



Lesson Plan: Earth - Inside and Out

Grade Level: 4

Subject: Earth Science

Duration: 45–60

NGSS 4-ESS2-2: Analyze and interpret data from maps to describe patterns of Earth's features.

Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** the four main layers of the Earth: crust, mantle, outer core, and inner core
- **Describe** the unique physical and chemical characteristics of each layer, including state of matter
- **Explain** how internal geological processes like plate tectonics shape external features like



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[guide-science-grade-4-earth-inside-and-out.pdf](#)

- Activity Lesson: Earth Inside Out (<https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-4-earth-inside-and-out-earth-inside-out-4.pdf>)
- Practice Worksheet 1 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-earth-inside-and-out-1.pdf>)
- Practice Worksheet 2 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-earth-inside-and-out-2.pdf>)
- Assessment Worksheet (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-earth-inside-and-out-0.pdf>)



- Vocabulary Set 1 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-earth-inside-and-out-1.pdf>)

Lesson Procedure

Step 1: Introduction (5 minutes)

- Hook students by asking: 'If you could dig a hole straight to the center of the Earth, what do you think you would see and feel?'
- Discuss the idea that the Earth is not just a solid ball, but has distinct layers like a peach or an onion.
- Introduce the topic using the main Earth - Inside and Out resource page.

Step 2: Direct Instruction (10 minutes)

- Use the Study Guide to define and describe the Crust, Mantle, Outer Core, and Inner Core.



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(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-earth-inside-and-out-1.pdf>)

- Students use Practice Worksheet 2 to identify geological features shaped by internal processes. (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-earth-inside-and-out-2.pdf>)

Step 5: Assessment (5 minutes)



- Worksheet 2 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-earth-inside-and-out-2.pdf>)
- Worksheet 3 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-earth-inside-and-out-3.pdf>)
- Vocabulary Set 1 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-earth-inside-and-out-1.pdf>)
- Vocabulary Set 2 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-earth-inside-and-out-2.pdf>)
- Vocabulary Set 3 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-earth-inside-and-out-3.pdf>)
- Vocabulary Set 4 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-earth-inside-and-out-4.pdf>)
- Vocabulary Set 5 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-earth-inside-and-out-5.pdf>)
- Vocabulary Set 6 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science->



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Name _____ Class _____ Date _____

Inside the Earth

Earth is made up of **3 main layers**.

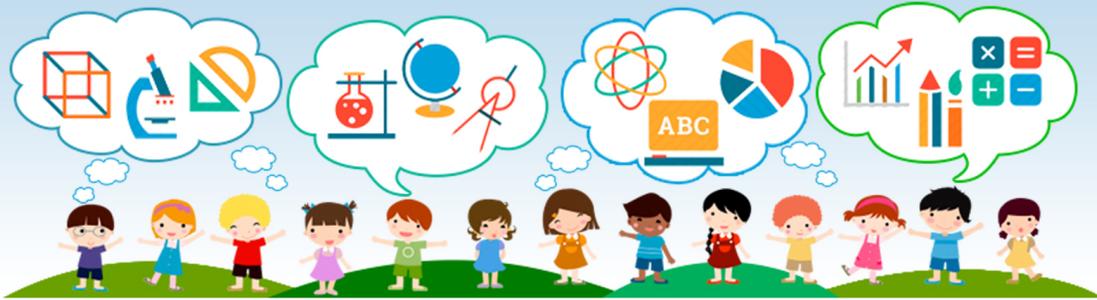
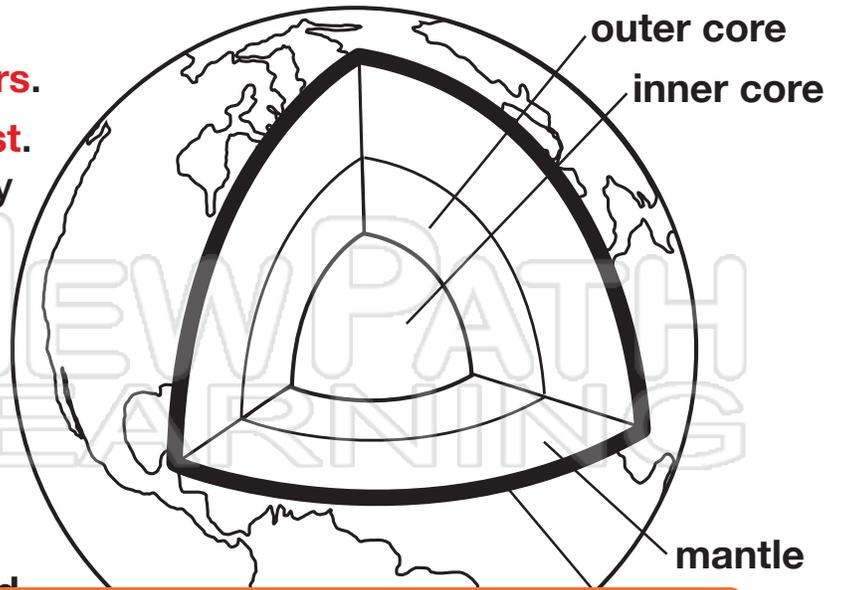
The outer layer is called the **crust**.

