

Grade 4

Unit 5

Our Planet: Geology

Activity Book

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NAME: _____

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1.1

Activity Page

Areas of Study About the Earth

Read the questions related to areas of study about the earth. Discuss the questions with your group and identify those that relate to the area of study on your group's card. Write the related questions on the card.

- What are Earth's seven continents?
- What clues do the ruins of ancient buildings provide about the ancient Roman civilization?
- What is the name for the place where an animal or plant normally lives and grows?
- What can cause changes in an ecosystem?
- What was the city of London like in the Middle Ages?
- What are the names of the oceans of the world?
- How would you describe the tropical rainforest of the Amazon River?
- What are the four main directions on a map?
- What features make up the environment?
- What are the names of important rivers of the world?
- What do the pictures embroidered on the Bayeux Tapestry illustrate?

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1.2

Activity Page

Vocabulary for “Earth’s Changing Surface”

1. **catastrophe, *n.*** a terrible, sudden event (**catastrophes**)
2. **erupt, *v.*** to send out rock, lava, and ash in a sudden explosion
(**erupted, *n.* eruption**)
3. **observation, *n.*** **1.** the act of paying careful attention to gather information; **2.** a statement based on paying careful attention to something (**observations**)
4. **evidence, *n.*** proof; information and facts that are helpful in forming a conclusion or supporting an idea
5. **fossil, *n.*** the preserved remains of things that lived long ago (**fossils**)
6. **geologist, *n.*** a scientist who studies the makeup of the earth and the forces and processes that shape and change it (**geologists**)
7. **climate, *n.*** the average weather conditions of a particular area
8. **conclude, *v.*** to decide something or form an opinion based on information you have
(**concluded, *n.* conclusion**)
9. **dense, *adj.*** thick or heavy (**denser**)
10. **hypothesis, *n.*** an idea that has been suggested and may be true but has not yet been proven
11. **continental drift, *n.*** a process in which continents slowly move over time on the surface of the earth
12. **crust, *n.*** Earth’s outermost layer, featuring a rocky surface

Word(s) from the Chapter	Pronunciation	Page
Shen Kua	/shen/ /kwə/	5
Pangaea	/pan*jee*ə/	9

Evidence Collector's Chart

Chapter #	What is the cause?	What evidence is there?	Letter
	At some point, Pangaea broke apart and the pieces slowly moved apart over a long period of time.		
	Tectonic plates move very slowly due to the heat and pressure in Earth's mantle.		
	Material in the mantle moves beneath stuck rocks at a fault, causing pressure to build over time and then suddenly release as the rocks break and slip past each other, shaking the ground.		

Chapter #	What is the cause?	What evidence is there?	Letter
	Tremendous pressure and heat in the mantle force magma in a chamber below Earth's crust to move upward through a crack in Earth's surface.		
	Rocks are created, destroyed, and recreated in a continuous cycle.		
	Over time, weathering breaks rocks into smaller pieces and erosion moves these pieces to new locations.		

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Chapter #	What is the cause?	What evidence is there?	Letter
	Tectonic plates subduct underneath one another and move up and down against each other, and magma pushes up into the crust.		
	Tectonic plates interact to create seafloor spreading and underwater subduction zones.		

Riddle: _____

Answer: _____

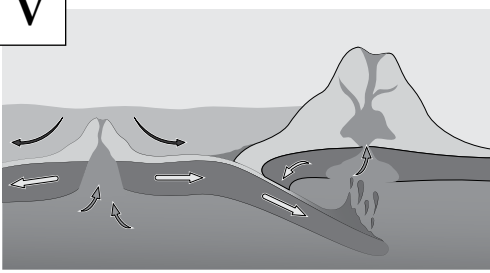
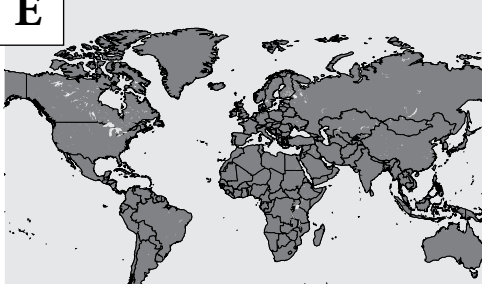
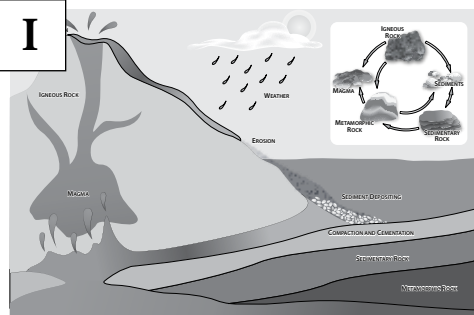
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1.4

Activity Page

Evidence of Changes on Earth

V 	E 
E 	E 
C 	N 
I 	D 

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2.1

Activity Page

Vocabulary for “Earth’s Layers and Moving Plates”

1. **seismic wave, *n.*** a surge of energy traveling out from an earthquake’s source through the earth (**seismic waves**)
2. **pressure, *n.*** the weight or force produced when something presses or pushes against something else
3. **basalt, *n.*** heavy, dense rock formed from cooled, hardened lava
4. **magma, *n.*** melted rock in Earth’s mantle
5. **lava, *n.*** red-hot melted rock that has erupted above Earth’s crust from deep underground
6. **basin, *n.*** a large area in the earth that is lower than the area around it (**basins**)
7. **ocean trench, *n.*** a narrow, extremely deep valley formed when the seafloor dips down as one tectonic plate slides under another (**ocean trenches**)
8. **theory, *n.*** an explanation for why something happens based on evidence
9. **plate tectonics, *n.*** a theory that Earth’s crust and the solid top part of the mantle are broken up into sections that fit together but move against each other
10. **exert, *v.*** to cause a force to be felt or have an effect (**exerts**)

Word(s) from the Chapter	Pronunciation	Page
Inge Lehmann	/ing*gə/ /lee*mon/	21

NAME: _____

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2.2

Activity Page

Practice Commas

For each item, insert a comma or commas in the appropriate location(s).

Examples: We went to Concord North Carolina to visit friends for spring break.

