

Name_____ Period_____ Date_____

Lab 101: Candle Lab

The purpose of this lab is to practice using the scientific method

1. The first step of the scientific method is to make a _____ that leads to a _____

Look at the equipment you have been given and make observations. Label each of your observations as quantitative (N) or qualitative (L)

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Write a question related to extinguishing the flame of the candle using the equipment provided

2. The second step of the scientific method is to form a _____ to answer your question

What are three things a good hypothesis must do?

- 1.
- 2.
- 3.

Write a hypothesis related to your question in step one

3. The third step of the scientific method is to _____ the hypothesis by _____

Define Variable.

Use ***controlled***, ***manipulated*** and ***responding*** to fill in the blanks

The _____ variable is changed by the scientist

The _____ variable changes as a result of the experiment

Everything else must be a _____ variable

Design an experiment procedure to test your hypothesis. Identify the manipulated variable, the responding variable, and the controlled variables. Perform your experiment. Design a chart, graph, table, etc. to keep track of your data.

- Experimental Procedure:

1.

2.

3.

4.

5.

- Collected Data:

4. The final step in the scientific method is to make a _____ based on the results of the experiment.

Use your notes and candle lab observations as you answer the following questions

Observations vs. Conclusions

In most labs, you will make observations and conclusions. What is the difference?

For each of the following statements, write “ O “ if it is an observation and “ C “ if it is a conclusion.

- a. _____ The temperature outside is 95 °F
- b. _____ I see smoke coming from the engine so the car must be overheating
- c. _____ The eggs stink
- d. _____ The eggs are rotten
- e. _____ Vinegar tastes sour so it must be an acid
- f. _____ The coin is copper colored
- g. _____ Because it is copper-colored, the coin is a penny
- h. _____ It looks like it is going to rain

Now, write two observations and two conclusions of your own from your lab

- Observations:

1).

2).

- Conclusions:

1).

2).

Do you understand what happens when a candle burns? Answer the following questions as best you can, using your general knowledge.

- 1). What is produced when a candle burns?

- 2). What is necessary for a candle to burn?

- 3). What is the purpose of the candle wick?

- 4). As a candle burns, it becomes shorter, Where does the wax go?

For each of the following statements, write “ L “ for qualitative and “ N “ for quantitative

- a. _____ The box is brown
- b. _____ The box is 12 cm long
- c. _____ The box is empty
- d. _____ The box has red words written on the side
- e. _____ The box is 8 cm wide
- f. _____ The box has a bumpy interior
- g. _____ The box has a lid
- h. _____ The box is 4 cm tall

Now, write two qualitative observations and two quantitative observations of your own from your lab

- Qualitative:

1).

2).

- Quantitative:

1).

2).

Answer each of the following questions and explain based on what you observed in your lab

1). What is produced when a candle burns?

2). What is necessary for burning?

3). Where does the wax go as a candle burns?