

## Finding the Density Between Intrusive Granite and Extrusive Basalt Rocks

**Purpose:** To determine the specific density between 2 types of igneous rocks; intrusive granite and extrusive basalt.

**Research:** **Intrusive rock** is rock formed from magma below the Earth's surface or inside the Earth; they are also called *magmatic* or *plutonic* rock. **Extrusive rock** is rock formed by lava near or on the Earth's surface (exiting the Earth); they are also called *volcanic* rock.

$$\text{Density} = \frac{\text{mass(g)}}{\text{volume(cm}^3\text{)}} \quad \begin{array}{l} \text{measuring mass - weight in grams(g)} \\ \text{measuring volume - 1cm}^3 = 1\text{ml} \end{array}$$

**Hypothesis:** From what I know about intrusive and extrusive rock,

---



---



---



---



---

**Materials:** worksheet, electronic scale, graduated cylinder, pie pan tray, displacement container, large cup of water, 6 rock samples (3 each), paper or plastic catch cup, calculator.

**Procedures:** Obtain all materials. Identify the rock samples. Then, using the scale weigh each (dry) rock and record the mass; make sure to be accurate to the tenths (00.0g). Place the displacement container in the pan and the catch cup under the spout to capture the water overflow. From the large cup of water, fill up the displacement container until the excess water begins to drip out of the flow port. \*Hint: you may have to put your finger over the spout and pull off quickly to begin the process (vapor lock). Pour the excess water in the catch cup back in the large cup. Carefully, drop a rock in the displacement container and capture the displaced H<sub>2</sub>O into the cup. Measure the displaced water by pouring the water from the cup into the graduated cylinder. Record the volume in cm<sup>3</sup> and pour back in the large cup. Leaving the rock in the displacement container repeat for the next rock sample. Repeat for all rocks.

Calculate the density for each sample by using the formula g/cm<sup>3</sup>; read grams per cubic centimeter.

**Results:**      granite#1      granite#2      granite#3      basalt#1      basalt#2      basalt #3

Mass: \_\_\_\_\_

Volume: \_\_\_\_\_

Density: granite #1 \_\_\_\_\_ g/cm<sup>3</sup>                      basalt #1 \_\_\_\_\_ g/cm<sup>3</sup>

                 granite #2 \_\_\_\_\_ g/cm<sup>3</sup>                      basalt #2 \_\_\_\_\_ g/cm<sup>3</sup>

                 granite #3 \_\_\_\_\_ g/cm<sup>3</sup>                      basalt #3 \_\_\_\_\_ g/cm<sup>3</sup>

**Analysis & Conclusion:** (Remember to answer your hypothesis.)

---

---

---

---

---

---

---

---

**Claim – Evidence - Reasoning**

**Claim:**

---

---

---

---

---

---

---

---

**Evidence:**

---

---

---

---

---

---

---

---

**Reasoning:**

---

---

---

---

---

---

---

---