**Notes & Handouts Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit 0 Study Guide**

1. **[](http://www.google.com/imgres?imgurl=http://thedesigninspiration.com/wp-content/uploads/2009/09/cute-animals/baby17.jpg&imgrefurl=http://thedesigninspiration.com/articles/70-cutie-baby-animals-bring-your-a-good-mood/&h=373&w=552&sz=72&tbnid=pltcE4P2ERhppM:&tbnh=90&tbnw=133&prev=/search?q=cute+animals&tbm=isch&tbo=u&zoom=1&q=cute+animals&usg=__5sPFfC-OeiMBNER94c5KQFUc2as=&docid=oq90d4VQ9Fim0M&hl=en&sa=X&ei=PDcyUMjzLZGk8gT134D4BA&sqi=2&ved=0CFUQ9QEwAg&dur=4290)Be able to identify equipment on your “Laboratory Equipment” handout.**
2. What units do we use to measure the following:
   1. Volume?
   2. Mass?
   3. Length?
3. How do you read a graduated cylinder?
4. Be able to read a ruler.
5. What are the steps of the scientific method?
6. In your own words, describe the following:
   1. Independent variable
   2. Dependent variable
   3. Controlled/Constant Variable
   4. Control group
7. What is the difference between an observation and an inference?
8. What is the difference between qualitative and quantitative data?
9. What are the properties of life?
10. Write your own example for each property of life.
11. Identify the dependent variable by underlining it. Identify the independent variable by circling it.
    1. How many days missed from school determines if I pass the course
    2. The price of gas determines how much I will purchase.
    3. The amount of clothing I wear depends on the temperature.
    4. How much I eat determines how long I need to exercise.
    5. The presence of coyotes in the desert depends on the size of the prairie dog population.
    6. The number of miles I drive is affected by the price of gasoline.
    7. The number of pizza slices left depends on the size of the family.
    8. How much weight I lose depends on how much I work out.
    9. How many students failed my class depends on how hard I make my test.
    10. The strength of an immune system depends on how many white blood cells you have.
    11. How long your car lasts is determined by how well you take care of it.
    12. The boiling point of water depends on the air pressure.
    13. The number of lawns I cut for depends on the hours of daylight.
    14. The amount of water I drink on a warm day depends on how thirsty I am.
    15. Whether I arrive to class on time depends on how quickly I walk in the halls.
    16. A player’s skill level in football is affected by how much he practices.
12. A group of students want to study the effects of temperature on bacterial growth. To get the bacteria, they leave Petri dishes of nutrient agar open on a shelf. They then put the dishes in different places: an incubator (37◦ C), a lab room (21◦ C), a refrigerator (10◦ C), and a freezer (0◦ C). Bacterial growth is measured by estimating the percentage of each dish covered by bacteria at the end of the 3-day growth period.
    1. What is the independent variable?
    2. What is the dependent variable?
    3. What variables should be constants/controls?
    4. Which do you think the control group is?
    5. What are two qualitative observations that can be made?
    6. What are two quantitative observations that can be made?
13. Write an observation:
    1. I think it will storm later.
    2. His favorite fruit is probably oranges.
    3. She must be a soccer player.
14. Write an inference:
    1. The dog’s tail is wagging.
    2. He sneezes when we walk past the pet store.
    3. Tina always drinks blue Gatorade.