Earth's **crust** is made up of many different rocks.

The layer beneath the crust is called the **mantle**. The **mantle** is made of igneous and metamorphic rocks.

The Earth has an **inner** and **outer** core. The **inner core** is packed tightly so it's mostly solid.

The **outer** core is made of molten iron and nickel.



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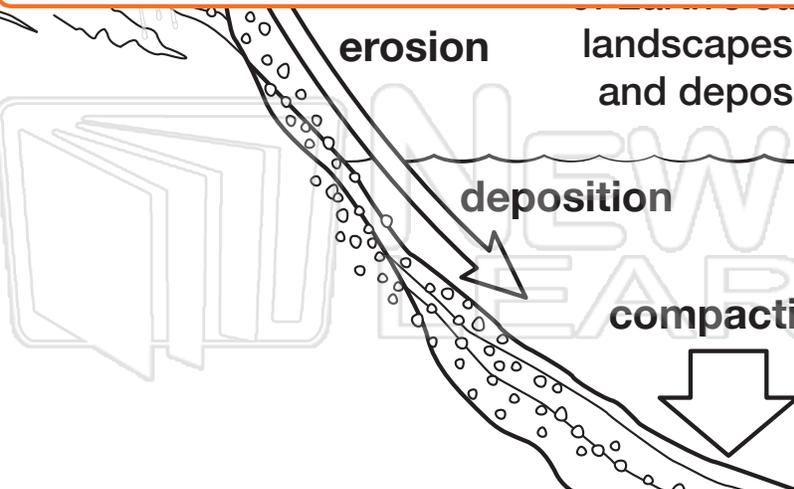
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erosion

landscapes can be changed by erosion and deposition.

deposition

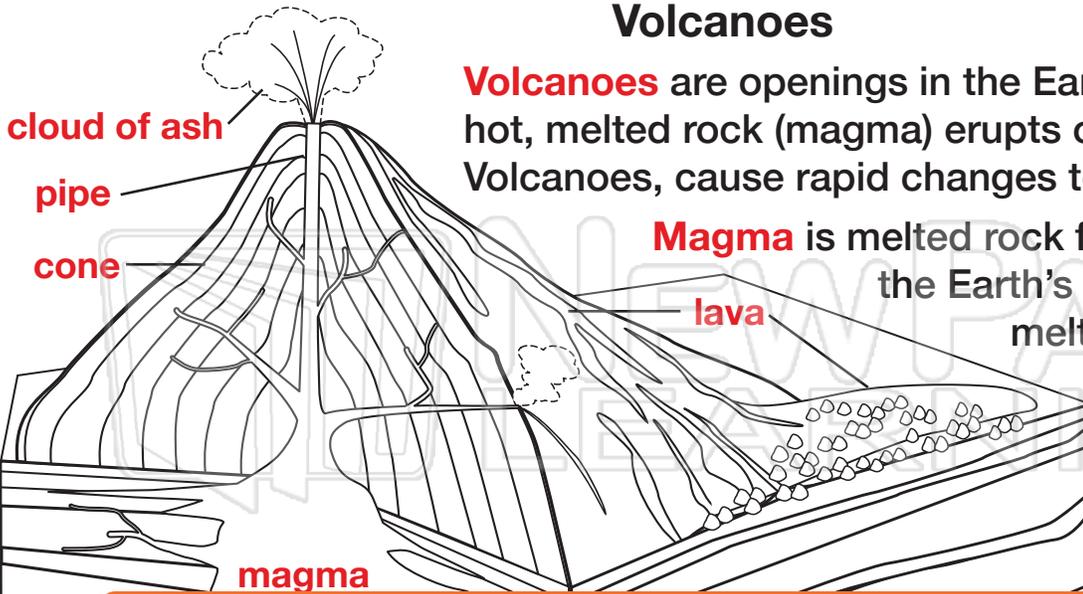
compaction





Name _____ Class _____ Date _____

Volcanoes



Volcanoes are openings in the Earth's crust where hot, melted rock (magma) erupts onto the surface. Volcanoes, cause rapid changes to Earth's surface.

Magma is melted rock found **beneath** the Earth's surface. **Lava** is melted rock that comes **above** the Earth's surface.

