Thinking more…

Now I wonder why…? Now I wonder if…? Now I wonder what…?
Now I wonder how…? Now I wonder what would happen if…?

☐ Now I wonder _____

Testable?

_____

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☐ Now I wonder _____

Testable?

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☐ Now I wonder _____

Testable?

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☐ Now I wonder _____

Testable?

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_____?

☐ Now I wonder _____

Testable?

_____

_____

_____?

Phenomenon

Questions

Research investigation

Science story

Thinking more

_____

Phenomenon

_____

Scientist's Name

Basic Sciencing Journal

Draw and label **P**henomenon
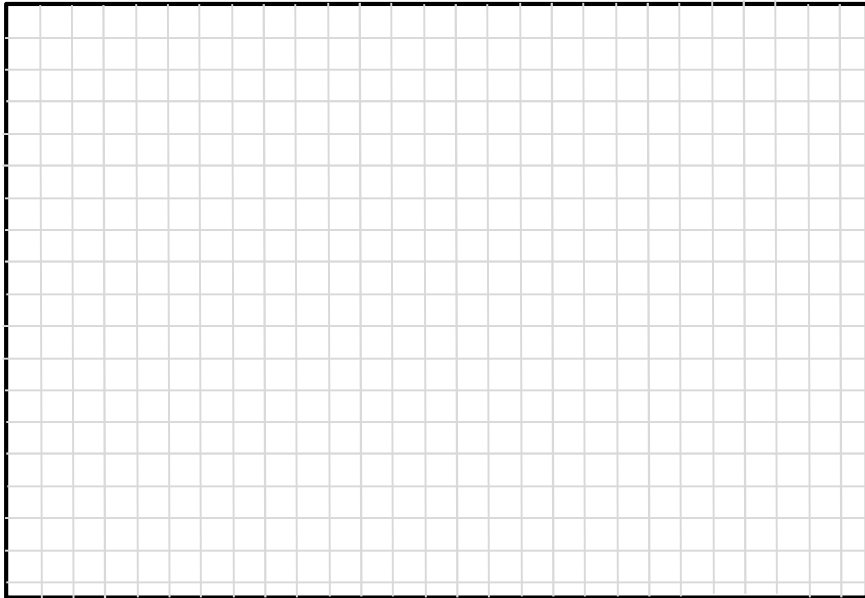
I notice _____

_____

_____.

I notice _____

_____

_____.
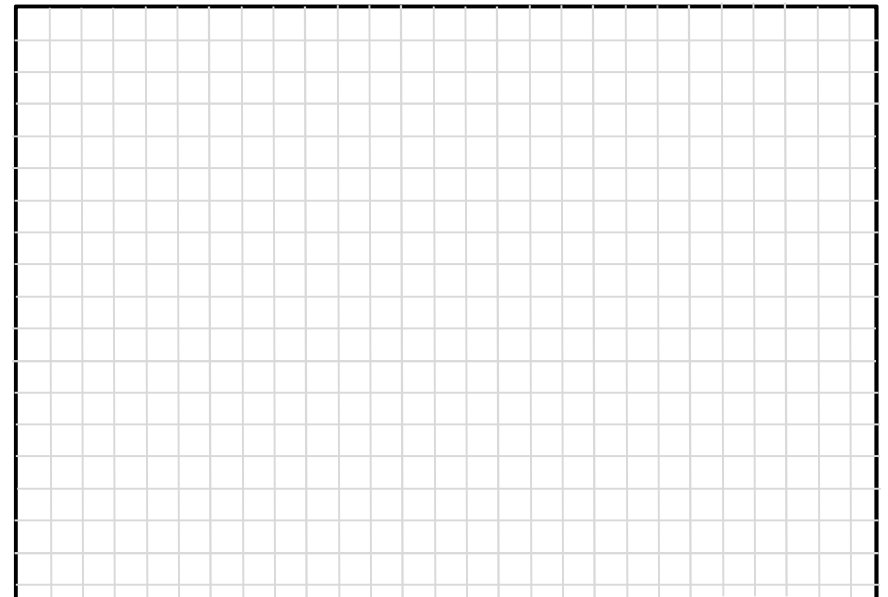
I notice _____

_____

_____.

3. Reasoning (connect evidence to claim using scientific principles and rules) _____

_____

_____

_____

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_____

Drawing to Explain Reasoning (Draw a model with labels to show what happens and why.)

Science Story (Using Claim, Evidence, and Reasoning, share the story the data tells and the science explains.)

2. Claim (answer to testable question, should either be one of you hypotheses or a new claim you had not considered) _____

_____

___?

_____

_____

1. Evidence (cite data from the experiment to support the claim) _____

_____

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Questions

I wonder why…? I wonder if…? I wonder what…?
I wonder how…? I wonder what would happen if…?

☐ I wonder _____

Testable?

_____

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_____?

☐ I wonder _____

Testable?

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☐ I wonder _____

Testable?

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☐ I wonder _____

Testable?

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☐ I wonder _____

Testable?

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_____?

All Materials and Equipment Available

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Play to learn more – tinker and experiment with materials and equipment you have available to explore how everything works.

I notice _____

_____

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I notice _____

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I notice _____

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Data Talk (Notes from peer discussion about data observations, claim evidence, and reasoning.)

Data Observations (What do you notice as you look at the raw data collected in the data table and at the graphical representation of the data?)

