NOTE TAKING: 1. Put the date on the paper.
2. Fill in all the notes
3. Add notes from the board, etc.
4. Add information from the text.

I EXPLORING PHYSICAL SCIENCE:

A. That's Science !

1. What is science?_____

_____

B. What is Physical Science?

1. Physical science is the study of _____&_____
2. Matter is the "_____" that everything is made of.
3. Energy is the _____to do_____.

C. Branches of Physical Science: (3 main ones)

1. _____-_____
2. _____-_____
3. _____-_____

D. Physical Science: All Around You:

1. 4 more sciences:

a)_____-_____

b)_____-_____

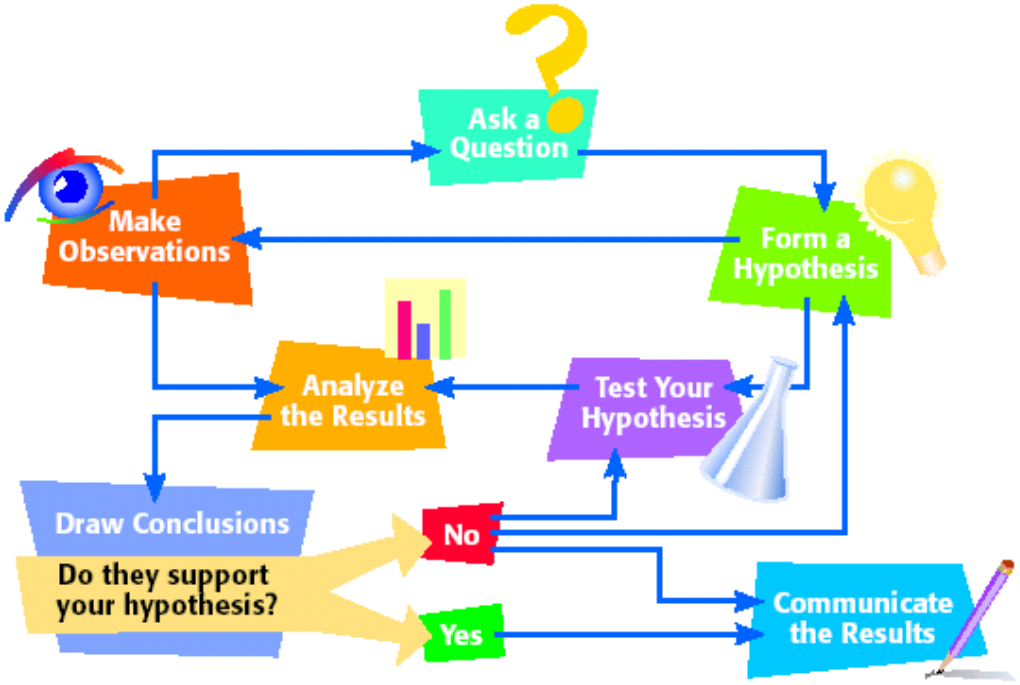
c)_____-_____

d)_____-_____

II SCIENTIFIC METHODS:

A. What are Scientific Methods?

1. They are the _____that scientists answer _____ and solve_____.



B. Asking a Question

1. Helps _____ the purpose of an _____.
2. Usually asked after many _____.
3. An observation is any use of the _____ to gather _____.

C. Forming a Hypothesis

1. It is a possible _____ or _____to a question.
2. A good hypothesis is _____.
3. Scientists often make a _____before they test the hypothesis.

D. Testing the Hypothesis

1. A controlled experiment _____ the results from a control group with an experimental group.
2. Independent variable – the one thing that _____ change.
3. Dependent variable- the _____ to the independent one.

D. Analyzing the Results

1. After you _____ & _____data, you must analyze them.
2. You must find out if the results _____the hypothesis.
3. _____ & _____ are useful.

E. Drawing Conclusions

1. _____
2. _____
3. _____

III SCIENTIFIC MODELS:

A. Models in Science

1. A model is a _____ if an object or a system.
2. Three common kinds of scientific models:
   a. _____-_____
   b. _____-_____
   c. _____-_____

B. Using Models

1. They can also be _____ to help learn new information.
2. Theory-_____
3. Scientific law-_____

IV TOOLS, MEASUREMENT:

A. Tools in Science

1. One way to collect _____ is to take _____.
2. Some tools are: _____ _____ _____

B. Making Measurements

1. SI is the _____
2. Two reasons why it is a good system:

   a._____

   b. _____

Common SI Units

Length 	**meter (m)** kilometer (km) decimeter (dm) centimeter (cm) millimeter (mm) micrometer (μm) nanometer (nm)	 1 km = 1,000 m 1 dm = 0.1 m 1 cm = 0.01 m 1 mm = 0.001 m 1 μm = 0.000001 m 1 nm = 0.000000001 m
Volume 	**cubic meter (m^3)** cubic centimeter (cm^3) liter (L) milliliter (mL)	 1 cm^3 = 0.000001 m^3 1 L = 1 dm^3 = 0.001 m^3 1 mL = 0.001 L = 1 cm^3
Mass 	**kilogram (kg)** gram (g) milligram (mg)	 1 g = 0.001 kg 1 mg = 0.000001 kg
Temperature 	**Kelvin (K)** Celsius (°C)	 0°C = 273 K 100°C = 373 K

