hundreds of acres of new land to the Big Island. Old lava flows are quickly weathered by the waves into rocks and black sand.</p>	<p data-bbox="779 289 1409 350"><b>Question 13:</b> What does the author mean by the word, billow? How does the photograph help us to understand the word?</p> <p data-bbox="779 448 1373 509"><b>Question 14:</b> How do active volcanoes change the shape of Hawaii?</p>	<p data-bbox="1442 289 1982 383">I can see the steam clouds and they look like they are puffing out or swelling outward. Billow must mean to swell outward.</p> <p data-bbox="1442 480 1982 542">The volcanoes add “hundreds of acres of new land to the Big Island.”</p>
23	<p data-bbox="333 992 720 1125"><b>H</b>awaiian lava is fluid and flows quickly. In some lava rivers, speeds as high as thirty-five miles per hour have been measured. In an eruption in 1986, a number of houses were threatened by the quick-moving lava. Firefighters sprayed water on the lava to slow down its advance.</p> 	<p data-bbox="779 959 1409 1021"><b>Question 15:</b> How does the flow of Hawaiian lava increase the danger to people who live near an active volcano?</p>	<p data-bbox="1442 959 1982 1021">Hawaiian lava is fast flowing and can travel as quickly as 35 miles per hour.</p>

**Part 3: Daily Instructional Task: Writing an Explanation (2.ESS.1.1, RI.2.1, W.2.2)**

1. After reading the text, have students write a letter to a peer explaining how volcanoes change the earth’s surface. Students should **provide examples and explain how the change occurs**. Students should also explain if the change they **describe is a quick or slow change**.

2. Support students in the **format of letter writing if needed**.

<https://docs.google.com/presentation/d/1ML-iiLzrKuAj5Gybh5QkCYD-fgHaL30VCQ7NXs02RA/edit?usp=sharing>

**Teacher Note:** Read students’ writing and respond. Address students’ misconceptions and errors. See rubric.

**Student Exemplar**

Dear Friend,

I want to share some information with you about volcanoes. Volcanoes can change the Earth’s surface in many ways. One way volcanoes change the Earth’s surface is that they erupt and shoot ash into the air. The ash covers the ground. Another example of how volcanoes change Earth’s surface is the creation of islands. Islands are formed when underwater volcanoes erupt and lava hardens. Over time the volcanoes grew so big that they appear above the sea level as islands. Even though it takes a long time for volcanoes to create islands, it is one of the ways volcanoes change the Earth’s surface. I hope you find this information as interesting as I do!

Your Friend,

Second Grade Student

	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Accuracy	The writing is accurate.	The writing is mostly accurate. 2 out of three of the tasks are included and are accurate.	Tasks are attempted but are mostly not accurate.
Organization	Well organized with salutation, body, and closing.	Organized, but not all parts of the letter are present.	Not organized; more than one part of the letter missing.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			

**Lesson 8: *Volcanoes* - Retell, Read Aloud pages 24 to 32, Pose & Answer Text-Dependent Questions (1-15), Culminating Task: Writing an Explanation (2.ESS.1.1, RI.2.1, 2.4, 2.7, W.2.2)**

**Learning Intentions:**

I am learning how to ask and answer questions to demonstrate understanding.

I am learning how to determine the meaning of words and phrases in a text.

I am learning how to explain how specific illustrations and images contribute to and clarify a text.



**Success Criteria**

I can write a composition describing how volcanoes affect the surface of Earth, plants, animals, and people.

**Part 1: Retell**



Before reading on in the text, stop and ask students this question:


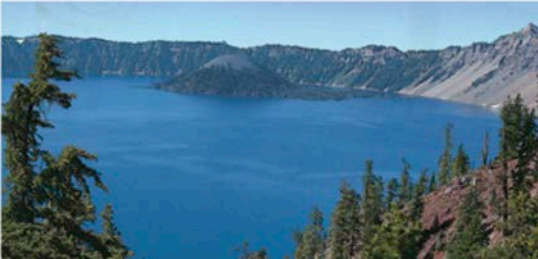
1. What have we learned so far from this book, *Volcanoes*, about the ways volcanoes change the earth?

**Erupting volcanoes over time create islands, such as the Hawaiian islands.**


**Part 2: Read Aloud pages 24-32, Pose & Answer Text-Dependent Questions (1-13)**

1. Read aloud and stop at these pages and pose these questions/tasks. Suggested responses are provided.
2. It is important for teachers to model responses if students are having difficulty.
3. Think aloud where needed.

PAGE	IMAGE	QUESTION/TASK	ANSWERS
24-25		<p><b>Question 1:</b> What are the two main types of volcanic rock in Hawaii?</p> <p><b>Question 2:</b> Turn and tell your partner how each is formed.</p>	<p>Aa and pahoehoe are the two main types of volcanic rock.</p> <p>Aa is formed by slow-moving lava, while pahoehoe is formed by thin, fast-moving lava.</p>
27-28		<p><b>Question 3:</b> Shield volcanoes are one kind of volcano. What do they look like?</p> <p><b>Question 4:</b> Cinder cone volcanoes are another kind of volcano. What do they look like?</p>	<p>The shield volcano looks like a warrior's shield. They have broad, gentle slopes. Mauna Loa and Kiluea are examples of shield volcanoes.</p> <p>Cinder cone volcanoes look like piles of dry sand poured through an opening.</p>
29-30		<p><b>Question 5:</b> Stratovolcanoes are one kind of volcano. How are stratovolcanoes formed?</p> <p><b>Question 6:</b> Is this a quick or slow process? How do you know?</p>	<p>Stratovolcanoes are formed by the lava, cinders, and ash from many eruptions. Mount Hood and Mount Shasta are examples.</p> <p>This must be a slow change, because I see in the picture that this mountain is very tall. It must take many, many years to stack up so many layers of lava, cinders, and ash.</p>

PAGE	IMAGE	QUESTION/TASK	ANSWERS
30	 <p><b>A</b>nother kind of volcano is called a dome volcano. Dome volcanoes have thick, slow-moving lava that forms a steep-sided dome shape. After an eruption, the volcano may be plugged with hardened lava. The plug prevents the gases from escaping, like a cork in a bottle of soda water. As the pressure builds up, the volcano eventually explodes, as Mount St. Helens did. Lassen Peak in California is a dome volcano that erupted violently in 1915. You can see the huge chunks of volcanic dome rock near the summit.</p>	<p><b>Question 7:</b> Turn and describe a dome volcano to your partner.</p>	<p>A dome volcano looks like a dome. It is formed from slow-moving lava that forms steep-sided dome shape. Mount St. Helens is a dome volcano.</p>
31	<p><b>A</b>round the world there are many very old volcanoes that no longer erupt. Some of these volcanoes are dead and will not erupt again. These are called extinct. Others can be inactive for as long as 50,000 years and then reawaken. These are called dormant. Crater Lake Volcano in Oregon is currently considered dormant, but it is likely to erupt again. Almost seven thousand years ago, its predecessor, Mount Mazama, erupted and covered the ground for thousands of miles around in a blanket of pumice and ash. Toward the end of the eruption, the entire top of the volcano collapsed inward. A huge crater, called a caldera, formed and was later filled with water. Crater Lake reaches a depth of two thousand feet, the deepest lake in North America.</p> 	<p><b>Question 8:</b> What does extinct mean?</p> <p><b>Question 9:</b> Therefore, what is an extinct volcano?</p> <p><b>Question 10:</b> What is the difference between a dormant volcano and an active volcano?</p> <p><b>Question 11:</b> What is a crater?</p> <p><b>Question 12:</b> How is a crater lake formed?</p> <p><b>Question 13:</b> In the text it says, “plants and animals are nowhere to be found.” Why is that?</p> <p><b>Question 14:</b> How do those volcanoes affect people, plants, and animals?</p>	<p>Extinct means something is dead or doesn’t live anymore. An extinct volcano is very old and doesn’t erupt again.</p> <p>Now I know volcanoes are different. A dormant volcano is sleeping or is just sitting doing nothing. Sometimes, volcanoes can be dormant for a long, long time. Then it becomes active. An active volcano means that it’s not asleep, and changes are happening within the volcano. An active volcano is the opposite of an extinct volcano.</p> <p>Craters are big holes in the Earth. Craters, or calderas, can be caused when the entire top of a volcano crashes inward. An eruption causes the mountaintop to fall in. Sometimes it fills with water and looks like a big lake.</p> <p>Plants, animals, and people die or leave.</p> <p>People leave because their homes, towns, and property can be covered in cinders, ashes, and lava. Plants are killed by hot lava and tons of rocks but grow back in a few months. Animals that aren’t killed have to leave because their food and homes are destroyed.</p>



