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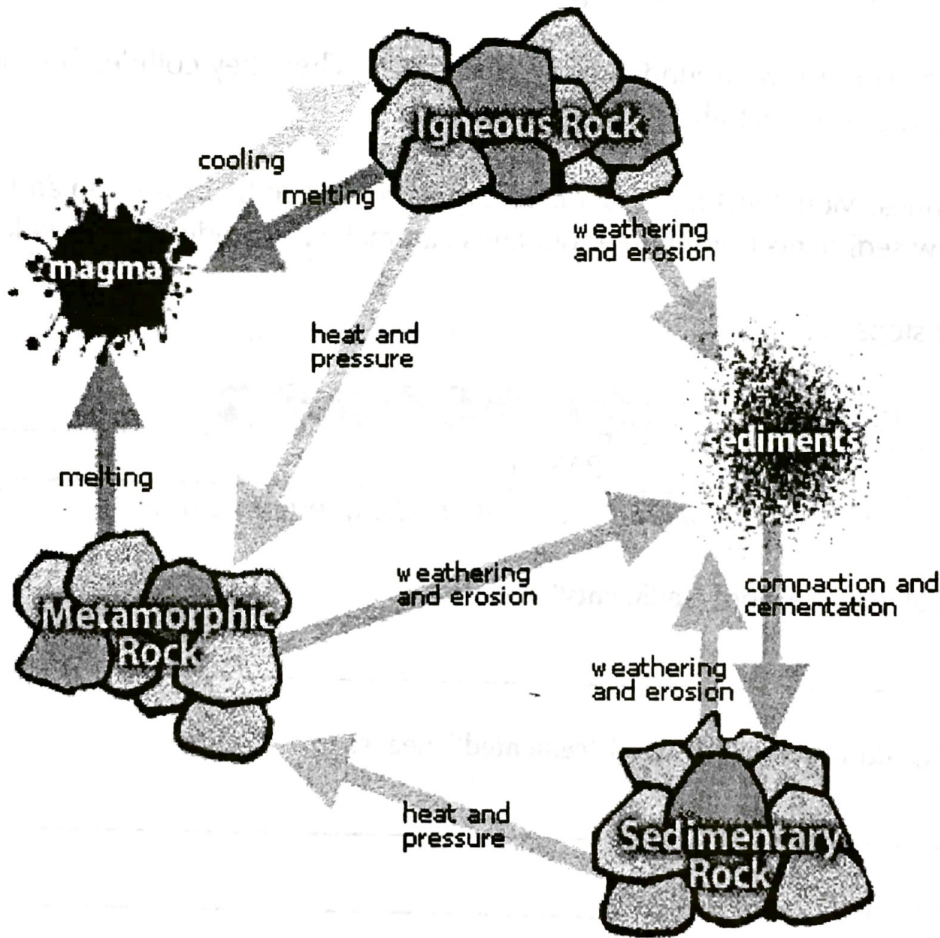
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THE ROCK CYCLE

The Rock Cycle is a group of changes. Igneous rock can change into sedimentary rock or into metamorphic rock. Sedimentary rock can change into metamorphic rock or into igneous rock. Metamorphic rock can change into igneous or sedimentary rock.

Igneous rock forms when magma cools and makes crystals. Magma is a hot liquid made of melted minerals. The minerals can form crystals when they cool. Igneous rock can form underground, where the magma cools slowly. Or, igneous rock can form above ground, where the magma cools quickly.



When it pours out on Earth's surface, magma is called lava. Yes, the same liquid rock matter that you see coming out of volcanoes.

On Earth's surface, wind and water can break rock into pieces. They can also carry rock pieces to another place. Usually, the rock pieces, called **sediments**, drop from the wind or water to make a layer. The layer can be buried under other layers of sediments. After a long time the sediments can be **cemented** together to make **sedimentary rock**. In this way, igneous rock can become sedimentary rock.

All rock can be heated. But where does the heat come from? Inside Earth there is heat from pressure (push your hands together very hard and feel the heat). There is heat from friction (rub your hands together and feel the heat). There is also heat from radioactive decay (the process that gives us nuclear power plants that make electricity).

So, what does the heat do to the rock? It bakes the rock.

Baked rock does not melt, but it does change. It forms crystals. If it has crystals already, it forms larger crystals. Because this rock changes, it is called **metamorphic**. Remember that a caterpillar changes to become a butterfly. That change is called metamorphosis. Metamorphosis can occur in rock when they are heated to 300 to 700 degrees Celsius.

When Earth's tectonic plates move around, they produce heat. When they collide, they build mountains and metamorphose (met-ah-MORE-foes) the rock.

The rock cycle continues. Mountains made of metamorphic rocks can be broken up and washed away by streams. New sediments from these mountains can make new sedimentary rock.

The rock cycle never stops.

I N D E P E N D E N T L Y

PART I

USING COMPLETE SENTENCES, answer the questions below.

1. In paragraph #4, what does the word "**sediments**" mean?

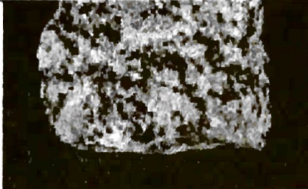


2. In paragraph #4, what do you think the word "**cemented**" means?

3. Explain how sedimentary rocks are formed: _____

4. Which type of rock changes? _____

5. _____ rock forms when magma (lava) cools off and forms crystals.