Even More Questions

Now I wonder why…? Now I wonder if…? Now I wonder what…?
Now I wonder how…? Now I wonder what would happen if…?

☐ Now I wonder _____

Testable?

_____

_____

_____?

☐ Now I wonder _____

Testable?

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☐ Now I wonder _____

Testable?

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☐ Now I wonder _____

Testable?

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☐ Now I wonder _____

Testable?

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Testable **Q**uestion (can be answered with a claim based on evidence from a scientific experiment)

How will changing _____
<div style="text-align:center">independent variable (what I manipulate – **cause**)</div>

affect _____?
<div style="text-align:center">dependent variable (what I measure as the outcome – **effect**)</div>

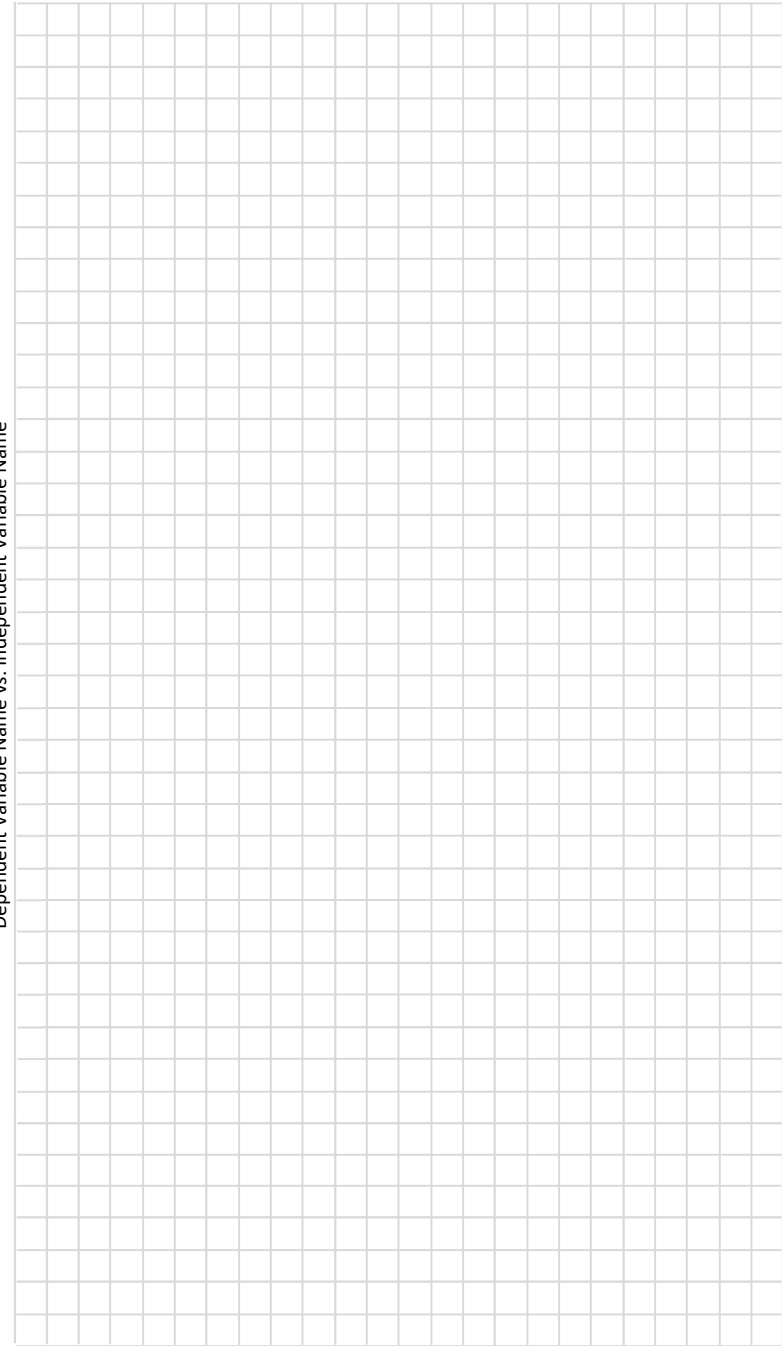Multiple Hypotheses (consider every possible claim you might be able to make once you collect data)

Hypothesis/Prediction A: Yes, _____

_____

_____

_____.

Hypothesis/Prediction B: Yes, _____

_____

_____

_____.

Hypothesis/Prediction C: No, _____

_____

_____

_____.

Dependent Variable Name vs. Independent Variable Name

Option 2

Independent Variable

Option 1

Dependent Variable Name (units)

Independent Variable Name (units) ↑	Dependent Variable Name (units)							
Trial 1								
Trial 2								
Trial 3								
Trial 4								
Trial 5								
Trial 6								
Trial 7								

Data Prediction for Each Hypothesis

Dependent Variable Name

A

Option 1   Independent Variable   Option 2

Dependent Variable Name

B

Option 1   Independent Variable   Option 2

Dependent Variable Name

C

Option 1   Independent Variable   Option 2

Research Investigation (Experiment)

Draw and label experimental setup.

Materials and Equipment List for Experiment

_____

_____

_____

_____

_____

_____

_____

Experimental Procedure (detailed enough to allow data collection to be repeated exactly as you collected it)

NOTE: Control Variables (all independent variables not selected for testing must be given a set value or controlled. These controlled settings must be explicitly noted in the procedure.)

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