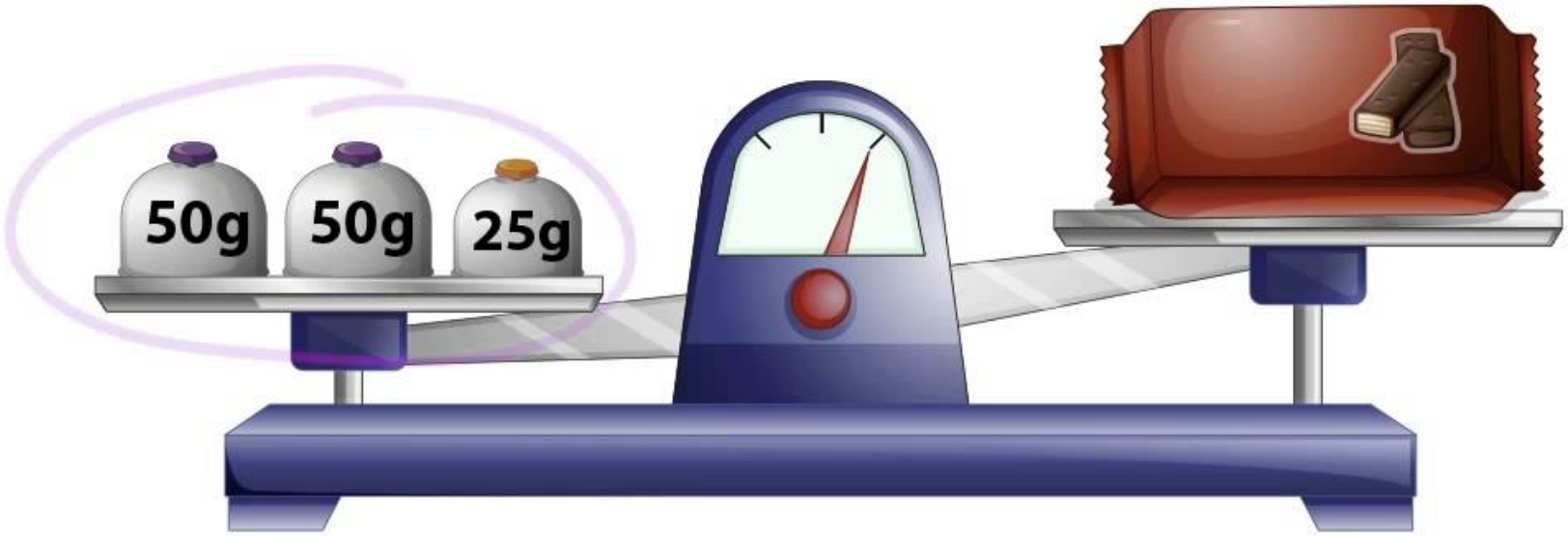
MASS & VOLUME

Chapter 1 Section 2

What is mass?

