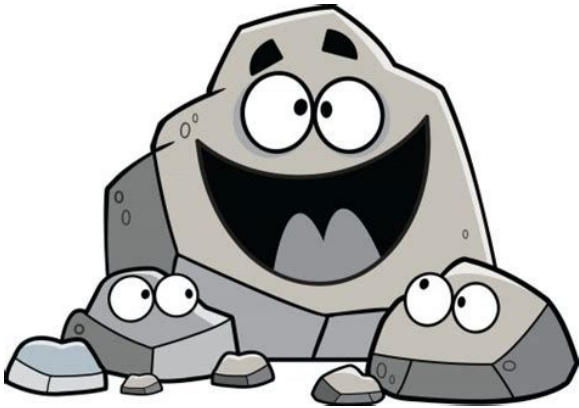
Inspiring Greatness
ISD
INDEPENDENCE SCHOOL DISTRICT

7th grade Science Virtual Learning

The Rock Cycle Review

May 14th, 2020



7th grade EARTH SCIENCE

Lesson: May 14th, 2020

LEARNING GOAL:

I can describe the processes of the rock cycle.

Bell Ringer Activity

1. **Begin your review by taking this short quiz.**

Quizziz: The Rock Cycle

PRACTICE

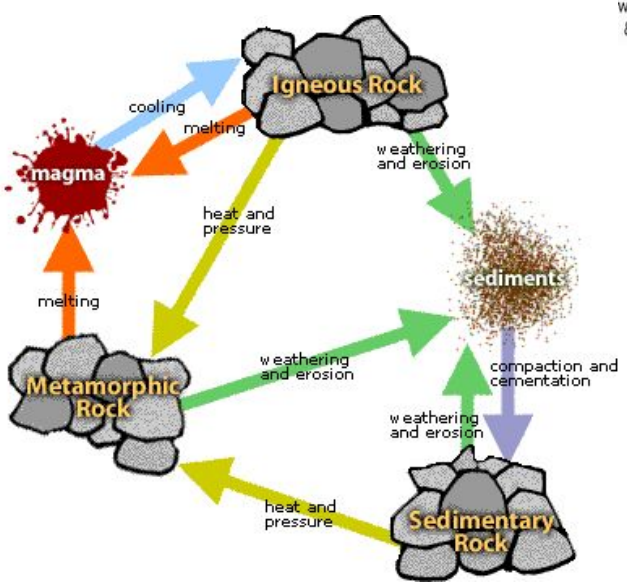
1. On your paper create a model of the rock cycle (from memory).

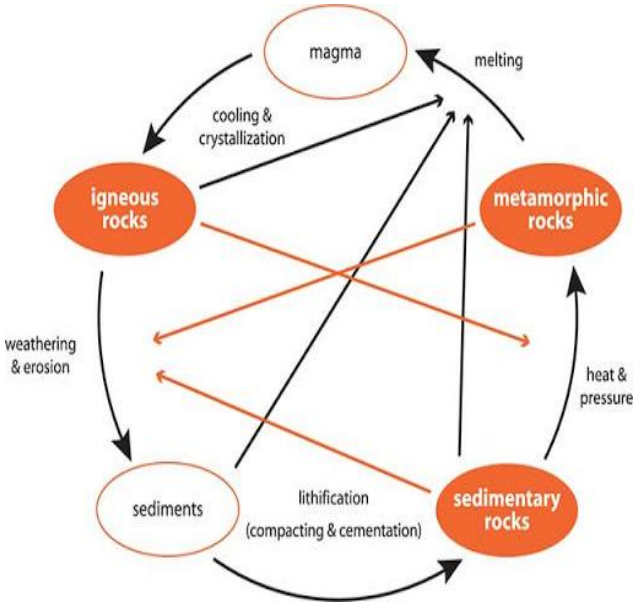
Watch this short film about the rock cycle

