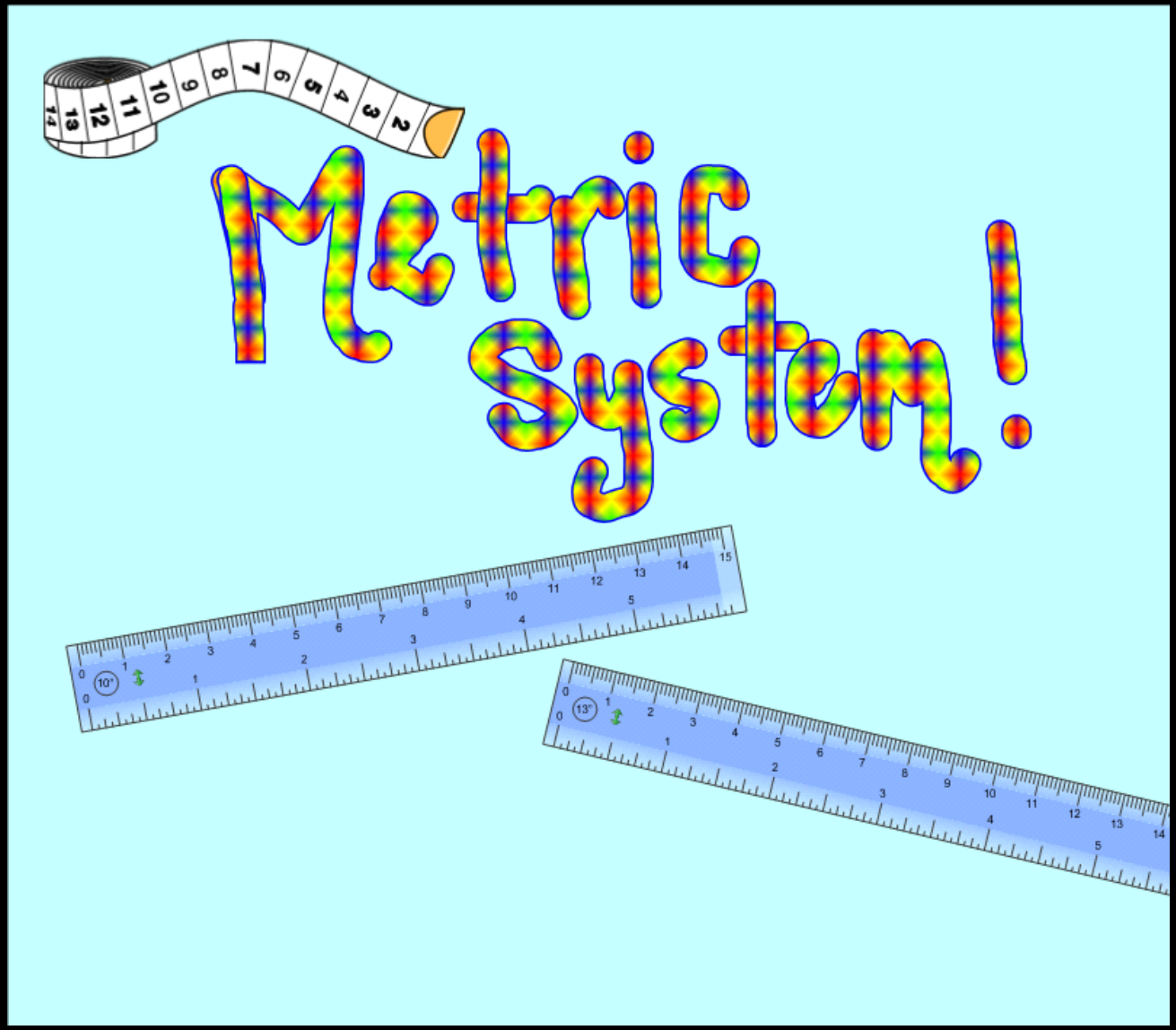
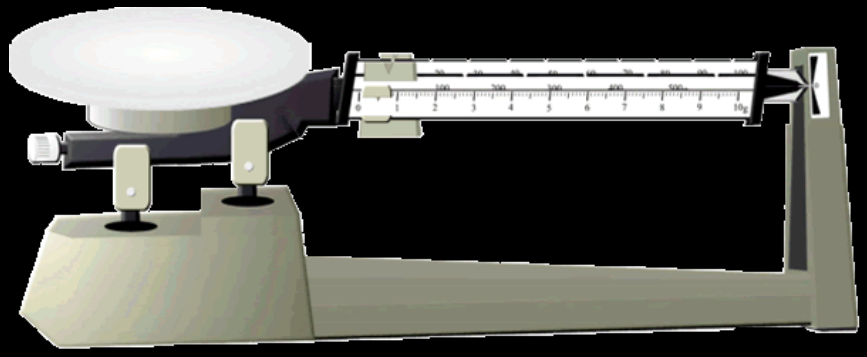
Metric System – Pt. 1

