

NAME _____

PERIOD _____

DATE _____

Answer the questions below

1. List the steps to the scientific method.

2. How is a theory different from a hypothesis?

3. Give two examples of quantitative data.

4. Give two examples of qualitative data.

5. How many variables should an experiment test at a time? Explain your answer.

6. What is the difference between an inference and an observation?.

Read each statement and determine if the statement is true or false.

- _____ 1. A biologist who is measuring the length of salmon as they travel upstream is collecting qualitative data.

- _____ 2. An experiment is a procedure that tests a hypothesis by providing data and observations under controlled conditions.

- _____ 3. In scientific investigations, experimenting usually comes before hypothesizing.

- _____ 4. In an experiment, there can be two independent variables..

- _____ 5. The scientific method begins with an observation or a question.

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Read the experiment below and answer the questions.

A drug company is testing the effectiveness of a new blood pressure medicine using rats as the test subjects. One group will consist of a set of rats that will be given the new blood pressure medication. One group will receive a fake blood pressure medication. The rats that took the blood pressure medication consistently had lower blood pressure than the group that did not take the medication.

a) Describe the experimental group:

b) Describe the control group:

c) What is the independent variable?

d) What is the dependent variable?

e) What are some possible factors that must remain constant during the testing?

f) What is the ONE factor that will be different between the experimental group and the control group?

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Multiple Choice: Choose the letter that best answers the question.

_____ 1. Which of the following would be done last if one is following the scientific method?

- (a) forming a hypothesis
- (b) observing a problem
- (c) performing an experiment
- (d) reporting the results.

_____ 2. A hypothesis:

- (a) can be tested
- (b) is a prediction about the expected outcome of an experiment
- (c) must be stated in a form that can be either proven or disproven (
- (d) all of the above are true.

_____ 3. The factors in an experiment that can be changed are called:

- (a) variables
- (b) data
- (c) the hypothesis
- (d) the control.

Answer the following questions about the metric system.

What is the metric system unit of measure for each of the following...

A. Mass -

C. Volume -

B. Temperature -

D. Length -

What are the boiling and freezing points for...

A. Celsius -

B. Farenheit -

How do you find the volume of an irregular shaped object?

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