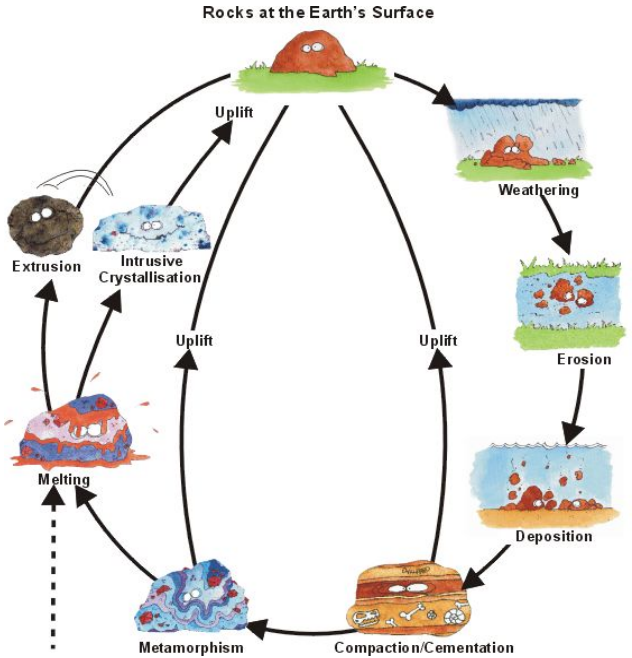
2. Now create a model of the rock cycle after watching the film.

3. Write a short summary regarding how your model changed before and after watching the film.

Possible Answers







1. Read all 5 steps.

Read then Model

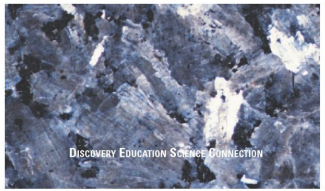
3. In each step create a symbol that models the process.(Answers vary)

2. Recreate the chart below

Rocks can be made over again and again, going back and forth from one type to another in a never-ending process called the rock cycle.

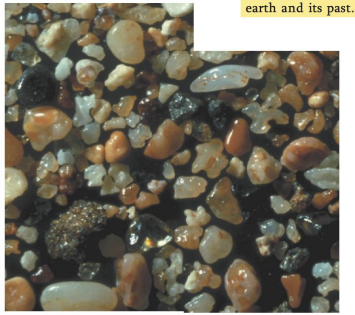
Step 1

Minerals are heated to extremely high temperatures and then cooled, forming igneous rocks. When magma cools inside the earth, it forms igneous rocks such as granite. These are called intrusive igneous rocks. And they're coarse-grained because they cool slowly. When lava cools at the earth's surface, it forms igneous rocks such as basalt—a rock with fine grains, because it cooled quickly.



Step 2

When rocks are exposed at the earth's surface, their mineral structure changes because they erode and break down into smaller grains. These grains are then transported through wind or water and deposited as sediments, such as sand and pebbles.



Step 3

Sediments are compacted and cemented over time, forming sedimentary rocks. You can usually find sedimentary rocks in and near riverbeds and streambeds. Sedimentary rocks sometimes contain fossils—traces of life—that can give scientists some information about the earth and its past.

Step 1 EXAMPLE

Step 2

Step 3

Step 4

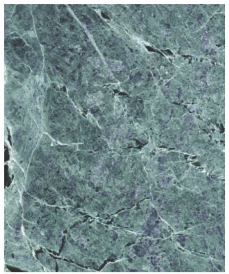
Step 5

Step 4

Igneous or sedimentary rocks that are heated or put under pressure can turn into metamorphic rocks. Some or all of the minerals in the original rocks are replaced, atom by atom, to form new minerals. Metamorphic rocks are often squished, twisted, smeared out, and folded from pressure, water, or heat.

Step 5

At higher temperatures, over time, metamorphic rocks may melt again. That changes the crystals of the rocks and creates igneous rocks. What happens then? Go back to Step 1 and repeat—forever.



Activity

HAWAIIAN HEAT The islands of Hawaii were formed when volcanic lava cooled to form igneous rocks. Use an encyclopedia or the Internet to make a timeline of how the islands of Hawaii formed. How has Hawaii's rock composition changed? What type of rocks are found in Hawaii today? Why do you think those rocks are found there? Keeping in mind what you've learned about the rock cycle, what could possibly happen to the igneous islands of Hawaii?

Discovery Education Science Connection

Compaction

Definition: The process by which sediments are pressed together under their own weight.

Example: Small pieces of sand and stone **compacted** together to form sedimentary rock.

Sedimentary Rock

Definition: A type of rock that forms when particles from other rocks or the remains of plants and animals are pressed and cemented together.

Example: **Sedimentary rocks** are formed by the lithification of layers of soft sediment into hard rock when pressure causes compaction of sediment.

Metamorphic Rock

Definition: A rock type that forms from an existing rock that is changed by heat, pressure or chemical reactions.

Example: Marble is a **metamorphic rock** formed by heat and pressure.

Igneous Rock

Definition: A type of rock that forms from the cooling of molten rock at or below the surface.

