Unit 3/Week 5

Title: Volcanoes, Nature’s Incredible Fireworks

Suggested Time: 4 days (45 minutes per day)

Common Core ELA Standards: RI.3.1, RI.3.2, RI.3.3, RI 3.5, RI.3.7; W.3.1, W.3.4, W.3.7, W.3.8; SL.3.1, SL.3.2; L.3.1, L3.2, L.3.5

Teacher Instructions

*Refer to the Introduction for further details.*

**Before Teaching**

1. Read the Big Ideas and Key Understandings and the Synopsis. Please do **not** read this to the students. This is a description for teachers, about the big ideas and key understanding that students should take away **after** completing this task.

Big Ideas and Key Understandings

The earth is made up of many layers. Volcanoes erupt when the pressure from the inner layer becomes so strong and pushes hot melted rock, (magma) through the earth’s crust. Like fireworks, volcanoes are powerful and beautiful, but also dangerous.

Synopsis

The earth is not a solid, unmovable object. Volcanoes show us how the earth changes. Volcanoes can be made of lava, gases, hot steam, ground-up rocks and melted rock called lava. The earth is made up of layers called the inner core, the outer core, the crust and the mantle. The core is under pressure and is very hot. The crust is made up of pieces, called plates. The plates move very slowly, and create pressure where they meet. Volcanoes are places in the crust where the hot rock is forced through cracks in the crust and the pressure is so great, it reaches the surface. Many volcanoes have erupted throughout history, sometimes with disastrous results. Volcanoes erupt many times over a long period of time. Scientists study volcanoes and the earth’s movement and try to understand how they erupt.

1. Read entire main selection text, keeping in mind the Big Ideas and Key Understandings.
2. Re-read the main selection text while noting the stopping points for the Text Dependent Questions and teaching Vocabulary.

**During Teaching**

1. Students read the entire main selection text independently.
2. Teacher reads the main selection text aloud with students following along. (Depending on how complex the text is and the amount of support needed by students, the teacher may choose to reverse the order of steps 1 and 2.)
3. Students and teacher re-read the text while stopping to respond to and discuss the questions and returning to the text. A variety of methods can be used to structure the reading and discussion (i.e.: whole class discussion, think-pair-share, independent written response, group work, etc.)

Text Dependent Questions

|  |  |
| --- | --- |
| **Text-dependent Questions** | **Evidence-based Answers** |
| Why is the earth never still? | Because it trembles and quivers, and volcanoes erupt somewhere every day. |
| A **simile** is a figure of speech that directly compares two different things, usually by employing the words "like" or "as". The author states, “from far off, they look like beautiful fireworks.” What makes the volcano look like fireworks? | Geysers, gases, ground-up rocks, ashes blast into the air, large rocks, floods, mud slides, avalanches, rivers of lava  The “fiery blobs of melted rock called lava” looks like fireworks when they explode in the air. |
| Use the text to describe what happens inside a volcano. Explain why some volcanoes erupt and some do not. | Volcanoes sometimes explode when too much gas builds up. If the gas does not build up too much, they do not explode. Sometimes the gas escapes through vents and keeps it from exploding. |
| The text states, “Others stream down the mountain as quickly as cars in city traffic.” What evidence from the text helps us understand what this means? Find another comparison that is a simile and explain how the text helps you understand the meaning. | “…red rivers of lava flow” Rivers move fast, so it shows the lava moves like a river. “Some kinds of lava ooze and slide slowly. Others stream down the mountain” This shows the lava is moving fast.  Other possible answers:  “look like beautiful fireworks”  “like a coconut shell”  “like a giant jigsaw puzzle”  “cracks like chimney flues” |
| Share with your neighbor something you have learned about the earth’s crust. Make a list of descriptive words the author used to describe the earth’s crust. | The earth has four layers. The top layer is the crust. The crust is the thinnest. The crust is on the top. It is covered by land and water. The second layer is the mantle. The mantle is 1800 miles deep, and so hot there it melts rocks. The third layer is the outer core made of hot, liquid iron. The inner core is solid because of the great pressure on it.  Descriptive words could include: thinnest, solid, made of hot, liquid iron. |
| How does the author describe the plates of the earth’s crust? | Like a coconut shell and a jigsaw puzzle  The text says “not one piece, like a coconut shell”,  “…several large pieces” and they “cover the planet” also the illustration shows what it looks like. |
| How and where volcanoes form. Use evidence to explain what causes earthquakes. | “Where two plates meet, the force is so great that rocks bend or even break. This sends tremors called earthquakes through the ground” |
| What are some examples of the dangers of volcanoes? Give examples of historic eruptions and what effects the eruptions had. | 1980-Mt. St. Helens- a mountain exploded  79 AD- Mount Vesuvius-two cities were buried  They are alike because they were both big eruptions. They are different because they were at different times and places. Volcanoes eruptions can cause a lot of damage. Eruptions have happened over many years. |
| What is the “Ring of Fire”? | “Around the Pacific Ocean, many plates collide, many eruptions have happened there.” |
| The text uses **personification**, which is when we give human characteristics to other animals or non-living things. Find examples of volcanoes described with a human characteristic. | “it may sleep in silence”  “sleeping giant may suddenly awaken”  “volcano will blow its top or split its side” |
| How is a volcano like a “sleeping giant”? | Because a sleeping giant looks harmless, but when it wakes up, it can be very dangerous. A volcano that is not active looks harmless, but when it erupts, it can cause a lot of harm. |