PAGE	IMAGE	QUESTION/TASK	ANSWERS
32		<p><b>Question 15:</b> Using what you know about different kinds of volcanoes and lava, what affects do volcanic eruptions have on Earth?</p>	<p>Eruptions can cause the top of volcanoes to collapse and make craters. That means a lake could end up where a mountain used to be! Also, the land can be covered in sharp or billowy rocks, cinders, and ashes. Islands can form in the middle of the ocean.</p>

**Part 3: Culminating Task: Writing an Explanation (2.ESS.1.1, RI.2.1, 2.4, 2.7, W.2.2)**

- Using textual evidence and photographs of volcanoes, students will write an informational text, describing how volcanoes affect the surface of Earth, plants, animals, and people.
- Remind students to introduce their topic, to use facts and details from the text, use domain-specific vocabulary from the word wall/display, and include a concluding statement.
- Students will collaborate with peers to revise and edit their work and then publish their work digitally following district guidelines.

**Teacher Note:** Read students’ writing and respond. Address students’ misconceptions and errors. See rubric.

**Student Exemplar**

All of the four types of volcanoes can change Earth’s surface in many ways. They also destroy plants, animals, and towns. Sometimes volcanoes can even kill people.

In Volcanoes, Mr. Simon tells us that some kinds of volcanoes erupt with a huge explosion of cinders and ashes. Then when they calm down a little, lava begins flowing out, and it covers the cinders and ashes. This means that all around the volcano changes as soon as the eruption starts. Sometimes, lava comes out slowly and it cools as it rolls down the slopes of the volcanoes. This cooling and hardening lava changes the shape of the volcano dome in a very short time. If the volcano stops up, pressure can build up. When it explodes like ten tons of dynamite, it spouts huge rocks around the volcano vent. The second explosion of rocks causes more sudden changes to the land around the volcano. Depending on the type of lava and the energy of the explosion, surrounding land can be covered in sharp rocks or have smooth, billowy rocks. There wouldn’t be any plants or trees either.

Because some lava is thin and fast-moving, many animals and people living near the volcanic eruption don’t move to safety in time. Plants and trees around the volcano explosions are covered with cinders and ashes, burned, and killed too. For a while, there are no plants, animals, and people living around the volcano.

In a few months after an eruption, plants begin growing in the cracks of the hardened lava and rocks. Animals and people often return to live near the volcanoes again. When people return, they will find new mountains and new soil.

	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Accuracy	The writing is accurate and fully describes how volcanoes affect the surface of Earth, plants, animals, and people.	The writing is mostly accurate. The description of how volcanoes affect the surface of Earth, plants, animals, and people is not complete.	Tasks are attempted but are mostly not accurate or largely incomplete.
Organization	Well organized with introduction and concluding statement.	Organized, but introduction or conclusion is inadequate.	Not organized; introduction and/or conclusion is inadequate.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			

**Lesson 9: "Earth 's Systems : Volcanoes " - Partner /Buddy Reading (RF.2.3, 2.4), Buddy Reading bookmark , Check for Understanding Card , Daily Instruc tional Task : Writing an Explanation (2.ESS.1.1, RI.2.1, 2.2, 2.4, 2.7, W.2.2, 2.5, SL.2.1)**



**Learning Intentions:**

- I am learning how to ask and answer questions to demonstrate understanding.
- I am learning how to determine the meaning of words and phrases in a text.
- I am learning how to explain how specific illustrations and images contribute to and clarify a text.
- Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.

**Success Criteria**

- I can increase comprehension by using check for understanding card during peer reading.
- I can write a composition explaining what causes volcanoes to erupt.

## Partner Reading/Buddy Reading (RF.2.3, 2.4)

1. Explain to students that they will be working with their partner to read the news article, Earth Systems: Volcanoes. They will be reading it two times.
2. Have each member of the teacher-assigned pair take turns being "Coach" and "Player." **Note: It is important to monitor and support students as they work together.**
3. Ask the stronger reader to begin this activity as the "Player" and to **read these two sections: Introduction and Active, Dormant And Extinct Volcanoes.**
4. Have the "Coach" follow along and prompt peer to correct mistakes when necessary using the **Buddy Reading bookmark.**
5. Have the pair switch roles and ask the weaker reader to become the "Player." The "Player" rereads the same passage and the "Coach" provides feedback.
6. Repeat the process **reading these two sections: Magma Rises And Lava Flows and Magma's Different Movements**
7. Then repeat the process **reading last section: Volcanoes On Other Planets And Moons.**
8. At the end of each two-page spread, the students can use the **Check for Understanding card to prompt comprehension.**
9. Remind students that they should sit side-by-side, read with soft voices, and take time to discuss what they have read.

**Note:** If this task is too difficult for some students bring them into a small group and treat this as shared reading with the teacher reading first and the students following along. Read the text first to them and then ask them to reread it and conduct the group as guided reading.

## Buddy Reading



My partner is stuck on a word.  
What will I do?

- Count to 5.
- Say "Do you need more time or coaching?"



- What word makes sense?
- **Cross Check:** Does it look right? Sound right? Make sense?



- Go back and reread. Get your lips ready for the first sound.
- Stretch out the word slowly.
- Chunk sounds together. Say quick/ly.
- Do the pictures have clues?
- Flip the sounds.
- Does it look like a word you know?
- Skip the word and come back.

"I will sound out the word with you"  
"I will tell you the word."

## Check for Understanding

- Who did you just read about?
- What just happened?
- What feelings are being shown?
- What can you tell from the pictures?
- Why?

If details are left out or your partner can not remember ask

- What will you do now?

If your partner has a good understanding, you might also ask:

- What do you think will happen next?

Well done! Keep up the great reading!