Example: **Igneous rocks**, which cool slowly, form intrusive rocks with large crystals.

Deposition

Definition: Process in which sediment is laid down in new locations.

Example: The river **deposited** tons of sediment into the estuary.

Erosion

Definition: The process by which water, ice, wind or gravity moves weathered particles of rock and soil.

Example: The hillside began to **erode** and fall into the sea from years of wind and rain battering it.

Weathering

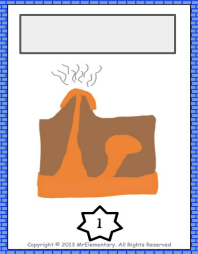
Definition: The chemical and physical processes that break down rock and other substances.

Example: Wind and rain worked together to **weather** the hillside and pieces began to fall off.

Cementation

Definition: The process by which dissolved minerals crystallize and glue particles of sediment together into one mass.

Example: Pieces of sediment were **cemented** together beneath the earth.



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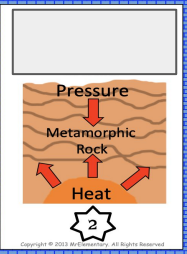

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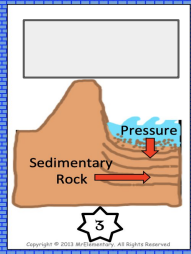

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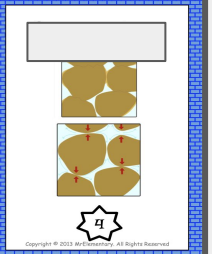

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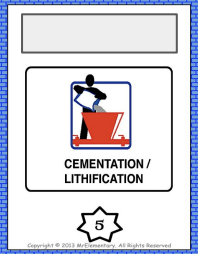

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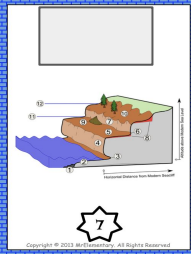

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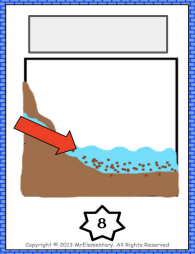

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VOCABULARY REFRESHER

1. **ON YOUR PAPER NUMBER FROM 1- 16**
2. **MATCH THE DEFINITION WITH THE SYMBOL**

1.
2.
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16.

Answers on next slide

Magma

Definition: Molten, or hot liquefied rock, located deep below the Earth's surface is called magma.

Example: **Magma** boiled and bubbled beneath the earth's surface.

Intrusive Rock

Definition: Igneous rock layer formed when magma hardens beneath Earth's surface.

Example: Igneous rocks, which cool slowly, form **intrusive rocks** with large crystals.

Extrusive Rock

Definition: Igneous rock layer formed when lava flows onto Earth's surface and hardens.

Example: After the volcanic eruption the lava cooled to form an **extrusive rock** formation.

Rock Cycle

Definition: A series of processes on the surface and inside earth that slowly change rock from one kind to another.

Example: Studying the **rock cycle** is the best way to learn how rocks are formed.

Heat + Pressure

Definition: Heat from the center of the earth along with all of the pressure pushing down form metamorphic rock.

Example: The combined **heat and pressure** within the earth are strong enough to change rock from one kind to another.

Volcano

Definition: A volcano is a vent, or opening, in the Earth's surface through which molten rock, gases, and ash erupt.

Example: When plates collide, the energy of movement can heat the rock until it melts into magma and erupts as a **volcano**.

Sediment

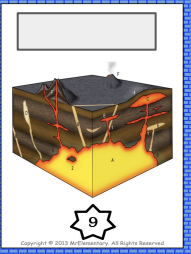
Definition: Small, solid pieces of materials that come from rocks or the remains of organisms.

Example: A bunch of **sediment** was washed into the river after the big storm.

Lava

Definition: When magma erupts from a volcano it turns to lava and hardens as it cools.

Example: Lava erupted from the **volcano** covering the valley below.



