Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_

**Lab: Weathering – DATA SHEET**

**Objectives/Purpose**

1. Gather, analyze and interpret data.
2. Observe the processes of both physical/mechanical and chemical weathering of “rocks”.
3. Understand how physical/mechanical and chemical weathering are different.
4. Cause three substances to undergo weathering processes.

**Safety**

1. Do not eat the sugar cubes

**Pre-Lab Questions:**

1. What is physical (mechanical) weathering? List two or more specific examples/causes of physical weathering.
2. What is chemical weathering? List a specific example/cause of chemical weathering.
3. **Predictions**. Predict what will happen to size, shape, color, etc. when:
   1. Vinegar is added to chalk. **Explain why** you think that will happen.
   2. Vinegar is added to sugar. **Explain why** you think that will happen.
   3. Vinegar is added to a mini-marshmallow. **Explain why** you think that will happen.
   4. Sugar cubes are placed in a jar and shaken. **Explain why** you think that will happen.

**Experiment 1 DATA Table** **– Chalk/sugar/marshmallow with Vinegar**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Container Contents** | **INITIAL**  **Drawing** | **INITIAL**  **Description in Words** | Indications of **Immediate Chemical Reaction?** Explain. | **FINAL**  **Drawing** | **FINAL**  **Description**  **In Words** |
| **Chalk** |  |  |  |  |  |
| **Sugar** |  |  |  |  |  |
| **Mini-Marshmallow** |  |  |  |  |  |

**Experiment 1 ANALYSIS Questions** **– Chalk/sugar/marshmallow with Vinegar**

1. **Experiment Set-up**:
   1. What is the Independent Variable in the vinegar experiment?
   2. What is the Dependent Variable in the vinegar experiment?
   3. List 3 constants in the experiment with vinegar.
2. **Weathering Rate**: Did all 3 objects weather at the same rate? Explain, including which weathered the fastest and which was the most resistant to weathering. Use complete sentences.
3. **Which of the 2 types of weathering** did this experiment simulate?
4. What is one cause of this type of weathering in nature?
5. What igneous rock listed in your notes is resistant to this type of weathering?
6. Chalk is made of calcium carbonate, CaCO3.
   1. What sedimentary rock is made of calcium carbonate?
   2. Based on this lab, what inference can you make about this rock’s weathering?

**Experiment 2 DATA Table** **– Shaken Sugar Cubes**

|  |  |  |
| --- | --- | --- |
| **Number of Seconds** | **Drawing – Include all 4 cubes & crumbs if present** | **Description in words**  Include descriptions of size, shape, amount, etc. |
| **0 Seconds**  **(BEFORE**  **Shaking)** |  |  |
| **20 seconds** |  |  |
| **40 seconds** |  |  |
| **60 seconds** |  |  |
| **80 seconds**  **(1 min 20 sec)** |  |  |

**Experiment 2 ANALYSIS Questions** **– Shaken Sugar Cubes**

1. What changes occurred in the sugar cubes as the number of shakes increased? Be specific. List several.
2. How did the total amount of crumbs change as the number of shakes increased?
3. In nature, when rocks are turned into “crumbs” by weathering, what is the term for the “crumbs” or pieces of rock that are formed by weathering?
4. What type of weathering did Experiment 2 “Shaken Sugar Cubes” simulate?
5. Select one cause of this type of weathering that actually occurs in nature. Compare AND contrast this experiment with what really happens in nature.
   1. Comparisons (list 2 or more similarities):
   2. Contrasts :