

Lesson 3 – Mass, Volume, Density & Measurement

THE FOLLOWING VIDEO HAS BEEN APPROVED FOR
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THE VIDEO HAS BEEN RATED

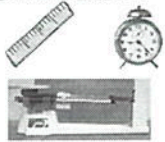

I INTELLIGENT
 UNDER 33 REQUIRES TEACHER
 ASSISTANCE

STRONG EARTH SCIENCE LANGUAGE, DETAILED
 DIAGRAMS, AND SUPER MEASUREMENTS


- I can define *Measurement*
- I can define *Mass*
- I can define *Volume*
- I can define *Density*
- I can use the *Density triangle* to find *Mass, Volume, & Density Formulas*

Measurement

- Expressing an observation with more accuracy
- Direct comparison to a known standard
 - Example
 - Centimeters
 - Seconds
 - Grams

- Every measurement contains at least one of these three quantities
 - Length - distance between two points
 - Time - order or duration of event
 - Mass - amount of matter in an object




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Mass

- Amount of matter in an object

Mass is measured by using a.....



Triple Beam Balance

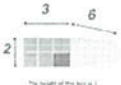
****Not the same as WEIGHT (Mass x Gravity)****
 Mass never changes depending on location

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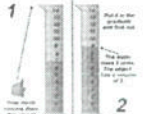
Volume

- The amount of space an object occupies
- Volume is measured by using.....

The formula $L \times W \times H$
 (Ruler)

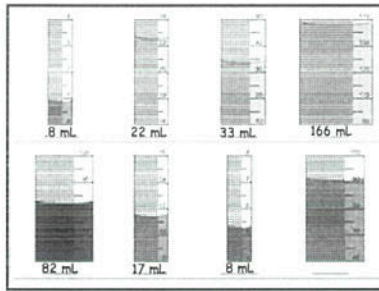
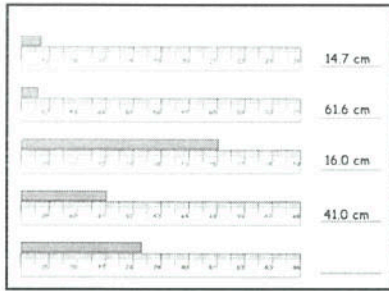


OR



Water displacement
 (Graduated Cylinder)

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Sample Questions

Find the volume of the following objects:

Marbles = 12mL - 7mL Box = 5cm x 2cm x 3cm
Marbles = 5mL Box = 30 cm³

Take a look at the two boxes below. Each box has the same volume. If each marble has the same mass, which box would weigh more? Why?

The box that has more marbles has more mass per unit of volume.

Density

Is the ratio of mass to an objects volume
- Or how compacted an object is

The density of a material helps to distinguish it from other materials

The formula for Density is:

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}}$$

Given on the page 1 of your Reference Table!

Volume = $\frac{\text{Mass}}{\text{Density}}$
Mass = Density x Volume

DENSITY of WATER is
1.0 g/cm³

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