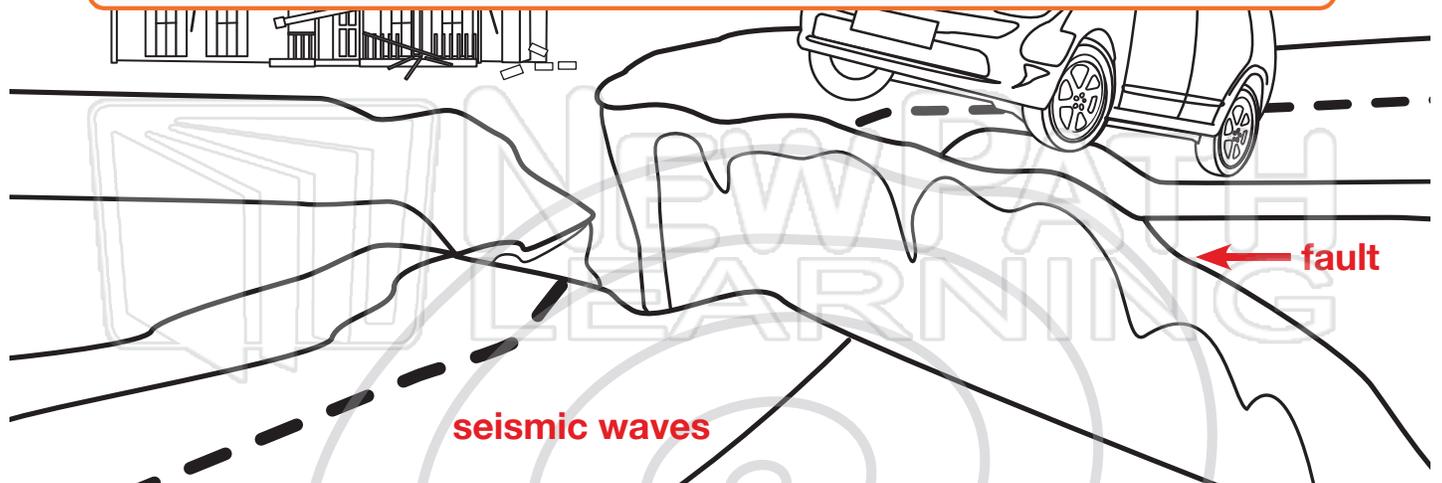


Earth is a s
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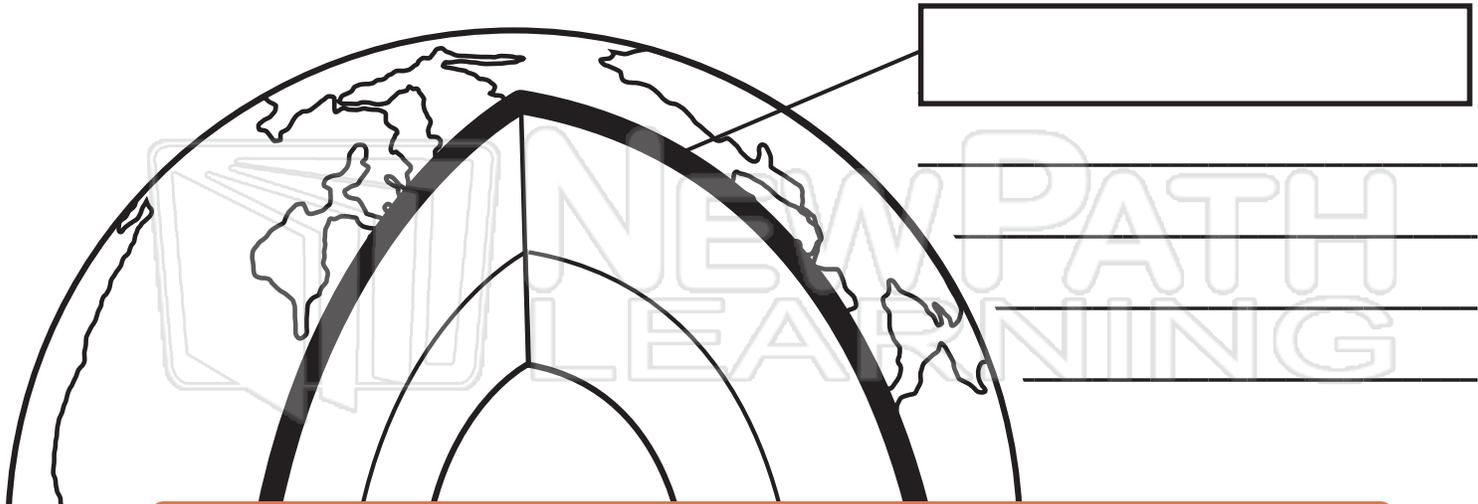




Earth – Inside & Out

Name _____ Class _____ Date _____

Earth has **3 main layers**. Name them and describe each.



