ES – Activity #21

Rock Cycle

QUESTION: How does the rock cycle work?

MATERIALS:

colored pencils
dice
rock cycle diagram
rock cycle table
rock samples

PROCEDURE:

1. Look over the three rocks you have been given and try to determine which rock is ***igneous***, which is ***sedimentary***, and which is ***metamorphic***. Use the clues below to help. Remember, igneous rock often shows visible crystals, sedimentary rock shows layering, and metamorphic rock shows banding.
2. By rolling the die, determine what kind of rock you will start out being.
   A roll of a 1 or 2 = igneous
   A roll of a 3 or 4 = sedimentary
   A roll of a 5 or 6 = metamorphic
   Record your starting rock in the Data table. Use a colored pencil to circle this type of rock on your Rock Cycle diagram.
3. Once you have determined what rock you start as, roll the die to discover what type of rock you will become next (this is Roll #1). Use the Rock Cycle table to help determine this. On the Data table record the type of rock you become. Use the same colored pencil you started with to draw a line to the rock you become.
4. Use the die again to decide what type of rock you will change to next (this is Roll #2). Again, use the same colored pencil you started with to draw a line to the next rock you become.
5. Repeat Step 4 eight (8) more times.
6. Once you have completed Roll #10 for one rock, repeat steps 1-5 for at least 2 more rocks. Use a different colored pencil for each beginning rock.

DATA: See next page

QUESTIONS:

1. What processes are involved in forming rocks?

2. Which rock-forming process is most active on surface rocks?

3. What type of rock is usually formed by heat and pressure? Which type of rock would you expect to be formed by a volcano? Which type of rock would you expect to be formed at the junction of colliding boundaries?

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DATA TABLE:

////////////////////////	ROCK 1	ROCK 2	ROCK 3
Starting Rock			
Roll #1			
Roll #2			
Roll #3			
Roll #4			
Roll #5			
Roll #6			
Roll #7			
Roll #8			
Roll #9			
Roll #10			

ROCK CYCLE TABLE

ROCK TYPE	DIE #	ROCK CYCLE PROCESS
IGNEOUS	1 or 2	Rock weathers & erodes into sediments; sediments are carried to the ocean bottom; pressure forms ***SEDIMENTARY ROCK***
	3 or 4	Rock changes by heat and pressure to form ***METAMORPHIC ROCK***
	5 or 6	Heat and pressure causes rock to melt into mantle; it later cools to form new ***IGNEOUS ROCK***
SEDIMENTARY	1 or 2	Rock weathers & erodes into sediment; sediments are carried to the ocean bottom; pressure forms new ***SEDIMENTARY ROCK***
	3 or 4	Rock changes by heat and pressure to form ***METAMORPHIC ROCK***
	5 or 6	Heat and pressure causes rock to melt into mantle; it later cools to form ***IGNEOUS ROCK***
METAMORPHIC	1 or 2	Rock weathers & erodes into sediment; sediments are carried to the ocean bottom; pressure forms ***SEDIMENTARY ROCK***
	3 or 4	Rock changes by heat and pressure to form new ***METAMORPHIC ROCK***
	5 or 6	Heat and pressure causes rock to melt into mantle; it later cools to form new ***IGNEOUS ROCK***

Rock Cycle Diagram

IGNEOUS ROCK

SEDIMENTARY ROCK

METAMORPHIC ROCK