- Mass is the amount of matter in an object
- SI unit of mass is **grams**

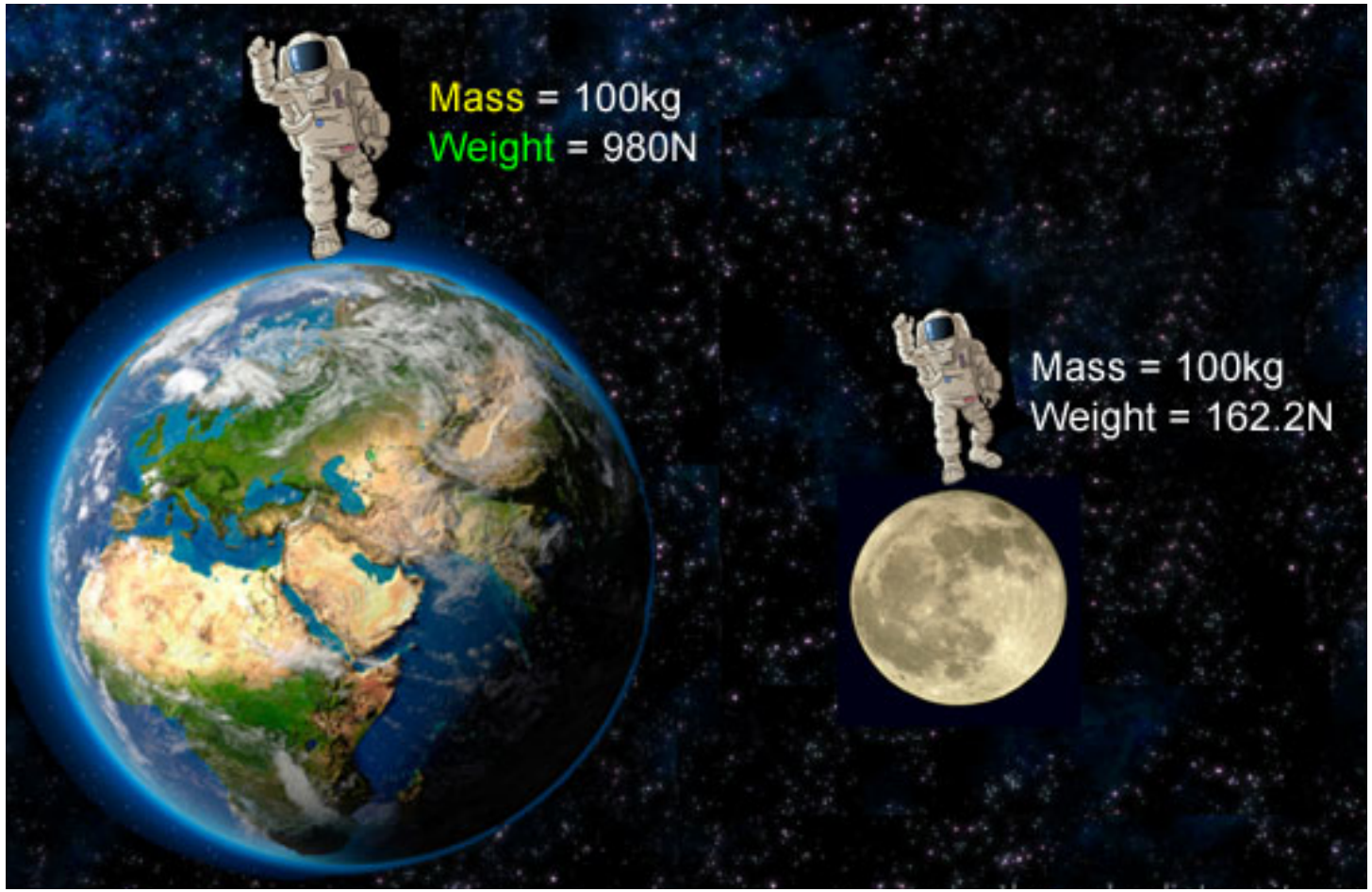


What is mass?

- We use two instruments to measure mass: **electronic scale** and **triple beam balance**

What is the difference between mass and weight?

- **Weight** is dependent on gravity and location
- Weight changes on different surfaces, but mass does not



What is mass?

- What does a bathroom scale measure? **Weight**
  - *When you step on the scale, springs in the scale compress due to how much gravity is pushing down on you.*

- We use scales because we all live on the same surface!

How to use a Triple Beam Balance?

1. Place the object on the pan

2. Slide the large slider to the right until the arm drops below the line and then move it back one notch.

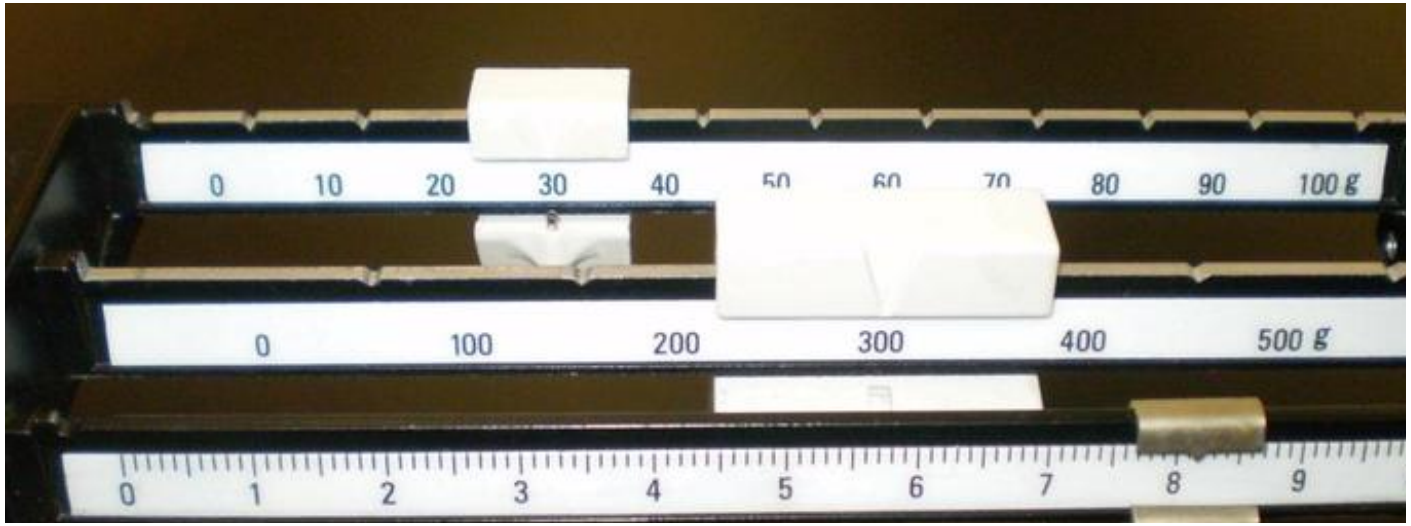
How to use a Triple Beam Balance?