We went to Concord, North Carolina to visit friends for spring break.

I needed paper pencils erasers and a notebook for school.

I needed paper, pencils, erasers, and a notebook for school.

Seismologist Inge Lehmann was born on May 13 1888.

Seismologist Inge Lehmann was born on May 13, 1888.

1. When I was a child, my family moved from Chicago Illinois to Madison Wisconsin.
2. We have two dogs three cats a turtle and a bunny.
3. 801 East High Street
Charlottesville VA 22902
4. President Obama was elected the 44th President of the United States on
November 4 2008.
5. My cousin cooked eggs bacon toast and pancakes for breakfast.
6. We traveled from Boston Massachusetts to San Diego California on our cross-country trip.
7. Earth's layers are the inner core the outer core the mantle and the crust.

8. 233 Broadway
New York NY 10007

9. Her graduation date is scheduled for May 24 2016.

Write a sentence that includes a date or items in a series. Be sure to use correct capitalization and punctuation.

Write an address. Be sure to use correct capitalization and punctuation.

Challenge: *Write a sentence that includes at least two of the following:*

a date	a city and state	items in a series
--------	------------------	-------------------

NAME: _____

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2.3

Activity Page

***-ly*: Suffix Meaning “in a _____ way”**

Write the correct word to complete each sentence.

easy	easily	loud
careful	carefully	temporary
speedy	accidentally	temporarily

1. Even though his stay was only _____, I got really attached to the neighbor's dog staying with us for a week while his owners were on vacation.
2. Amber's dad _____ put his coffee in her thermos instead of his thermos.
3. I was _____ not to wake up the baby while he was sleeping, so I listened to music quietly through headphones instead of speakers.
4. According to the continental drift hypothesis, continents move very slowly, which is definitely not a(n) _____ process.
5. The buzzer on my alarm clock is so _____ that it wakes up everyone in the house.
6. The ground _____ shakes during an earthquake, as seismic waves travel through Earth's crust and its interior.

Write a sentence using one of the words left in the box.

Write a sentence using one of the words left in the box.

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2.4

Activity Page

Similes about Earth's Changes

Reread the text on the page noted for each simile. Then, fill in the chart to explain what the simile is comparing and what it means.

Page	Simile from Text	What is the simile comparing?	What does the simile mean?
9	<i>What if continents were like enormous pieces of ice?</i>		
13	<i>An earthquake is a bit like a rock plunking into water.</i>		
16	<i>The rift was like a seam in a pants leg, where two pieces of fabric come together.</i>		

NAME: _____

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4.1

Activity Page

Vocabulary for “Earth’s Shakes and Quakes”

1. **eyewitness, n.** a person who has seen something happen and is able to describe it
2. **experiment, n.** a scientific test to try out something in order to learn about it
3. **fault, n.** a crack in Earth’s crust (**faults**)
4. **heave, v.** **1.** to move up and down over and over; **2.** to lift, pull, push, or throw with a lot of effort
5. **trigger, v.** to cause something to start or happen (**triggered**)
6. **pinpoint, v.** to figure out the exact location of something
7. **magnitude, n.** an earthquake’s strength
8. **aftershock, n.** a smaller, weaker earthquake that often follows a main earthquake event (**aftershocks**)
9. **tsunami, n.** a gigantic wave of seawater caused by an earthquake in oceanic crust (**tsunamis**)
10. **surge, v.** to move forward quickly, suddenly, and with force (**surges**)

Word(s) from the Chapter	Pronunciation	Page
Francesco Petrarch	/fran*ches*koe/ /pe*trark/	22
Richter	/rik*ter/	28
tsunami	/soo*no*mee/	30

NAME: _____

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4.2

Activity Page

Practice Commas

For each item, insert a comma or commas in the appropriate location(s).

1. My aunt is from Austin Texas and my uncle is from Minneapolis Minnesota.
2. She plays tennis soccer and basketball.
3. Opening night of his first play is scheduled for June 24 2015.
4. Yellowstone National Park
P.O. Box 168
Yellowstone National Park WY 82190

Write a sentence for each of the following items. Be sure to use correct capitalization and punctuation. Each sentence should include at least one comma in its appropriate location.

1. a date

2. city and state or an address

3. items in a series

NAME: _____

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4.3

Activity Page

-ly: Suffix Meaning “in a _____ way”

Write the correct word to complete each sentence.

1. Even though earthquakes are only _____, they can still
(temporary, temporarily, accidental, accidentally)
cause significant and sometimes permanent damage.
2. The fire engine was so _____ that I had to cover my ears as it drove by
(loud, loudly, careful, carefully)
my house.
3. Tsunamis are _____—they travel as fast as 500 miles per hour.
(loud, loudly, speedy, speedily)
4. He _____ dropped a glass, spilling milk all over the floor.
(easy, easily, accidental, accidentally)
5. Scientist Inge Lehmann was _____ to do lots of research and
(careful, carefully, temporary, temporarily)
analysis before concluding that Earth’s core has two parts—a liquid outer core and a solid
inner core.
6. It was _____ to see that he loved baseball because his face lit up
(temporary, temporarily, easy, easily)
every time he got to play.

Write a sentence using one of the -ly words.

Write a sentence using one of your own -ly words.

Challenge: *Write a sentence using one of the root words and its -ly word.*

NAME: _____

DATE: _____

5.1

Activity Page

Earth's Shakes and Quakes

Answer each question thoughtfully, citing the page number(s) where you found evidence for each question. Answer in complete sentences and restate the question in your answer whenever possible.

1. Fill in the blank:

Most earthquakes happen at _____.

Page(s) _____

2. How much energy is released when blocks of rock that were stuck break and slip past each other?

Page(s) _____

3. Circle the two answers that correctly complete the following statement.

Surface waves cause _____.