3. Length:_____

   Tool:_____ Units:_____

4. Mass:_____

   Tool:_____ Units:_____

5. Volume:_____

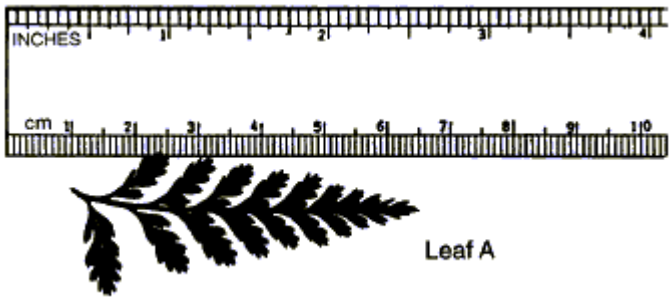
   Tool:_____ Units:_____

6. Temperature:_____

   Tool:_____ Units:_____

C. Metric Ruler:

1. When reading the metric ruler, remember:



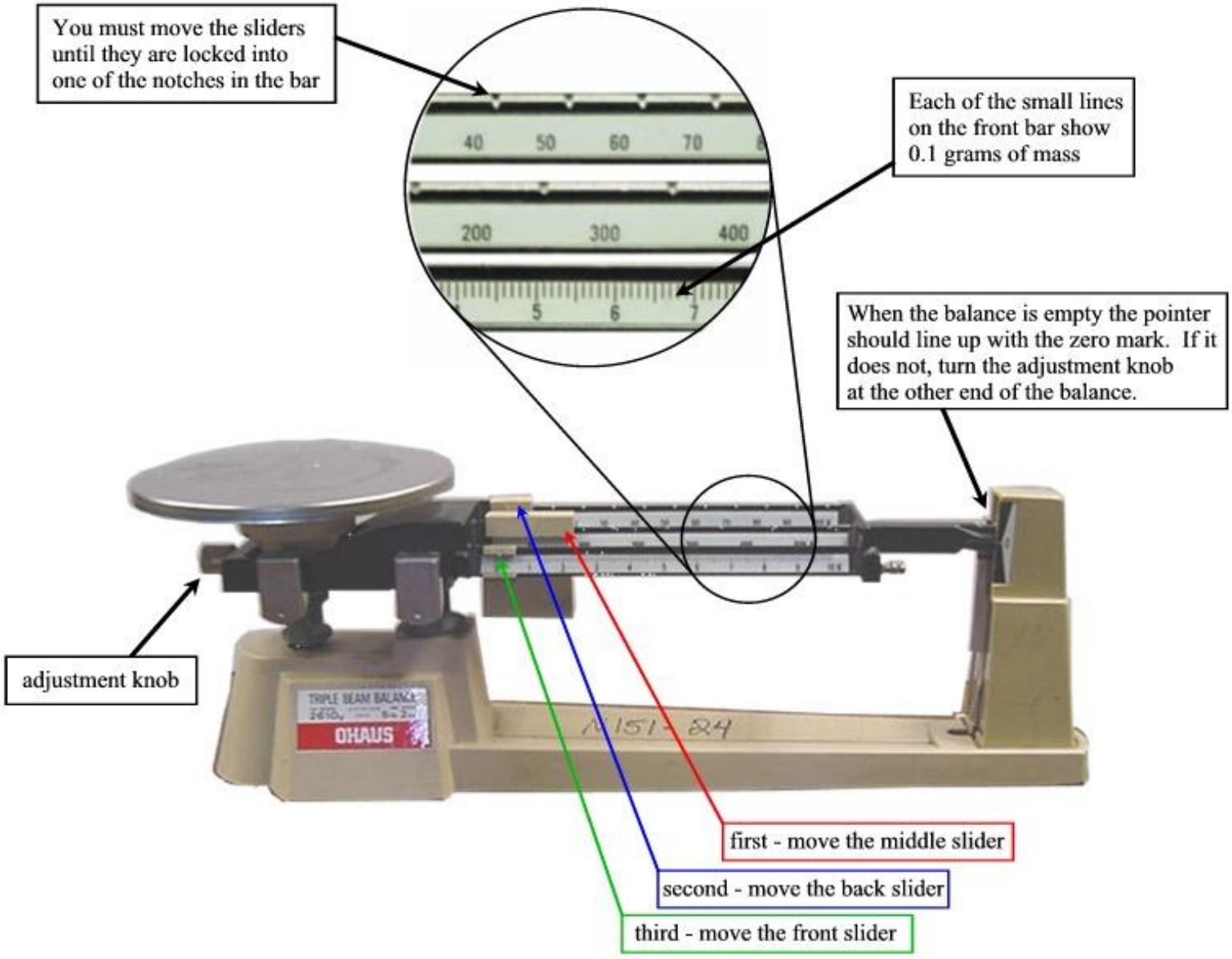
   a. There are _____ mm in 1 cm.

   b. The leaf at right is :

      _____ mm or _____ cm

   c. Be careful, the leaf starts at the 1 cm mark.