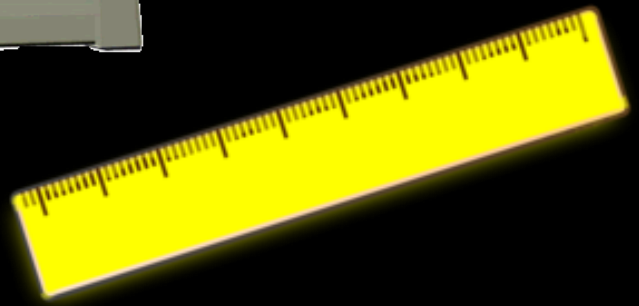


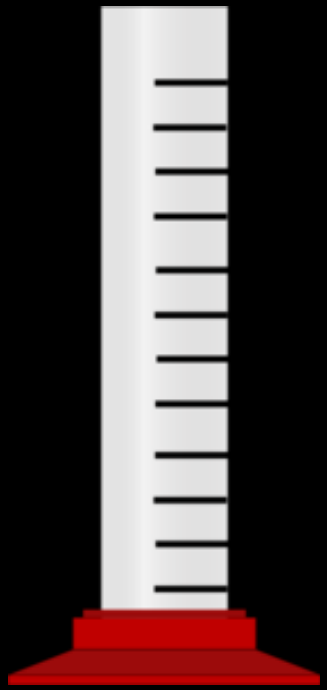
Learning Objectives

- Identify the basic metric units used to measure length, weight, and volume.
- List the common metric prefixes.

Metric System







• The metric system is an internationally agreed decimal system of measurement based on powers of 10.

Base Unit

Standard Base Unit of Measurement:

Length -	Meter (m)
Mass (weight) -	Gram (g)
Volume -	Liter (l)
Temperature -	Degree Celsius (C)
Time -	Second (s)

Metric System Prefixes

Kilo (k) - 1000	King
Hecto (h) - 100	Henry
Deca (da) - 10	Died
Base Unit - 1	By
Deci (d) - 0.1	Drinking
Centi (c) - 0.01	Chocolate
Milli (m) - 0.001	Milk

When you add a prefix to a base unit, you change it's value.

Metric System

Prefix + Base Unit = Metric System value

Example:

Prefix	+	Base Unit
centi	+	meter

= centimeter

Write the Correct Abbreviation

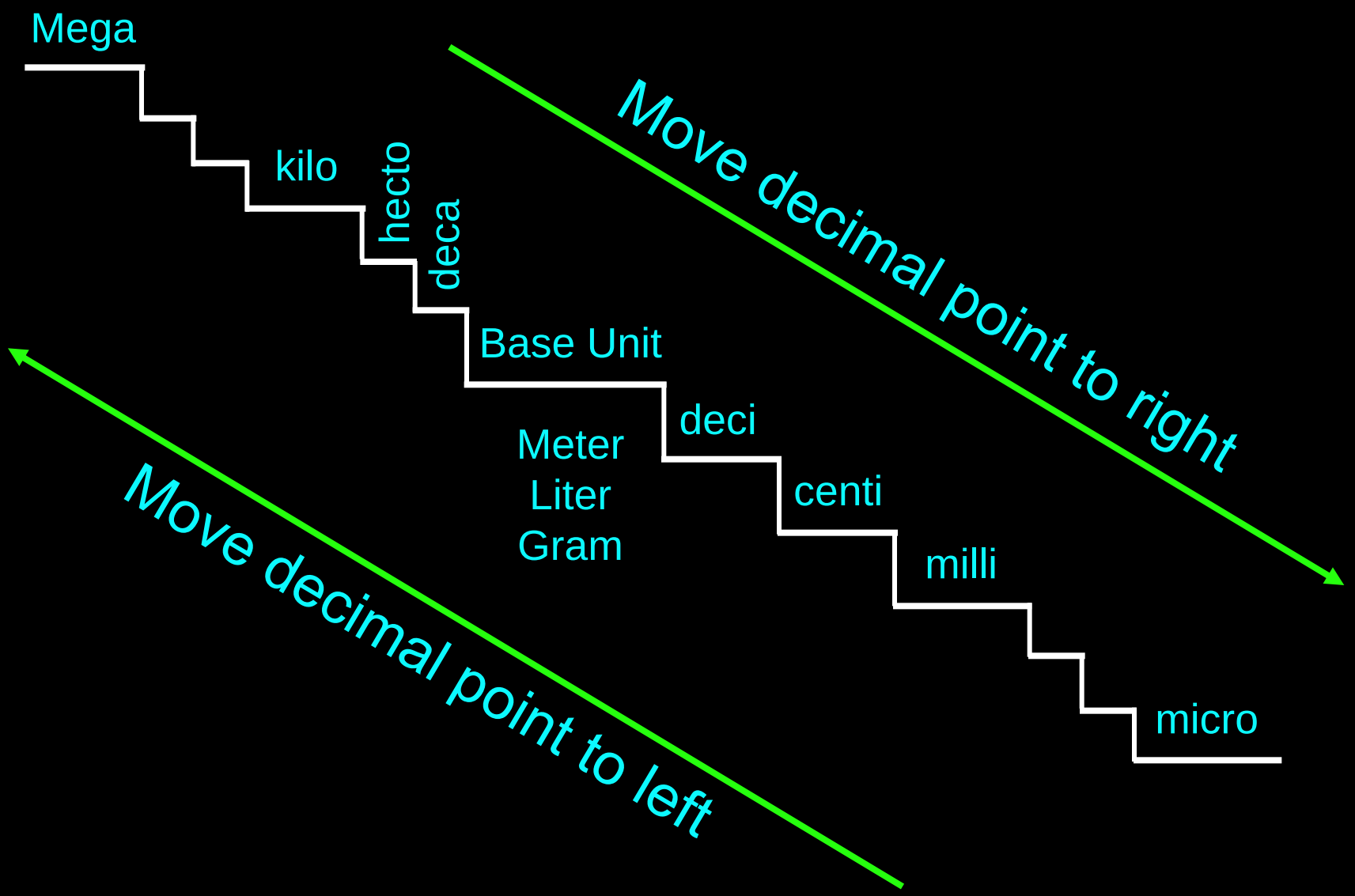
1. Kilogram kg
2. Meter m
3. Milliliter ml
4. Liter L or l
5. Kilometer km
6. Centimeter cm
7. Milligram mg
8. Gram g