# Earth's Systems: Volcanoes



*The Tungurahua volcano spews fumes and lava. This volcano erupted in February 2016 in the country of Ecuador. Photo from: Juan Cevallos/AFP/Getty Images.*

By NASA.gov, adapted by Newsela staff and Mary Ann Reilly, 400L

## Introduction

A volcano is a vent, or opening, on the surface of a planet or moon. It lets burning hot rock, magma, and gas **escape**. When it shoots to the surface — boom! The volcano **erupts**, releasing the magma.

Some volcanoes shoot this material sky-high. Others let it slowly ooze.

## Active, Dormant And Extinct Volcanoes

Some volcanoes are active. This means they erupted not long ago. They may erupt again soon. Some volcanoes are dormant. They have not erupted in a long time. However, they may still erupt someday. Other volcanoes are extinct. They have not erupted in a long time. They will probably not erupt again.



*The Sarychev Peak is a volcano in Russia that erupted in June 2009. Astronauts passed overhead when it happened and took this great picture! The hole in the clouds was caused by a shockwave from the explosion. Photo from: NASA.*

### **Magma Rises And Lava Flows**

Rocky planets like Earth have an outer shell. That shell is called a crust. The crust is not one piece. It is made up of many pieces. These are called plates.

The plates float on a **layer** of magma. Magma is a hot mix of rock and gas. It is like a thick soup with chunks of rock in it.

Volcanoes happen when magma rises through the crust to the surface. On Earth, lava, ash and gas can blast from a volcanic vent.

### **Magma's Different Movements**

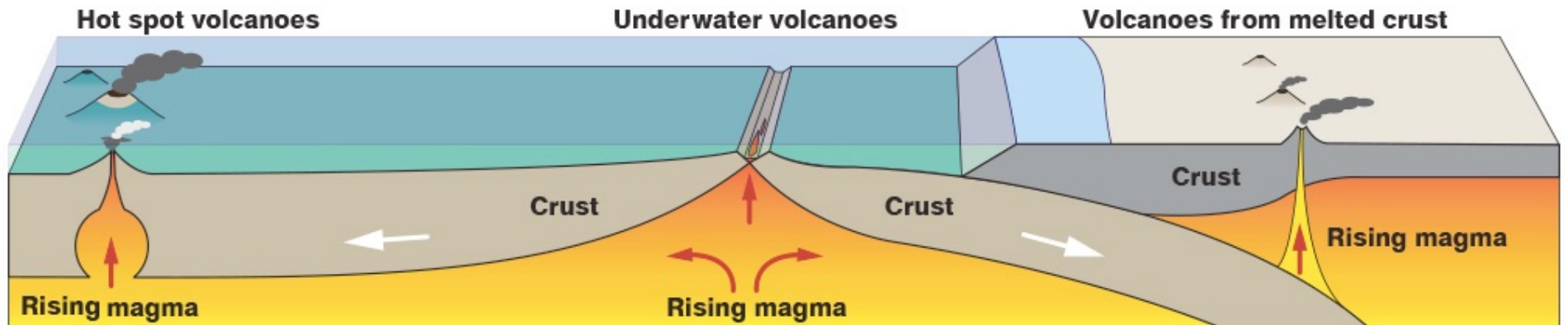
Magma can rise in three ways.

Earth's plates **shift**. Sometimes they move away from each other. Then magma rises up. It fills the open spaces and pushes to the surface.

Sometimes Earth's plates crash into each other. When this happens, part of Earth's crust can be pushed down. That piece gets very hot. It melts, becoming magma. The magma then rises to the surface.

Magma also rises over hot spots. Hot spots are hot places inside of Earth. They heat up the magma. This makes it rise.

The reasons why magma rises are different. The result is the same, though: a volcano!



Volcanoes on Earth form from rising magma. Graphic: NASA.

### Volcanoes On Other Planets And Moons

Do other planets have volcanoes? Yes, they do! Venus once had them. So did Mars. Those volcanoes stopped erupting long ago. They are extinct.

Jupiter, Saturn and Neptune's moons have volcanoes. Their volcanoes are active. Some are erupting right now.

NASA is the U.S. space group. This group has sent spacecraft to other planets. The spacecraft take pictures of the planets' surfaces. That is how we know there are volcanoes in space.

**Part 2: Daily Instructional Task: Writing an Explanation (2.ESS.1.1, RI.2.1, 2.2, 2.4, 2.7, W.2.2, 2.5, SL.2.1)**

1. Using the section, **“Magma's Different Movements”** and illustration, **“Volcanoes on Earth form from rising magma,”** explain what causes volcanoes to erupt.
2. Introduce the topic, use facts and details from the text, use science vocabulary, and include a concluding statement.
3. Collaborate with your partner to revise and edit your work.

**Teacher Note:** Read students’ writing and respond. Address students’ misconceptions and errors. See rubric.

	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Accuracy	The writing is accurate and fully explains what causes volcanoes to erupt.	The writing is mostly accurate. The explanation of how volcanoes erupt is not complete.	Tasks are attempted but are mostly not accurate or largely incomplete.
Organization	Well organized with introduction and concluding statement.	Organized, but introduction or conclusion is inadequate.	Not organized; introduction and/or conclusion is inadequate.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			

**Student Exemplar**

What causes volcanoes to erupt? Volcanoes erupt when one of the following three things occur.

First, sometimes volcanoes erupt when Earth’s plates move away from each other. This allows magma to rise, fill the empty spaces and then push up to the surface.

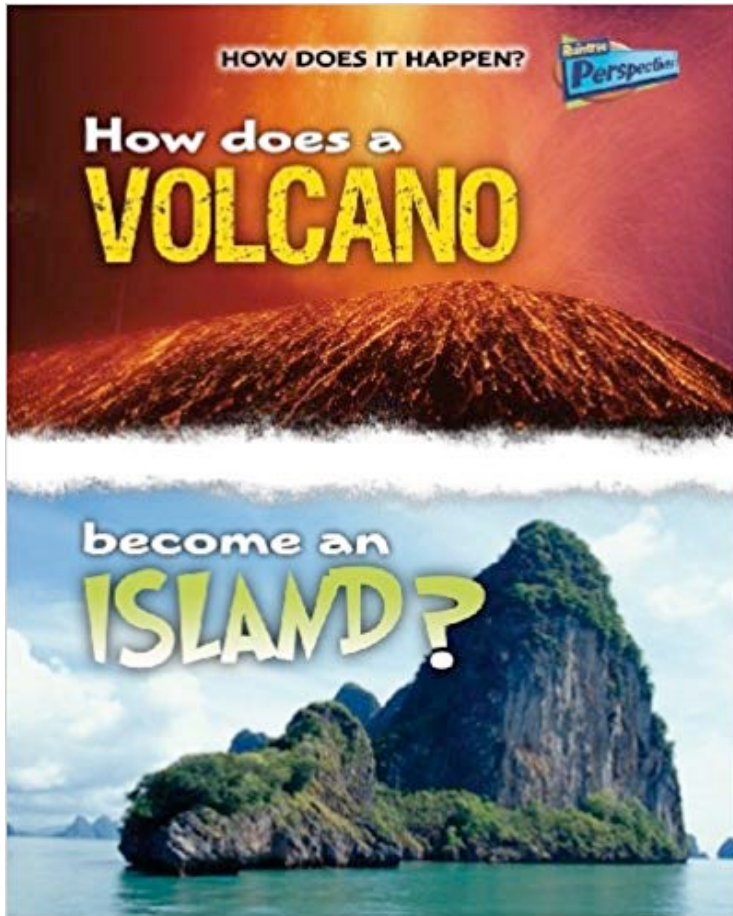
Next, volcanoes happen when Earth’s plates crash into one another. This causes one plate to be pushed below the other plate. The bottom plate heats up and it melts. This melted material is magma. Then the magma rises to the surface.