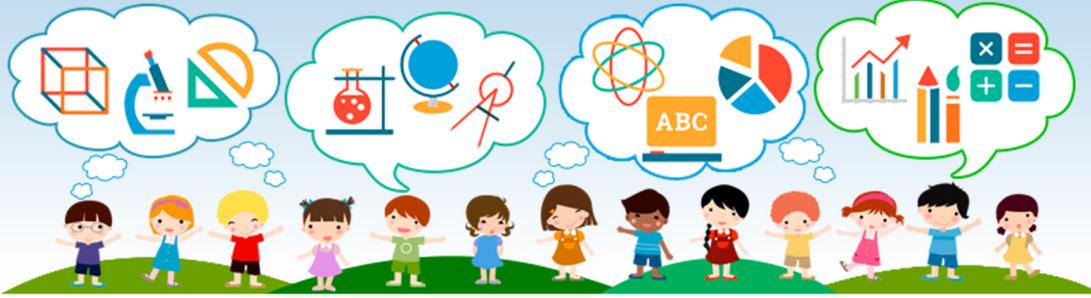
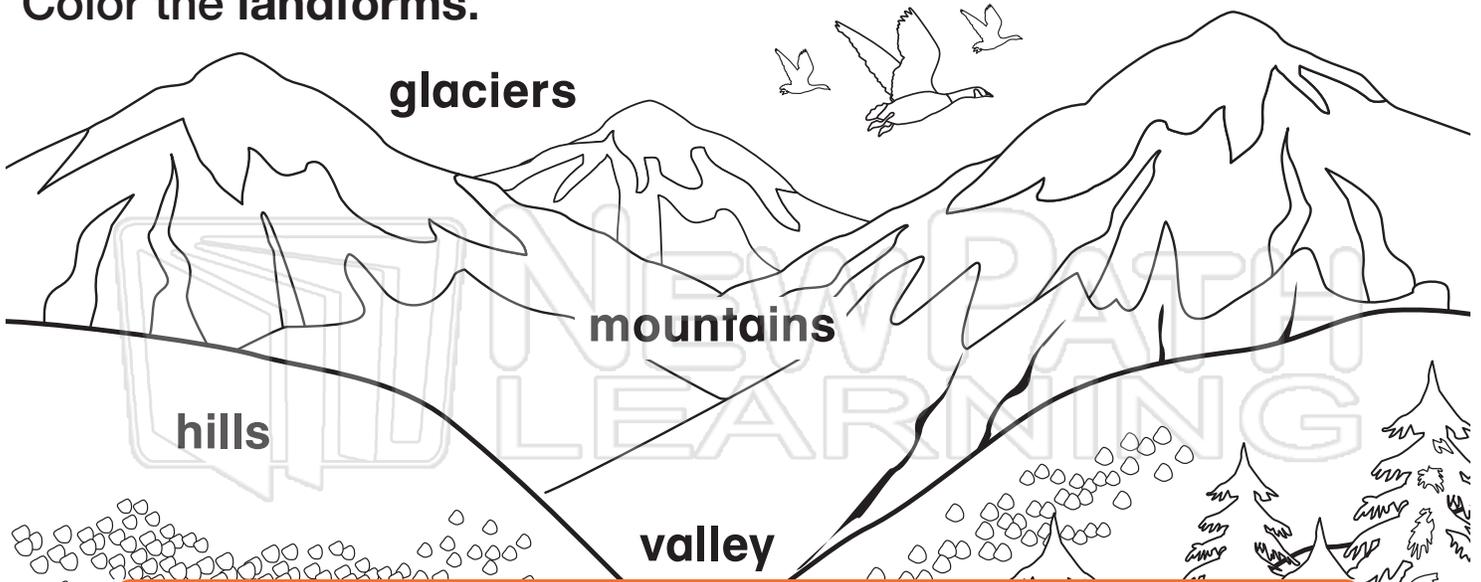
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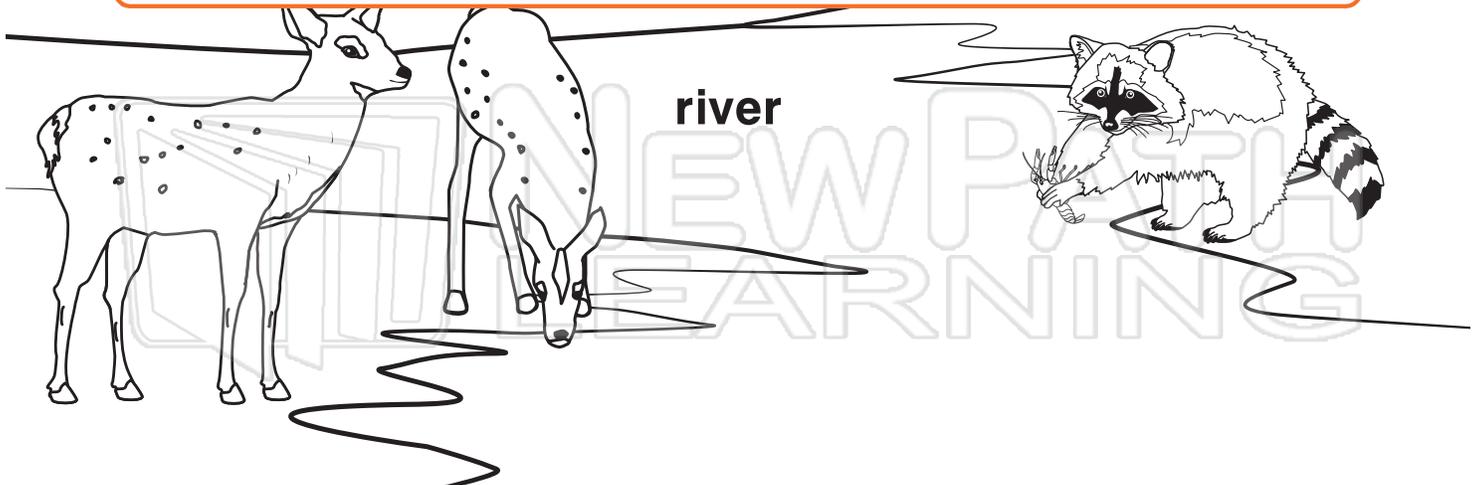
Name _____ Class _____ Date _____