Conversion Chaos

Sometimes we need to convert meters to centimeters or kilometers. How do we do that?

Conversion Ladder Method

Conversion Ladder Method



Conversion Steps

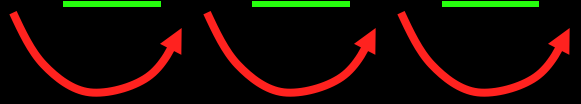
1. Determine your starting point.

4 km = _____ m

2. Count the # of “jumps” to your end point using your ladder.

3. Move the decimal the same number of jumps in the same direction.

4. __. __. __. = 4000 m



Conversion Ladder Practice

Try these conversions using the ladder method

1. 2000 mg = ___ g
2. 104 km = ___ m
3. 480 cm = ___ m
4. ___ kg = 5600 g
5. 8 mm = ____ cm
6. 5 L = ___ ml
7. 198 g = ___ kg
8. ___ ml = .075 L
9. 50 cm = ___ m
10. 65 g = ___ mg

Conversion Ladder Practice

Which is larger?

1. 1 L or 1500 ml

   1 L = _____ ml or
   ____ L = 1500 ml

2. 200 ml or 1.2 L

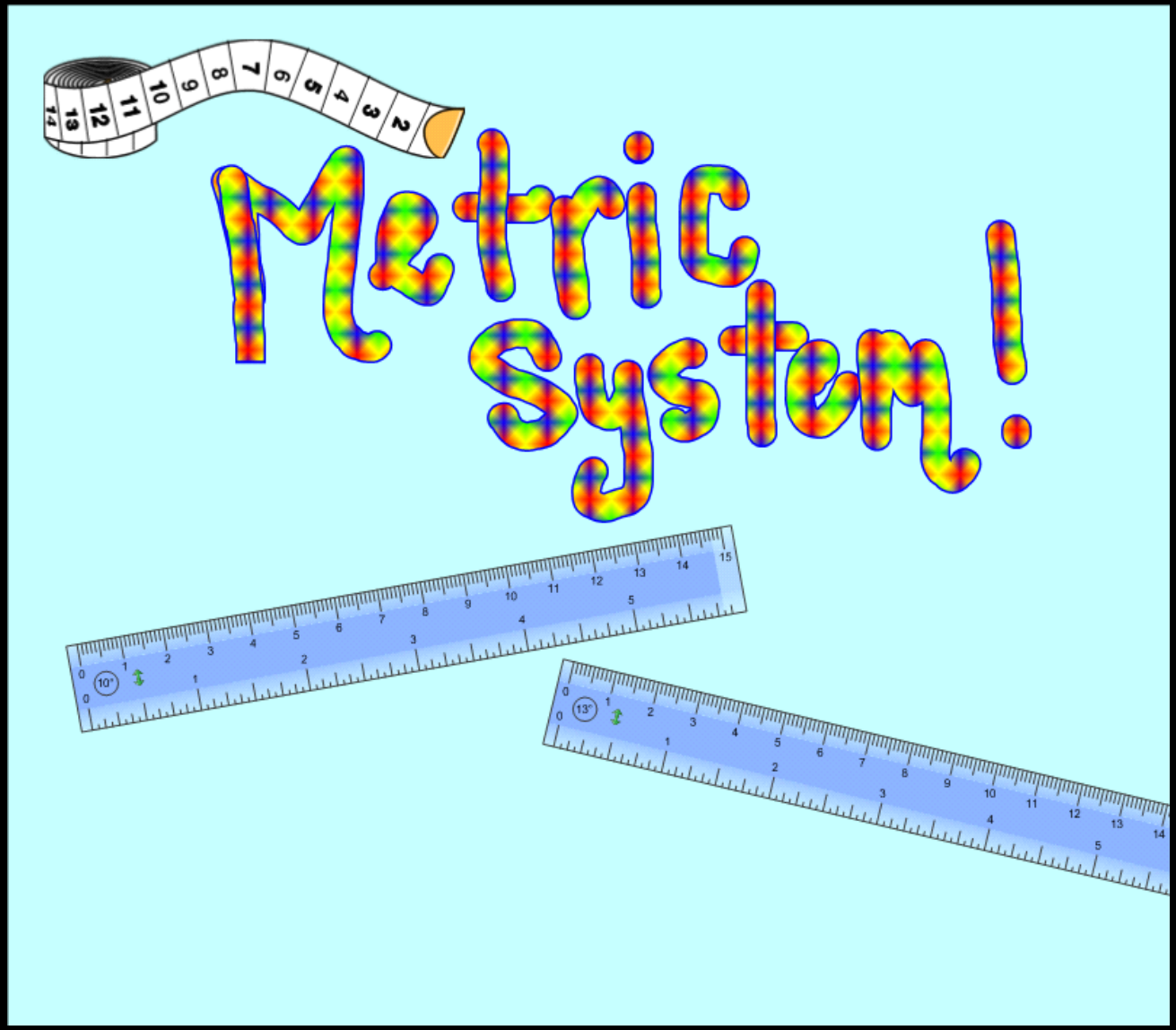
   200 ml = _____ L or
   ____ ml = 1.2 L