D. Triple Beam Balance:

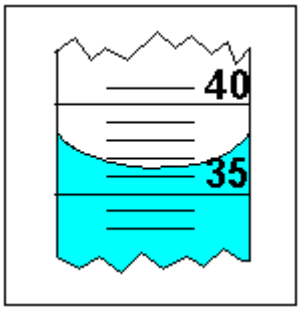


E. Graduated Cylinder:

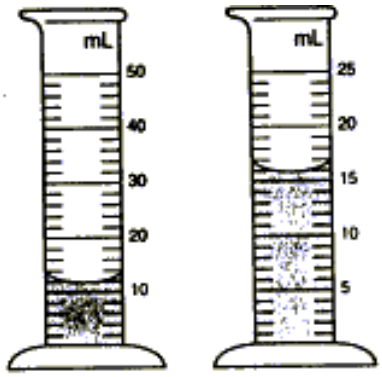
1. When measuring liquid, hold the graduated cylinder so you are at _____ level with the level of the liquid.
2. Notice the liquid is curved downward:

   This is called the _____

   The reading on the picture at right is _____ mL.



3. Sometimes graduated cylinders have lines for every mL and sometimes for every two mL. Look at the cylinders below:

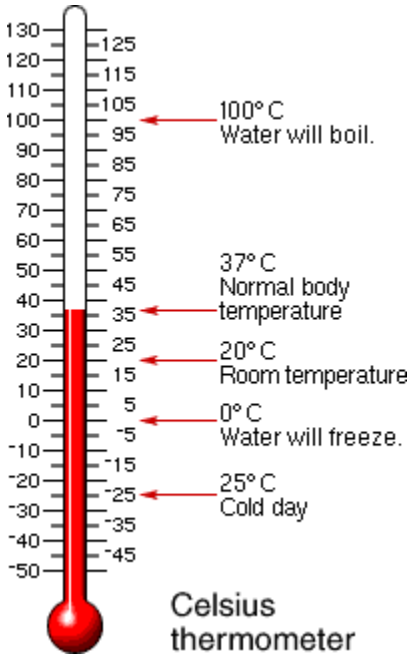


   a. What is the volume of liquid for the graduated cylinder on the…

      LEFT:_____

      RIGHT:_____

F. Thermometer:

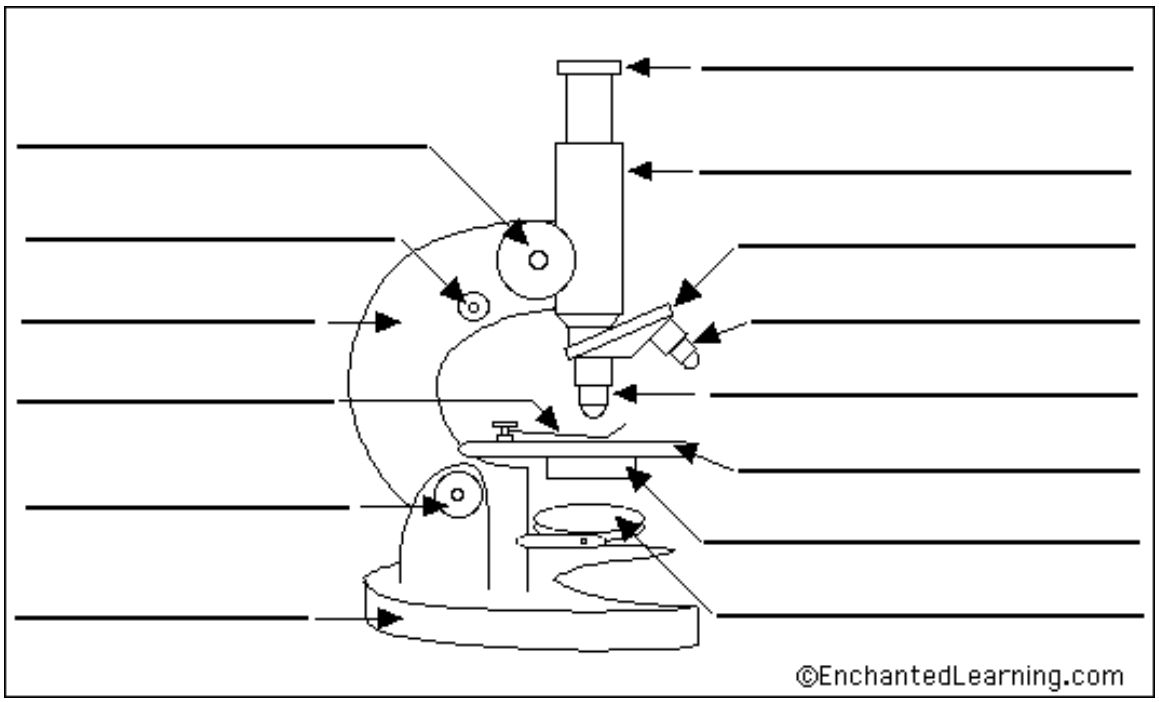


On the Celsius Scale:

1. Water boils at _____
2. Water freezes at _____
3. Normal body temperature is _____

G. The Microscope:

1. Diagram:



2. Parts:

a. Eyepiece:_____

_____

b. revolving nosepiece:_____

_____

c. objectives:_____

_____

d. stage:_____

e. diaphragm:_____

_____

f. coarse focus knob:_____

_____

g. fine focus knob:_____

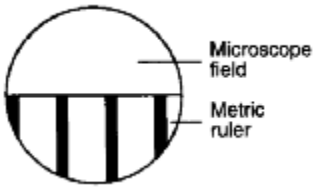
_____

3. Image:

a. Due to the way the lenses bend the light waves, the image you see is _____ and _____

b. When you look into the microscope, you see a _____ area of light. This is called the _____ of _____

c. On low power, the field of view is approximately _____mm in diameter.



4. Rules for using the microscope:

b. _____

_____

c. _____

_____

d. _____

_____

e. _____

