Part 1: Designing the Experiment

What I am wondering about (my beginning question):

Brainstorming Ideas Related to my Beginning Question

Part A: Things I could change or vary:

Part B: Things I could measure or observe:

Identifying Variables

I will change:

Place sticky note from Part A here

I will measure or observe:

Place sticky note from Part B here

I will not change (I will keep these the same so my test is fair):

Place remaining sticky notes from Part A here

Place remaining sticky notes from Part A here

Place remaining sticky notes from Part A here

I will not measure or observe:

Place remaining sticky notes from Part B here

Place remaining sticky notes from Part B here

Place remaining sticky notes from Part B here

Asking a Testable Question
(Refining my beginning Wondering)

When I change _____: → What happens to _____?

Write the question that will guide your experiment:

Based on prior knowledge, what do you already know about this?

Predictions

(Note: List 3 possible outcomes: *Increase, Decrease, and No Affect*.)

Based upon my question, I predict:

1.

2.

3.

The Procedure

(Note: Others should be able to follow the way you set up your fair test)

Materials List

(detailed)

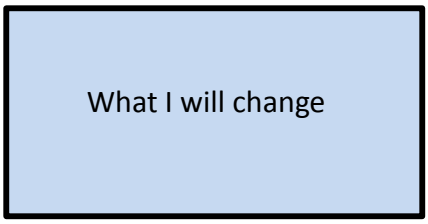
Directions

(List exactly what you did in each step of your experiment)

Set-Up Conditions/Controls

(What conditions should be kept constant?)

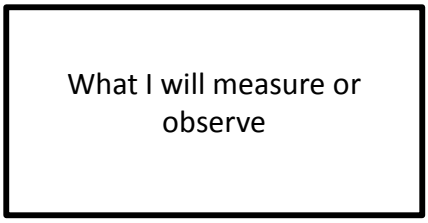
What I will change or vary (independent variable):



What I will do to carry out the change:

Number of trials I will conduct or amount of samples to include: _____

The data I will collect by measuring or observing (dependent variable):



How I will collect the data:

How I will record the data (for example: table, chart, picture):

Part 2: Carrying Out the Experiment

Data Collection:

When I changed _____, what measurements or observations resulted?

What I will change (independent variable)	What I will measure or observe (dependent variable)

Record your Data: (Note: This is intended simply as an example to help get you started. You may design your own chart to fit your experiment.)