3. 12 cm or 1.2 m

   12 cm = ____ m or
   ____ cm - 1.2 m

Stop Here

Metric System – Part 2

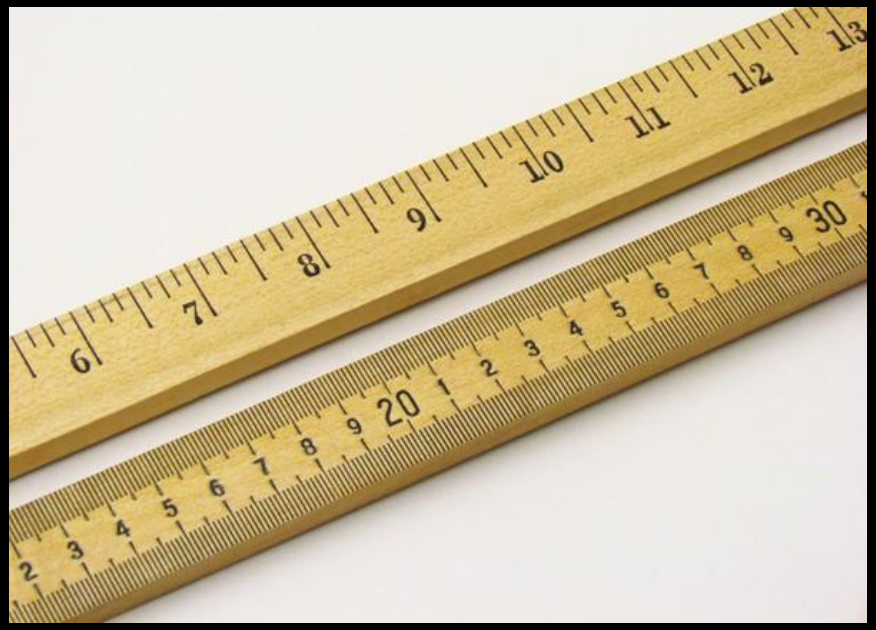


Learning Objectives

- Demonstrate proficiency in measuring length, volume and mass in metric units.
- Measure irregular objects