Vocabulary

|  |  |  |
| --- | --- | --- |
|  | **KEY WORDS ESSENTIAL TO UNDERSTANDING** | **WORDS WORTH KNOWING**  General teaching suggestions are provided in the Introduction |
| **TEACHER PROVIDES DEFINITION**  not enough contextual clues provided in the text | erupt  crevices, avalanches  tremors  chimney flues  force  shudders  incredible, scientists | gritty  quivers  scalding  awaken  fiery  incredible |
| **STUDENTS FIGURE OUT THE MEANING**  sufficient context clues are provided in the text | mantle  core |  |

Culminating Task

* Re-Read, Think, Discuss, Write
* *The title of the story is “Volcanoes, Nature’s Incredible Fireworks”. The author repeats this in the final sentence of the story. The author describes volcanoes as both beautiful and dangerous. Write a paragraph using evidence from the text to explain how the author shows that volcanoes are both beautiful and dangerous.*

Answer: Throughout the story, the author shows that volcanoes are both beautiful and dangerous. In the beginning of the story, the author writes, “from far off the volcanoes look like beautiful fireworks.” So, on the one hand, the author compares goes on to describe the blobs of melted lava. Lava is very hot and destructive, and this make it very dangerous. So, although the erupting volcano may look like pretty fireworks, it produces something that is very hot and dangerous. In another part of the story, the author explains how two entire towns were buried by a volcano in Italy a long time ago. This, again, shows how dangerous volcanoes can be. In the conclusion, the author talks about how volcanoes are both beautiful and dangerous.

Additional Tasks

* *Use Internet resources to find out where there is volcanic activity on the earth today. Choose one active volcano and track its activity by taking organized notes for several days. Then, write a short paragraph describing what you found. Use details learned in the story (Earth’s composition, development of a volcanic eruption) to support your findings.*

*Possible websites for use:*

* + The Volcano Hazards Program monitors active and potentially active volcanoes: http://volcanoes.usgs.gov/
  + The Smithsonian Institution's Global Volcanism Program (GVP) is housed in the Department of Mineral Sciences, part of the National Museum of Natural History, on the National Mall in Washington D.C: http://www.volcano.si.edu/reports/usgs/
* *Students can explore similes and/or personification further by finding examples in other texts they have already read this year. (Provide them with a few choices of stories that you know contained this kind of figurative language.) Have them work in pairs to locate the figurative language, record it, and describe its meaning. Then, have them answer the question: Why did the author use a simile (or metaphor or personification) in this particular spot in the story rather than simply telling you exactly what he/she using more direct or “simpler” language?*

Note to Teacher

* Potentially helpful websites for further extension activities:
  + Additional information on volcanoes: http://environment.nationalgeographic.com/environment/natural-disasters/volcano-profile/
  + Build your own volcano and watch it erupt: http://kids.discovery.com/games/build-play/volcano-explorer

Supports for English Language Learners (ELLs)

to use with Basal Alignment Project Lessons

When teaching any lesson, it is important to make sure you are including supports to help all students. We have prepared some examples of different types of supports that you can use in conjunction with our Basal Alignment Project Lessons to help support your ELLs. They are grouped by when they would best fit in a lesson. While these supports reflect research in how to support ELLs, these activities can help ALL students engage more deeply with these lessons. Note that some strategies should be used at multiple points within a lesson; we’ll point these out. It is also important to understand that these scaffolds represent options for teachers to select based on students’ needs; it is not the intention that teachers should do *all* of these things at every lesson.

**Before the reading:**

* Read passages, sing songs, watch videos, view photographs, discuss topics (e.g., using the [four corners strategy](http://www.theteachertoolkit.com/index.php/tool/four-corners)), or research topics that help provide context for what your students will be reading. This is especially true if the setting (e.g., 18th Century England) or topic (e.g., boats) is one that is unfamiliar to the students.
* Provide instruction, using multiple modalities, on selected vocabulary words that are *central to understanding the text*. When looking at the lesson plan, you should note the Tier 2 words, particularly those words with high conceptual complexity (i.e., they are difficult to visualize, learn from context clues, or are abstract), and consider introducing them ahead of reading. For more information on selecting such words, go [here](https://achievethecore.org/page/3167/selecting-and-using-academic-vocabulary-in-instruction). **You should plan to continue to reinforce these words, and additional vocabulary, in the context of reading and working with the text. (See additional activities in the During Reading and After Reading sections.)**

**Examples of Activities:**

* Provide students with the definition of the words and then have students work together to create [Frayer models](http://www.theteachertoolkit.com/index.php/tool/frayer-model) or other kinds of word maps for the words.
* When a word contains a prefix or suffix that has been introduced before, highlight how the word part can be used to help determine word meaning.
* Keep a word wall or word bank where these new words can be added and that students can access later.
* Have students create visual glossaries for whenever they encounter new words. Then have your students add these words to their visual glossaries.
* Create pictures using the word. These can even be added to your word wall!
* Create lists of synonyms and antonyms for the word.
* Have students practice using the words in conversation. For newcomers, consider providing them with [sentence frames](https://achievethecore.org/page/3159/ell-supports-for-writing-and-discussion) to ensure they can participate in the conversation.
  + Practice spelling the words using different spelling practice strategies and decoding strategies. Students could take turns spelling with a partner.
* Use graphic organizers to help introduce content.