Last, sometimes magma is heated by hot spots inside the Earth. These hot spots cause the magma to heat up and that makes it rise.

In each situation, magma heats up and rises. It is the rising, hot magma that causes the volcano to explode.



**Lesson 10: *How Does a Volcano Become an Island?* - Retell, Read Aloud pages 1-13, Pose & Answer Text-Dependent Questions (1-12), Daily Instructional Task: Writing an Explanation (2.ESS.1.1, RI.2.1, RI.2.9, W.2.2)**



Tagliaferro, Linda. (2016). *How Does a Volcano Become an Island? Revised Edition*. North Mankato, MN: Raintree.

**Lexile Level: 860**

### **Learning Intentions:**

I am learning how to ask and answer questions to demonstrate understanding.

I am learning how to compare and contrast the most important points presented by two texts on the same topic.

### **Success Criteria:**

I can write a composition that explains how volcanoes are different.

### **Part 1: Retell**

Before reading on in the text, stop and ask students this question:

1. What have we learned from *Volcanoes*, about how volcanoes can be different? Turn and tell your partner what you remember.

**Volcanoes are formed in different ways, have different shapes, and change at different speeds.**



## **Reading Strategy: Making Connections**

### **Teacher Model:**

As I read and make claims I find that I already know some information about many of the things in this book. This is helping me understand the book better. When I reread I realize that I remember information that allows me to make a connection. When I connect what I already know with what I am learning I am more likely to remember the information.

### **Part 2: Read Aloud pages 1-13, Pose & Answer Text-Dependent Questions (1-12)**

1. Read aloud and stop at these pages and pose these questions/tasks. Suggested responses are provided.
2. It is important for teachers to model responses if students are having difficulty.
3. Think aloud where needed.

PAGE	QUESTION/TASK	ANSWERS
4	<p><b>Question 1:</b> What do you remember from our previous text about the layers of the earth? What do you remember about magma?</p> <p><b>Question 2:</b> What is the difference between a mountain and a volcano?</p> <p><b>Question 3:</b> How do volcanoes erupt in different ways?</p>	<p>Possible responses: There is an inner core and an outer core. It is rock formed by lava that cools.</p> <p>The outside of a volcano can look just like a quiet mountain that seems to never change. The difference between a mountain and a volcano is that in a volcano, the magma is hiding inside it until the volcano begins to erupt.</p> <p>Some volcanoes explode violently and shoot lava, gases, and ashes far into the sky. Other times, volcanoes just ooze slowly and quietly while the lava burns a path down the side of the mountain.</p>
5	<p><b>Question 4:</b> Why might underwater islands go unnoticed for a long time?</p> <p><b>Question 5:</b> Describe how Iceland was formed.</p> <p><b>Question 6:</b> How long does it take for a volcano to make an island?</p> <p><b>Question 7:</b> What does it mean to be an active volcano?</p>	<p>Underwater islands may go unnoticed for a long time because they are under the water. They have not yet risen above sea level.</p> <p>Iceland was mostly formed from volcanoes under the water that erupted over time.</p> <p>It takes a long time for a volcano to become an island. I know this because in the text it says, "if an underwater volcano keeps erupting over and over for millions of years, its peaks can eventually poke out of the water."</p> <p>An active volcano is still capable of erupting.</p>
7	<p><b>Question 8:</b> What do you see in the picture?</p> <p><b>Question 9:</b> Where do the gasses and lava come from?</p>	<p>In the picture I see bubbles from gasses that are oozing out of earth's crust.</p> <p>The gasses come from the mantle, below earth's crust.</p>
8	<p><b>Task 1:</b> Pretend your hands are plates, and show one of them sliding over the other. Now show your hands colliding with each other. Now show your hands moving away from each other.</p> <p><b>Question 10:</b> What do you see in the picture? What does that tell you about the tectonic plates in this area of the world?</p>	<p>I see a crack. This tells me the plates are moving away from each other.</p>
10	<p><b>Question 11:</b> What makes the "mound of lava grow?" Does the mound of lava grow quickly or slowly over time? How do you know?</p>	<p>Magma flows on top of hard lava and builds up slowly into the shape of a mountain. The text says, "After millions of years, the growing pile of hardened lava builds up into the shape of a mountain."</p>
12	<p><b>Question 12:</b> What is the difference between an active volcano and a dormant volcano? (Note: In the previous text, students heard the word 'extinct' for a volcano that will never erupt again.)</p> <p><b>Question 13:</b> Discuss with a partner and be prepared to share your thinking with the class. How are the different kinds of volcanoes unique? Provide examples from the information in the text.</p>	<p>An active volcano erupts, and a dormant volcano doesn't erupt for a long time.</p> <p>The different kinds of volcanoes are unique because of (1) how they look, and (2) how they form. For example, a shield volcano has sloping sides that form from slow lava flowing out of the earth. Composite cones, on the other hand, have steep sides formed by violent eruptions of lava.</p>

**Part 3: Daily Instructional Task: Writing an Explanation (2.ESS.1.1, RI.2.1, RI.2.9, W.2.2)**

- Using knowledge from *Volcanoes* and the first half of *How Does a Volcano Become an Island?*, write a paragraph to answer the question: **How are volcanoes different** from each other? Come up with three ways volcanoes differ from each other. Use evidence from the text to support your response. Be sure to include an introduction and conclusion statement.
- When you are finished, share your answer with your partner. Ask your partner questions if there is anything you don't understand. If your partner has an idea you didn't have, go back and add that idea to your writing.

**Writing Exemplar**

Volcanoes can differ from each other in a variety of ways. First, volcanoes can erupt with different speeds. Sometimes the eruptions can be fast and violent. Other times, the eruption can be quiet and slow. Second, volcanoes differ by where they are. Volcanoes don't just occur on land. Many can also be found on the bottom of the ocean. Volcanoes can be found in many places on Earth. Third, volcanoes differ in how often they erupt. Some volcanoes are active, meaning they erupt frequently, and some are dormant, meaning they have not erupted in a long time. These are just some of the ways volcanoes differ.

**Teacher Note:** Read students' writing and respond. Address students' misconceptions and errors. See rubric below.

	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Content Accuracy	The writing is accurate and fully explains how volcanoes differ.	The writing is mostly accurate. The explanation of how volcanoes differ is not complete.	Tasks are attempted but are mostly not accurate or largely incomplete.
Organization	Well organized with introduction and concluding statement.	Organized, but introduction or conclusion is inadequate.	Not organized; introduction and/or conclusion is inadequate.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			

**Lesson 11: How Does a Volcano Become an Island? - Retell, Read Aloud pages 14-29, Pose & Answer Text-Dependent Questions (1-16), Turn and Talk, Culminating Task: Writing an Explanation (2.ESS.1.1, RI.2.1, W.2.2)**

**Learning Intentions:**

I am learning how to ask and answer questions to demonstrate understanding.