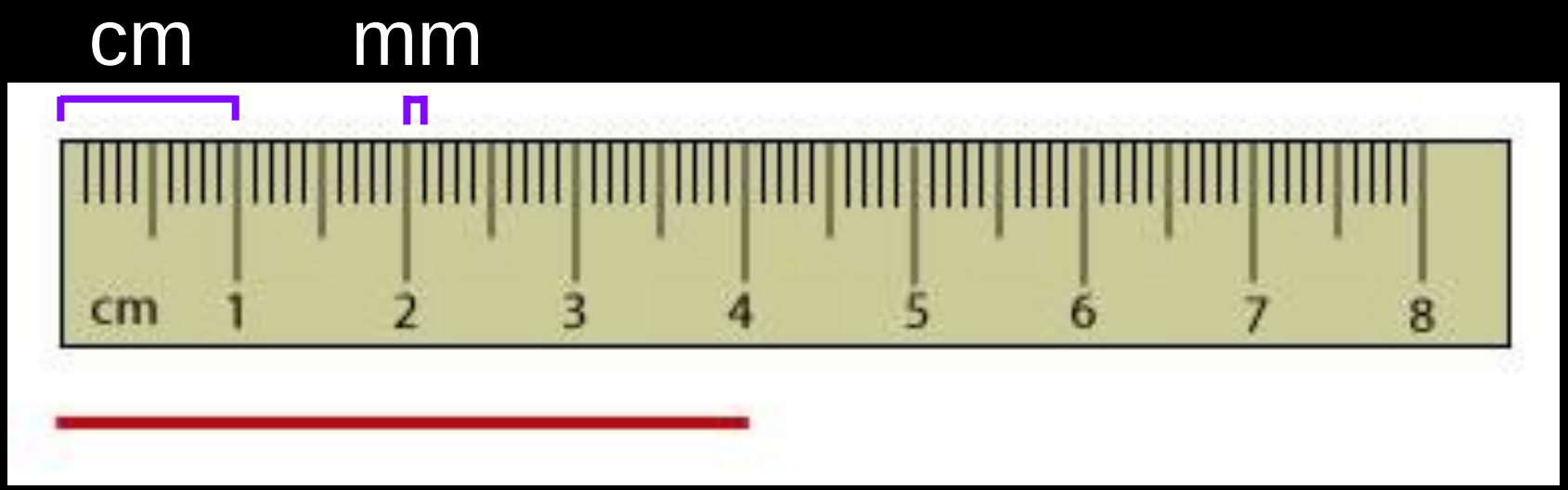
Measuring Length

Length – the longest extent of anything as measured from end to end.



The base unit of length is the meter (m)

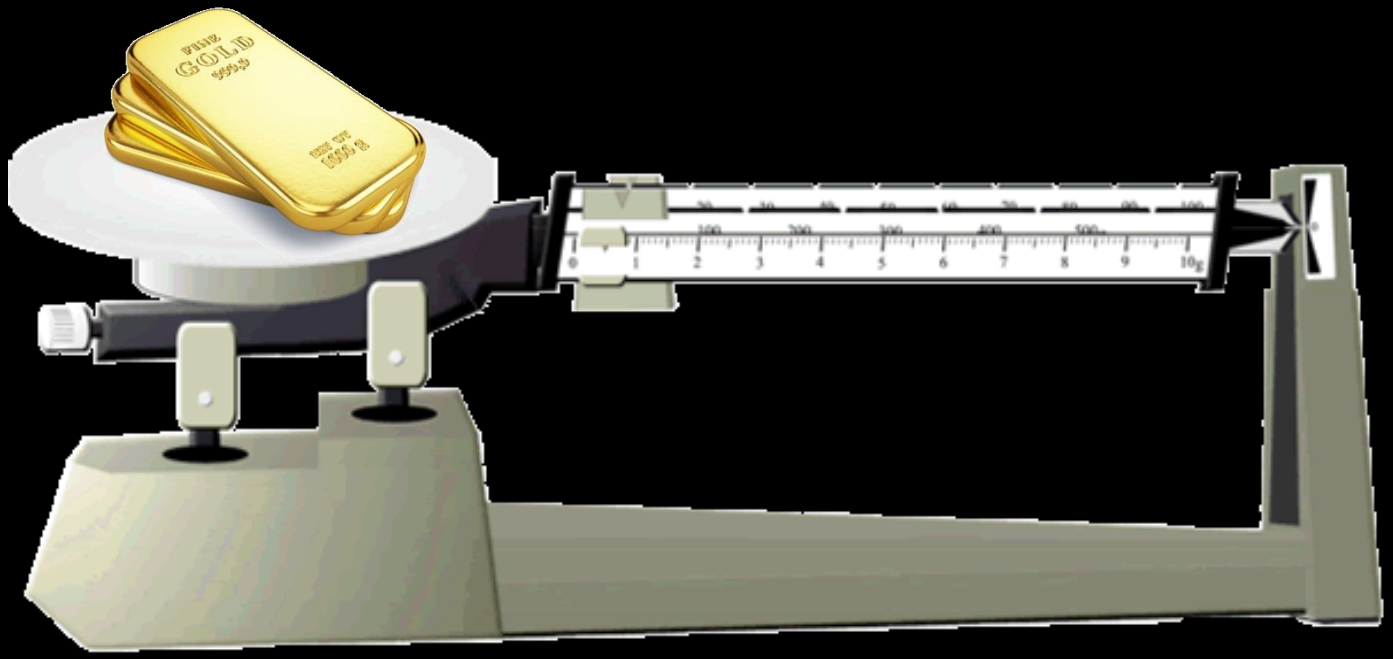
Measuring Length



How many millimeters (mm) are in 1 centimeter (cm)?
What is the length of the red line in centimeters (cm)?
What is the length of the red line in millimeters (mm)?