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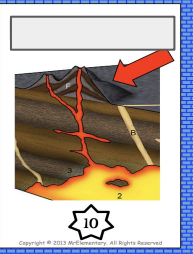

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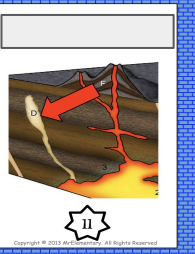

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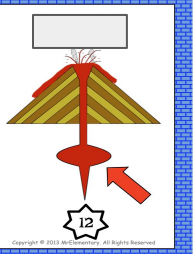

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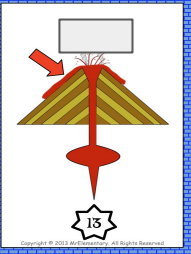

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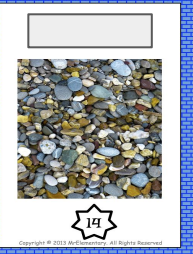

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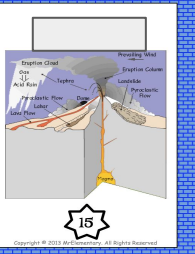

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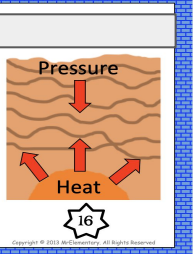

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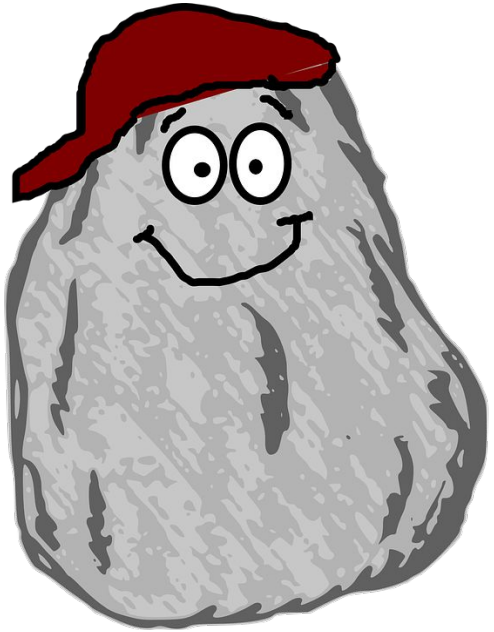
Answer Key

1. Igneous Rock
2. Metamorphic Rock
3. Sedimentary Rock
4. Compaction
5. Cementation
6. Weathering
7. Erosion
8. Deposition
9. Rock Cycle
10. Extrusive Rock
11. Intrusive Rock
12. Magma
13. Lava
14. Sediment
15. Volcano
16. Heat+Pressure



Check Your Learning

1. Study the table and select the best answer

Some processes in the rock cycle are listed below.

Rock Cycle Process

Process	Description
X	Rocks change by heat and pressure.
Y	Rocks melt and cool.
Z	Rocks weather and erode.

Which type of rock is <u>most likely</u> to form by Process Z?

Note: Think about which type of rock is formed from weathering and erosion.

- A magmatic rock
- B metamorphic
- C sedimentary
- D igneous

2. Study the table and select the best answer.

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Which type of process is most likely to form by process Y?

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3. Read the passage then study the pictures and select the two best answers.

On March 20, 1980, Mount St. Helens experienced a magnitude 4.2 earthquake; and, on March 27, steam venting started. By the end of April, the north side of the mountain had started to bulge. On May 18, a second earthquake, of magnitude 5.1, triggered a massive collapse of the north face of the mountain. The magma in St. Helens burst forth into a large-scale flow that flattened vegetation and buildings over 230 square miles around.

What geological impact did the 1980 eruption of Mt. St. Helen's (pictured below) have on the mountain and it's surrounding environment. Select all that apply.



- A Vegetation populations thrived.
- B The summit height was reduced by over 1,000ft.
- C Vegetation was flattened due to debris avalanche.
- D The eruption has no geological impacts.

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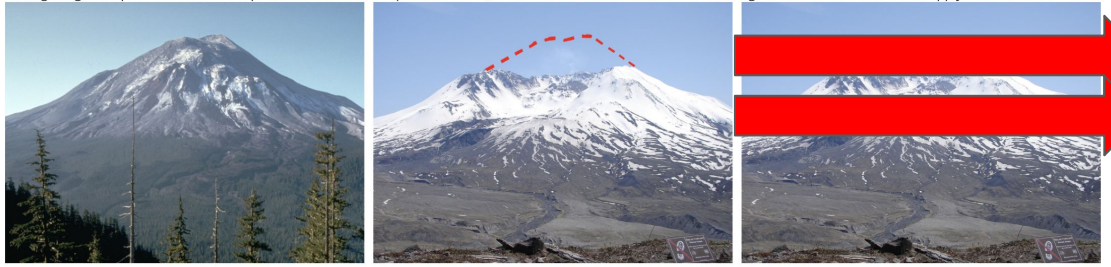

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