**Simulating Weathering**

**Aim:** To investigate how chemicals and ice can cause weathering.

**Materials:**

*Part A: The effect of acid and water*

* 6 test tubes
* Test tube rack
* 2 small samples of marble, limestone and granite
* Hydrochloric acid

*Part B: The effect of temperature (Class Demonstration prepared by your teacher)*

* 2 large containers
* Small water balloon
* Plaster of Paris
* Spatula

**Method:**

*Part A:*

1. Label your test tubes 1-6. Put small samples of granite in test tubes 1 and 2, limestone in 3 and 4 and marble in 5 and 6.
2. Fill test tubes 1, 3 and 5 with 2 cm of water.
3. Fill test tubes 2, 4 and 6 with 2 cm of hydrochloric acid.
4. Leave the test tubes in the rack and record any observations. Leave them set up until your next science class.
5. Record your observations.

*Part B:*

1. Mix up the plaster of Paris and half fill two containers.
2. Fill a small balloon with water and tie it. Push the balloon into the plaster of one container and keep it below the surface until the plaster sets.
3. Put both containers into the freezer overnight.

**Results:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Rock Type** | **Liquid Added** | **Observations** | **Explanation** |
| **Test tube 1** |  |  |  |  |
| **Test tube 2** |  |  |  |  |
| **Test tube 3** |  |  |  |  |
| **Test tube 4** |  |  |  |  |
| **Test tube 5** |  |  |  |  |
| **Test tube 6** |  |  |  |  |

**Questions:**

1. Describe what happened to the granite when it was placed in the acid.
2. Describe what happened to the limestone when it was placed in the acid.
3. Describe what happened to the marble when it was placed in the acid.
4. How is what you have observed similar to chemical weathering in the real world? How is it different?
5. Which rock appeared to undergo the most weathering?
6. Marble is a metamorphic rock, limestone is sedimentary, and granite is igneous. Using your knowledge of how these rocks are formed, explain your answer to Question 5.
7. Describe what happened to the plaster left in the freezer.