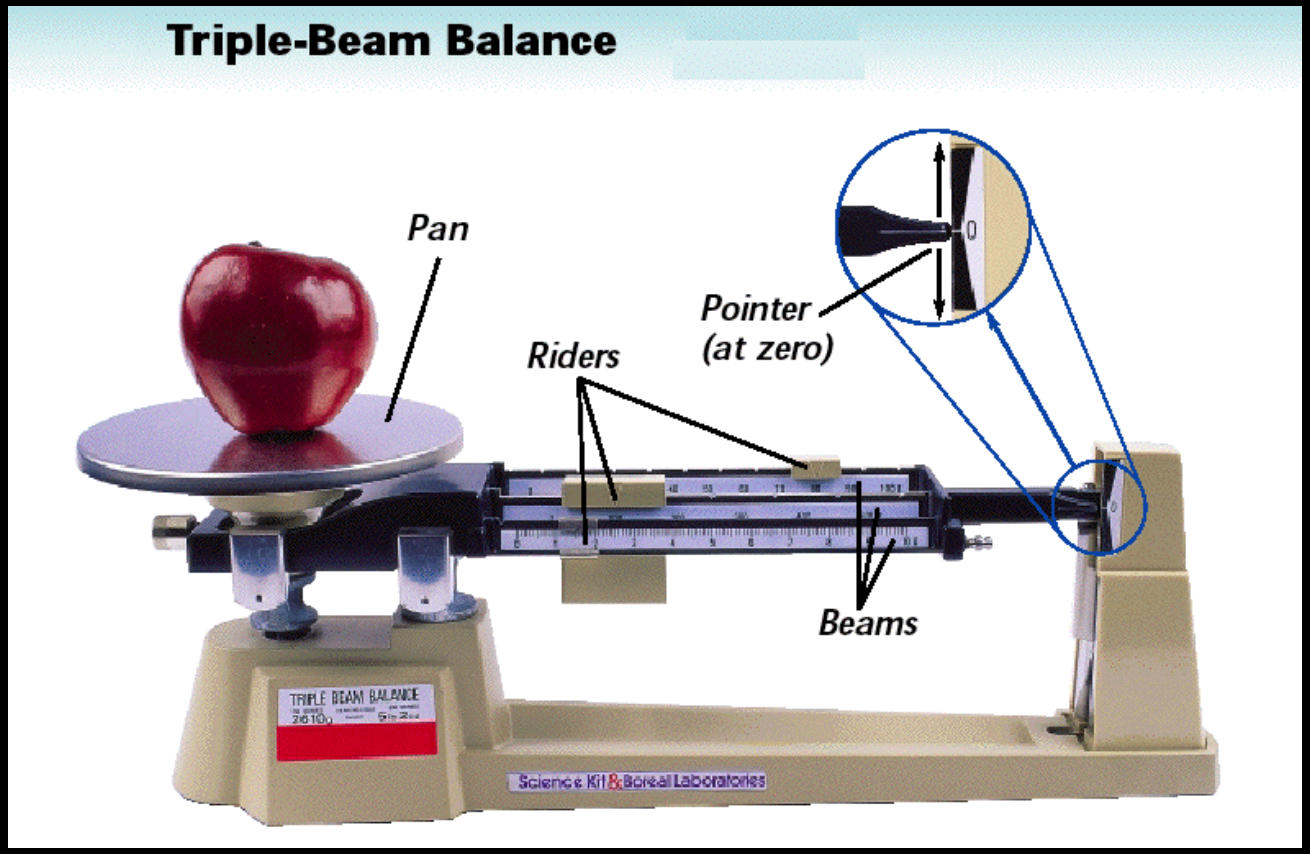
Measuring Mass

Mass refers to the amount of matter in an object.



The base unit of mass is the gram (g). To measure mass, we use a balance or scale.

How to Use a Triple Beam Balance



Zero the balance then add the object onto the weight pan. Slide the largest rider, then the medium, then smallest until the pointer is steady at zero. Add the values to get the total.