- A. the ground to shake, heave, sway, and lurch during an earthquake
- B. a fault to form in Earth's crust
- C. most tsunamis
- D. the most earthquake damage

Page(s) _____

4. Complete each sentence with details from the text.

A seismograph and the Richter scale are similar because _____

A seismograph and the Richter scale are similar, but _____

A seismograph and the Richter scale are similar, so _____

Page(s) _____

NAME: _____

DATE: _____

5.1
CONTINUED

Activity Page

5. Write two or three sentences that include one fact about a tsunami and at least two descriptive words from the text.

Page(s) _____

NAME: _____

DATE: _____

5.2

Activity Page

Take Notes on Tsunamis

Read through all the questions in the chart so you are clear about what information you should scan the Reader text for related to tsunamis. Take notes by paraphrasing the Reader text or writing information in your own words. Write key information in the shortest form possible.

Questions	Notes
What is a tsunami?	
What causes a tsunami?	
Why do tsunamis happen?	
How fast does a tsunami travel?	
Can we stop tsunamis from happening?	
How can we prepare and protect ourselves?	

NAME: _____

DATE: _____

5.3

Activity Page

Tsunami Pamphlet

Draft your pamphlet by composing answers to the questions.

	Question: What is a tsunami? Answer:
Question: What was THAT?	Question: Why do tsunamis happen? Answer:
	Question: How fast does a tsunami travel? Answer:
Answer: A tsunami! Tsunamis are caused by _____ _____ _____ _____ _____ _____	Question: Can we stop tsunamis from happening? Answer:
	Question: How can we prepare and protect ourselves? Answer:

NAME: _____

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6.1

Activity Page

Vocabulary for “Earth’s Fiery Volcanoes”

1. **volcano, *n.*** a hill or mountain that forms over a crack in Earth’s crust from which lava erupts (**volcanoes**)
2. **crater, *n.*** a bowl-shaped opening at the top of a volcano or geyser
3. **fine, *adj.*** very small
4. **subduction zone, *n.*** the place where one tectonic plate is sliding beneath another tectonic plate (**subduction zones**)
5. **descend, *v.*** to move downward (**descends**)
6. **hotspot, *n.*** a very hot region deep within Earth’s mantle where a huge magma chamber forms (**hotspots**)
7. **plume, *n.*** a column of magma that rises from the mantle into a chamber beneath Earth’s crust
8. **hot spring, *n.*** a naturally flowing source of hot water (**hot springs**)

Word(s) from the Chapter	Pronunciation	Page
Kilauea	/kee* <u>l</u> ə*wae*ə/	32
Mauna Loa	/mon*ə/ /loe*ə/	36
Paricutin	/par*ee*koo* <u>t</u> een/	37
Krakatoa	/krak*ə* <u>t</u> oe*ə/	37
Moloka'i	/mol*o*chee/	38
Maui	/mow*ee/	38
Kaua'i	/koo*wie/	39
O'ahu	/oe*wo*hoo/	39
Loihi	/loo*ee* <u>h</u> ee/	39

NAME: _____

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6.2

Activity Page

Commas and Quotation Marks

Rewrite each sentence, inserting a comma or commas and quotation marks in the appropriate locations. Be sure to use correct capitalization and end punctuation.

Example: The time he explained is 3:47 pm

“The time,” he explained, “is 3:47 pm.”

1. You don't have to look hard the teacher said to find rocks

2. Students might ask what are rocks? before reading the text

3. Rocks are naturally occurring materials made of solid substances the author explains

4. The rock cycle according to the text has been going on for several billion years

5. Given enough time the text explains all rocks change

6. There are three types of rocks the teacher explained igneous sedimentary and metamorphic

NAME: _____

DATE: _____

6.3

Activity Page

Root *rupt*

Write the correct word to complete each sentence. You may need to add -ed, -ing, or -s to make the word correctly fit in the sentence.

uninterrupted	erupt	disrupt
rupture	abrupt	eruption

1. A volcanic _____ is usually sudden and violent.
2. When my friend lied to me, it caused a(n) _____ in our friendship.
3. My parents say it's bad for me to spend _____ hours watching television, so they limit how much I can watch.
4. Old Faithful is a geyser in Yellowstone National Park that _____ several times a day.
5. Sometimes my dog _____ my sleep when she barks in the middle of the night.
6. During an argument, my brother left the room in a(n) _____ way instead of continuing the conversation.

Write a complete sentence for each of the following words. Be sure to use correct capitalization and punctuation.

7. *disrupt*

8. *abrupt*

9. *eruption*

NAME: _____

DATE: _____

7.1

Activity Page

Vocabulary for “Mythic Volcano Spirits”

1. **strong-willed**, *adj.* determined to do what you want even if other people tell you not to
2. **bitter**, *adj.* 1. resentful and angry because of unfair treatment; 2. very cold
3. **outsmart**, *v.* to trick or defeat someone by being clever
4. **caldera**, *n.* a crater caused by the collapse of the top of a volcano
5. **eternal**, *adj.* lasting forever, with no beginning and no end
6. **elder**, *n.* a person who is older, respected, and often in a position of authority
(elders)
7. **revenge**, *n.* the act of getting even for a wrongdoing

Word(s) from the Chapter	Pronunciation	Page
Mo'olelo	/mo*oe*lel*oe/	42
Pele	/pae*lae/	42
Kīlauea	/kee*lā*wae*ə/	42
Na-maka-o-kaha'i	/no*mo*kā*oe*kā'hie/	43
Hi'iaka	/hee*ie*ā*kā/	43
Kaua'i	/koo*wie/	43
Lohi'au	/loe*ee*o/	43
O'ahu	/oe*wo* <u>hoo</u> /	44
Moloka'i	/mol*o*chee/	44
Maui	/mow*ee/	44
Monadalkni	/mon*ə*dok*nie/	47
Sahale Tyee	/so*ho*lee/ /tie*ee/	47

Mythic Volcano Spirits

The following words were used in Chapter 5, “Mythic Volcano Spirits.” For each word, pick an activity and complete the chart below.

outsmart	Vocabulary Activities 1. Write a definition in your own words. 2. Provide a synonym (similar meaning). 3. Provide an antonym (opposite meaning). 4. Use the word in a sentence. 5. Provide another word that the word or phrase makes you think of and explain why. (<i>Apple</i> makes me think of bananas because they are both fruits.) 6. Think of an example of the word or phrase and write about it. (An example of <i>fruit</i> is cantaloupe. It is a melon that is white on the outside and orange on the inside. They are really tasty in the summer.)
fond	
revenge	
caldera	
bitter	

