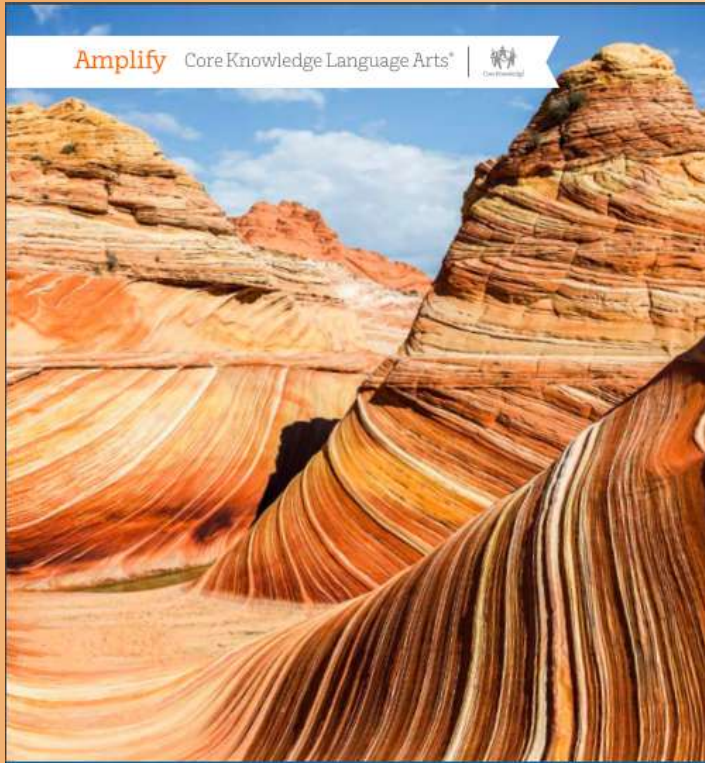


Lesson 13:

Under the Sea, Part 1





We are going to be reading chapter 9: Earth's Undersea World

Before we start reading, let's go over
some vocabulary first! Turn to Activity
page 13.1 (workbook page 119)

Unit 5

Reader

Grade 4

Geology: The Changing Earth



Vocabulary for “Earth’s Undersea World”

1. **submersible**, *n.* a small vehicle that can travel deep under water for research (**submersibles**) (82)
2. **rugged**, *adj.* having a rough, uneven surface (83)
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**) (85)
4. **seamount**, *n.* an underwater volcano that forms wherever magma is erupting through oceanic crust (**seamounts**) (87)
5. **underlie**, *v.* to be located under something (**underlies**) (87)
6. **firsthand**, *adv.* coming directly from actually seeing or experiencing something (87)
7. **school**, *n.* a large number of ocean animals of one type swimming together (**schools**) (88)

Word(s) from the Chapter	Pronunciation	Page
anemones	/əˈnemˈoːneɪs/	88
Jacques Piccard	/ˈjɒk/ ˈpiːˈkɑːr/	89
Trieste	/ˈtriːst/	89

Let’s echo read the words
and then we will discuss a
few unfamiliar words and
review a few familiar ideas!



Chapter 9

Earth's Undersea World

THE BIG QUESTION
How does the movement of tectonic plates shape and change the seafloor?

Imagine that you are dropping down, down, down into the middle of the Atlantic Ocean. The seawater outside the submersible gets darker and darker. Soon the light fades completely. Outside is a watery world as black as night. Finally, the sub's lights pick up shapes below as the ocean bottom comes into view. You see lumpy hills and looming peaks of dark volcanic rock. Welcome to the Mid-Atlantic Ridge. The ridge marks the boundary between several enormous tectonic plates. Portions of these plates form the bottom of the Atlantic Ocean.

82

THE BIG QUESTION

How does the movement of tectonic plates shape and change the seafloor?

Turn to page 82 in your reader and follow along as we begin to read this chapter together.





Would
you want
to go
down into
the
Mariana
Trench?