Color the landforms.



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Earth – Inside & Out

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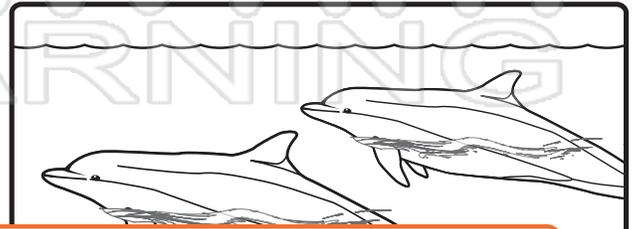
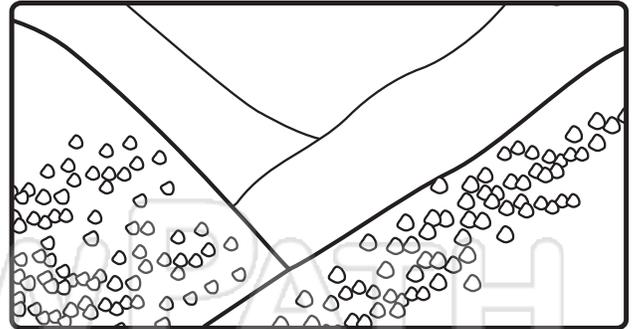
Name _____ Class _____ Date _____

Match each landform to a picture.

ocean



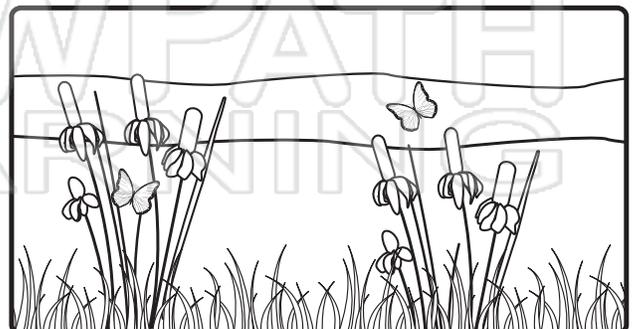
valley



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lake





Answer Key

Earth has **3 main layers**. Name them and describe each.

crust

The outer layer of Earth.
It's made up of many
different kinds of
rocks.

inner core

Most inner layer of Earth.
It's very tightly packed
and solid.

outer core

Inner layer of Earth
beneath the mantle.
It's made of very hot,
thick liquid.

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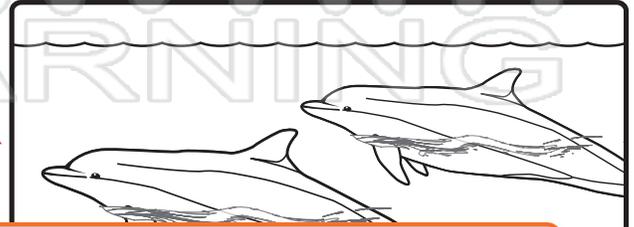
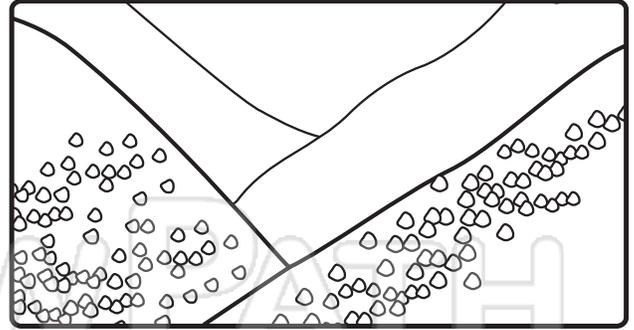
Answer Key