Word	Activity	Activity Response

NAME: _____

DATE: _____

7.3

Activity Page

Wiki Entry Rubric

	Exemplary	Strong	Developing	Beginning
Introduction	Initial section(s) provide accurate, general information related to location and type of volcano	Initial section(s) provide accurate information related to either location or type of volcano, but not both	Initial section(s) provide information loosely related to location and/or type of volcano	Initial section(s) lack information related to location and type of volcano
Body	Additional sections provide increasingly specific information about the volcano	Additional sections provide more information about the volcano	Additional sections provide some information about the volcano	Additional sections provide little to no information about the volcano
Conclusion	A final statement provides a thought-provoking summative or closing reflection about the volcano	A final statement provides a summative or closing reflection about the volcano	The summative or closing nature of the final statement is unclear	No final statement is provided
Structure of the Piece	All sentences in sections are presented logically	Most sentences in sections are presented logically	Some sentences in sections are presented logically	Connections between sentences in sections are confusing
	All information has been paraphrased	Most information has been paraphrased	Some information has been paraphrased	Little information has been paraphrased

You may correct capitalization, punctuation, and grammar errors while you are revising. However, if you create a final copy of your writing to publish, you will use an editing checklist to address those types of mistakes after you revise.

NAME: _____

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7.4

Activity Page

Wiki Entry Editing Checklist

Wiki Entry Editing Checklist	After checking for each type of edit, place a check here.
Meaning	
All my sentences have a subject and predicate.	
I included all the words I wanted to write.	
I took out repeated words or information.	
I have checked how long my sentences are and split run-on sentences into two.	
I have used nouns and adjectives correctly.	
Format	
The volcano name is the title at the top.	
Each section of the entry has a heading.	
Indenting is not used.	
If lists are included, they are bulleted or numbered.	
There is a reference list at the end in the appropriate format.	
Capitals	
I began each sentence with a capital letter.	
I used capital letters for all proper nouns.	
I used capital letters for all words in titles or headings.	
Spelling	
I have checked the spelling for any words I was unsure of or my teacher marked.	
Punctuation	
I read my writing piece aloud to check for commas at pauses and periods, question marks, and exclamation points at the ends of my sentences.	
I used commas and quotation marks in places where they belong.	
The titles in my reference list are underlined or in italics.	

NAME: _____

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8.1

Activity Page

Vocabulary for “Earth’s Building Blocks”

1. **mineral, *n.*** a solid, nonliving substance found in the earth that makes up rocks (**minerals**)
2. **texture, *n.*** the size, shape, and sorting of the mineral grains in rocks
3. **class, *n.*** group of people or things that are similar in some way (**classes**)
4. **solidify, *v.*** to make or become hard or solid (**solidifies**)
5. **obsidian, *n.*** a dark rock or natural glass formed from lava that cooled very quickly
6. **granite, *n.*** a common igneous rock that forms from magma that cooled within Earth’s crust
7. **durable, *adj.*** able to last a long time in good condition
8. **compact, *v.*** to closely pack or press together (**compacts, compacting**)
9. **dissolved, *adj.*** mixed with liquid so no solid pieces are visible anymore

Word(s) from the Chapter	Pronunciation	Page
gneiss	/nis/	56
Agnes Nyanhongo	/ag*nes/ /nie*an*hong*goe/	57
Zimbabwe	/zim*bob*wae/	57

NAME: _____

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8.2

Activity Page

Earth's Building Blocks

Answer each question thoughtfully, citing the page number(s) where you found evidence for each question. Answer in complete sentences and restate the question in your answer whenever possible.

1. How might rocks differ from each other?

Page(s) _____

2. How does igneous rock form?

Page(s) _____

3. Which statement distinguishes between the two basic types of igneous rock?
- A. Two igneous rocks are granite and basalt.
 - B. Different rocks have different size grains and different textures.
 - C. One type forms on Earth's surface and the other forms below Earth's surface.
 - D. The slower the rock cools and hardens, the larger its mineral grains will be.

Page(s) _____

4. How does a sedimentary rock form?

Page(s) _____

5. How does metamorphic rock form?

Page(s) _____

NAME: _____

DATE: _____

8.2
CONTINUED

Activity Page

6. What is the rock cycle?

- A. the continuous process of volcanoes erupting
- B. the continuous process of change in which rocks are created, destroyed, and recreated
- C. the continuous process of sedimentary rock changing to become igneous rock
- D. the continuous process of mineral grains making rocks smooth and shiny

Page(s) _____

Complete the following items after you have finished reading the chapter. Match the following words with the correct definitions and examples. You may use some words more than once. Try to think of the answer to each item first from memory and then check back in the text to verify your answer before filling in the blank.

minerals	limestone	erosion
sedimentary rock	igneous rock	metamorphic rock

7. **Word:** _____

Definition: any process or force that moves sediments to new locations

Page(s) _____

8. **Word:** _____

Definition: a rock that forms when magma cools and solidifies; the most abundant class of rocks

Page(s) _____

9. **Word:** _____

Definition: the building blocks of rocks that consist of solid, nonliving substances

Page(s) _____

10. **Word:** _____

Definition: a type of sedimentary rock that often has many fossils and shells of tiny ocean creatures

Page(s) _____

11. **Word:** _____

Definition: a type of rock that forms when either igneous or sedimentary rock is changed due to extreme heat and pressure

Page(s) _____

12. **Word:** _____

Definition: a type of rock made of tiny bits of rock and sand mixed with small pieces of things that were once alive

Page(s) _____

13. **Word:** _____

Examples: basalt, granite, and obsidian are examples of this class of rock

Page(s) _____

14. **Word:** _____

Examples: serpentine, marble, and gneiss are examples of this class of rock

Page(s) _____

15. **Word:** _____

Examples: sandstone, limestone, and mudstone are examples of this class of rock

Page(s) _____

NAME: _____

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8.3

Activity Page

Take Notes on a Volcano

Take Notes on a Volcano	
Name of the Volcano	
Location of the Volcano	
Type of Volcano; Date of Last Eruption	
Description of Volcano or of Last Eruption	
Other Facts	

References for Volcano Wiki Entry		
Title	Date	Source (Book or Web Address)

NAME: _____

DATE: _____

8.4

Activity Page

Volcano Wiki Entry

Use complete sentences to fill in the information below.