_____

f. _____

_____

g. _____

_____

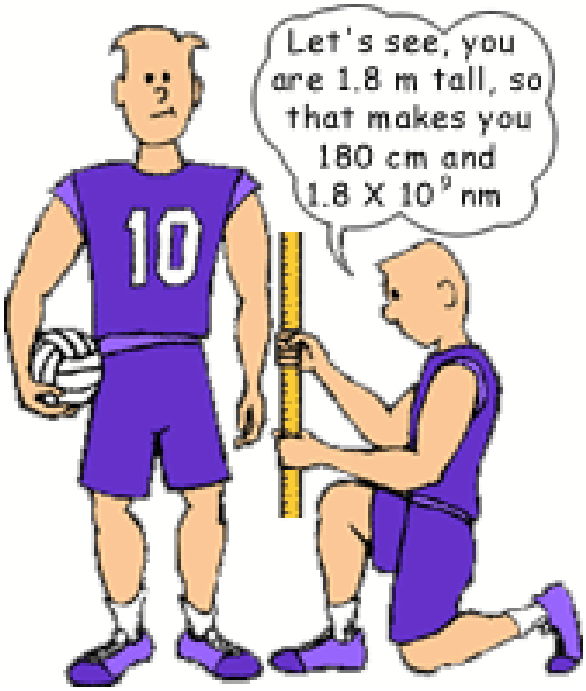
4. When you are finished with the microscope, do the following:

a. _____

b. _____

c. _____

H. Metric Conversions:



1. The metric system is easier to use because:
   a. It is based on _____
   b. You only have to _____ the decimal point _____ or _____.
2. The prefixes used the most are:
   Kilo:_____
   Deka:_____
   Deci:_____
   Centi:_____
   Milli:_____
3. Look at the PREFIX table below:

KILO	HECTO	DEKA	Gram Liter Meter	DECI	CENTI	MILLI
1000	100	10		.1	.01	.001

   a. When you convert, use this table to know which way to move the decimal point and how many places.
4. Example:
   a. If you have 23 centimeters, how many millimeters is that?
      Start at the Centi box in the table, move to the Milli box. You went one place to the right, so the decimal point goes one place to the right. The answer is:_____

a. 1200 grams = _____ kilograms

b. 35 kilograms = _____ hectograms

c. 4.5 kilograms = _____grams

d. 13 millimeters = _____ centimeters

e. 13 millimeters = _____meters

f. 54 centimeters = _____meters

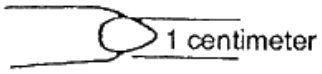
g. 76 decimeters = _____meters

h. 85 centimeters = _____decimeters

i. 4800 meters = _____kilometers

j. 5734 centimeters = _____hectometers

1 centimeter (or 1 cm) = the width of some part of your smallest finger or fingernail



1 kilometer (or 1 km) = a little more than half a mile (pronounced KILL-oh-meet-ur not kill-AHM-it-ur)