Match each landform to a picture.

ocean



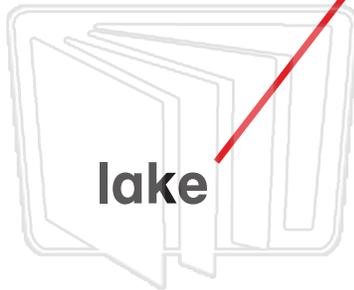
valley



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lake





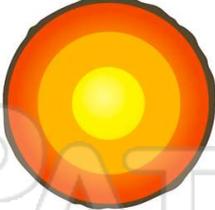
Name _____ Class _____ Date _____

1 **Earth** is made up of **three** main layers: _____.



A crust, mantle, and core
B crust, mantle, and sediment
C mantle, core, and lava
D crust, core, and magma

2 What is the **innermost layer** of the earth?



A magma
B core
C mantle
D crust

3 The _____ is packed tightly so it is mostly **solid**.



A lava
B magma
C outer core

4 What is the **outer core** of the earth made up of?



A hot, watery liquid
B cool, solid liquid



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A loam **C** humans
B soil **D** mulch



C the temperature in that area
D how cold it gets in that area



9 What does **all soil** contain?



A air and water only
B humus and air only
C pieces of weathered rock, humus, air, and water
D loam

10 Soil is **extremely important**. Which sentence supports this fact?



A Animals need soil.
B Soil keeps plants warm.
C Soil can be broken down.
D Soil supports all life on earth.



Name _____ Class _____ Date _____

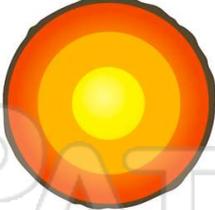
1 **Earth** is made up of **three** main layers: _____.



A crust, mantle, and core
B crust, mantle, and sediment
C mantle, core, and lava
D crust, core, and magma

(A)

2 What is the **innermost layer** of the earth?



A magma
B core
C mantle
D crust

(B)

3 The _____ is packed tightly so it is mostly **solid**.



A lava
B magma
C outer core

(D)

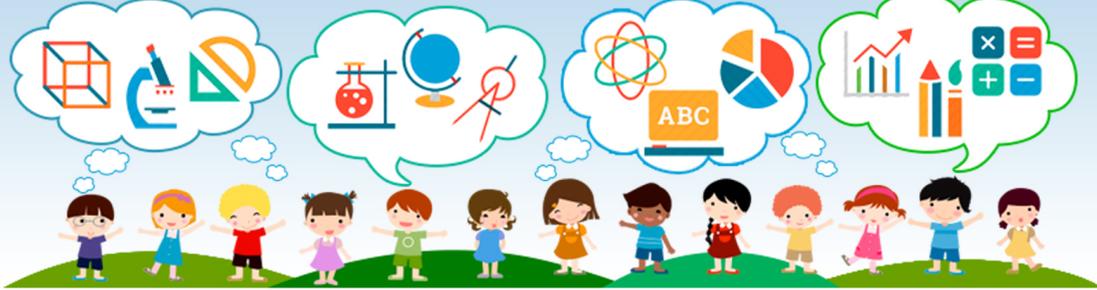
4 What is the **outer core** of the earth made up of?



A hot, watery liquid
B cool, solid liquid

(C)

5



(C)

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(B)

A loam **C** humans
B soil **D** mulch



C the temperature in that area
D how cold it gets in that area



9 What does **all soil** contain?



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B humus and air only
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D loam

(C)

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(D)



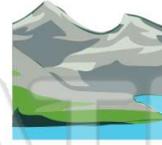
Name _____ Class _____ Date _____

1 The **earth's surface** _____ because of wind, water, temperature changes, and living things.

- A changes constantly
- B never changes
- C remains the same
- D changes rarely

2 The **earth's surface** has many different solid features that have **formed naturally** on top of the earth's crust and bodies of water. These shapes and features are known as _____.

- A environments
- B landforms
- C ecosystems
- D landslides



3 Which of the following is an **example** of a **landform**?

- A rock
- B soil
- C mountain



4 **Landforms** change constantly due to _____, which is the process of **rocks breaking into smaller pieces**.

- A weathering
- B precipitation



5



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- C heat weathering
- D rapid weathering



- B Ice takes up less space than water.
- C Ice takes up more space than water.
- D Water is heavier than ice.

9

How can plants **growing** in a **crack of a rock** cause physical weathering?

- A Their leaves can put pressure on rocks.
- B Plants can cause rocks to shrink.
- C Roots can grow larger causing the rock to break.
- D Plants can add a lot of weight to the rock.



