

# 1.3 Measurements

**Unit:** Introduction

**Learning Objectives:**

- **Perform** calculation involving scientific notation and conversion factors.
- **Identify** the metric and SI Units used in science and convert between common metric prefixes.
- **Compare** and **contrast** accuracy and precision.
- **Relate** the Celsius, Kelvin and Fahrenheit temperature scales.

**Language Objectives:**

- Be able to describe quantities using metric units with & without prefixes.

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**Notes:**

Measurements have \_\_\_\_\_ and required \_\_\_\_\_ .

<b>Quantity</b>	<b>Scale</b>
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Length.....

Mass.....

Time.....

Electric Units.....

**Must Know SI Units**

<b>Quantity</b>	<b>Base Unit</b>	<b>Symbol</b>
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Length

Mass

Time

Temp

Current

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Use this space for summary and/or additional notes.

### SI Units of Measurement

Additional SI Units, called **derived units** are made from combination of base units.

Ex: **Volume** is the amount space taken up by an object

**Density** is the ratio of an object's mass to its volume; SI Unit

Derived Units		
Quantity	Unit	Symbol
Area	square meter	m <sup>2</sup>
Volume	cubic meter	m <sup>3</sup>
Density	kilograms per cubic meter	kg/m <sup>3</sup>
Pressure	pascal (kg/m•s <sup>2</sup> )	Pa
Energy	joule (kg•m <sup>2</sup> /s <sup>2</sup> )	J
Frequency	hertz (1/s)	Hz
Electric charge	coulomb (A•s)	C

### SI Prefix units (Must know)

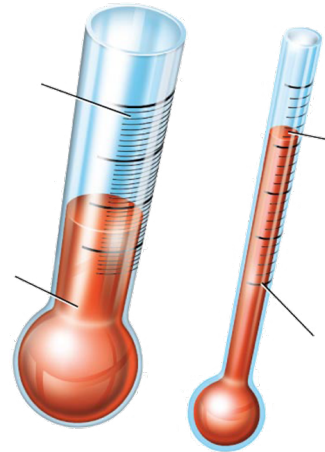
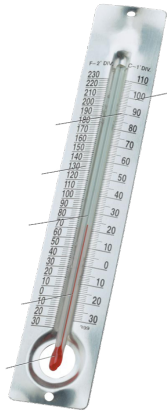
Prefix	Symbol	Meaning
Mega		
Kilo		
<b>BASE UNIT</b>		
Deci		
Centi		
Milli		
Micro-		
Nano		
Pico		

**10<sup>exp</sup>**

Use this space for summary and/or additional notes.



## Measuring Temperature



## Measuring Temperature

Two of the most familiar scales are \_\_\_\_\_ and \_\_\_\_\_

How to convert between the scales

SI Base unit for temperature is \_\_\_\_\_  
Lowest possible temperature in the kelvin scale is \_\_\_\_\_

How to convert between Celsius and Kelvin

Common Temperatures			
	Fahrenheit (°F)	Celsius (°C)	Kelvin (K)
Water boils	212	100	373
Human body	98.6	37	310
Average room	68	20	293
Water freezes	32	0	273

Use this space for summary and/or additional notes.