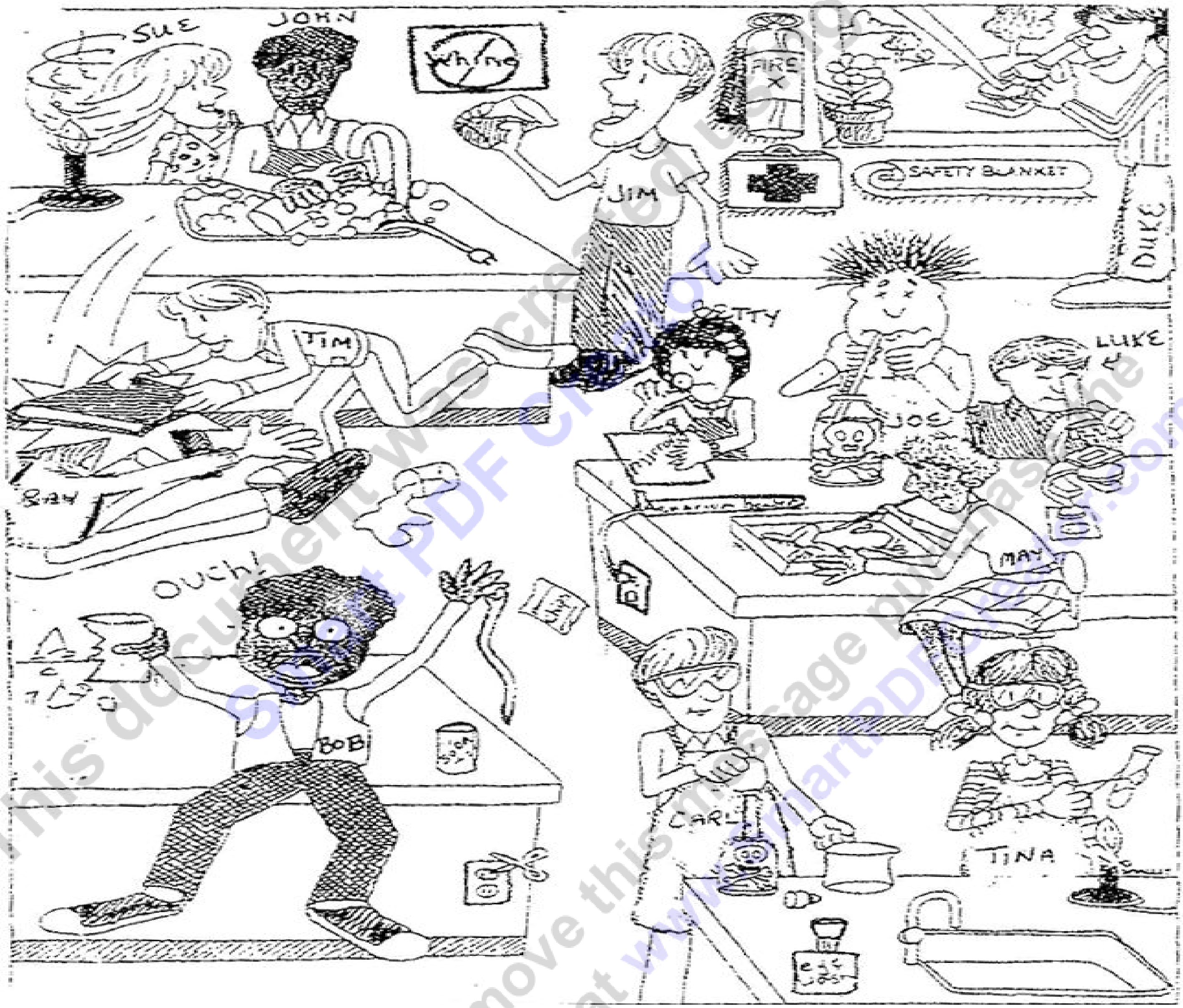
Science Skills Unit

Name:
Due:

Please view the picture and answer the questions below about laboratory safety.



Write down the names of the students who are doing things right and wrong below.

Right ☺	Wrong! ☹

List 3 unsafe activities shown in the illustration and the person making them? Why is it unsafe?

Name:_____ Unsafe Activity:	Name:_____ Unsafe Activity:	Name:_____ Unsafe Activity:

List three items in the illustration that are there for the safety of the students in the lab.

1.)_____ 2.)_____ 3.)_____

What are three things shown in the lab that should not be there?

Describe two uses of magnification on the lines below. Write a couple of complete sentences that describe the specifics of the use.