3. Repeat this process with the **medium** slider. When the arm moves below the line, back it up one groove.

4. Slide the **small** slider on the front beam until the **arm** and zero match up.

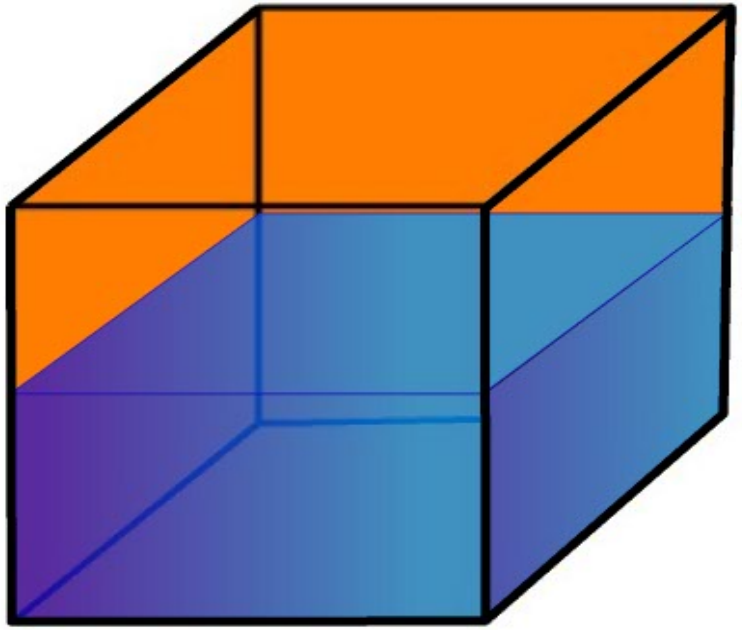
How to use a Triple Beam Balance?

5. Add the amounts on each beam to find the total **mass** to the nearest tenth of a gram.



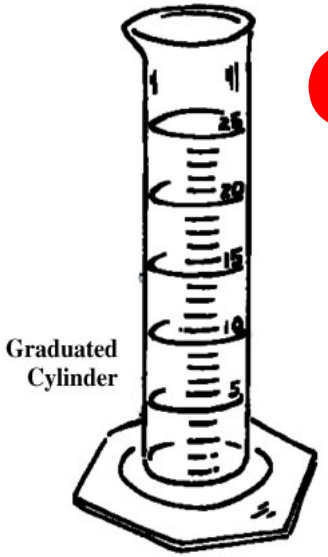
What is Volume?

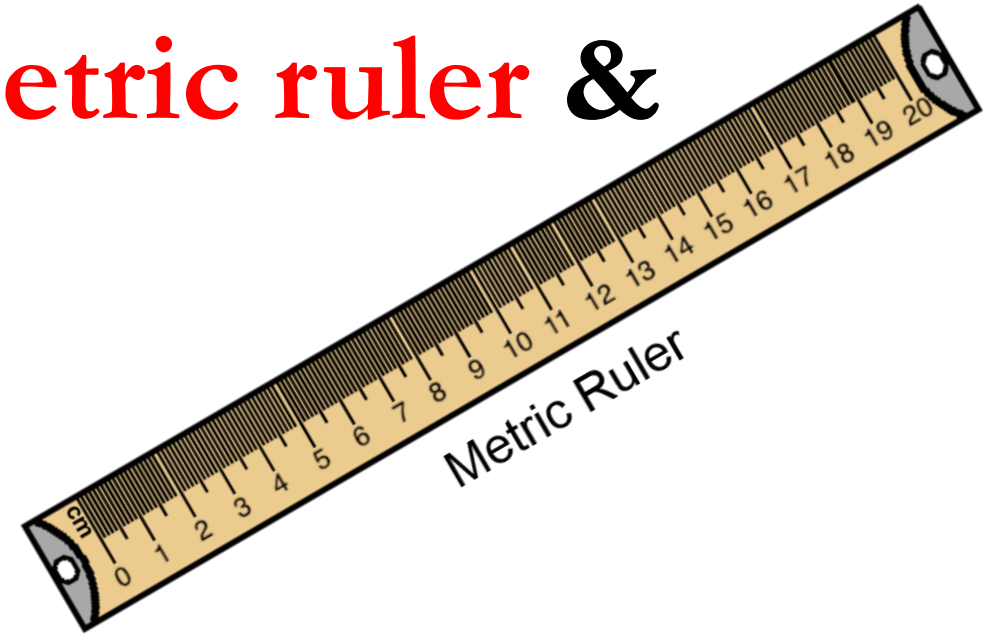
- Volume is the amount of space inside an object or that it takes up



What is Volume?

