

STUDY GUIDE: UNIT #1 FINAL QUIZ

Know Lab Safety Rules

Know Lab Tools: Triple Beam Balance, Graduated Cylinder, Beaker, Meter Stick, Stereomicroscope

Definitions:

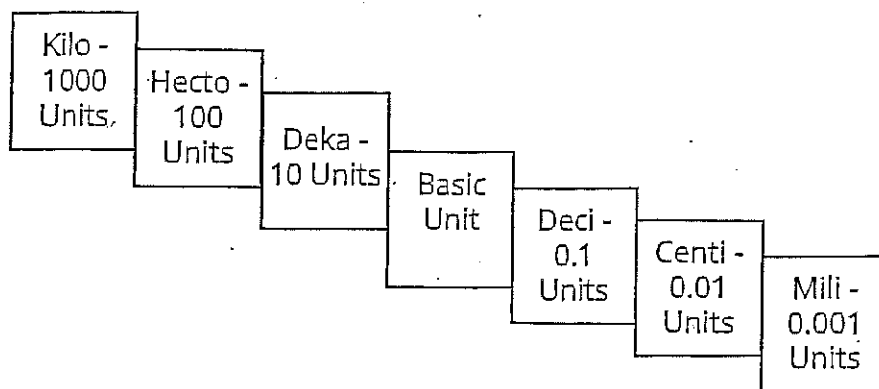
1. scientific inquiry- explaining something in the natural world by making observations
2. inference- explaining what is observed by using what is already known or experienced
3. prediction – an educated guess using what is already known stating what one thinks will happen
4. quantitative observations- descriptions that use numbers
5. qualitative observations- descriptions that can't be made using numbers

Metric Units:

1. mass- amount of matter an object has, measured in the basic unit of grams with a balance
2. volume- amount of space something takes up, measured in the basic unit of liters using a graduated cylinder
3. length- length or distance, measured in the basic unit of meters using a meter stick

Metric Conversions:

1. 200 km = _____ m
2. 5 g = _____ kg
3. 7.23 L = _____ mL
4. 68.54 dg = _____ hg
5. 46.7 hL = _____ cL



Practice Example - Experimentation

A scientist was studying brine shrimp, which are tiny animals that live in salt water. The scientist wondered whether temperature would affect how many brine shrimp eggs would hatch. The scientist performed an experiment and collected the following data.

	# of brine shrimp hatched at 15°C	# of brine shrimp hatched at 20°C	# of brine shrimp hatched at 30°C
Group 1	24	32	49
Group 2	18	39	56
Group 3	21	37	51
TOTAL	63	108	156
AVERAGE	21	36	52

1. Based on the data collected and recorded above, complete the scientific question being investigated.

How does _____ affect _____
_____?

2. Write a hypothesis statement that this experiment could have been designed to test.

If _____

then _____

because _____

3. Identify the following variables for the experiment above:

- Independent Variable -
- Dependent Variable -

4. Describe at least 3 controlled variables necessary for this experiment.

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-
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5. Write the correct independent and dependent variables on the proper axes.

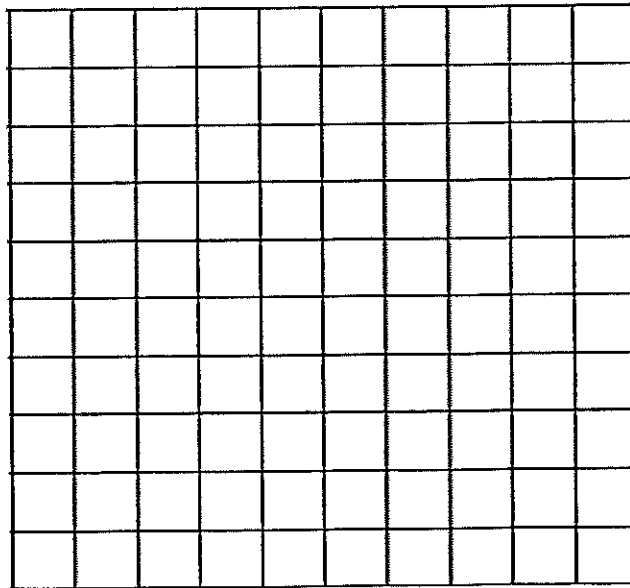
Scale the graph accurately by 5.

Write a proper title for the data in this experiment.

DO NOT GRAPH ANY DATA!!

Title:

Label:



Label:

SAMPLE QUESTIONS:

- _____ 1. Observations that deal with a number or amount are called
- manipulated observations
 - quantitative observations
 - qualitative observations
 - operational observations
- _____ 2. Explaining or interpreting the things that you observe based on reasoning from what you already know is called
- observing
 - predicting
 - inferring
 - classifying
- _____ 3. What is the unit used to measure the amount of space something occupies?
- centimeters.
 - grams.
 - milliliters.
 - pounds.
- _____ 4. What is the unit used to measure how much matter something has?
- centimeters
 - liters
 - grams
 - gallons
- _____ 5. When you draw a conclusion from an experiment, you ask yourself whether the data
- presents no interesting information
 - forms a scientific theory
 - defines a particular term
 - supports or disproves the hypothesis