1.)_____

_____

_____

_____

_____

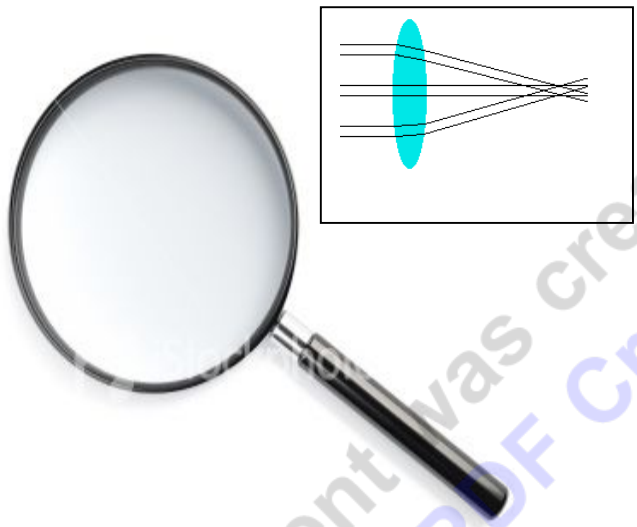
2)_____

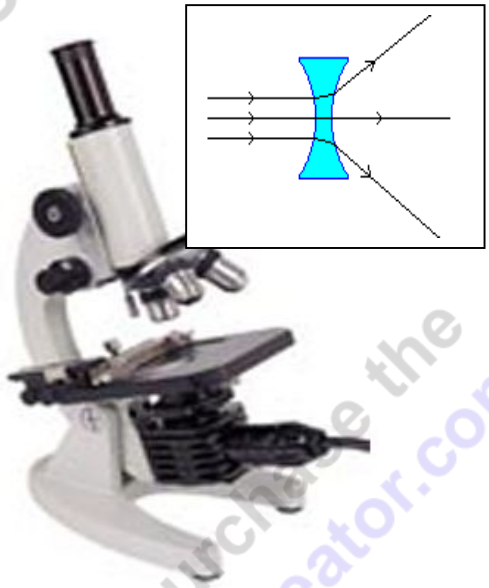
_____

_____

_____

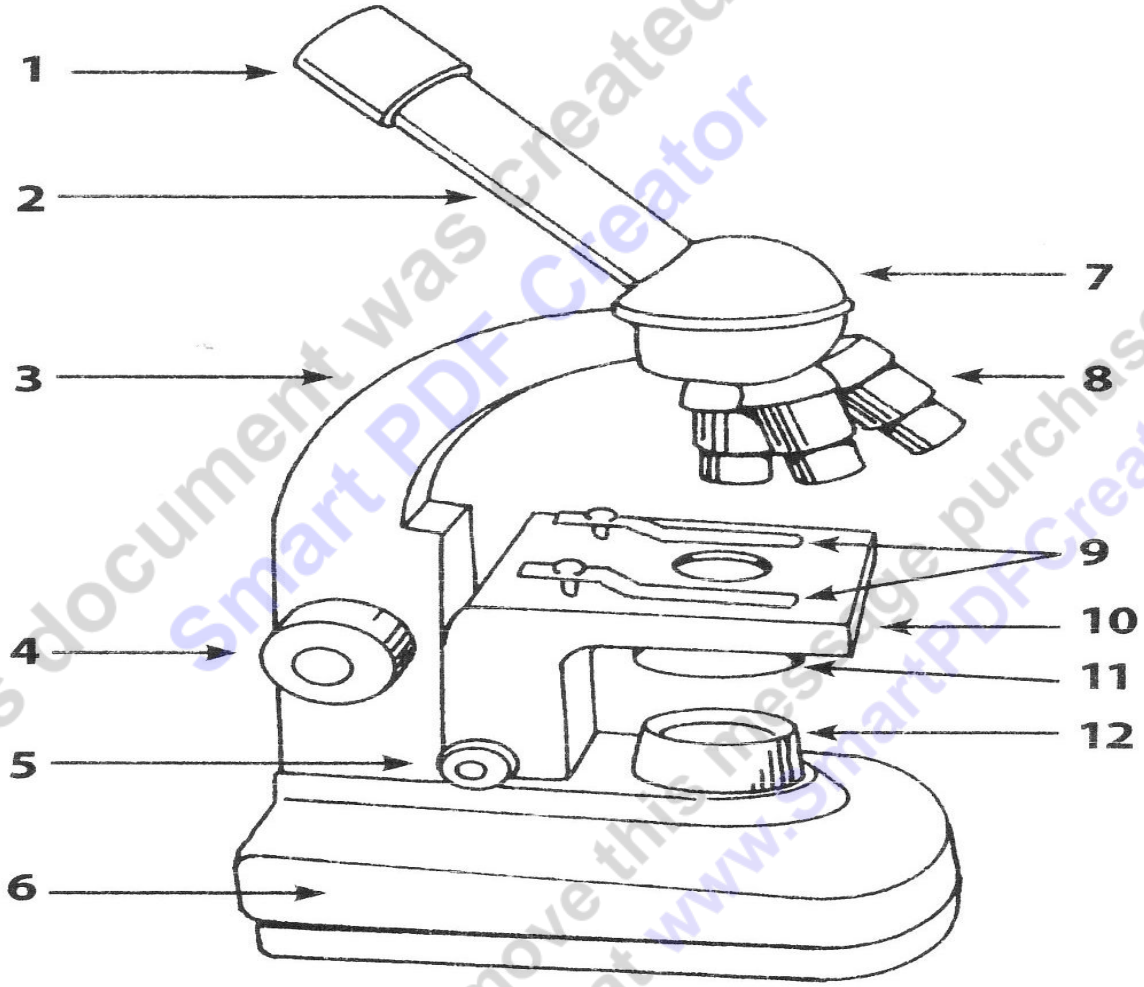
Warning! 3 Part Question! Check each diamond after completion!
◊1) Record the name of each type of magnification device below.
◊ 2) Describe specifics about each of the pictures below (what type of specimen does it magnify).
◊3) Describe the types of lens in the smaller boxes