10

One type of weathering called _____ refers to when **chemicals cause rocks to change** into different materials.

- A physical weathering
- B chemical weathering
- C acid weathering
- D base weathering



Name _____ Class _____ Date _____

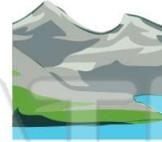
1 The **earth's surface** _____ because of wind, water, temperature changes, and living things.

- A changes constantly
- B never changes
- C remains the same
- D changes rarely

(A)

2 The **earth's surface** has many different solid features that have **formed naturally** on top of the earth's crust and bodies of water. These shapes and features are known as _____.

- A environments
- B landforms
- C ecosystems
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(B)

3 Which of the following is an **example** of a **landform**?

- A rock
- B soil
- C mountain



(C)

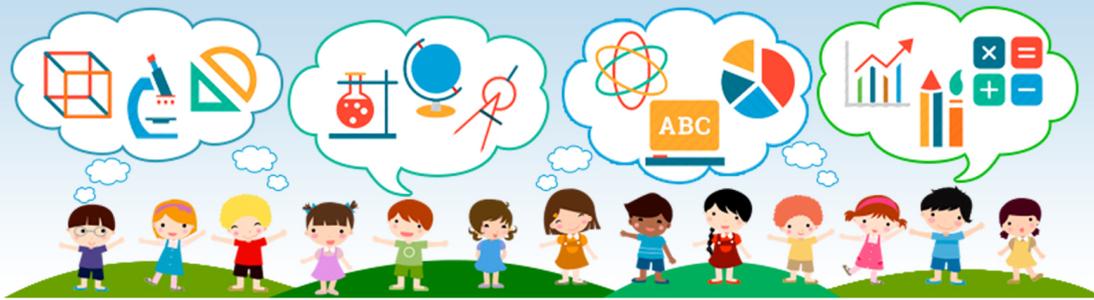
4 **Landforms** change constantly due to _____, which is the process of **rocks breaking into smaller pieces**.

- A weathering
- B precipitation



(A)

5



(B)

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(C)

- C heat weathering
- D rapid weathering



- B Ice takes up less space than water.
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9

How can plants **growing** in a **crack of a rock** cause physical weathering?

- A Their leaves can put pressure on rocks.
- B Plants can cause rocks to shrink.
- C Roots can grow larger causing the rock to break.
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(C)

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- A physical weathering
- B chemical weathering
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- D base weathering

(B)



Name _____ Class _____ Date _____

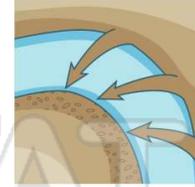
1 What causes **erosion**?

- A only wind
- B only rain
- C large mountains
- D water, wind, gravity, and glaciers



2 **Deposition** is the _____ of pieces of **sediment** on the earth's **surface**.

- A rising
- B swirling
- C laying down
- D blowing



3 _____ are the **rapid downhill movement** of large amounts of rock and soil.

- A Landslides
- B Tornadoes

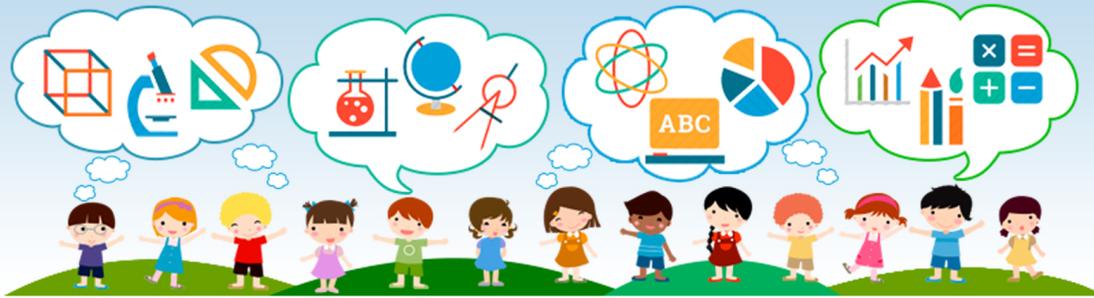


4 Some things that occur in nature cause rapid changes to the earth's surface. Which is an example of **nature causing a rapid change**?

- A fossilization
- B erosion



5



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- C Large volcanoes
- D Molten volcanoes



- D craters



9

An **earthquake** is a **sudden shift** in the **earth's crust** which causes the ground to shake and vibrate **violently**. Earthquakes often occur near faults and cause a _____ change in the earth's surface.

- A slow
- B rapid
- C constant
- D continuous

10

A **seismic wave** is a wave of **energy** that travels **through the earth**, most often as the result of a(n) _____.

