Name _____

Float or Sink? The Science of Buoyancy Answer Key

1. $D = \frac{120}{200} = 0.6\ \text{g/cm}^3$ → **Floats**
2. $D = \frac{540}{200} = 2.7\ \text{g/cm}^3$ → **Sinks**
3. $D = \frac{9.2}{10} = 0.92\ \text{g/cm}^3$ → **Floats**
4. $D = \frac{280{,}000}{400} = 700\ \text{kg/m}^3$ → Less than 1000 → **Floats**
5. $\frac{2.8}{1.0} = 2.8$ → Rock is **2.8× denser** than water.
6. $\frac{D_{\text{object}}}{D_{\text{water}}} = 0.8/1.0 = 0.8$ → **80% underwater**
7.
   - A (0.6) → **Floats**
   - B (1.2) → **Sinks**
   - C (1.0) → **Suspended / neutrally buoyant**
8. Seawater is denser, so the object (1.00) will float **slightly higher**.
9. $D = \frac{24}{30} = 0.8\ \text{g/mL}$ → **Floats**
10. $D = 0.80 \times 1.0 = 0.80\ \text{g/mL}$