**Success Criteria**

I can write a composition that describes how volcanoes impact plants, animals, people, and the earth’s surface.

**Part 1: Retell**

Before reading on in the text, stop and ask students this question:

What have we learned from *Volcanoes*, about how volcanoes can be different? Turn and tell your partner what you remember

**Volcanoes are formed in different ways, have different shapes, and change at different speeds.**

**Part 2: Read Aloud pages 14-29 Pose & Answer Text-Dependent Questions (1-12)**

1. Read aloud and stop at these pages and pose these questions/tasks. Suggested responses are provided.
2. It is important for teachers to model responses if students are having difficulty.
3. Think aloud where needed

PA GE	QUESTION/TASK	ANSWERS
14	<p><b>Question 1:</b> What does the map show us?</p> <p><b>Question 2:</b> Why is it called the ring of fire?</p>	<p>The map shows the ring of fire.</p> <p>It is called the ring of fire because there are a lot of volcanoes there, and it kind of looks like a circle, or a ring.</p>
15	<p><b>Question 3:</b> How might an eruption of Mount Merapi affect people who live nearby?</p>	<p>If they are not warned in time, they could die.</p>
16	<p><b>Question 4:</b> How was the Hawaiian island of Kauai formed?</p>	<p>A hot spot began shooting up molten lava. It formed an underwater volcano that reached the water’s surface over time.</p>
17	<p><b>Question 5:</b> How does Kilauea change the earth’s surface?</p>	<p>Kilauea is still an active volcano. As it continues to erupt, more and more lava spurts out. As it cools, more land is added to the island.</p>
18	<p><b>Question 6:</b> How does the author describe a new island?</p> <p><b>Question 7:</b> What does that tell you about the plants, animals, and people on the island?</p> <p><b>Question 8:</b> What does waste mean in this context?</p> <p><b>Question 9:</b> How do birds impact the landscape of the island?</p>	<p>The author uses the adjectives empty and lonely to describe the new island.</p> <p>This tells me there are no plants, animals, or people on the island.</p> <p>Birds fly over or land on new islands as they migrate. Seeds are left on the island in their waste. These seeds grow into plants that were recently eaten from on nearby land. Eventually, a large variety of plants would end up on the island.</p>

PAGE	QUESTION/TASK	ANSWERS
19	<b>Question 10:</b> Describe how a coconut might end up becoming a seedling on a different island?	If a coconut falls from a palm tree into the ocean, it can float for many miles. If the coconut lands in the right kind of soil on another island, it will take root and grow.
21	<b>Question 11:</b> How do volcanoes impact plants and animals? Give some examples from the text.	Volcanoes can provide a new place for plants and animals to live. For example, Albatross only lay their eggs on the Galapagos islands, which were created by volcanoes.
22	<b>Question 12:</b> What might happen to Surtsey in the next 100 years?  <b>Question 13:</b> How might that happen?	It might disappear.  The wind and rain could slowly wear away the island.
23 - 24	<b>Question 14:</b> What does fertile soil mean?  <b>Question 15:</b> Talk with a partner. Based on these two pages, how do volcanoes impact plants, animals, people, and the earth's surface? Did this happen quickly or slowly?	Fertile soil means that the soil has what it needs for things to grow.  Volcanic islands and their rich soil slowly become homes for different kinds of plants and animals. However, volcanoes can also destroy lives suddenly when ocean water heats up and sending very hot waves to beaches close by.
27	<b>Question 16:</b> How do underwater smokers impact sea animals?	Underwater smokers provide minerals needed for plants and animals to grow such as strange worms and giant clams.

### Part 3: Culminating Task: Writing an Explanation (2.ESS.1.1, RI.2.1, W.2.2)

- In a paragraph, describe how volcanoes impact plants, animals, people, and the earth's surface. Be sure to include the following in your response:
  - An introductory statement
  - Facts and details from the text about how volcanoes impact plants
  - Facts and details from the text about how volcanoes impact animals
  - Facts and details from the text about how volcanoes impact the earth's surface
  - A concluding statement

#### Student Exemplar:

Volcanoes impact plants, animals, and people in many ways. Over time, a new island becomes a home to plants and animals. This happens when birds fly to the island and when ocean currents carry plants and animals to the shore of the island. If the soil on the island is fertile, plants and seeds will begin to take root and grow. Volcanoes can also impact people, because people who live close to an active volcano can die when houses or buildings are destroyed. Vol-

canoes also impact the earth's surface by adding new material to islands.

**Teacher Note:** Read students' writing and respond. Address students' misconceptions and errors. See rubric below.

	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Content Accuracy	The writing is accurate and fully describes how volcanoes impact plants, animals, and earth's surface.	The writing is mostly accurate. The description of how volcanoes impact plants, animals, and earth's surface. is not complete.	Tasks are attempted but are mostly not accurate or largely incomplete.
Organization	Well organized with introduction and concluding statement.	Organized, but introduction or conclusion is inadequate.	Not organized; introduction and/or conclusion is inadequate.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			

**Lesson 12: Earthquakes - Read Aloud pages 5-31, Pose & Answer Text-Dependent Questions (1-14), Daily Instructional Task: Drawing and Writing an Explanation (RI.2.3, W.2.2, 2.8)**

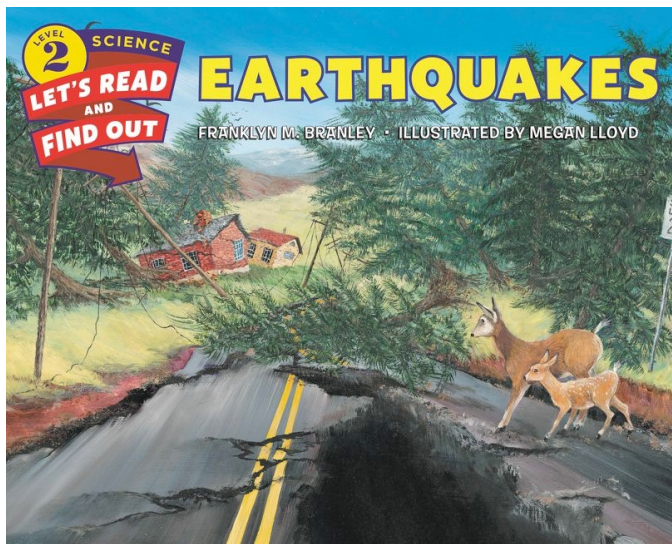
**Learning Intentions**

I am learning how to describe the connection between a series of scientific concepts, or steps in technical procedures in a text.

**Success Criteria**

I can draw a picture that shows what happens to the earth's crust during an earthquake.

I can write a paragraph explaining what causes earthquakes.



Branley, Franklyn M. (2015). *Earthquakes*. Illustrated by Megan Lloyd. New York: HarperCollins.

**Lexile Level: 750, Guided Reading Level O**

**Part 1: Read Aloud pages 5-3, Pose & Answer Text-Dependent Questions (1-14),**


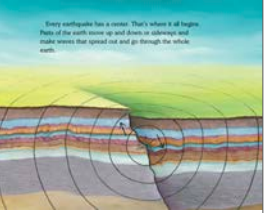
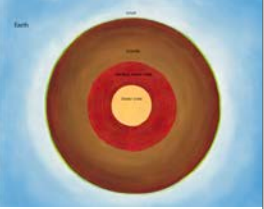
1. Read aloud and stop at these pages and pose these questions/tasks. Suggested responses are provided.
2. It is important for teachers to model responses if students are having difficulty.
3. Think aloud where needed.