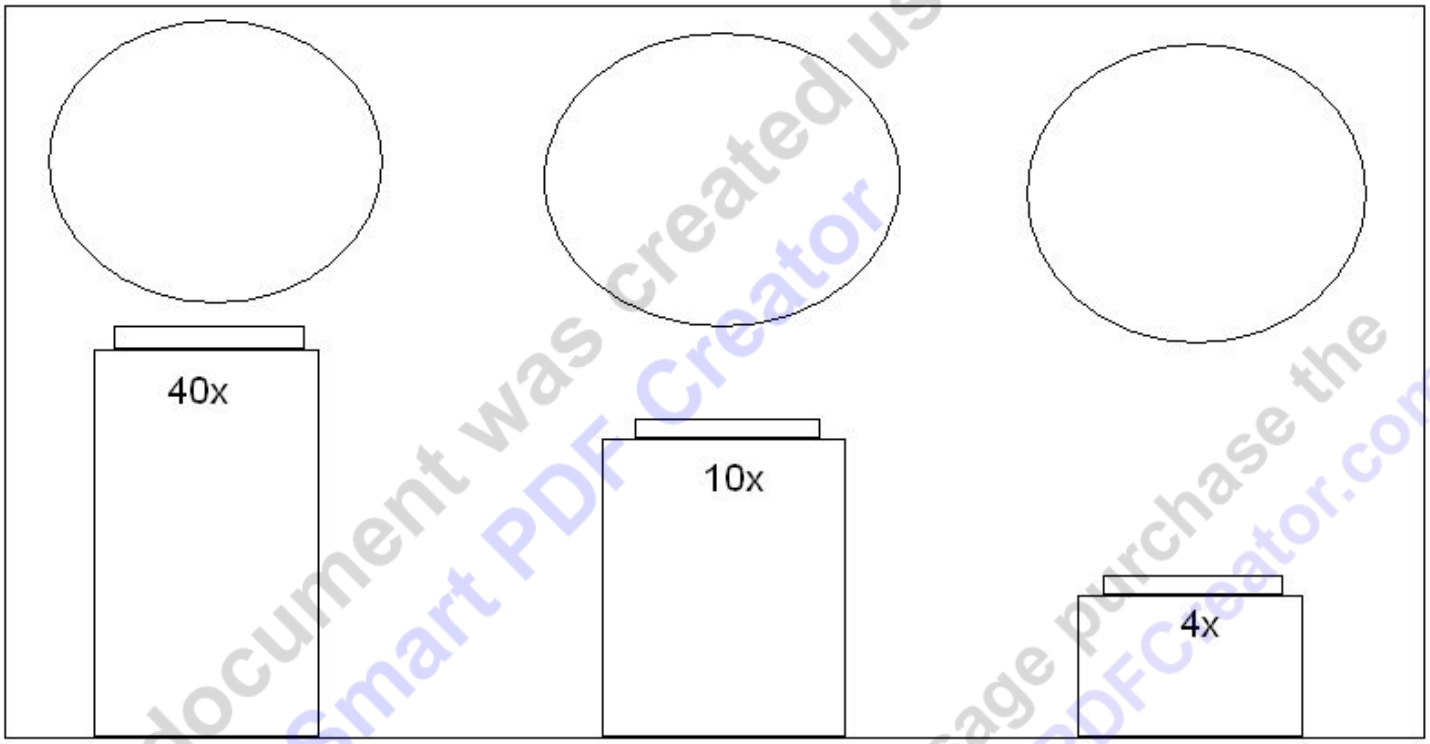
Please label the parts of the compound light microscope below.
Use the word bank below. Cross off the word when used.

Base	Diaphragm	Stage
Light Source	Fine Adjustment knob	Objective Lenses
Body Tube	Revolving nose piece	Eyepiece
Stage Clips	Coarse Adjustment Knob	Arm



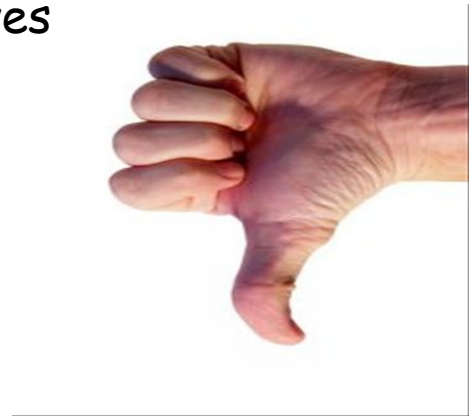
How do you carry a microscope in the lab?	What are three things you should do when putting the microscope away?

3 Part Question! Check the diamond when each part is completed
◊ 1.) Please label the high, medium, and low power objective lens.
◊ 2) Draw the letter "e" as it appears on low, medium, and high power.
◊ 3) Please record the magnification below each circle if you are using a 10x ocular lens in the eyepiece.



What are the positives and negatives of the "The Old English / U.S. Customary System of Measurements?"

Negatives



What is so important about the number 10 and the metric system? Describe some reasons in the box below. The numbers on the right are there to help you.

