Name _____ Date _____ Period _____

Rocks and the Rock Cycle

Directions: Answer the following questions using the websites provided for each question. Go to dixiemiddlescience.weebly.com, Earth Science, 2nd quarter to find the links for this worksheet.

Task I- Rock Cycle - http://www.cotf.edu/ete/modules/msese/earthsysflr/rock.html

1. What are the three main types of rocks?

2. How does a sedimentary rock turn into a metamorphic rock?

3. How does an igneous rock turn into a metamorphic rock?

4. How do metamorphic rocks change into sedimentary rocks?

5. How do igneous rocks change into sedimentary rocks?

6. What is the beginning of the rock cycle? The end?

Task 2- Rock Cycle Animation

http://www.classzone.com/books/earth_science/terc/content/investigations/es0602/es0602page01.cfm

7. Quick cooling forms many small what?

8. When you look at the desert monuments, what eroded away?

9. The microscopic view of sand contains what two components?

10. What two things are needed to turn igneous rock into metamorphic rock?

Task 3- Rocks http://www.learner.org/interactives/rockcycle/

11. List and define the 6 key characteristics that can help you identify rocks within the three main classes.

a.

b.

c.

d.

e.

f.

Task 4- Rock Identification Key http://www.minsocam.org/msa/collectors_corner/id/rock_key.htm#TOC

12. For igneous rock, when magma cools slowly, the crystals…..

13. For igneous rock, when magma cools quickly, the crystals…..

14. Of the types of igneous rock formed underground, which one is most familiar?

15. When looking at sedimentary particle size, which material type has the largest particles and which has the smallest particles? Largest _____ Smallest _____

16. Which metamorphic rock forms under the highest temperature and highest pressure?

Task 5 - Rock Cycle Lab

Materials: per group: 3 different colored candies, scissors, piece of aluminum foil, hot plate, markers or colored pencils, paper, heavy books, blank rock cycle diagram

Procedures:

1. Take your three different colored candies and cut them into as many small pieces as you can. Put them in a pile and draw what you observe in your sediments box on the rock cycle diagram.

2. Pick up the "sediments" and gently push them together so they all form into one big piece. Set this piece down and draw what you observe in the sedimentary rock box on the rock cycle diagram

3. Now take your "sedimentary rock" and warm it in your hands for a while. Place the paper and book on top of the warm "sedimentary rock" and press down on it. Fold this in half and press down on it some more. Draw what you observe in the metamorphic rock box on the rock cycle diagram.

4. Place your "metamorphic rock" on the piece of aluminum foil. Turn on the hot plate and place the foil on the hot plate. BE CAREFUL! Observe the "metamorphic rock" as it melts. Draw what you observe in the magma box on your rock cycle diagram.

5. Take your foil off the hot plate with tongs, being careful not to spill the "magma". Set it on the table and observe it as it cools and hardens. Draw what you observe in the igneous rock box on your rock cycle diagram.

Conclusions and Analysis Questions:

1. We already know that we could turn the sedimentary rock into metamorphic rock (we did that in step #3). How could you turn the sedimentary rock into igneous rock without going through the metamorphic stage?

2. You are probably starting to see that any form of rock can be changed into any other form of rock. How could a rock be changed but still be classified as the same form of rock?

3. What type of rock do you think forms from erupting volcanoes?

4. Which rock is formed from broken-down pieces of rock? How do you think these pieces harden into rocks in nature?

5. How can this activity be described as a cycle?

6. Besides using candies to represent minerals, how is this model of the rock cycle different than the real rock cycle in nature? (Hint: Think heat and pressure)

7. Draw and color your observations from the lab in the boxes, then use the following five processes to label every arrow on the rock cycle diagram: compaction and cementation, melting, cooling and hardening, heat and pressure, weathering and erosion