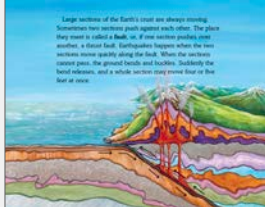
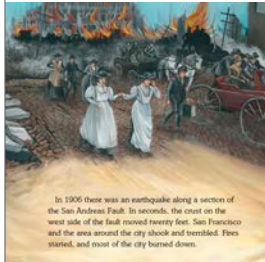
**Reading Strategy: Identifying and Using Nonfiction Features and Structures**




**Teacher Model:**

The title of the book is Earthquakes, but I'm not sure what that means. There are deer and a hole in the middle of the street on the cover but I don't understand the connections between the title and the picture. I need to look at the photographs and diagrams inside the book. I notice ... Now I'm really getting a better idea about what the book is about. Since nonfiction books contain so much information, I always find that scanning the words and the pictures before I read really helps me. It helps me see connections between the photographs, the diagrams, and the text, and it also helps me remember things I already know about the topic.



PAGES	IMAGE	QUESTION/TASK	ANSWERS
4-5		<p>On page 5, the author states that the earth is always moving.</p> <p><b>Question 1:</b> What reasons does the text give us as to why we do not feel these movements?</p> <p><b>Question 2:</b> According to the author, do earthquakes happen often or not often? How do you know?</p> <p><b>Question 3:</b> Are earthquakes an example of a slow or fast change? How do you know?</p>	<p>The earth's movements cannot be felt, because they are so small and slow.</p> <p>Earthquakes happen often in some places that are close to the fault lines in the Earth.</p> <p>Earthquakes are an example of a fast change because the author states they happen suddenly.</p>
8		<b>Question 4:</b> How does the illustration on page 8 show us what happens to the earth's layers during an earthquake? In your answer, try to use a word we have learned in a previous text.	The earth's layers (plates, crust) shift up or down or sideways during an earthquake.
13		<b>Question 5:</b> The illustration on page 13 shows us the layers of the Earth. How is this illustration similar to what you learned in the Planet Earth book?	It is similar, because it shows the crust, the mantle, the molten outer core, and the inner core.

PAGES	IMAGE	QUESTION/TASK	ANSWERS
14		<p><b>Question 6:</b> What causes earthquakes to happen? (Support: Provide the definition of 'buckle' in this context.)</p> <p><b>Question 7:</b> Is this a fast change or a slow change?</p> <p><b>Question 8:</b> What is the key word in this sentence that tells us this is a fast change? (If needed, reread specific parts of this page: "When the sections cannot pass, the ground bends and buckles. Suddenly the bend releases, and a whole section may move four or five feet at once.") (Make sure students Think-Pair-Share this concept.)</p>	<p>An earthquake happens when the Earth's layers (plates, crust) shift up or down or sideways.</p> <p>This is a fast change.</p> <p>The book said, "Suddenly the bend releases, and a whole section may move four or five feet at once." The key word in this sentence is "suddenly."</p>
17		<b>Question 9:</b> What caused the earthquake in San Francisco?	The earthquake in San Francisco was caused when one of the tectonic plates, or the crust, near the San Andreas Fault moved.
18	<p>Most earthquakes occur along the shores of the Pacific Ocean, where the crust moves a lot. Japan has about 7,000 earthquakes a year. Luckily, most are small. There are volcanoes in this part of the world too. Earthquakes often occur in places where there are volcanoes. Melted rock deep under the earth pushes upward, making the area shake and rumble. These are warnings that a volcano may erupt or that there may be a big earthquake. In southern Europe there are several volcanoes. There are also many earthquakes. In Pizzosul, Italy, a small town not far from Mount Vesuvius, there were 4,000 quakes in one year. Mount Vesuvius is a volcano that has erupted from time to time for several thousand years.</p>	<b>Question 10:</b> Why do most earthquakes occur along the shore of the Pacific Ocean?	Most earthquakes occur along the shore of the Pacific Ocean because that is where the crust moves a lot, and we know earthquakes form where the crust moves.

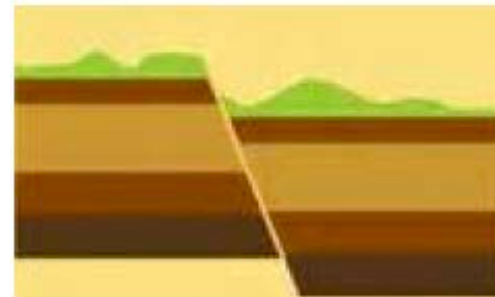
PAGES	IMAGE	QUESTION/TASK	ANSWERS
24-25		<p><b>Question 11:</b> What do these illustrations show us happens during an earthquake? Do the illustrations give us any information about what causes earthquakes?</p> <p><b>Question 12:</b> Why might those things happen during an earthquake?</p>	<p>During an earthquake, fires can start in houses, flooding can happen, telephone poles and trees can fall, and pipes underground can break.</p> <p>These things happen because the ground moves during an earthquake.</p>
30	<p>People who live in places where there have been earthquakes should always keep a supply of plastic bottles of drinking water. They should also have a supply of canned food, a flashlight, a fire extinguisher, and a battery-powered radio.</p> 	<p><b>Question 13:</b> Why would it be important to have these types of supplies ready if you lived in an earthquake zone?</p>	<p>It would be important to have a plan because earthquakes happen very quickly, and you might not have time to get away from it. You will also need supplies after it happens because you might not be able to drive anywhere to get them due to the destruction the earthquake has caused.</p>
31	<p>The crust of our planet is always moving, so we will continue to have earthquakes. Most of them, fortunately, will be small ones. We hope there is never a big earthquake near you, but if there is, you know there are things that you can do to protect yourself and other people.</p> 	<p><b>Question 14:</b> Why will we “continue to have earthquakes?” Turn and talk with your partner,</p>	<p>We will continue to have earthquakes because the Earth is always moving and changing. Humans have no way to stop the natural processes of the cycles of the Earth.</p>

## Part 2: Daily Instructional Task: Drawing and Writing an Explanation (RI.2.3, W.2.2, 2.8)

1. Draw a picture that shows what happens to the earth’s crust during an earthquake. Then write a paragraph explaining what causes earthquakes. Remember to include an introductory sentence, facts from the text, and a conclusion.
2. When you are finished, share your writing and illustration with a partner. Give your partner feedback if they have any incorrect information.

**Teacher Note:** Read students’ writing and respond. Address students’ misconceptions and errors. See rubric.

### Student Exemplar



Earthquakes happen when the Earth moves too much at one of its fault lines. Earthquakes are an example of one of Earth’s quick changes. An Earthquake is caused when there is a sudden slip on a

fault. The tectonic plates are always slowly moving, but they get stuck at their edges due to friction. When the stress on the edge overcomes the friction, there is an earthquake that releases energy in waves that travel through the earth's crust and cause the shaking that we feel.