Prefix	Symbol	Multiplier	
exa	E	10^{18}	1,000,000,000,000,000,000
peta	P	10^{15}	1,000,000,000,000,000
tera	T	10^{12}	1,000,000,000,000
giga	G	10^{9}	1,000,000,000
mega	M	10^{6}	1,000,000
kilo	k	10^{3}	1,000
hecto	h	10^{2}	100
deka	da	10^{1}	10
deci	d	10^{-1}	0.1
centi	c	10^{-2}	0.01
milli	m	10^{-3}	0.001
micro	μ	10^{-6}	0.000,001
nano	n	10^{-9}	0.000,000,001
pico micro micro	p $\mu\mu$	10^{-12}	0.000,000,000,001
femto	f	10^{-15}	0.000,000,000,000,001
atto	a	10^{-18}	0.000,000,000,000,000,001

Use the above chart to assist you if needed to do the SI conversions below.

Convert the following number into the units below.	Convert the following number into the units below.	Convert the following number into the units below.
Kilometers	Kilometers	**Kilometers 5**
Hectometers	Hectometers	Hectometers
Decameters	Decameters	Decameters
Meters 1	Meters	Meters
Decimeters	Decimeters	Decimeters
Centimeters	Centimeters	Centimeters
Millimeters	**Millimeters 750**	Millimeters
Micrometers	Micrometers	Micrometers

Please convert the following number into scientific notation. 93,000,000	What's 156,000 in scientific notation?	What is 4.56×10^{-9}?

Please fill in the missing terms and units in the sequence below.

King	Kilometer		10^{3}
	Hectometer	100m	10^{2}
Died		10m	
While	Standard		10^{0}
	Decimeter	.1m	
Chocolate	Centimeter		10^{-2}
Milk		.001m	10^{-3}

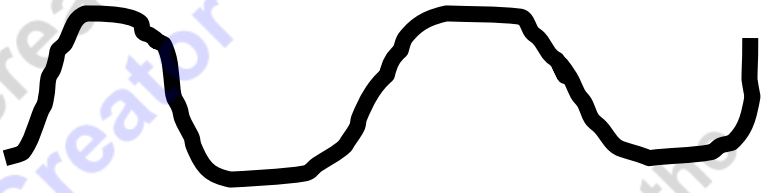
Please fill in the missing terms and units in the sequence below.

Quantity	Base Unit	Symbol
Length	Meter	
	gram	
Temperature		K
	Second	s
Amount		mol
	Newton	N
Electric Current		
Luminous Intensity	Candela	
	Liter	l

How long is the line below in…

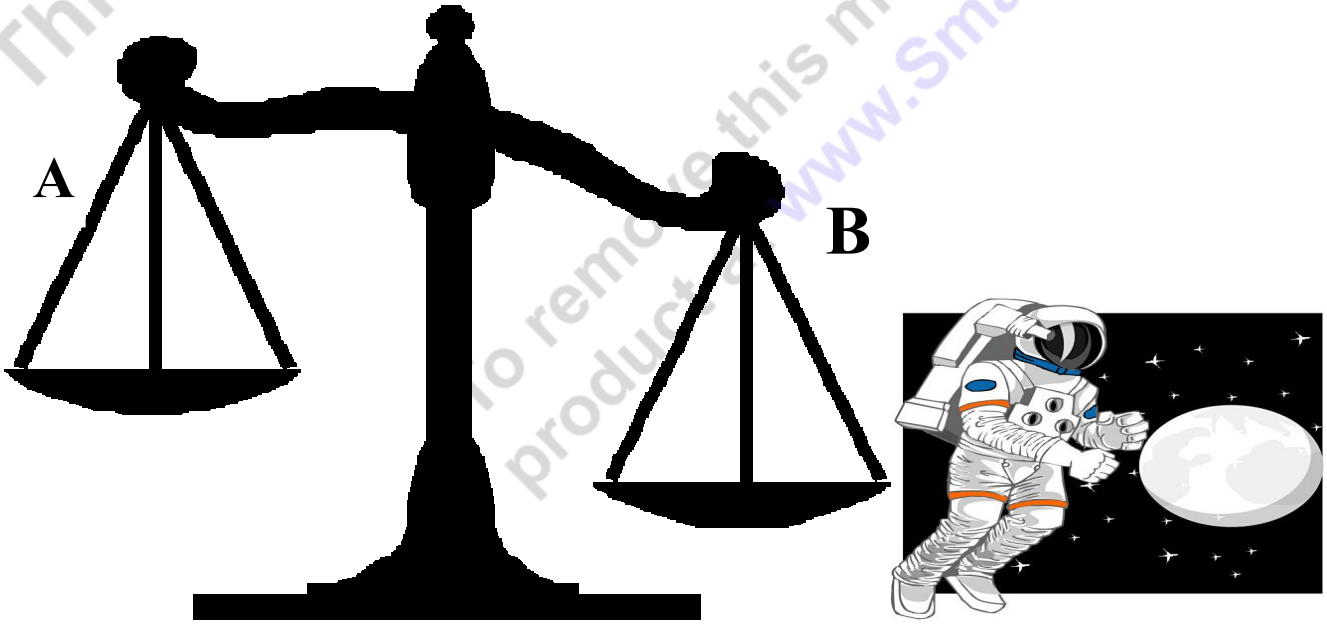
Meters _____
Centimeters _____
Millimeters _____