Volcano Name:

Location:

Volcano Type and Last Eruption Date:

Description:

Other Facts:

References:

NAME: _____

DATE: _____

9.1

Activity Page

Commas and Quotation Marks

For each item, insert commas and quotation marks in the appropriate places.

Example: He said my favorite board game is checkers.

He said, “My favorite board game is checkers.”

1. Just then, my grandpa asked What would you like to eat for dinner?
2. I replied I would like to have grilled chicken.
3. I want spaghetti and meatballs exclaimed my sister.
4. How about my grandma asked we make sandwiches?
5. What if we . . . Grandpa paused and then said order pizza?
6. My sister and I both cried Yes! in response.

Read the following passages from Chapter 5 “Mythic Volcano Spirits.” Rewrite the sentences marked in bold so they include dialogue. Make sure at least one sentence is rewritten as a split quotation. Be sure to use correct capitalization and punctuation.

Example: Loha refused.

Loha said, “No.”

1. *One day Monadalkni spotted the daughter of the Klamath chief, Loha. Monadalkni thought Loha was the most beautiful woman he had ever seen. Immediately he wanted her to be his wife. He came down from the mountaintop and proposed to Loha. **He promised her eternal life if she would agree to marry him.** Loha refused.*

2. ***She ran to her father and asked for help.** The chief of the Klamath people called the tribal elders together. They all agreed that Loha should try to hide from Monadalkni, so she did.*

3. *Monadalkni was very angry when he found out that Loha had refused him yet again. He raged inside his mountain, making it shake and rumble. He threw lightning bolts and spewed fireballs from his mouth. The top of the mountain exploded, which sent hot lava and choking clouds of ash raining down on the land. The Klamath people waded into streams and lakes trying to escape Monadalkni's fiery revenge. **They cried out to Sahale Tyee for help.***

NAME: _____

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9.2

Activity Page

Root *rupt*

Write a complete sentence for each of the following words. Be sure to use correct capitalization and punctuation.

1. *erupt*

2. *uninterrupted*

3. *rupture*

Choose the correct word to complete the sentence and write it on the line.

4. The science lesson was _____ when the fire alarm went off
(erupting, uninterrupted, interrupted, erupted)
and we all had to quickly walk outside.

5. They _____ a serious discussion by making jokes and acting
(erupted, uninterrupted, disrupted, ruptured)
silly, causing everyone to lose focus.

6. An _____ of a geyser releases hot water and steam.
(interruption, interrupt, erupt, eruption)

Challenge: Write a complete sentence using two words with the root *rupt*. Be sure to use correct capitalization and punctuation.

NAME: _____

DATE: _____

9.3

Activity Page

Practice Spelling Words

Write the correct word to complete each sentence. Words will not be used more than once; some words will not be used.

abrupt	autograph	matriarch	paragraph
eruption	archrival	uninterrupted	hierarchy
calligraphy	biographer	rupture	anarchy

1. He left in a(n) _____ way without even saying goodbye.
2. My grandma has a(n) _____ book that includes the signatures of noteworthy actors, sports players, and political figures.
3. A volcanic _____ can add new land to Earth's surface but can also cause a large amount of destruction.
4. A man from North Carolina won a world record for jumping rope for a(n) _____ period of time—33 hours straight.
5. The _____ conducted a series of interviews to collect the information he needed to write a book about the baseball player's life.
6. The tennis player finally defeated his _____ in a heated match.
7. She wrote a(n) _____ focusing on how earthquakes occur.
8. The queen is the _____ of her kingdom and government.

NAME: _____

DATE: _____

10.1

Activity Page

Spelling Assessment

Write the spelling words as your teacher calls them out.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

Write the sentence as your teacher calls it out.

NAME: _____

DATE: _____

10.2

Activity Page

Vocabulary for “Earth’s Powerful Forces of Change”

1. **expand**, *v.* to get bigger
2. **contract**, *v.* to shrink slightly or get smaller
3. **ultimately**, *adv.* finally; at the end of a process
4. **pepper**, *v.* to sprinkle or cover
5. **deposit**, **1. v.** to put or leave something in a particular place; **2. n.** material laid down or left by a natural process (*v. deposited, n. deposits*)
6. **state**, *n.* the condition of being a solid, liquid, or gas
7. **silt**, *n.* very small sediments deposited by water
8. **canyon**, *n.* a deep valley with steep sides and often a stream or river flowing through it (**canyons**)

Word(s) from the Chapter	Pronunciation	Page
Yunnan	/yoo*nan/	63
Shilin	/shee*leen/	63

NAME: _____

DATE: _____

11.1

Activity Page

Sequencing Multiple Adjectives

Article	Adjective(s)					Noun
	General → Specific					
	Opinion	Physical Description (size, shape, age, color)	Origin	Material	Purpose	

Reorder the words in the sentence so they are ordered correctly. Be sure to use proper capitalization and punctuation.

Example: wears she pretty a green dress

She wears a pretty, green dress

1. the underwater round data little vessel collects

2. big red a round apple fell

3. we farm old visited a small

4. old the erupted Hawaiian tall volcano

Write a sentence using at least two adjectives and an article. Be sure to order the words appropriately and to use proper capitalization and punctuation.

NAME: _____

DATE: _____

11.2

Activity Page

Review Suffixes *-ly* and *-y* and Roots *graph* and *rupt*

Write the correct word to complete each sentence. Words will not be used more than once.

messy	taste	interrupt	mess
kindly	biography	tasty	busily
abruptly	busy	kind	photograph

1. It was _____ of the stranger to pick up the money I dropped and return it to me.
2. Scientists received warning of a tsunami wave far out in the ocean, so they were _____ working to warn people before it reached land.
3. She didn't want to _____ the discussion but it was time for her to leave, so she said they would talk again later.
4. Someone wanted to write a(n) _____ about the geologist, but he declined because he was writing his own life story in an autobiography.
5. My brother and my sister do not like the _____ of tomatoes but my mom and I love it.
6. They had to leave the soccer game _____ and seek shelter when an announcement was made of an approaching storm.
7. She _____ agreed to take care of our dog while we went on vacation.
8. My favorite _____ from the slideshow was the one that showed the Grand Canyon.