Turn to Activity Page 13.2 (workbook page 121 – 123)

NAME: _____
DATE: _____

13.2 TAKE-HOME

Excerpt from "Earth's Undersea World"


Imagine you are a geologist searching for a hydrothermal vent as you read the following excerpt. Answer the questions following the excerpt in complete sentences.

Hydrothermal Vents

At first glance, it looks like a fire. Black smoke is billowing up from a spot in the ridge. It's not smoke, though. It's searing hot, dark water pushing out of cracks in the rock. It's a **hydrothermal vent**.

Hydrothermal vents are a bit like geysers in Yellowstone National Park. These deep-sea geysers are much, much hotter than anything on land. Hydrothermal vents form as seawater sinks down through cracks in the oceanic crust. As it nears the magma lying below the crust, the water is heated to incredibly high temperatures. It can reach an astonishing 750°F. The water is so hot that it dissolves minerals from the surrounding basalt. The minerals become part of the hot liquid, like salt does when it's stirred into a glass of water.

As a hydrothermal vent, the super-heated, mineral-rich water comes rushing back up through cracks in the crust. It shoots out of the rock with the force of water blasting out of a fire hydrant. When hot vent water meets cold seawater, the dissolved minerals in vent water become solid again. They form tiny particles. The particles make the vent water look like dark smoke.



NAME: _____
DATE: _____


13.2 TAKE-HOME

1 Vents

Find
They hunt for
a. Hot, mineral-
rich water
slowly away from
the seafloor.
forms a plume,
particles that drift
up and sink.
seawater from a
vent locate a plume,
a vehicle. When
robot sends
signals.

s of hot, black,
s flow around many
vents are the largest
can grow as tall as
trees, with all-sized

hydrothermal vents



hydrothermal vent in the

Grade 5 (Core Knowledge Language Arts)

Core Knowledge Language Arts | Grade 5

Activity Book | Unit 5 **121**



Let's go back to our descriptive paragraphs...Remember our example paragraph?

My name is Leah Lava, and I feel as hot as the sun! That's probably because I'm lava shooting down the side of an active volcano. I hear a deep rumble behind me as rocks and debris spew out of the mountain, and I wonder if the plume is still reaching toward the blackening sky like an opening umbrella. As soon as I feel the air touch me, I begin to cool down. Thank goodness! It was getting awfully hot. As I cool, I harden, forming igneous rock. After all that hot activity, I like feeling wind blow across me and rain rinse my body. Sometimes I get uncomfortable in the scorching sun or the freezing cold, but I feel calm listening to the birds chirping around me and tasting the water that trickles over me.

What are the 3 types of sentences?

topic sentence, detail sentences,
concluding sentence

What literary device or tool is being used in the paragraph?

personification

Now take a
look at your
completed
Activity Page
12.3!

NAME: _____ DATE: _____

12.3 **Writing** **12.3** **the sentences below**

Planning a Descriptive Paragraph
Complete the following chart to plan for writing your descriptive paragraph about a rock or other item in the rock cycle.

1. Read the following chart listing rocks and names 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
igneous	partially melted rock that is cooled from a very hot liquid
sedimentary	formed from fragments of other rocks and minerals that are buried, compacted, and cemented together. They are often found in layers.
metamorphic	formed from other rocks that are changed by heat and pressure into new rocks.
igneous	formed from molten rock that is cooled from a very hot liquid
metamorphic	formed from other rocks that are changed by heat and pressure into new rocks.
igneous	formed from molten rock that is cooled from a very hot liquid
metamorphic	formed from other rocks that are changed by heat and pressure into new rocks.

Paragraph Topic: _____

2. Give the item a first and last name. Consider using the rock or item name as part of the name. For example, you might say "Igneous Rock" or "Metamorphic Rock".



Time to create a draft of your descriptive paragraph.

- Remember your 3 types of sentences: topic, detail, and conclusion
- Make sure you are using personification
- Try using alliteration or a simile
- Be creative!

Clear
pictures for
reader

Humor
(funny)

Complete
sentences

Capitals and
punctuation

Remember to turn in the draft of your
descriptive paragraph