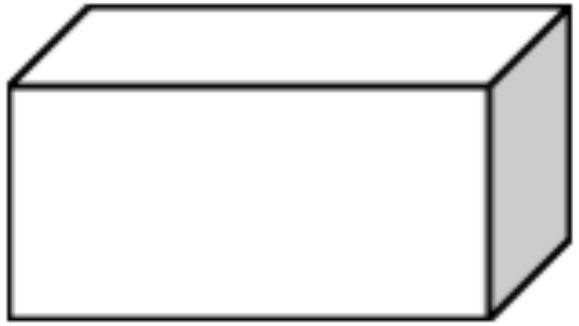
- SI unit of mL and cm^3
- We use two instruments to measure volume: Metric ruler & Graduated cylinder





How do you measure volume of a regular shape?

- Unit cm^3
- $V = L \times W \times H$



$1\ cm^3 = 1\ mL$

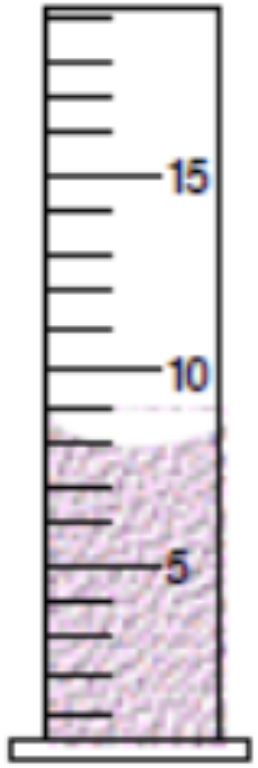
How do you measure liquid volume ?

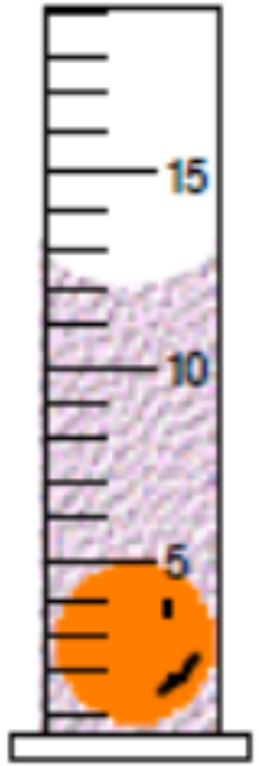
- Unit mL
- ALWAYS read volume from the bottom of the meniscus

How do you measure the volume of an irregular shape?

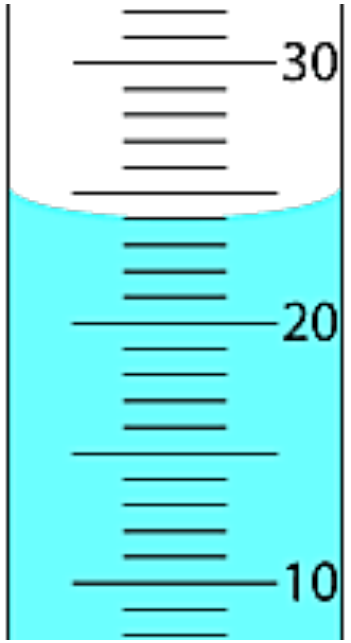
- Unit mL
- Water displacement

1. Measure the volume of liquid
2. Add the object
3. Subtract the volumes.

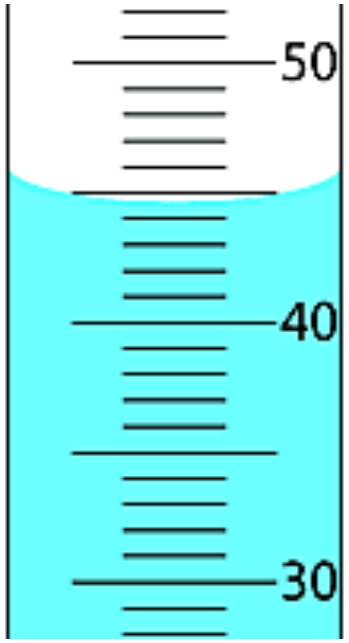




Practice



Practice



Practice