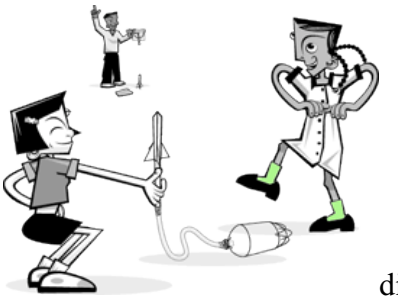
Scientific Method – Testing for the Best Air Rocket!

Introduction: We want to build the air rocket that can fly the furthest. To do this, we must use the Scientific Method to test 2 different variables; the width of the pipe, and the size of the bottle.

Observations: The air rocket is propelled by air that is forced out of the bottle. The faster the air is forced out and the more air that is forced out will decide how far the rocket goes. In a small group, discuss previous observations as to what creates the most speed, force, and pressure in the air rocket. Record key points of your



discussion below:

Hypothesis: Which of the bottles do you think will make the air rocket fly the furthest? State your reasoning as to why you believe this.

Test:

1. To complete an accurate experiment, you can only test one variable at a time. Choose one variable to test and build the air rockets. Remember to keep everything else in the experiment the same except for the one variable you are testing. Record the data in the data table.
2. Now test for the next variable and record the results.

Data Table:

	Distance Air Rocket Went
2-Liter Bottle	_____
20 Ounce Bottle	_____

Conclusion:

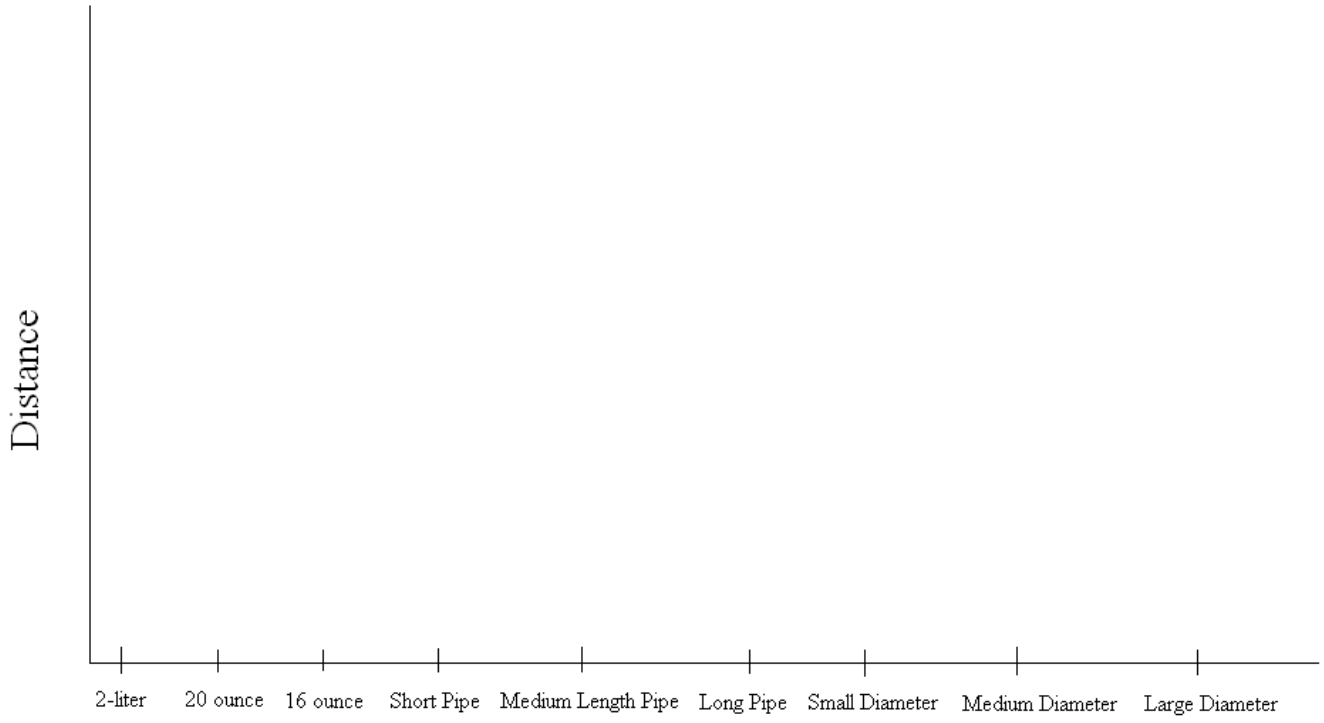
1. Which variables made the rocket fly the furthest? Was your hypothesis correct or incorrect?

2. Explain why you think each variable made the rocket fly the furthest?

3. During each experiment, are you sure that you only changed one variable? Explain.

4. Why should a scientist only change one variable during an experiment? What would happen if he or she changed more than one?

5. Make a graph of your results below:


Distance
2-liter
20 ounce
16 ounce
Short Pipe
Medium Length Pipe
Long Pipe
Small Diameter
Medium Diameter
Large Diameter