How long is the rope below in…



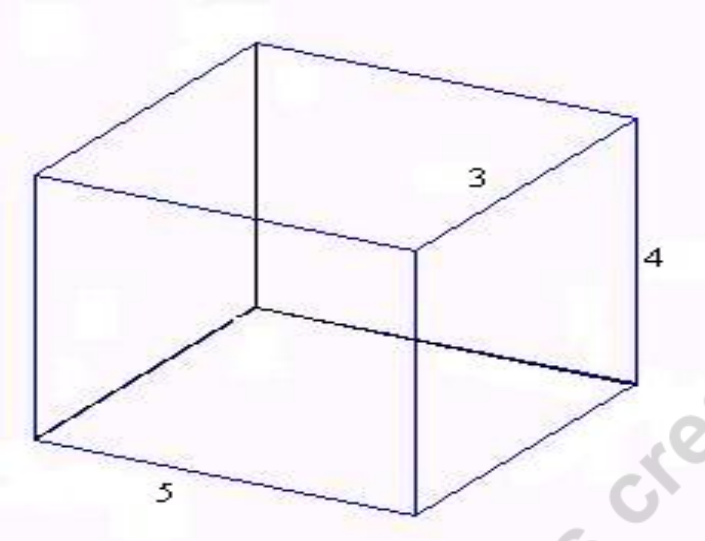
Meters _____
Centimeters _____
Millimeters _____

1.) Please add some mass to the correct side of the equal balance below so that the picture below makes sense.
2.) Do you know the difference between mass and weight?

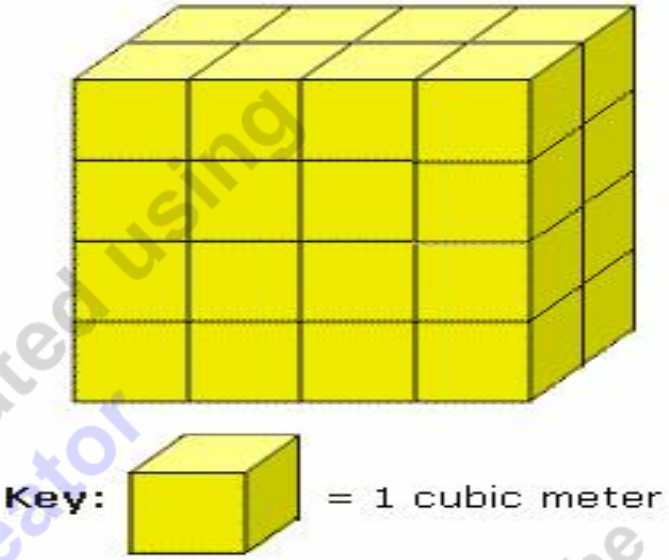


What is the volume of the two shapes below?

centimeters



meters



Warning! 3 Part Question. – Check the Diamonds when completed.

◊1) How much fluid is in A and B?

◊2) What is the curve of the water called and where should you measure?

◊3) What is the volume of the toy diver based on water displacement?

A

B

Volume of the Toy Diver?

What is the density of an objects whose mass is 500 grams and displaces 250 ml of water? $\text{Density} = \frac{M}{V} =$ Will the object float in water? Yes / No	What is the density of an objects whose mass is 200 grams and displaces 250 ml of water? Density = ---------- Will the object float in water? Yes / No

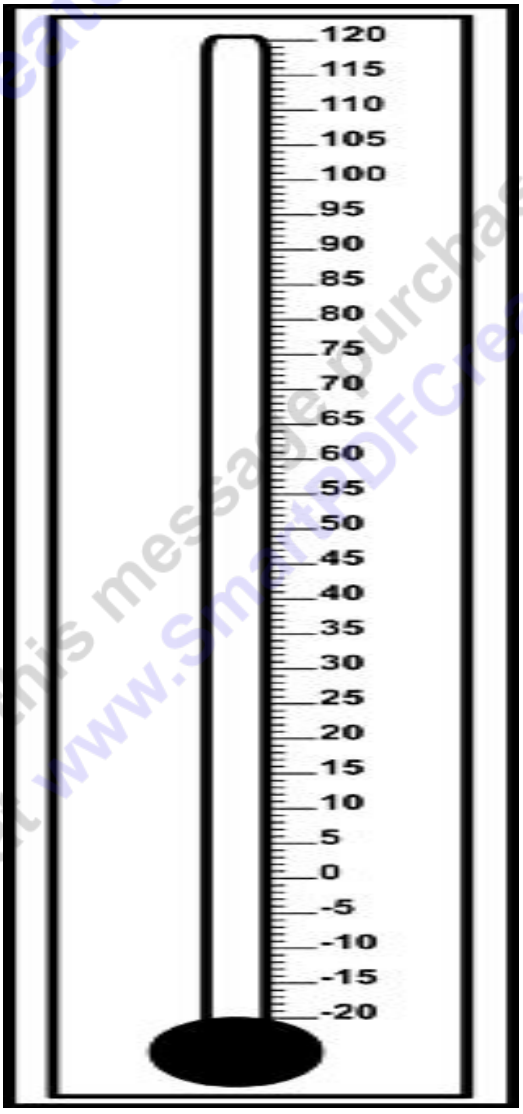
Warning! 4 Part Question. – Check the diamond when complete.

