Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Show Me the Light!**

**Lab Activity**

**Directions**: Obtain a candle, a candle holder and a match. Some students are capable of making an extraordinary number of observations of a lit and unlit candle. You are being asked to make only 30 observations of a candle, 15 qualitative and 15 quantitative observations. Use as many of the laboratory measuring devices introduced earlier as possible to make your quantitative observations. Be certain that you are using the instruments properly and that you always write the appropriate units after each measurement. Your observations may be of both a lit and unlit candle.

**QUALITATIVE OBSERVATIONS QUANTITATIVE OBSERVATIONS**

**Burning Questions**

**Problem**: Does a birthday candle burn at a constant rate or does it speed up as it gets shorter?

|  |  |
| --- | --- |
| Birthday candle | Metric ruler |
| Candle stand | Matches |

**Materials**:

**Let’s Investigate!**

In the “Show Me the Light” activity you made many observations of a candle. Did you notice how fast the candle burned? Did it seem to burn faster or slower as time progressed? If you did not notice anything about the rate, this is your chance to focus on that question. Your job is to design an experiment to determine whether or not a birthday candle burns at a constant rate. Although you need to come up with your own design for the experiment, here are a few pointers to get you started:

1. Make a data table to record your important data before actually taking any measurements. Be sure to clearly label all columns of your data table.
2. Always blow out the candle before measuring its height.
3. Measure the candle height in millimeters. For this experiment, millimeters are a better unit of measure to use than centimeters.
4. Include all units on all of the data recorded in your data table.
5. Make at least four different measurements.

**Lab Questions:**

1. Calculate the burning rate of your candle for each time interval you measured. Show your calculations, including units. (rate = change in height/change in time)
2. Based on your data, make a conclusion about the burning rate of a candle.
3. Make at least two suggestions for improving your experiment.