9. The bookshelf at the library was so _____ and disorganized that I couldn't find the book I wanted to check out.
10. Her dinner was very _____, so she ate it all and even asked for more.

For each word remaining in the word bank, write a sentence using the word.

1. _____

2. _____

NAME: _____

DATE: _____

12.1

Activity Page

Vocabulary for “Earth’s Mighty Mountains”

1. **sea level**, *n.* the average height of the ocean’s surface
2. **sheer**, *adj.* very steep, almost straight up and down
3. **bulge**, *v.* to stick out or swell

Word(s) from the Chapter	Pronunciation	Page
Tethys Sea	/teth*ees/ /see/	72
Eurasian	/yer*ae*zshən/	72
Urals	/yer*əlz/	73
Navajo	/nov*ə*hoe/	78
Gutzon Borglum	/gootz*un/ /bor*glum/	79

NAME: _____

DATE: _____

12.2

Activity Page

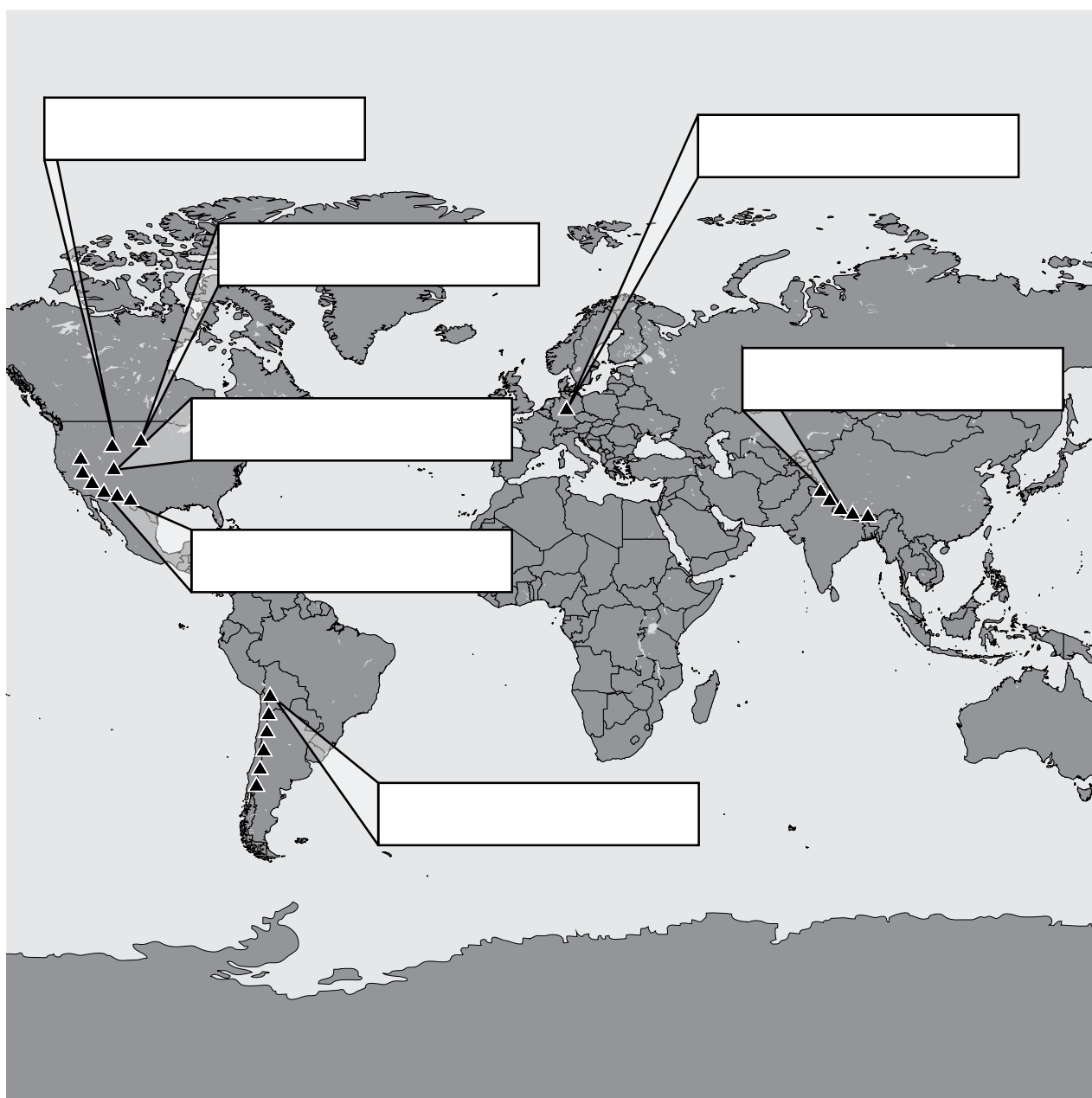
Earth's Mighty Mountains

Answer each question thoughtfully, citing the page number(s) where you found evidence for each question. Answer in complete sentences and restate the question in your answer whenever possible.

	Fold Mountains	Fault-Block Mountains	Dome Mountains
How are they formed?			
Page(s)			
What are common features or characteristics?			
Page(s)			
What are some examples and where are they located?			
Page(s)			

Use the following word bank to correctly label the map.

Himalayas	Harz Mountains	Black Hills	Andes Mountains
Grand Tetons	Navajo Mountain	Basin and Range Province	



NAME: _____

DATE: _____

12.3

Activity Page

Planning an Informative Paragraph

Complete the following items to plan for writing your informative paragraph about a rock or other item in the rock cycle.

1. Read the following chart listing rocks and items in the rock cycle. Choose one that will be the focus of your paragraph and write it on the line following the chart.

