

HYPOTHESIS

COLLECT DATA

ANALYZE DATA

EXPLAIN FINDINGS



A video tutorial of this document is here: https://www.youtube.com/watch?v=07LO_avbBFU

Hypothesis

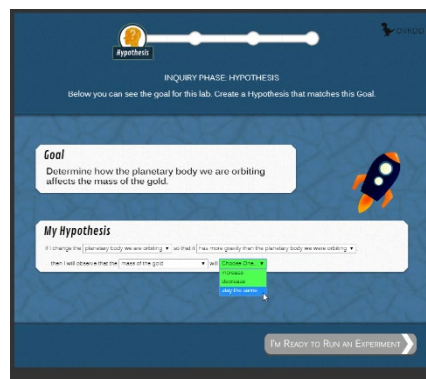
Each Virtual Lab consists of 3 to 4 different activities. Every activity contains a specific goal that is meant to help you create a **hypothesis**.

For each goal you will need to create a testable hypothesis with the Inq-ITS Hypothesis Generators. There are two different types of Hypothesis Generators. The first kind allows you to create a sentence from a series of choices available by pressing on the arrow in each box. The second type allows you to create a hypothesis by clicking on one choice from each box.

Each Hypothesis Generator requires you to identify your Independent and Dependent Variables.

Independent Variable: "What I Will Change"

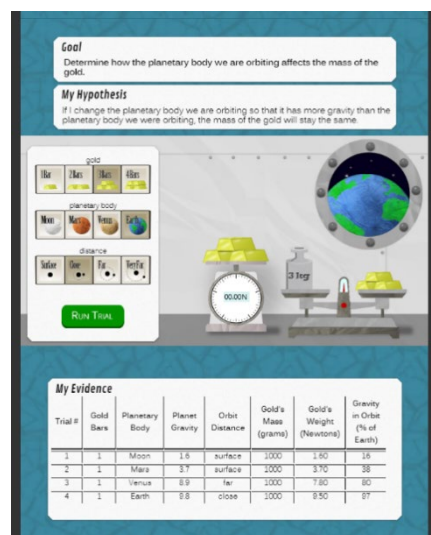
Dependent Variable: "What Will Happen"



Collect Data

For each activity you will need to **collect data** in order to test your hypothesis. The Inq-ITS Virtual Labs allow you to make your choices and test your hypothesis by clicking on different selections and running as many trials as you need in order to test your hypothesis.

As you run your trials, you will collect data in the results section so you can see whether your data supports or refutes your hypothesis.



Analyze Data

Once you are satisfied with your data, you will move on to your **analysis** using the Analysis Generators.

There are two different types of Analysis Generators. The first kind allows you to create a sentence from a series of choices available by pressing on the arrow in each box. The second type of Analysis Generator allows you to create an analysis claim by clicking on one choice from each box.

Your claim should state whether your data supported or refuted your hypothesis.

In order to complete the Analyze Data section, you will need to select which trials support your Claim.

Goal
Determine how the planetary body we are orbiting affects the mass of the gold.

My Hypothesis
If I change the planetary body we are orbiting so that it has more gravity than the planetary body we were orbiting, the mass of the gold will stay the same.

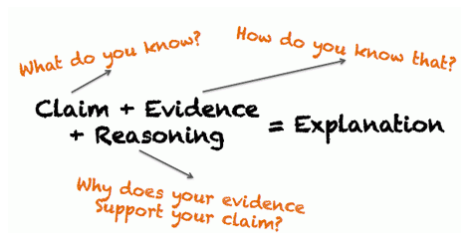
My Claim
When I changed the [planetary body we were orbiting] so that it [had more gravity than the planetary body we were orbiting] the [mass of the gold] then [Choose One].
This [Choose One] my hypothesis.

My Evidence
These trials are evidence of my claim: 8, 7, 4, 2, 1.

Select	Trial #	Gold Bars	Planetary Body	Planet Gravity	Orbit Distance	Gold's Mass (grams)	Gold's Weight (Newtons)	Gravity in Orbit (% of Earth)
<input checked="" type="checkbox"/>	1	1	Moon	1.6	surface	1000	1.60	16
<input checked="" type="checkbox"/>	2	1	Mars	3.7	surface	1000	3.70	38
<input type="checkbox"/>	3	1	Venus	8.9	far	1000	7.80	80
<input checked="" type="checkbox"/>	4	1	Earth	9.8	close	1000	9.90	97
<input type="checkbox"/>	5	3	Moon	1.6	far	3000	3.30	11
<input type="checkbox"/>	6	3	Earth	9.8	far	3000	26.10	89
<input checked="" type="checkbox"/>	7	3	Venus	8.9	far	3000	23.40	80
<input checked="" type="checkbox"/>	8	3	Mars	3.7	far	3000	9.00	31

Explain Findings

You are asked to **explain your findings** by forming a Claim, supporting your Claim with Evidence, and describing your Reasoning.



In the Claim Section, you will need to explain what you've learned. In other words, what is your conclusion about your investigation.

In the Evidence Section you need to outline how you know what you've stated in your Claim. Be sure to include the scientific data that supports your claim.

Finally, in the Reasoning Section you should explain why your evidence supports your claim. This is where you connect your evidence to your claim.

Claim

Write a sentence that states what you found out about the scientific question you just investigated. Provide enough detail so that a friend who did not do the experiment could learn from your description.

Evidence

Provide and describe scientific evidence from your data table that supports (or refutes) your claim. Remember to provide enough detail so that a friend who did not do the experiment could learn from your description.

Reasoning

Explain why your evidence (what you wrote in Box 2) supports your claim (what you wrote in Box 1). Remember to provide enough detail so that a friend who did not do the experiment could learn from your description.