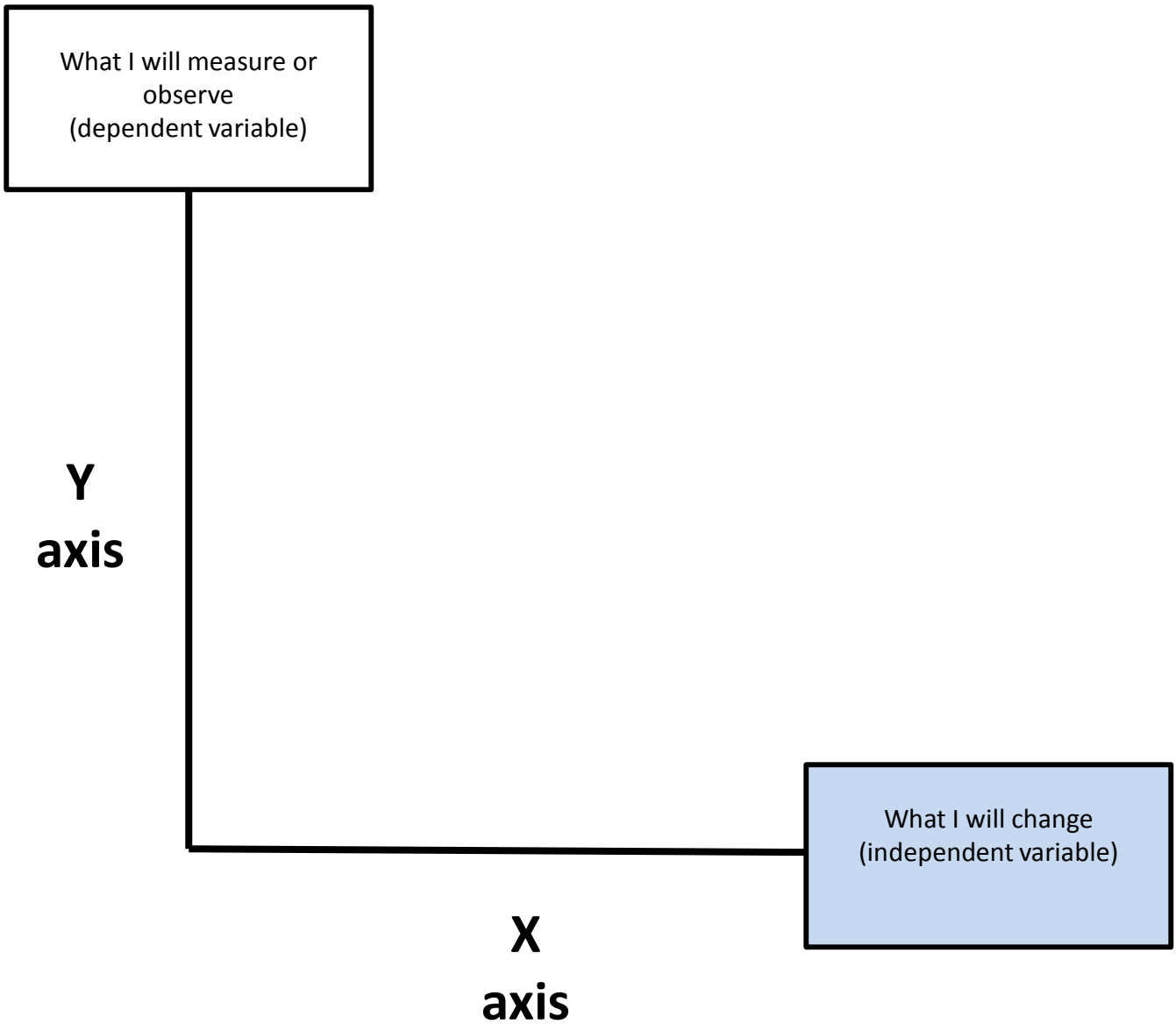
Data Collection *(metric measurement)*

Item(s) Tested	Trials (Increasing the number of trials will provide more valid data)										
	1	2	3	4	5	6	7	8	9	10	mean avg.

Graphing Results

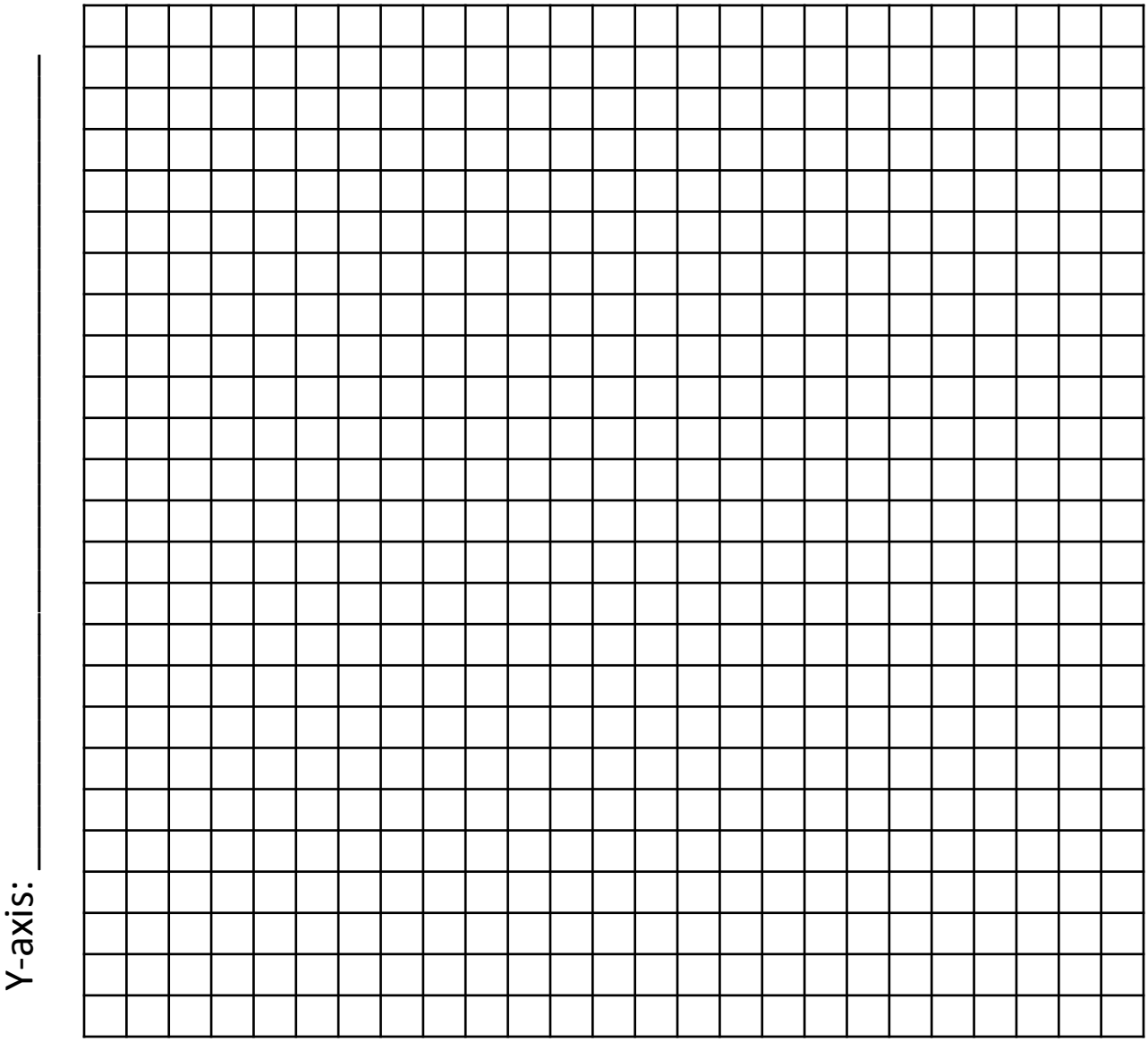
Which type of graph is best- line graph or bar graph? _____

Graph: should reflect mean average of trials



(Note: Both axes will need to be labeled and the appropriate scale marked)

Title of Graph: _____



X-axis: _____

When I changed _____, what happened to _____?

What I changed (independent variable)	What I measured or observed (dependent variable)

Results/Explanation

Summarize what you discovered from this experiment. Include:

- ✓ **Looking at your graph, describe your results (patterns or relationships shown by your data) using mathematical language.**

- ✓ **Write an explanation that reflects your predictions and data in your experiment.**

- ✓ **Explain real world uses relating to research and the experiment.**

- ✓ **Any new questions for further investigation- what else do you wonder about?**