6. Where are 3 places that this passage says heat comes from in paragraph #5? _____

Rock	How does it form?	Picture
Igneous		
Sedimentary		
Metamorphic		

7. What is the most common type of rock found on the Earth's crust? _____

8. What 2 types of rock are most common beneath the Earth's crust?

_____ AND _____

NOTE:

*Weathering: to break down

*Lithification: to solidify and turn into a rock

PART II

1. Match the type of rock with how it is formed:

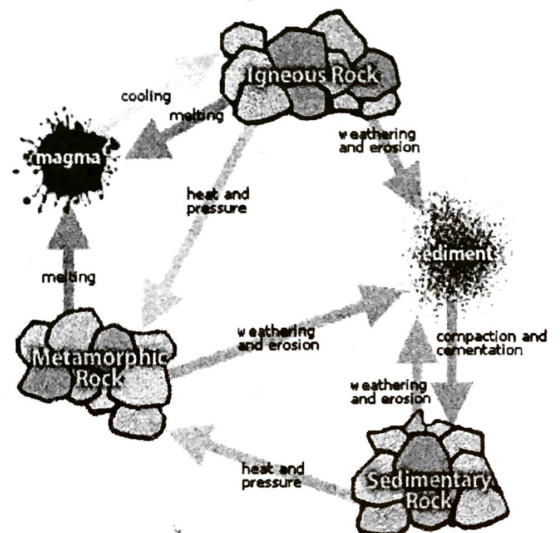
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|----------------------|--|
| _____ 1. Igneous | A. Changes by forming or making bigger crystals due to heat and pressure |
| _____ 2. Sedimentary | B. Forms when magma (lava) cools and makes crystals |
| _____ 3. Metamorphic | C. Forms when sediments become cemented together |

4. Weathering is when:

- A. Something solidifies into a rock
- B. Rocks are broken down into small sediments
- C. A rock turns into a mineral
- D. The sun bakes a rock

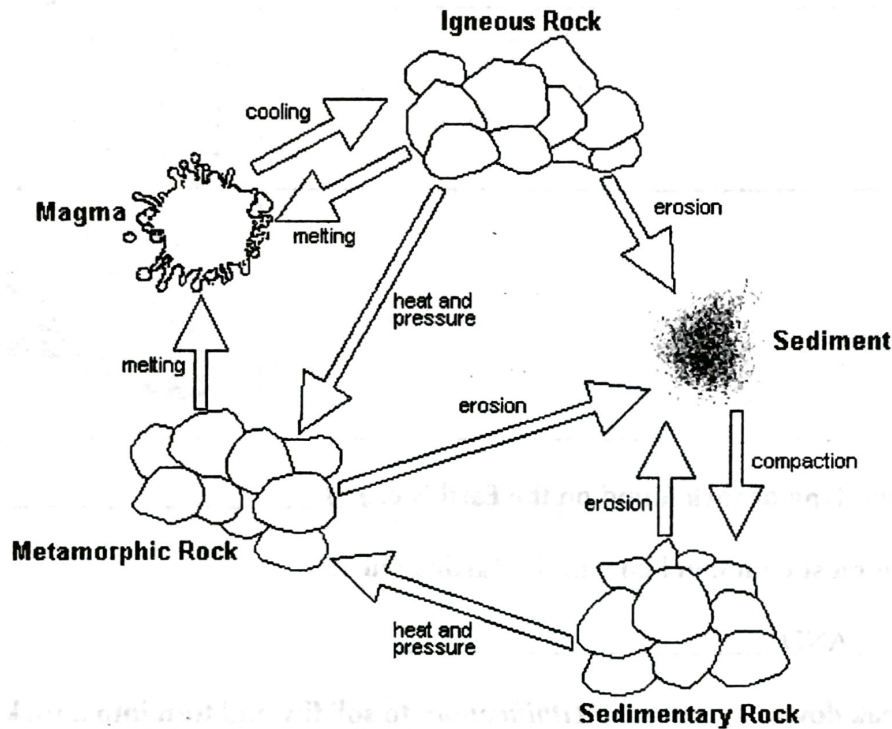
5. If Sedimentary rock undergoes enough heat and pressure to form crystals, which type of rock will it change into?

- A. Sedimentary
- B. Igneous
- C. Metamorphic
- D. All of the above



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The Rock Cycle Activity Page



Sediment is sandy. Color it yellow. It is made when igneous, metamorphic, or sedimentary rocks are worn into tiny pieces. Color the **erosion** arrows pointing to the sediment yellow too.

Sedimentary rock is like concrete. Color it brown. It is made when sediments are squeezed and cemented together. Color the **compaction** arrows pointing to the sedimentary rocks brown too. Sandstone and limestone are examples of sedimentary rocks.

Metamorphic rock has been changed. Color it purple. It is made when sedimentary or igneous rocks are changed by heat and pressure. Color all the **heat and pressure** arrows pointing to the metamorphic rock purple too. Quartzite and marble are examples of metamorphic rock.

Magma is liquid rock. Color it red. It is formed when igneous or metamorphic rocks get so hot that they melt. Color all the **melting** arrows pointing to the magma red too.

Igneous rock is cold magma. Color it blue. It is formed when magma gets cool enough to turn back into stone. Color the **cooling** arrow pointing to the igneous rocks blue too. Obsidian and basalt are examples of igneous rock.