

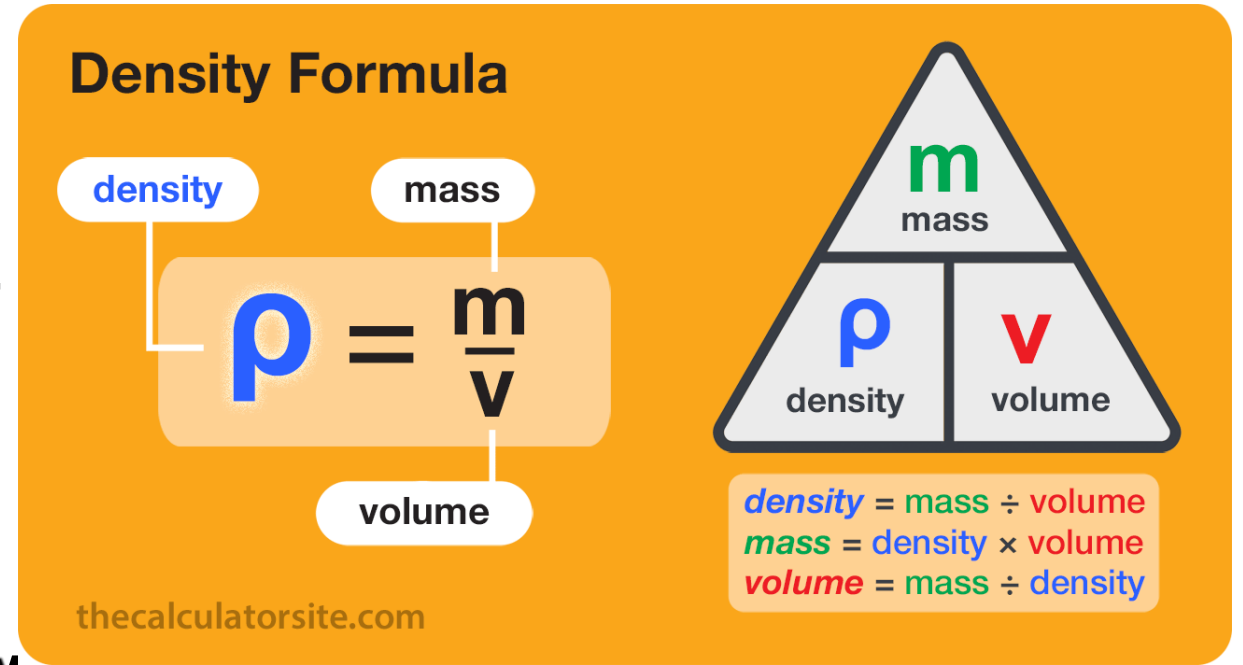
Density

Physical Science

Density

Base unit:

- Liquids: g/mL
- Solids: g/cm³



Calculating Density

1. Measure the mass of object in grams (g) on a scale
2. Measure the volume of object
 - **Liquids** – use a graduated cylinder (mL)
 - **Solid** use a metric ruler (cm³) (Volume = length x width x height)
 - **Irregular solids** – water displacement method
3. Solve for density by dividing the mass by the volume and label your answer in either **g/cm³ for solids** or **g/mL for liquids**

Density:

Four Step Problem Set-up

- **Step 1:** Write the given down:
 - Given:
 - $M =$
 - $V =$
 - $D =$
- **Step 2:** Write Equation using
- **Step 3:** Plug in numbers
- **Step 4:** Write answer/label/Box

Density:

Water Displacement method

- Since both irregular shaped objects and water have the same volume, we can immerse objects in water and the water will rise an amount equal to the volume of the object. This happens because two materials which have volume cannot occupy the same space.

Example: When a person jumps into a bathtub full of water, the water overflows the edges of the tub.

Steps for Water Displacement Method

1. Fill a graduate with enough water to cover the object. (Write down this measurement in mL)
2. Tilt the graduate and slide the object into the cylinder to avoid breakage.
3. The water level will rise (Record this new water level in mL)
4. Subtract the original water level from the final water level and record.
5. Change this number's units from mL to cm^3 since the object is solid

$$1 \text{ mL} = 1 \text{ cm}^3$$