◊1) Color the thermometer so it displays 50 degrees Celsius?
◊2) Draw an arrow and label the temperature at which water freezes?
◊3) At what temperature does water boil?
◊4) Convert 22° C to degrees Fahrenheit

Begin by multiplying the Celsius temperature by 9.
Divide the answer by 5.
Now add 32.

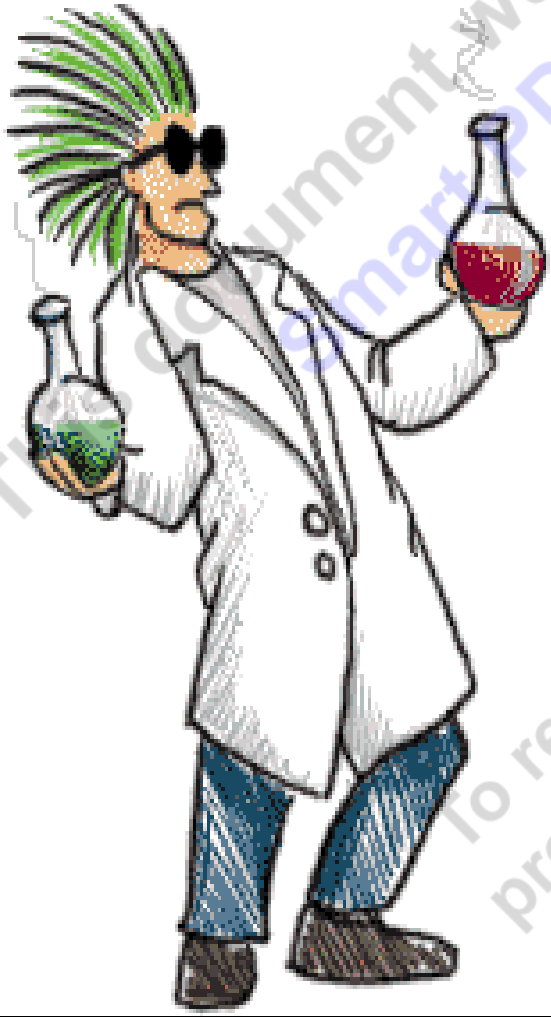
Or

Take the temperature in Celsius and multiply 1.8. Add 32 degrees. The result is degrees Fahrenheit.



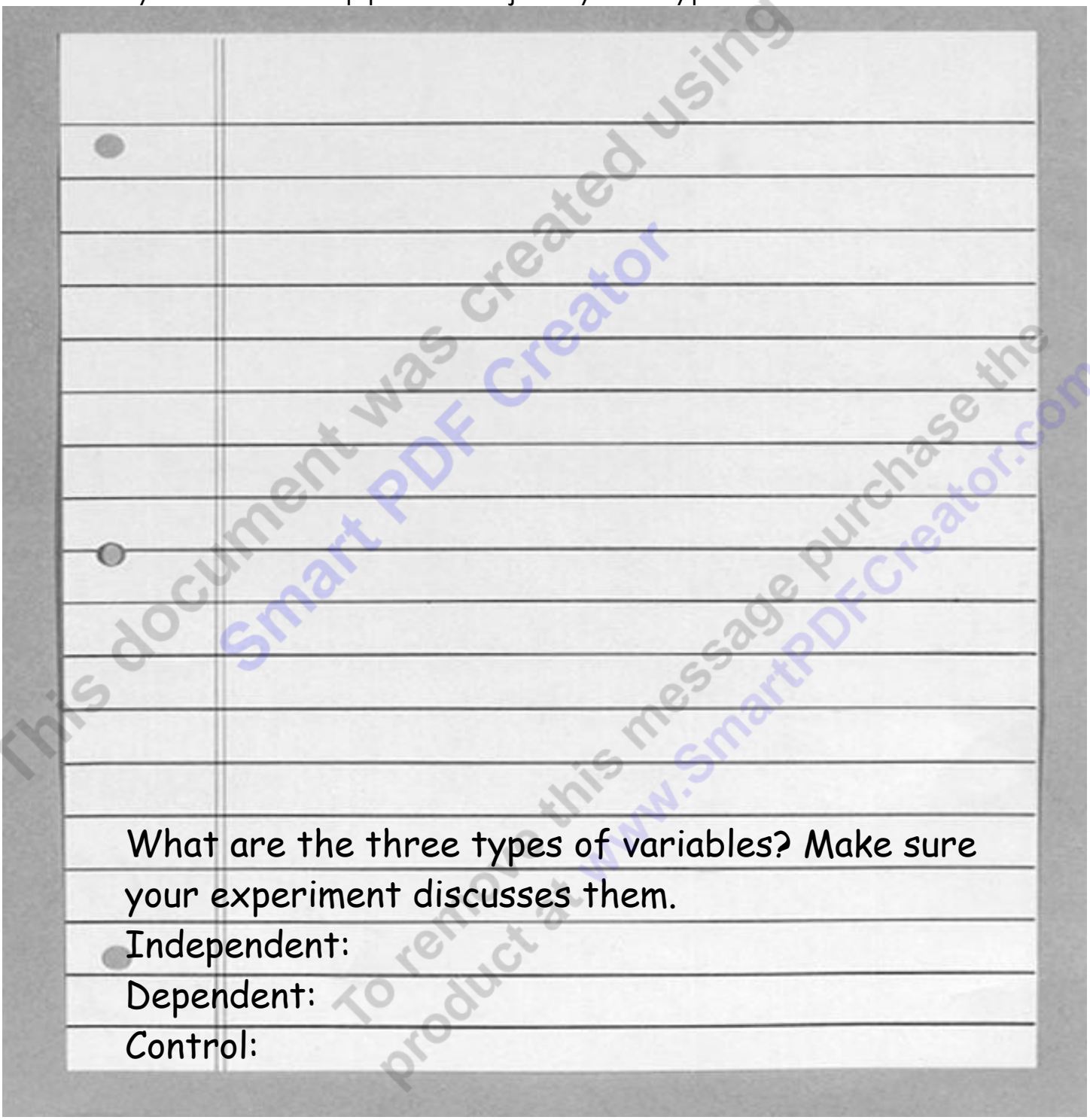
How many… Seconds in a minute?_____ Minutes in an hour?_____ Seconds in an hour? _____ Hours in a day? _____ Days in a year? _____ Days in a leap year?_____ Seconds in a day?_____ Seconds in a year? _____ Seconds in a decade? _____ (don't forget two leap years)	Please record a brief description of a few SI units that have not been covered in detail on this unit assessment? • • • •