Rock Type	Characteristics
magma	partially melted rock in the earth's mantle; very hot
igneous rock	1. formed when magma cools and becomes solid; the most common type of rock; smooth and shiny (obsidian) or dark colored (basalt); 2. formed when magma cools below the Earth's surface; large grains (granite)
metamorphic rock	forms when sedimentary rocks are exposed to extreme heat and pressure; hard; found deep in Earth's crust; marble is a metamorphic rock
sediments	tiny bits of rock and sand combined with fragments of once-living things
sedimentary rock	made of tiny pieces of rocks, sand, and once-living things; forms layers that over time become compressed into rock; easily broken; sometimes contains fossils (limestone)

Paragraph Focus:

2. Think about the characteristics of your item. Complete the sentences below:

My item's surface feels like:

It looks

It forms when:

-
3. My item is part of the rock cycle and/or is important to Earth's surface because

-
4. Use the following lines to write two more details you will include in your paragraph.

NAME: _____

DATE: _____

12.3
CONTINUED

Activity Page

5. Write the last sentence of your paragraph that connects back to your focus. Consider explaining why your item is important to Earth's surface or use a vivid image, question, or statement that engages the reader.

NAME: _____

DATE: _____

13.1

Activity Page

Vocabulary for “Earth’s Undersea World”

1. **submersible, *n.*** a small vehicle that can travel deep under water for research (**submersibles**)
2. **rugged, *adj.*** having a rough, uneven surface
3. **hydrothermal vent, *n.*** a deep-sea geyser that forms as seawater sinks down through cracks in the oceanic crust and then releases extremely hot, mineral-rich water back up through cracks in the crust (**hydrothermal vents**)
4. **seamount, *n.*** an underwater volcano that forms wherever magma is erupting through oceanic crust (**seamounts**)
5. **underlie, *v.*** to be located under something (**underlies**)
6. **firsthand, *adv.*** coming directly from actually seeing or experiencing something
7. **school, *n.*** a large number of ocean animals of one type swimming together (**schools**)

Word(s) from the Chapter	Pronunciation	Page
anemones	/ə*nem*o*nees/	86
Jacques Piccard	/jok/ /pee*kar/	87
<i>Trieste</i>	/treest/	87

NAME: _____

DATE: _____

14.1

Activity Page

Earth's Undersea World

As you and your partner read chapter 9, "Earth's Undersea World," answer the following questions.

1. Seafloor spreading explains which of the following?
 - A. the presence of mid-ocean ridges on the seafloor
 - B. Wegener's theory of continental drift
 - C. the formation of hydrothermal vents
 - D. All of the above
 - E. A and B only

Page(s) _____

2. Rewrite the sentence below so that it includes an appositive to help the reader understand what the Mid-Atlantic Ridge is.

The Mid-Atlantic Ridge helped scientists understand more about changes in Earth's surface.

Page(s) _____

The following question has two parts. Answer Part A and then answer Part B.

3. **Part A:** Fill in the following chart to indicate which seafloor feature the animals live around, hydrothermal vents or seamounts.

Animals	Where they live
white crabs	
brittle stars	
schools of fish	
pale, blind shrimp	
sponges	
deep-sea corals	
giant tube worms	
anemones	
football-sized clams	

Page(s) _____

Part B: Why might these animals live near these particular seafloor features?

NAME: _____

DATE: _____

4. Match each cause to its effect by writing the correct letter for the effect next to the correct cause.

Causes		Effects
_____ Seamount emerges from the ocean's surface		a. continental drift
_____ One tectonic plate slides under another		b. seafloor spreading
_____ Tectonic plates move apart very slowly		c. islands are formed
_____ Seafloor spreading		d. a trench is formed
_____ Water seeps into the earth's crust and is heated by magma		e. mountains are formed
_____ Tectonic plates collide		f. hydrothermal vents are formed

5. On page 82, the author uses a simile when describing the mountain chain formed by mid-ocean ridges, saying it is *like the stitching on a baseball*. Explain what this simile means.

NAME: _____

DATE: _____

14.2

Activity Page

Sequencing Multiple Adjectives

Complete each sentence by choosing two adjectives from the ones provided and writing them in the correct order in the blanks. Underline the article(s) in each sentence.

Example: Adjectives: strong, young, gray, Italian

A strong, gray horse galloped in the field.

1. **Adjectives:** new, Japanese, fast

The _____, _____ race car zipped around the track.

2. **Adjectives:** hardcover, good, old, science

She looked at a _____, _____ book about volcanoes.

3. **Adjectives:** canvas, blue, comfortable, walking

He loves the _____, _____ shoes he tried on.

Circle the phrase with the adjectives in the correct order.

Example: a black, large, clever cat

clever, a large black cat

a clever, large, black cat

1. the tall, rocky mountain

the rocky, tall mountain

rocky, tall, the mountain

2. a sharp, wooden pencil

wooden, a sharp pencil

a wooden, sharp, pencil

3. old, an bicycle, orange

an old, orange bicycle

an orange, old bicycle

Write a sentence using at least two adjectives. Be sure to order the adjectives correctly and to use proper capitalization and punctuation.

NAME: _____

DATE: _____

14.3

Activity Page

Practice Suffixes *-ly* and *-y* and Roots *graph* and *rupt*

Write a complete sentence for each of the following words. Be sure to use correct capitalization and punctuation.

1. *interrupt*

2. *messy*

3. *photograph*

4. *busily*

5. *tasty*

6. *abruptly*

7. *biography*

8. *kindly*

Challenge: Write a sentence that includes one word with the suffix *-ly* or *-y* and one word with the root *graph* or *rupt*.

NAME: _____

DATE: _____

14.4

Activity Page

Practice Spelling Words

For each word, write a sentence using the word.

epicenter	erosion	glacier	fault	tsunami
geyser	conclusion	seismograph	molten	tectonic

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

NAME: _____

DATE: _____

15.1

Activity Page

Spelling Assessment

Write the spelling words as your teacher calls them out.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Write the sentence as your teacher calls it out.

NAME: _____

DATE: _____

E1.1

Activity Page

The Rock Towns of Cappadocia

Word(s) from the Chapter	Pronunciation	Page
Cappadocia	/kap*ə*doe*shə/	90
Mount Erciyes	/mount/ /er*sie*əs/	92
Rapa Nui	/ro*po/ /noo*ee/	98
moai	/moe*wie/	98

As you read the enrichment selection, “The Rock Towns of Cappadocia,” answer the following questions using complete sentences.

