**Starburst Rock Cycle Lab**

**Earth Science**

**Materials:**

Objectives

* Model the rock cycle, identifying how rocks transform from one type into another
* Recognize the 3 rock types and how they can change
* Aluminum Foil
* Plastic Bag
* 3 colors of starburst
* Hot plate

Safety Precautions

* Be cautious of hot plates and melted, hot starburst
* Ice

**Directions:** Use your book, starting on page 125, to help work through this lab and to answer the questions below.

1. What are rocks and how do they relate to minerals?
2. List the 3 types of rocks and a characteristic of each.
3. In this lab, you will be modeling the rock cycle using 3 different colors of starburst, so before you start read page 126 and draw the rock cycle below.
4. Each different color of starburst represents a different mineral (or rock). In this first step, you are going to stack the 3 starburst on top of each other. Flatten the foil and place it within the plastic bag. This will make it easier to peel the starburst off. *Deposit* the 3 stacked starburst on top of the plastic bag, and fold it over the top. Apply *pressure* to the starburst by placing your book on top of the starburst and smashing them down. You may need to step on your book, carefully to smash them!
5. The minerals (or rocks) have now been cemented together. Open up your foil to see your newly formed rock. Can you see the different colors of starburst? Color your rock below.
6. What type of rock did you form? How do you know?
7. Next peel off your starburst. Feel it. It is still rather hard but is flattened into layers. Now you will apply heat to the rock.
8. Re-wrap up your rock. Apply *heat* by placing it on the hot plate for about 60 seconds. BE CAREFUL NOT TO BURN YOURSELF. Apply *pressure* to your rock. Then unwrap it. Draw your rock below and describe the differences that you see.
9. What type of rock did you form? How do you know?
10. Now, peel your rock off of the plastic bag. Re-wrap your rock only in the foil. Place it on the hot plate for about two minutes to get the rock completely melted into its liquid form. Draw your rock below and describe any differences.
11. What type of rock did you form? How do you know?
12. Read page 127 and define Bowen’s Reaction Series.
13. What minerals crystallize first at the hottest temperatures?
14. Which crystallize in the middle range of temperatures?
15. Which crystallize last at the lowest temperatures?
16. Read more about the Bowen’s Reaction Series in the article on the class website titled “Bowen’s Reaction Series”. What is happening in the continuous series versus the discontinuous series?
17. Watch the 3 minute youtube video on the class website about the rock cycle. What is something that you learned from this video that you did not already know **after** completing this lab?
18. From page 128, explain how the chemical stability of a mineral is affected by the bonding of the atoms in the mineral.
19. Where are weak parts in sedimentary rocks usually located? Why?
20. Where are the weak parts in metamorphic rocks usually located? Why?
21. Where are the weak areas of igneous rocks located? Why?