	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Content Accuracy	The drawing is accurate. The writing is accurate and explains what causes earthquakes.	The drawing is accurate. The writing is mostly accurate. The explanation of what causes earthquakes is not complete.	Tasks are attempted but are mostly not accurate or largely incomplete.
Organization	Well organized with introduction and concluding statement.	Organized, but introduction or conclusion is inadequate.	Not organized; introduction and/or conclusion is inadequate.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			


**Lesson 13: Earthquakes - Reread pages 5-31, Pose & Answer Text-Dependent Questions (1-11), Culminating Task: Writing a Letter (2.ESS.1.1, RI.2.1, 2.3, W.2.8, SL.2.1)**

**Learning Intentions:**

I am learning how to ask and answer questions to demonstrate understanding.


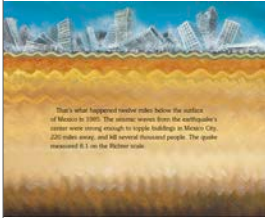
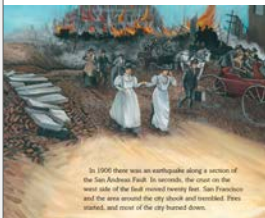
I am learning how to describe the connection between a series of scientific concepts, or steps in technical procedures in a text.


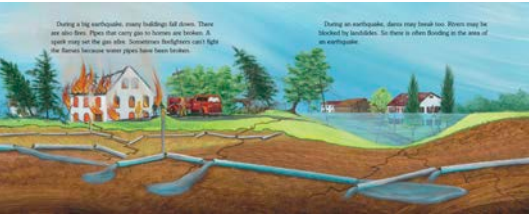

**Success Criteria:**

 I can write a letter explaining ways earthquakes affect people and places.

**Part 1: Reread Aloud pages 5-31, Pose & Answer Text-Dependent Questions (1-11), 1Task.**

1. Reread and stop at these pages and pose these questions/tasks. Suggested responses are provided.
2. It is important to model responses if students are having difficulty.
3. Think aloud where needed.

PAGES	IMAGE	QUESTION/TASK	ANSWERS
6-7		<p><b>Question 1:</b> What is the difference between a magnitude 2 earthquake and a magnitude 7 earthquake?</p> <p><b>Question 2:</b> What do you see in the picture (p. 6)? What does that tell you about the impact of earthquakes?</p>	<p>A 2 is hardly noticeable, where a 7 or above can cause extensive damage to buildings and can be felt in large regions.</p> <p>I see a crack in the earth, houses breaking, and people running around. This tells me earthquakes not only change the earth's surface, but also impact houses.</p>
15	 <small>That's what happened earlier today before the outbreak of March 1907. The intense waves from the earthquake's center were strong enough to topple buildings in Mexico City, 200 miles away, and kill several thousand people. The quake measured 8.1 on the Richter scale.</small>	<p><b>Question 3:</b> Was this a large earthquake or a small earthquake? How do you know?</p>	<p>This was a large earthquake. I know this because this earthquake caused buildings to fall down. (This earthquake measured 8.1 on the Richter scale.)</p>
17	 <small>In 1906 there was an earthquake along a section of the San Andreas Fault. In seconds, the crust on the west side of the fault moved toward San Francisco and the area around the city shrank and foreshook. Fires started, and most of the city burned down.</small>	<p><b>Question 4:</b> Using information from the text and the illustration, what impact did this earthquake have on people and places?</p>	<p>People had to leave because their homes and buildings were destroyed. There were broken water and power lines that caused dangerous situations.</p>
18	<small>Most earthquakes occur along the shores of the Pacific Ocean, where the great plates of the Earth meet about 7,000 earthquakes a year. Luckily, most are small. There are volcanoes in this part of the world too. Earthquakes often occur in places where there are volcanoes. Melted rock deep under the earth pushes upward, making the area shake and vibrate. There are warnings that an eruption may erupt or that there may be a big earthquake. In southern Europe there are several volcanoes. There are also many earthquakes. In Pinatubo, Italy, a small town was hit. In Mount Vesuvius, there were 4,000 quakes in one year. Mount Vesuvius is a volcano that has erupted from time to time for several thousand years.</small>	<p><b>Question 5:</b> The author states that earthquakes often happen around volcanoes. Why might this be?</p>	<p>Earthquakes might happen around volcanoes because the earth inside is already moving from the molten lava causing pressure on the ground around it.</p>

PAGES	IMAGE	QUESTION/TASK	ANSWERS
20-21	 <p>In 2004, there was a big undersea earthquake in the Indian Ocean that triggered a series of huge waves that hit the shores of countries bordering the ocean. These waves were several miles of water called tsunamis. A Japanese word. The earthquake is now called the Sumatra-Andaman earthquake and was one of the deadliest natural disasters in recorded history. It affected over fourteen countries and killed over 250,000 people.</p>	<p><b>Question 6:</b> What is a tsunami?</p> <p><b>Question 7:</b> Using information from the text and the picture, what was the impact of the undersea earthquake in 2004?</p> <p><b>Question 8:</b> Would these huge waves cause slow or fast changes to land?</p>	<p>Tsunamis are waves that grow into great walls of water.</p> <p>The picture shows they destroyed buildings and trees and caused people to have to leave.</p> <p>They would cause very fast changes because they happen so quickly, people would not have time to prepare for them.</p>
24-25	 <p>During a big earthquake, many buildings fall down. There are also fires. Pipes that carry gas to houses are broken. A quake may cut the gas line. Sometimes buildings can't light the houses because water pipes have been broken.</p> <p>During an earthquake, dams may break too. Rivers may be blocked by landslides. So there is often flooding in the area of an earthquake.</p>	<p><b>Task 1:</b> Looking at these pages, <b>describe</b> how an earthquake might change the surface of the earth or impact people and places.</p>	<p>Earthquakes can cause lakes to move, trees to fall, mountains or hills where there were none before, and also deep crevices in the ground.</p>
26	<p>In many parts of the world where there are big earthquakes, new buildings are constructed to withstand these natural disasters. They are built where the ground is solid so seismic waves will not knock them down. Old bridges and dams are made stronger with extra steel and concrete.</p> <p>In 1989, there was a serious earthquake near San Francisco. It was the worst in the area since 1906. Sixty-seven people were killed. Bridges and roadways were damaged, and many buildings were destroyed. Because of the way it was built, the famous Golden Gate Bridge swayed in the quake, but it did not collapse.</p> <p>Earthquakes happen without any warning. However, scientists are working to find ways to predict quakes, like estimating how likely it is that earthquakes will happen over years and decades to come. They use satellites to measure even the smallest motion along faults. These small motions can often become larger.</p>	<p><b>Question 9:</b> What are some ways people are trying to prevent the impact of earthquakes?</p>	<p>Some things people are doing to prevent the impact of earthquakes are: buildings are built to be able to withstand the movement of the ground. Bridges and dams are reinforced with concrete and extra steel.</p>
29	 <p>If you are inside, stay there. Get under a strong table or bed, or stand in a doorway. Keep away from windows.</p> <p>If you are in school, your teacher will tell you what to do.</p> <p>Whenever you see, remember there may be smaller shocks after the main quake. These aftershocks could cause more damage.</p>	<p><b>Question 10:</b> What are some ways people can protect themselves from the effects of earthquakes?</p> <p><b>Question 11:</b> How do those things help?</p>	

**Part 2: Culminating Task: Writing a Letter (2.ESS.1.1, RI.2.1, 2.3, W.2.8, SL.2.1)**

1. With a partner, brainstorm as many ways earthquakes affect people and places.
2. Write a letter to a friend about some of the changes that can happen due to an earthquake. Include at least **four ways earthquakes impact people and places**. Also, include information about whether these changes are fast or slow.