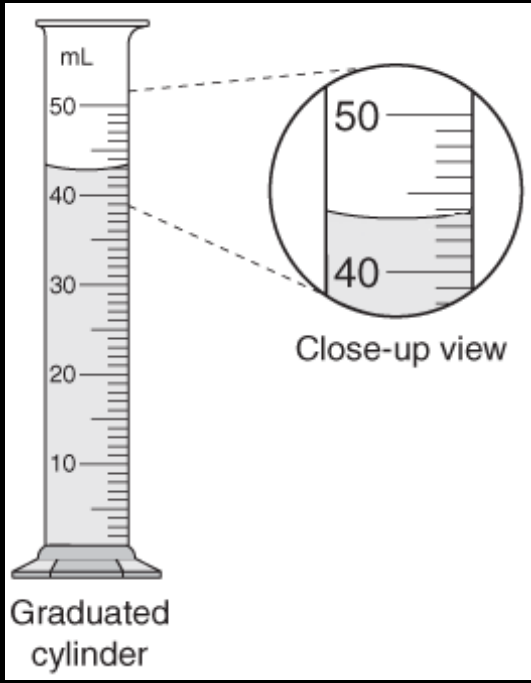
Measuring Volume

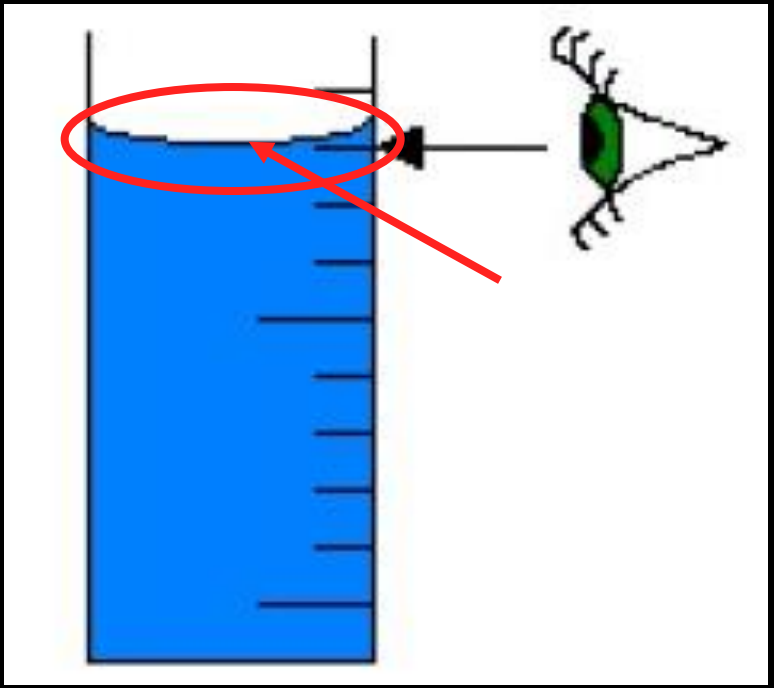
Volume is the amount of space an object takes up.

The base unit of volume is the liter (L or l). To measure volume, we use a graduated cylinder.

Meniscus

Volume is measured at the bottom of the meniscus.