A bad scientist is one who… - Finish this sentence with examples.

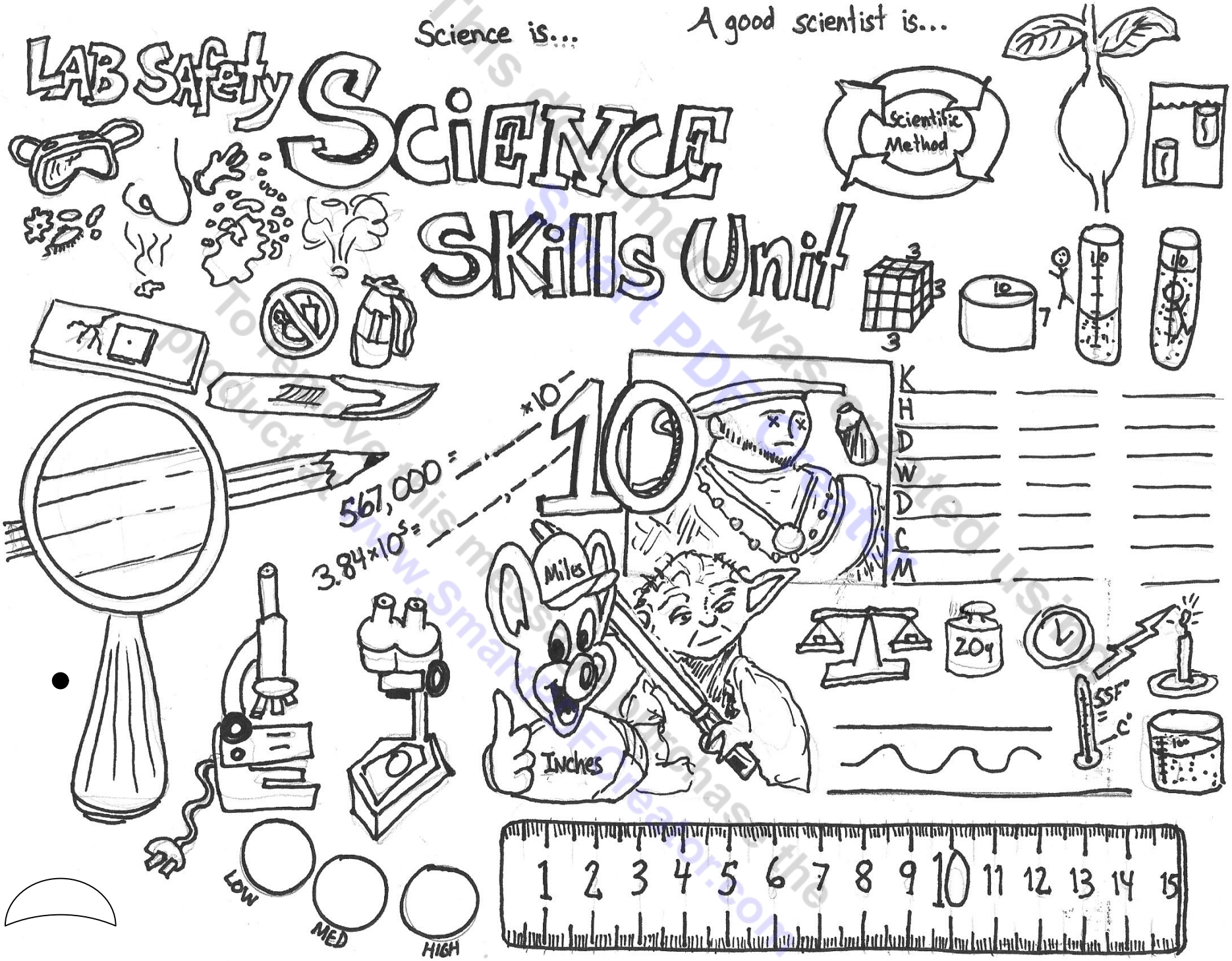


Conduct a very simple scientific study of your own. Record each step of the scientific method using the notebook page below. Include your observations, hypothesis, experiment, results.

