Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Data Collection Lab: Grade 7 Science

**Part I: Gathering Data**

Reliable data collection depends upon, among other things, organization and neatness. As you complete the following four tasks, be sure to carefully record the data asked of you in a neat and organized manner. This is only Part I of this lab. The data you gather during these tasks will be used at a later time.

1. AT HOME Chose a relatively busy street and observe passing cars for 10 minutes. Create a data chart that depicts the frequency of each color of car that you observed passing your position. Direction of the cars does not matter.

2. AT HOME Select six friends or family members of different ages. Time them to see how long they can hold their breath in seconds. Create a data table below that depicts the person’s age and the length of time that they can hold their breath.

3. IN CLASS w\ lab partners. Place 250 mL of water in a beaker on a hotplate. Turn the hotplate on HIGH. Record the amount of time it takes for the water to reach a full boil. Repeat this procedure using the same sized beaker for 500 mL, 750 mL and 1 L of water. Create a data table in the space below that represents this data.

4. IN CLASS w\ lab partners. Head to the basketball court and complete the following task. Use a measuring tape to mark off 3m, 6m, 9m and 12m straight back and perpendicular to the backboard. Each of you are to take 8 shots from each of the marked distances and record the number of shots you make from each distance. No practice shots allowed! If your feet come down on the other side of the line before you’ve released the basketball, the shot counts as a miss. Create a data table below that records the number of shots made from each distance.

**Part II: Representing Data**

1. Use a bar graph to represent the data you have gathered about the frequency of passing cars and their color. Use graph paper page 1 to do so.
2. Use a line graph or bar graph to represent the data you have gathered about the effects of age on lung capacity. Use graph paper page 2 to do so.
3. Use a line graph to represent the data you have gathered about the amount of time it takes different amounts of water to boil. Use graph paper page 3 to do so.
4. Use a line graph to represent the data you have gathered about the number of successful basketball shots at different distances from the hoop. Use graph paper page 4 to do so.

**Part III: Data Analysis**

1. -Using the data gathered, predict how many cars would pass your observation post in a 24 hours period, assuming the flow of traffic remained constant.
2. -Does the data you have gathered and represented allow you to draw any conclusions about the affect age has on breath-holding ability? What are those conclusions?

-If not, what may be some uncontrolled variables that make drawing a conclusion difficult and how could they be controlled for?

3. -Does the data you have represented allow you to make predictions about the amount of time it would take to boil other amounts of water?

-How long would it probably take 1.5 L of water to boil on the same hotplate? How long would it take 10 L of water to boil using the same hotplate?

4. -What kind of trend (positive or negative) is represented by the graph that depicts the number of shots made at different distances from the basketball hoop?

-Does this data allow you to make predictions about how many shots might be made at other distances from the hoop?