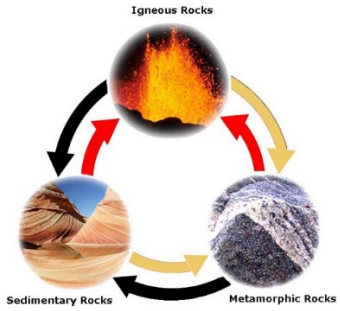
Name: _____ Class: _____ Date:_____ ____

Crayon Rock Cycle



Learner Outcomes:

- Identify evidence for the rock cycle, and use the rock cycle concept to interpret and explain the characteristics of particular rocks.
- Describe characteristics of the three main classes of rocks – igneous sedimentary and metamorphic – and describe evidence of their formation.

Key Terms:

Igneous rock	Compaction	Weathering
Metamorphic Rock	Sedimentation	Erosion
Sedimentary rock		Crystallization

Background Information:

The Rock Cycle is a never ending process. Igneous rock forms when magma or lava cools. Weathering breaks down rock into sediments that are compacted and cemented into sedimentary rock. Under great heat and pressure inside Earth's crust, rocks are changed into metamorphic rock. Through the rock cycle, each type of rock can change into any of the others. In the following activity, you will observe the transformations that occur as rocks change form.."

Research Question:

How do different processes within the rock cycle form different types of rocks?

Materials:

Colored wax crayons	Candle	Tongs
Pencil Sharpener	Foil	
Blocks	Candle	

Procedure:

Part 1.

1. Select three colors of crayons.
2. Using the pencil sharpener, carefully shave each of the colored crayons.
3. Keep all of the shavings of each color in its own pile.

What do the different colors of crayons represent? _____

What part of the rock cycle does this represent? _____

Part 2.

1. Fold the square of aluminum foil in half to form a rectangle.
2. Place one color of the crayon "rock" fragments in the middle of the aluminum foil.
3. Spread the shavings into a square layer approximately 1 cm thick.
4. Carefully spread another color of "rock" shavings on top of the first layer.
5. Do this with each remaining color so there is a three-layer stack of crayon "rock" fragments in the middle of the foil rectangle.

What part of the rock cycle does this represent? _____

Part 3.

1. Carefully fold each side of the aluminum foil over the stack of rock fragments, allowing for a 1 cm gap between the edge of the shavings and where the foil folds.
2. Place the foil package between the two blocks.
3. Apply moderate pressure by pressing the blocks together with your hands.
4. Remove the foil package from the blocks and carefully open it to observe any changes.

What part of the rock cycle does this represent? _____

Part 4.

1. Break your "rock" into two pieces by placing your fingers underneath and your thumbs close together on top.
2. Place the two parts back into the foil and refold the package.
3. Place the package back between the blocks and tightly squeeze the layers together.
4. Remove the foil package from the blocks and carefully open it to observe any changes.

What part of the rock cycle does this represent? _____

Part 5.

1. Break the "rock" into several pieces.
2. Place the rock fragments back into the aluminum foil.
3. Carefully light the candle.
4. Holding the foil with tongs, place it over the candle for about 3 minutes.
5. Blow out your candle and set the foil aside to cool for about 10 minutes.

What part of the rock cycle does this represent? _____

Observations:

	Appearance / Observations	Process in rock cycle
Part 1		
Part 2		
Part 3		
Part 4		
Part 5		

Analysis:

1. Summarize how this activity relates to the rock cycle. _____
_____
_____

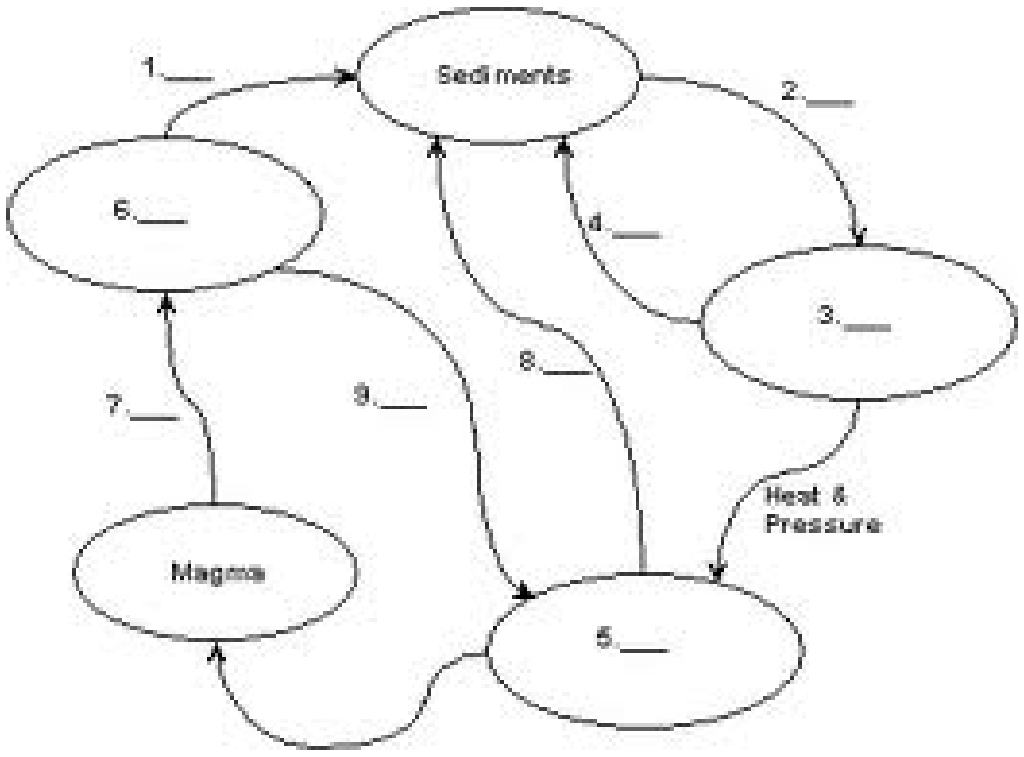
2. Explain how a sedimentary rock might become a metamorphic rock. _____
_____
_____

3. Why do people generally not see the processes simulated in this activity within their own lifetimes? _____
_____

4. What is probably the only type of rock you might have and opportunity to see formed in your own lifetime. Explain. _____
_____

Conclusion:

Complete the following diagram of the rock cycle. Include the terms; weathering, erosion, deposition/sedimentation, compaction, heat, pressure, and all three classifications of rock.



Extension:

Select two types of rock that are used in building materials. Create a flowchart to illustrate where they came from, what kind of parent rock they came from and how they were formed.