**Examples of Activities:**

* Have students fill in a [KWL chart](http://www.nea.org/tools/k-w-l-know-want-to-know-learned.html) about what they will be reading about.
* Have students research setting or topic using a pre-approved website and fill in a chart about it. You could even have students work in groups where each group is assigned part of the topic.
* Have students fill in a bubble map where they write down anything that they find interesting about the topic while watching a video or reading a short passage about the topic. Then students can discuss why they picked the information.

**During reading:**

* Read the text aloud first so that ELLs can hear the passage read by a fluent reader before working with the text themselves.
* Allow ELLs to collaborate in their home languages to process content before participating in whole class discussions in English. Consider giving them the discussion questions to look over in advance (perhaps during the first read) and having them work with a partner to prepare.
* Encourage students to create sketch-notes or to storyboard the passage when they are reading it individually or with a partner. This will help show if they understand what they are reading as they are reading it.
* Ask questions related to the who, what, when, why, and how of the passage. For students that may need a little more help, provide them with [sentence stems](https://achievethecore.org/page/3159/ell-supports-for-writing-and-discussion).
* Continue to draw attention to and discuss the words that you introduced before the reading.

**Examples of Activities:**

* Have students include the example from the text in their glossary that they created.
* Create or find pictures that represent how the word was used in the passage.
* Practice creating sentences using the word in the way it was using in the passage.
* Have students discuss the author’s word choice.
* Use graphic organizers to help organize content and thinking.

**Examples of Activities:**

* Have students fill in a chart to keep track of their 5ws while they read to help them summarize later and figure out the central idea of a passage.
* It may again be beneficial to have somewhere for students to store new words that they encounter while reading the text. Students could use a chart to keep track of these new words and their meanings as they read.
* If you had students fill in a KWL, have them fill in the “L” section as they read the passage.
* Utilize any illustrations or text features that come with the story or passage to better understand the reading.
* Compare/contrast the passage with what the illustrations convey about the passage. Have students consider if the illustrations look the way they visualized the passage in their own minds or if the passage matches their predictions based on the illustrations.
* Identify any text features such as captions and discuss how they contribute to meaning.

**After reading:**

* Present directions for any post-reading assignments orally and visually; repeat often; and ask English Language Learners to rephrase.
* Allow ELLs to use English language that is still under development. Students should not be scored lower because of incorrect spelling or grammar (unless the goal of the assignment is to assess spelling or grammar skills specifically). When grading, be sure to focus on scoring your students only for the objective(s) that were shared with students.
* Scaffold questions for discussions so that questioning sequences include a mix of factual and inferential questions and a mix of shorter and more extended responses. Questions should build on each other and toward inferential and higher-order-thinking questions. There are not many factual questions already listed in the lesson instructions, so you will need to build some in as you see fit. More information on this strategy can be found [here](https://achievethecore.org/aligned/creating-sequencing-text-dependent-questions-support-english-language-learners/).
* Reinforce new vocabulary using multiple modalities

**Examples of activities:**

* Using the words that you had students work with before reading, have students write sentences in reference to the passage that you just finished reading.
* Require students to include the words introduced before reading in the culminating writing task.
* For newcomers, print out pictures that represent the words that you focused on and have students match the words to the pictures.
* Based on different features of the words, have the students sort them into different categories and explain their choices. For example, the students could sort the words by prefixes, suffixes, connotation, etc.
* After reading the passage, continue to examine important sentences (1–2) in the text that contribute to the overall meaning of the text. Guide students to break apart these sentences, analyze different elements, and determine meaning. More information on how to do this, including models of sentence deconstruction, can be found [here](https://achievethecore.org/page/3160/juicy-sentence-protocol).
* Provide differentiated scaffolds for writing assignments based on students’ English language proficiency levels.

**Examples of Activities:**

* For all students, go over the prompt in detail, making sure to break down what the prompt means before having the students get to work. Then have the students explain the directions back to you.
* Have students create an evidence tracking chart during reading, then direct them to look back over their evidence chart and work with a group to see if their evidence matches what the rest of the class wrote down. If some of the chart does not match, students should have a discussion about why.
* For students who need more support, model the proper writing format for your students and provide them with a properly formatted example for reference.
* For newcomers, you may consider creating sentence or paragraph frames to help them to write out their ideas.
* To further discussion about the passage, have students create their own who, what, when, where, why, and how questions related to the passage to ask each other and have students pair up and practice asking each other the questions. If available, pair students of the same home language to support the use of language still under development.