Name_____ Hour_____

Partner's Names: _____

_____

Guiding Question: What affects the fizz rate of antacid tablets?

Part 1: **Observe** and **describe** what happens during the teacher's demonstration.

Container A	Container B

Highlight qualitative observations in pink and quantitative observations in blue.

L.O.U. Part 1

Plop Plop Fizz Fizz: A Review of Scientific Practices

Part 2: Variables

- Take a close look at how you could change the materials in the experiment.
- List materials by the number and possible ways to change each material using the bullets.
- Fill in the table below with possible **independent** variables.

1. * * * *	2. * * * *
3. * * * *	4. * * * *
5. * * * *	6. * * * *

What is your **independent** variable? (What are you testing?)

_____

What is your **dependent** variable? (How will you measure this?)

_____

Constants: What must stay the same in your experiment? Make a list below.

_____

_____

_____

_____

_____

_____

Control: How will you know that your experiment worked? The control is what you compare your independent variable to. It must stay the same and NOT contain the variable.

What is your control?

_____

L.O.U. Part 2

Part 3: Testable **Question:** What do I want to know?

Write your testable below. Make sure it contains both your independent and dependent variables and is in the format: How does the **___IV___** affect the **__DV__?**

_____

_____

Prediction: An expected outcome of an investigation based upon prior knowledge. Some, not all, predictions are hypotheses. An **hypothesis** describes the relationship between the independent and the dependent variables.

What do you predict will be the answer to your testable question?

_____

_____

_____

Is your prediction a hypothesis? Yes or No (Circle one) **Explain.**

_____

_____

_____

_____

L.O.U. Part 3

Part 4: Investigation Plan: What steps do I use?

An investigation plan is a fair test designed to answer the question being investigated. A fair test can be repeated. It clearly states:

*what is going to be observed, measured, and recorded
*what will change (variable)
*what will stay the same (control)

The steps in the investigation plan

*must be in number order
*must be complete and clear to let another person repeat the investigation
*might include labeled drawings or diagrams

Items to consider in writing an investigation plan include:

*what data to gather and how much data to gather
*what tools/materials to use
*what measurements to record and to what accuracy
*the number of trials to conduct
*how to reduct the sources of error

Materials and Equipment

List the materials and equipment that your group will need. **BE VERY SPECIFIC!!!**

_____

_____

_____

_____

_____

_____

Investigation Plan: **List** what you will do below.

Give your work to another lab group who will check it for the following:

- ☐ Can this investigation plan be repeated?
- ☐ Is one variable being tested?

☐ Did all other factors stay the same?
☐ Is it clear how the results will be measured?

Names of peer evaluators:

_____

_____

L.O.U. Part 4

Part 5: Data Analysis: How do I make sense of my data?
Record all of your observations in the space below **during the experiment.**

Draw a Picture	Write What You See

Fill in the classroom data table with the results of your experiment.

Evaluation: How well did I/we do?

Use these questions to help you learn from your experience. Answer them honestly.

What were my sources of error? What went wrong? (These can be issues with timing, procedures, equipment, temperature changes, etc..)

What would I do differently next time?

Explain **how** and when in this experiment you observed a **cause and effect**.

Modified from the Investigation Organizer Step Book; Van Andel Education Institute Science Academy, 333 Bostwick Ave, Ne, Grand Rapids, MI 49503

Explanation: What did I learn?

On the lines below, write a CLAIM supported by EVIDENCE to explain your findings.

Claim:_____

_____

_____

_____

_____

Evidence:_____

_____

_____

_____

_____

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