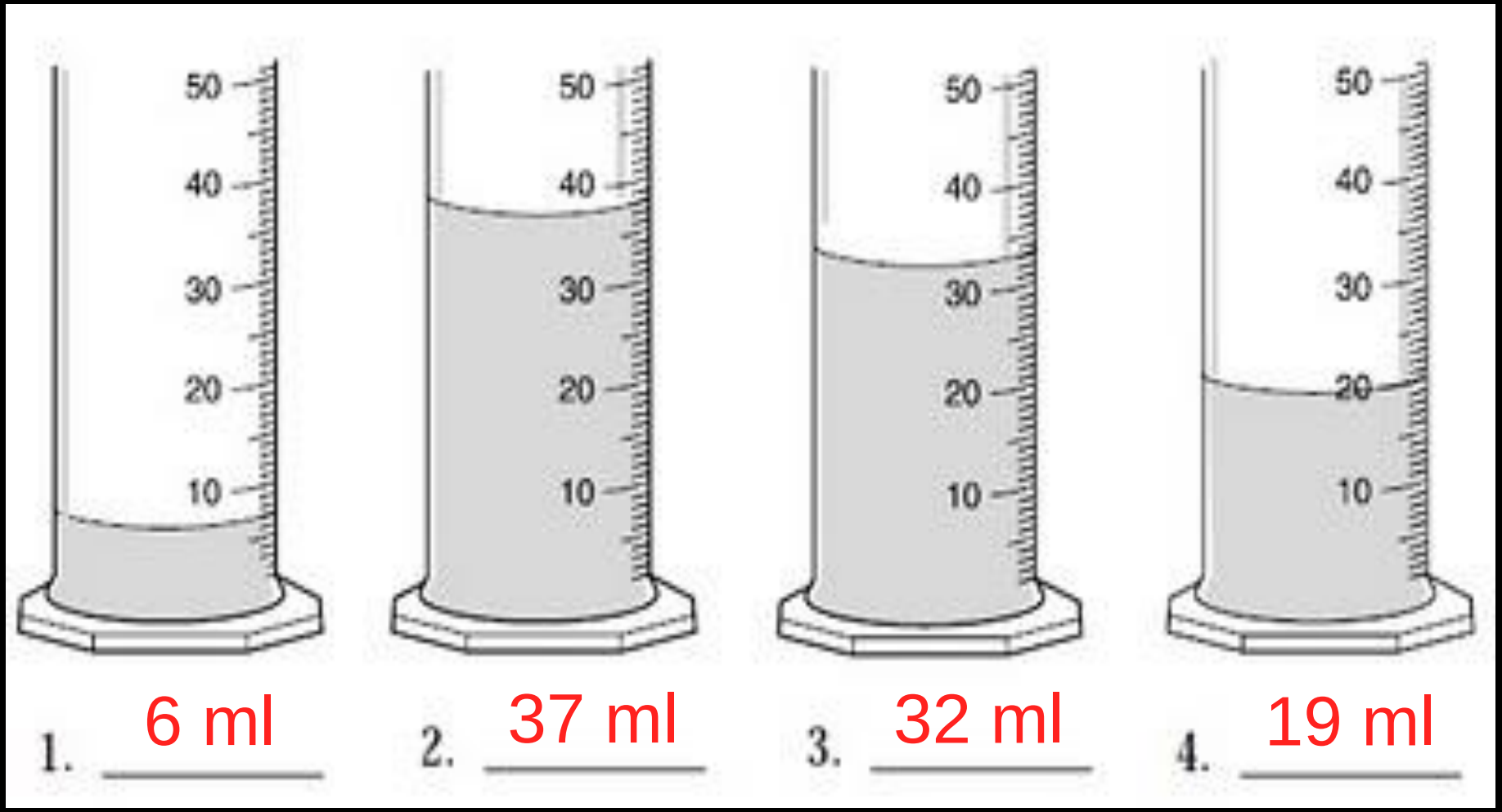




A concave meniscus occurs when the molecules of the liquid are attracted to the sides of the container.

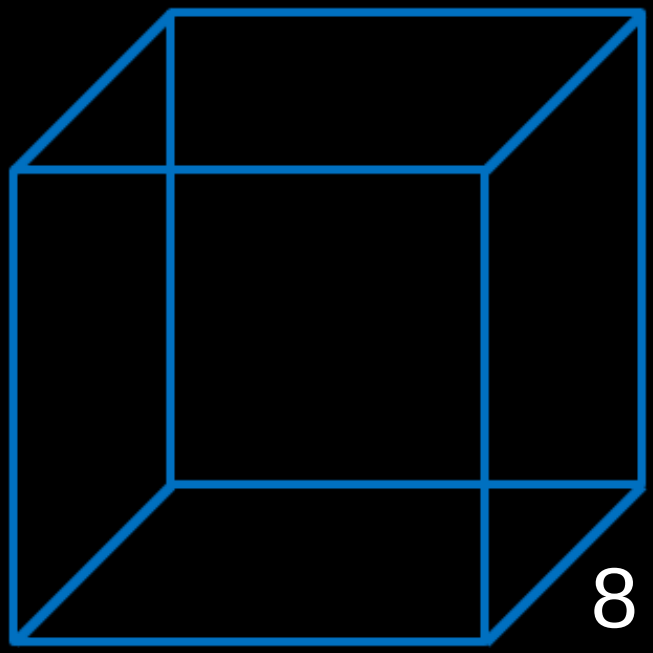
Measuring Volume

What is the volume in each graduated cylinder?



Measuring the Volume of Regular-Shaped Objects

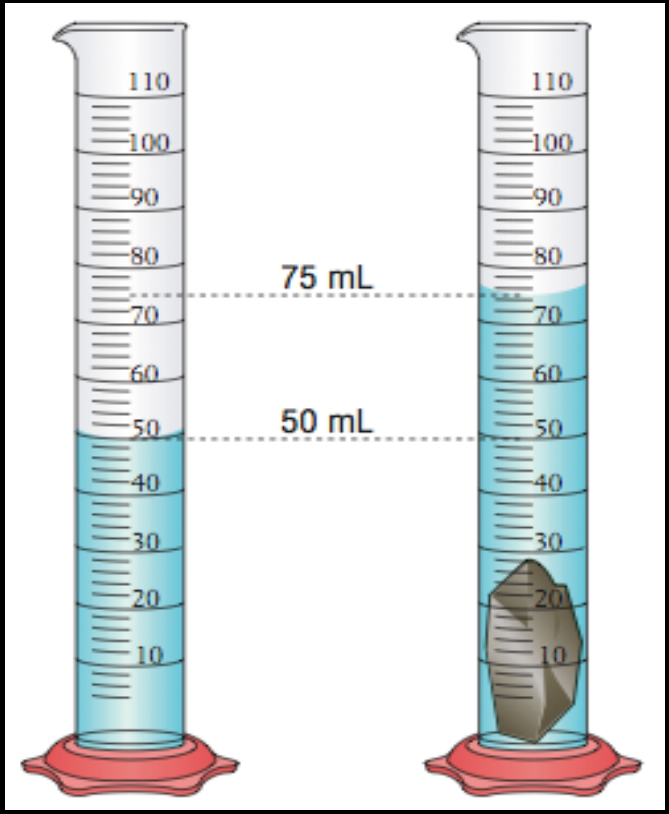
We can measure the volume of a regular object using the formula: Length X Width X Height



10 X 8 X 9 = 720 cm^3

Measuring the Volume of Irregular-Shaped Objects

We can measure the volume of an irregular object using the Water Displacement Method



Amt. of H20 w/ object = 75 ml

Amt. of H20 w/o object = 50 ml

Difference = 25 ml

YouTube
The Metric System
Explained

No Cussing!

The following 4-Letter Words are forbidden here:

Inch Mile

Foot Pint

Yard Acre

And we never swear the **Big F** (use °C)

Please keep it clean and

Metric

Stop Here