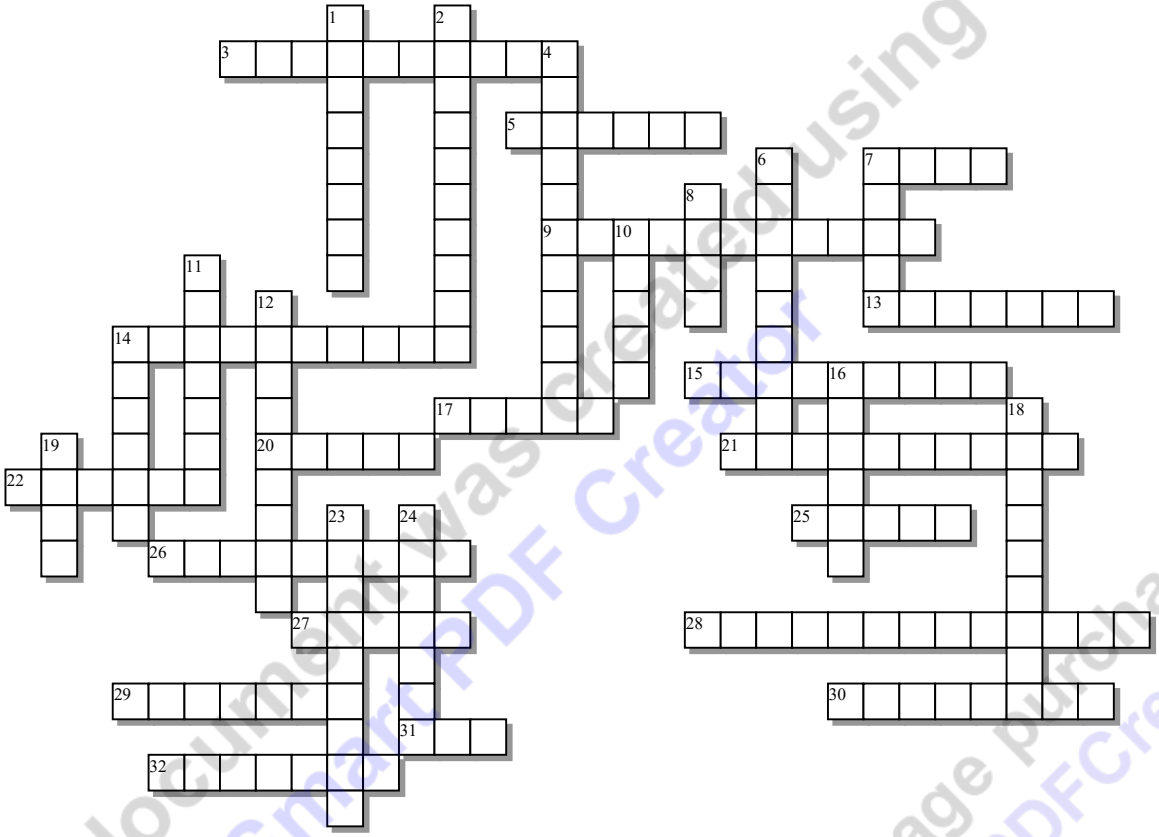
Did your results support or reject your hypothesis?



Please gently color the drawings and provide labels / text in the space to fill in the next page.



Science Skills Unit Crossword **Name:**



Across:

3 - An educated guess to your problem / question that is testable.
5 - Base Unit for temperature - K
7 - Always hold the microscope by the arm and by the _____.
9 - Anything you can see, hear, smell, touch, taste, (Using your senses).
13 - This is found by dividing and objects mass by its volume.
14 - .001m
15 - Keep _____ solutions away from flames.
17 - Keep electrical equipment

Down:

1 - Scientific _____. A method for expressing, and working with, very large or very small numbers.
2 – 100 of these are in a meter.
4 - Type of magnification device that looks at things in which light cannot pass like. Lets you see the image in 3D.
6 - Check _____ for cracks before using.
7 - Avoid _____ and other bodily fluids.
8 – A unit for weight. G_ _ _
10 - Always lower the _____

away from _____.
20 - 1m Standard
21 - 100m
22 - Do not breathe V_ _ _ _ _ _ or put things close to your nose.
25 - Compound _____ microscope. It lets you magnify images that light can pass through.
26 - A conclusion based on your observations.
27 - Base Unit for volume
28 - The act of expanding something in apparent size.
29 - Clean spills from the _____ in.
30 - Type of microscope that uses small particles. _____ microscope
31 - Please do not _____ in the lab.
32 - Always wear safety _____ and gloves when required.
after using the microscope.
11 - Water freezes and 0 degrees _____.
12 - 1000m
14 - Scientific _____. A process that is the basis for scientific inquiry (questioning and experimenting).
16 - The International System of Unit (SI) is also known as the _____ system.
18 - 10m
19 - It is most important to always be _____ in the lab.
23 - .1m
24 - This is a study of natural phenomenon, a systematic study and method, and Knowledge through experience.

Possible Answers:

base, blood, Celsius, Centimeter, Decameter, Decimeter, density, eat, electron, flammable, glassware, goggles, Gram, Hectometer, hypothesis, inference, Kelvin, Kilometer, light, Liter, magnification, Meter, method, Metric, Millimeter, notation, observation, outside, safe, science, stage, stereoscope, vapors, water