

What are some of the pieces of evidence that you wrote in your chart?



Similar fossils and rock layers were found on different continents that are now separated by great distances across large oceans.

Fossils of the ancient fern *Glossopteris* were found in similar rock layers in Africa, India, Australia, and South America.

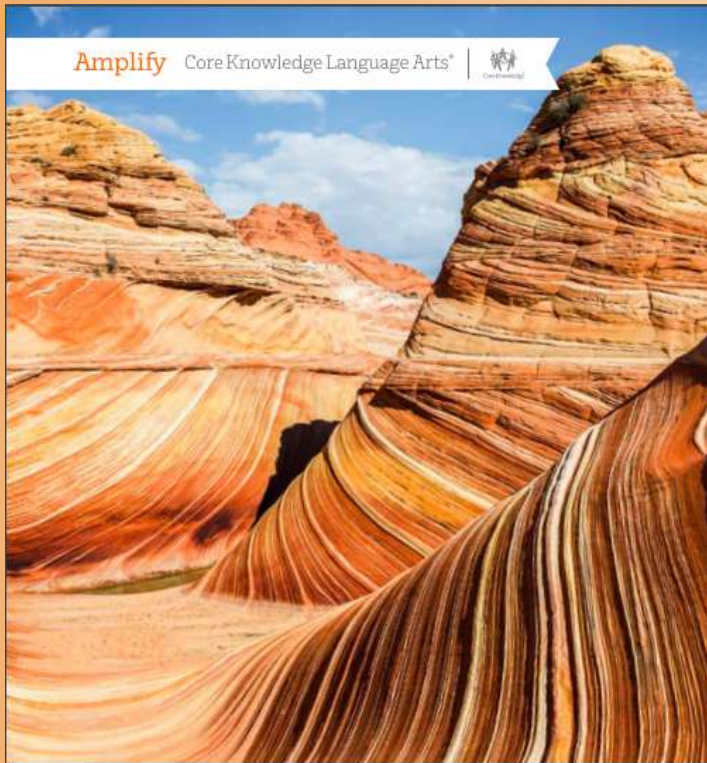
Fossils of the ancient fern *Glossopeteris* were found in ice-covered Antarctica, which today does not have a climate warm enough for this fern to grow.

Rock formations along the northern and eastern coasts of South America match those along Africa's western coast.

Fossils of the ancient reptile *Lystrosaurus* were found in southern Africa and India.

Fossils of the ancient reptile *Cynognathus* were found in South America and Africa.

Deposits of coal and salt in eastern North America are very similar to those in Southern Europe.



# We are going to be reading chapter 2: Earth's Layers and Moving Plates

Before we start reading, let's go over  
some vocabulary first! Turn to Activity  
page 2.1 (workbook page 21)

Unit 5

Reader

Grade 4

**Geology: The Changing Earth**



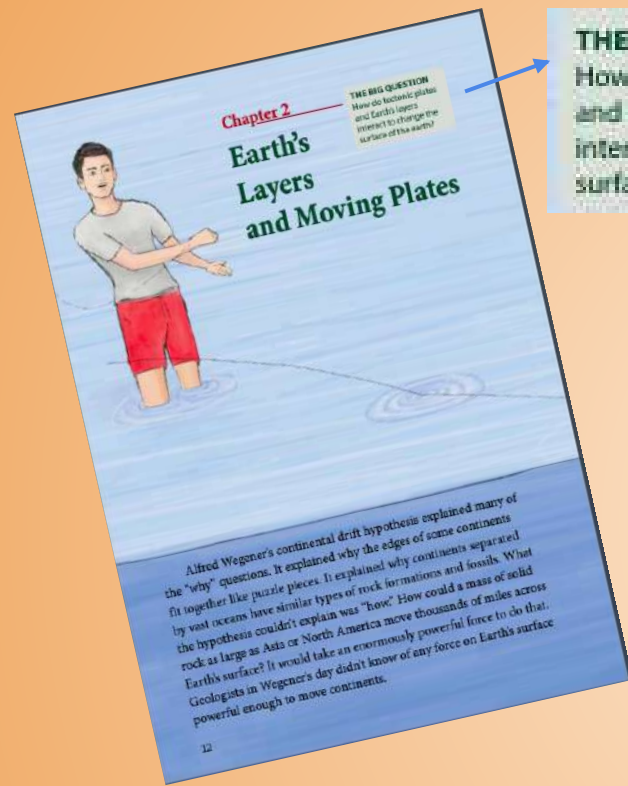
## Vocabulary for “Earth’s Layers and Moving Plates”

1. **seismic wave**, *n.* a surge of energy traveling out from an earthquake’s source through the earth (**seismic waves**) (13)
2. **pressure**, *n.* the weight or force produced when something presses or pushes against something else (15)
3. **basalt**, *n.* heavy, dense rock formed from cooled, hardened lava (16)
4. **magma**, *n.* melted rock in Earth’s mantle (17)
5. **lava**, *n.* red-hot melted rock that has erupted above Earth’s crust from deep underground (17)
6. **basin**, *n.* a large area in the earth that is lower than the area around it (**basins**) (17)
7. **ocean trench**, *n.* a narrow, extremely deep valley formed when the seafloor dips down as one tectonic plate slides under another (**ocean trenches**) (17)
8. **theory**, *n.* an explanation for why something happens based on evidence (17)
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 (17)
10. **exert**, *v.* to cause a force to be felt or have an effect (**exerts**) (19)

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

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





**THE BIG QUESTION**  
How do tectonic plates and Earth's layers interact to change the surface of the earth?

Turn to page 12 in your reader and follow along as we listen to the chapter read aloud. We are going to be completing a Note Taking Sheet as we read.