- A volcano
- B earthquake
- C hurricane
- D tornado





Name _____ Class _____ Date _____

1 What causes **erosion**?

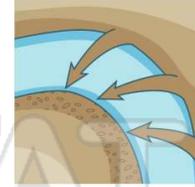
- A only wind
- B only rain
- C large mountains
- D water, wind, gravity, and glaciers



(D)

2 **Deposition** is the _____ of pieces of **sediment** on the earth's **surface**.

- A rising
- B swirling
- C laying down
- D blowing



(C)

3 _____ are the **rapid downhill movement** of large amounts of rock and soil.

- A Landslides
- B Tornadoes



(A)

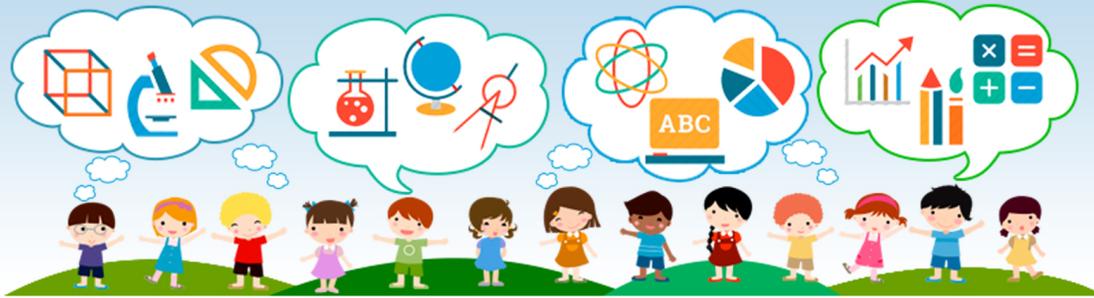
4 Some things that occur in nature cause rapid changes to the earth's surface. Which is an example of **nature causing a rapid change**?

- A fossilization
- B erosion



(C)

5



(D)

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(A)

- C Large volcanoes
- D Molten volcanoes



- D craters



9

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- A slow
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- D continuous

(B)

10

A **seismic wave** is a wave of **energy** that travels **through the earth**, most often as the result of a(n) _____.

- A volcano
- B earthquake
- C hurricane
- D tornado



(B)



Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Active transport

Alluvial fan

Acid rain

Alpine glacier

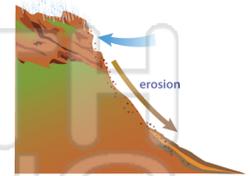
Aftershocks

Conduction

Erosion

Abrasion

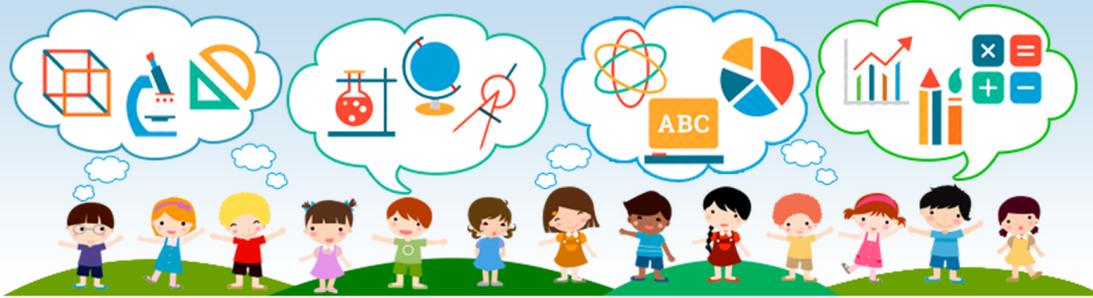
1. _____ - a process by which weathered rock and soil is transported to a new location; the wearing away of the Earth's surface by rain, wind, snow and ice



2. _____ - the transfer of heat energy from the contact of one object to another



3. _____
rock g



4. _____
chemi

5. _____
protei

6. _____
and oc

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7. _____ - a triangular deposit of sediment at the foot of a mountain or hill, where a river or stream empties into a flat, low-lying plain



8. _____ - a moving mass of ice that forms at high altitudes on mountains; also called valley glaciers





Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Active transport

Alluvial fan

Acid rain

Alpine glacier

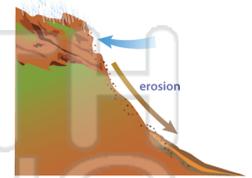
Aftershocks

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Abrasion

1. erosion - a process by which weathered rock and soil is transported to a new location; the wearing away of the Earth's surface by rain, wind, snow and ice



2. conduction - the transfer of heat energy from the contact of one object to another



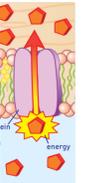
3. abrasion



4. acid weathering



5. active transport



6. aftershocks



7. alluvial fan - a triangular deposit of sediment at the foot of a mountain or hill, where a river or stream empties into a flat, low-lying plain



8. alpine glacier - a moving mass of ice that forms at high altitudes on mountains; also called valley glaciers



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