\*Teacher Note: This would be a good place to scaffold student’s learning of the letter writing process if they have not been exposed to it previously.

	3	2	1
Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Content Accuracy	The letter tells some of the changes that can happen due to an earthquake. It includes at least <b>four ways earthquakes impact people and places</b> . Also, it includes information about whether these changes are fast or slow.	The letter tells some of the changes that can happen due to an earthquake. It includes at least <b>three ways earthquakes impact people and places</b> . Also, it includes information about whether these changes are fast or slow.	Tasks are attempted but are mostly not accurate or largely incomplete.
Organization	The letter is well organized and includes a salutation, developed body, conclusion, and signature.	The letter is well organized and includes a salutation, body, conclusion, and signature. The body is not adequately developed.	Not organized; and/or fashioned correctly as a letter.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			

## Student Exemplar

Dear Friend,

I wanted to share some exciting information with you that I learned in school today. Did you know earthquakes are happening around the world all of the time, yet most of them we can barely feel? Here are some other important things I learned today.

Earthquakes can cause large cities to be destroyed. They can cause lakes or rivers to be moved. They can also cause trees and houses to be destroyed. When the plates move under water, they can cause large waves such as tsunamis which could drown out entire villages.

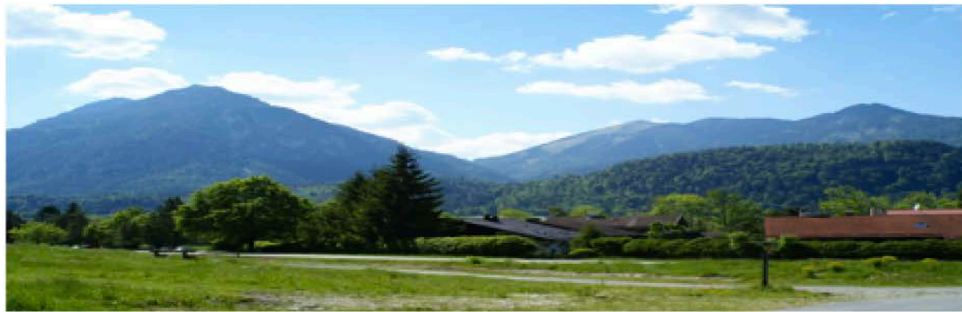
Earthquakes can be so scary! They are acts of nature that are very devastating and happen very quickly. I will write you more when I learn some new facts to share!

Your friend,

Student Name

**Lesson 14: End of Unit Task: Student Letter (2.ESS.1.1, RI.2.1, 2.3, W.2.8, SL.2.1)**

EARTH NEWS CENTRAL: WEBSITE FOR STUDENTS



A PICTURE OF MOUNTAINS NEAR MY HOME



# Earth Never Changes

By: Nevell Know-it-all

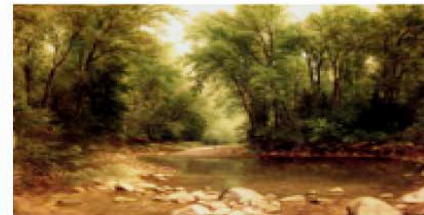
"The Earth never changes," exclaims my friend, Simple Simon the Scientist. He tells everyone the mountains have stayed the same since he was a little boy, therefore the other scientists must be wrong. As evidence, Simon has pictures of mountains near his home from when his parents moved there fifty years ago. When he looks at the same mountains now, they look the same!

Simple Simon the Scientist also describes events such as flooding, tornadoes, and volcanic eruptions as nature causing a problem for a few days, but not causing changes to the Earth. This smarty scientist says once the event is over, everything goes back to the same as it was before the big event.

As a know-it-all, I told Simon how I had heard that Earth can change in many ways and from many natural events. However, after seeing Simon's picture of the mountains behind his childhood home, I've decided Simple Simon is correct. I guess Earth really doesn't change.

Respectfully,

Nevell Know-It-All



Peaceful Creek

This beautiful creek is behind my home. It hasn't changed since I moved here ten years ago. We even had heavy rains this spring! Simon must be correct, Earth doesn't change.

Webmaster: Willy Webmaster

Contact:  
Willy.Webmaster@Earthnews.com

## Learning Intentions

I am learning how to ask and answer questions to demonstrate understanding.

I am learning how to describe the connection between a series of scientific concepts, or steps in technical procedures in a text.

## Success Criteria

I can write a letter explaining how the Earth changes and if those changes happen slowly or over a longer amount of time.

## Title of article: Earth Never Changes

You and some friends came across this website while researching the Earth. The website tells readers that Earth never changes.

Write an informational letter to the webmaster to explain how the Earth changes and if those changes happen slowly or over a longer amount of time.

You and your classmates will discuss your letter and your evidence from the text.

Next, you will present your information to a neighboring group to teach them to check their sources carefully.



Create a letter that:

- Explains to the webmaster why the earth changes
- Uses facts and details from unit texts to name and describe at least two processes that cause the Earth to change
- Be sure to include information about whether each process results in a quick change or a slow change to the Earth's surface over time.
- Be sure to include an introduction, facts and definitions from the texts to provide evidence, and a concluding statement.
- Use at least three words we have learned in our studies.

### Student Exemplar

Dear Willie Webmaster,

My second grade class came across your website last week. I know from our studies that your article is false. Simple Simon the Scientist and Nevell Know-It-All are incorrect, because the Earth is always changing. Their evidence is false because some changes are fast and some are slow. Mountains form gradually. We learned that most scientists believe that all mountains on Earth were formed by slow movements in the Earth's outer shell. Mountains can be formed when pressure below the Earth causes plates to move, so the ground is pushed up. Another way mountains are formed is underwater in the ocean when magma becomes solid, and mountains are built up. These changes may take millions of years. Wind, ice, and water cause mountains to form over many years. Simon's family photograph would not show big changes over fifty years, but that doesn't mean the mountains don't change.

An example of a quick change is an earthquake. An earthquake can cause a section of the Earth to buckle or break open. We have learned the Earth is always changing.

Sincerely,

Second Grade Student

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Task	All parts of the task were addressed.	Some parts of the task were addressed.	The task was not addressed or poorly addressed.
Content Accuracy	The letter explains to the webmaster why the earth changes, Uses facts and details from unit texts to name and describe at least two processes that cause the Earth to change, and includes information about whether each process results in a quick change or a slow change to the Earth's surface over time.	The letter explains to the webmaster why the earth changes, Uses facts and details from unit texts to name and describe at least one process that causes the Earth to change, and includes information about whether that process results in a quick change or a slow change to the Earth's surface over time.	Tasks are attempted but are mostly not accurate or largely incomplete.
Organization	The letter is well organized and includes a salutation, developed body, closing and signature.	The letter is well organized and includes a salutation, developed body, closing and signature. The body is not adequately developed.	Not organized; and/or fashioned correctly as a letter.
Spelling	All but 1 to 2 words are spelled correctly.	All but 3 to 5 words are spelled correctly.	More than 5 words are misspelled
Total			