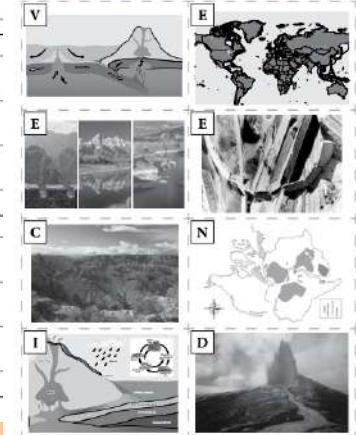




Explain how scientists figured out the theory of plate tectonics? What evidence were they using?

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.	<div style="border: 1px dashed black; width: 150px; height: 100px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div>	
	Tectonic plates move very slowly due to the heat and pressure in Earth's mantle.	<div style="border: 1px dashed black; width: 150px; height: 100px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div>	
	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.	<div style="border: 1px dashed black; width: 150px; height: 100px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; width: 150px; height: 15px; margin-bottom: 5px;"></div>	

Evidence of Changes on Earth



Now let's complete row 2 of our Evidence Collector's Chart.



# Word Work: crust

## Text Example:

“How can you discover  
what lies beneath  
Earth ’s crust?”

## Geology Meaning:

the outermost layer of  
Earth, a rocky surface

## Part of speech:

noun

## Alternate Meaning:

the hard outer layer  
that covers something

Similar meaning as the  
geology meaning, but  
not exactly the same



Meaning 1 – Earth's  
outermost layer; rocky  
surface

Meaning 2 – hard outer  
layer that covers  
something

OR



# COMMAS

A comma is a punctuation mark used to separate words or numbers in dates and addresses, as well as a series of words in a sentence.





COMMAS in

Dates

His little sister was born on January 2 1992.

The Declaration of Independence is dated  
July 4 1776.



# COMMAS in Addresses

I visited my relatives in Birmingham Alabama.

The address for the White House is:

The White House

1600 Pennsylvania Avenue NW

Washington DC 20500



# COMMAS in a Series

Tectonic plates can move apart collide or slide sideways past one another.

We went to a museum a park a theater and a restaurant on our trip.



# Time to practice!

NAME: \_\_\_\_\_ 2.2 TAKE-HOME  
DATE: \_\_\_\_\_

**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 Mount Pleasant, Maine.
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 dad 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.

Core Knowledge Language Arts | Grade 4  
Activity Book | Unit 5 23

Use correct capitalization  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
on.  
\_\_\_\_\_  
\_\_\_\_\_  
g:  
Items in a series

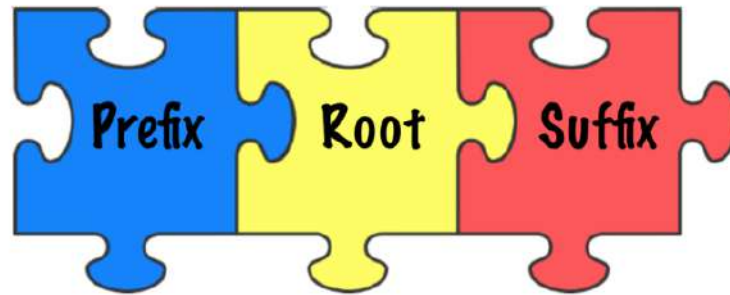
Turn to Activity  
Page 2.2  
(workbook page  
23) We will do  
a couple  
together.

The rest is  
homework!



# Suffixes

A suffix is a syllable or syllables placed at the end of a root word to change the word's meaning and/or to form a different word.



# Suffix –ly

–ly meaning in a \_\_\_\_\_ way

If –ly is added to the end of an adjective, the word becomes an adverb which describes a verb.

For example:

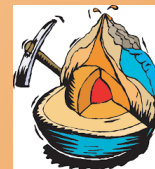
- careful means paying attention to avoid risks, mistakes, or accidents
- carefully means in a careful way or a way that involves paying attention to avoid risks, mistakes, or accidents





# Suffix –ly

Adjective	With –ly suffix
speedy	speedily
accidental	accidentally
loud	loudly
easy	
temporary	temporarily



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

---

---

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

NAME: \_\_\_\_\_

2.3

WAC-HOME

DATE: \_\_\_\_\_

**-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 and her thermos.
3. I was \_\_\_\_\_ not to disturb him when 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.

Complete  
Activity Page  
2.3 for  
homework.



# Similes

Let's use our knowledge of similes to complete the chart on Activity Page 2.4 (workbook page 27)

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**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 plunging into water.</i>		
16	<i>The rift was like a seam in a pant leg, where two pieces of fabric come together.</i>		

Open Knowledge Language Arts | Grade 4

Activity Book | UNITS 27



Remember to complete Activity Pages 2.2 and 2.3 for homework!