1. How are most hoodoos formed?

2. Why wasn't it difficult for people to create caves and rock houses in Cappadocia's rock formations?

3. Why did early Christians settle in Cappadocia?

4. What features might you find in the rock dwellings in Cappadocia?

5. Why do you think people wanted to live in these rock dwellings? What were some of the advantages of these unique houses?

The following question has two parts. Answer Part A first and then answer Part B.

6. **Part A:** What are the moai?

Part B: How did the Rapa Nui move them once they were finished?

NAME: _____

DATE: _____

E2.1

Activity Page

Violent Vesuvius

Word(s) from the Chapter	Pronunciation	Page
Pliny	/plin*ee/	102
Misenum	/mis*en*um/	103

As you read the enrichment selection, “Violent Vesuvius,” answer the following questions using complete sentences.

1. Why do scientists monitor Vesuvius so closely?

Page(s) _____

2. What are some signs that might indicate Vesuvius is on the verge of erupting?

Page(s) _____

3. Complete the following chart.

Geological Term	Definition
eruption column	
Plinian eruption	
pyroclastic flow	

Page(s) _____

4. How do we know so much about the eruption of Vesuvius in 79 CE?

Page(s) _____

NAME: _____

DATE: _____

E3.1

Activity Page

A Deep-Sea Detective Story

Word(s) from the Chapter	Pronunciation	Page
Galápagos	/gə*lop*ə*goes/	113

As you read the enrichment selection, “A Deep-Sea Detective Story,” answer the following questions using complete sentences.

1. Name two discoveries that changed how people thought about geology.

Page(s) _____

2. What are some clues scientists look for when searching for hydrothermal vents?

Page(s) _____

3. Why do unique animals live near hydrothermal vents but not on most other areas of the deep seafloor?

Page(s) _____

4. Why do you think this chapter is titled “A Deep-Sea Detective Story?”

Page(s) _____

Student Resources

In this section, you will find:

- SR.1—Individual Code Chart
- SR.2—Wiki Entry Rubric
- SR.3—Wiki Entry Editing Checklist

NAME: _____

DATE: _____

SR.1

RESOURCE

Individual Code Chart

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NAME: _____

DATE: _____

SR.1
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RESOURCE

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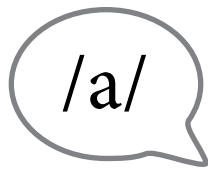
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NAME: _____

DATE: _____

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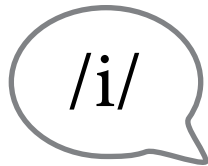
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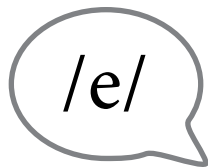


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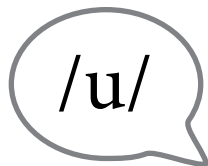


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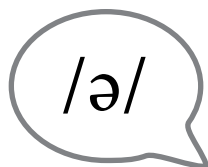


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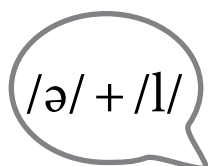


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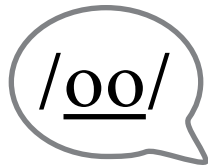
NAME: _____

DATE: _____

SR.1

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RESOURCE



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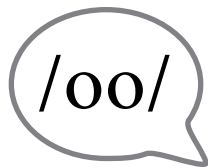


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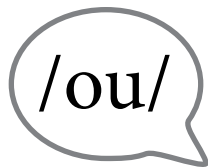


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NAME: _____

DATE: _____

SR.2

RESOURCE

Wiki Entry Rubric

	Exemplary	Strong	Developing	Beginning
Introduction	Initial section(s) provide accurate, general information related to location and type of volcano	Initial section(s) provide accurate information related to either location or type of volcano, but not both	Initial section(s) provide information loosely related to location and/or type of volcano	Initial section(s) lack information related to location and type of volcano
Body	Additional sections provide increasingly specific information about the volcano	Additional sections provide more information about the volcano	Additional sections provide some information about the volcano	Additional sections provide little to no information about the volcano
Conclusion	A final statement provides a thought-provoking summative or closing reflection about the volcano	A final statement provides a summative or closing reflection about the volcano	The summative or closing nature of the final statement is unclear	No final statement is provided
Structure of the Piece	All sentences in sections are presented logically	Most sentences in sections are presented logically	Some sentences in sections are presented logically	Connections between sentences in sections are confusing
	All information has been paraphrased	Most information has been paraphrased	Some information has been paraphrased	Little information has been paraphrased

You may correct capitalization, punctuation, and grammar errors while you are revising. However, if you create a final copy of your writing to publish, you will use an editing checklist to address those types of mistakes after you revise.

NAME: _____

DATE: _____

SR.3

RESOURCE

Wiki Entry Editing Checklist

Wiki Entry Editing Checklist	After checking for each type of edit, place a check here.
Meaning	
All my sentences have a subject and predicate.	
I included all the words I wanted to write.	
I took out repeated words or information.	
I have checked how long my sentences are and split run-on sentences into two.	
I have used nouns and adjectives, verbs, and adverbs correctly.	
Format	
The volcano name is the title at the top.	
Each section of the entry has a heading.	
Indenting is not used.	
If lists are included, they are bulleted or numbered.	
There is a reference list at the end in the appropriate format.	
Capitals	
I began each sentence with a capital letter.	
I used capital letters for all proper nouns.	
I used capital letters for all words in titles or headings.	
Spelling	
I have checked the spelling for any words I was unsure of or my teacher marked.	
Punctuation	
I read my writing piece aloud to check for commas at pauses and periods, question marks, and exclamation points at the ends of my sentences.	
I used commas and quotation marks in places where they belong.	
The titles in my reference list are underlined or in italics.	

Acknowledgements

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Amplify CKLA

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Educators across the country who have provided essential feedback on previous editions of CKLA, helping us to make the program better for teachers and students.

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