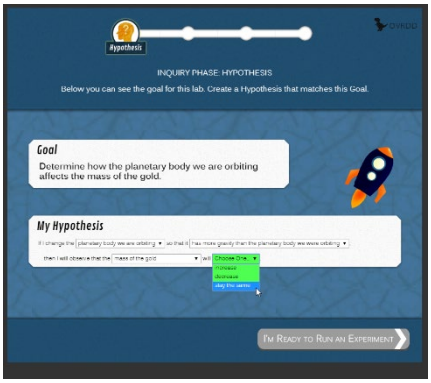
Inq-ITS Student Guide to Science Inquiry

HYPOTHESIS | COLLECT DATA | ANALYZE DATA | EXPLAIN FINDINGS

A video tutorial of this document is here: https://www.youtube.com/watch?v=07L0_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**.

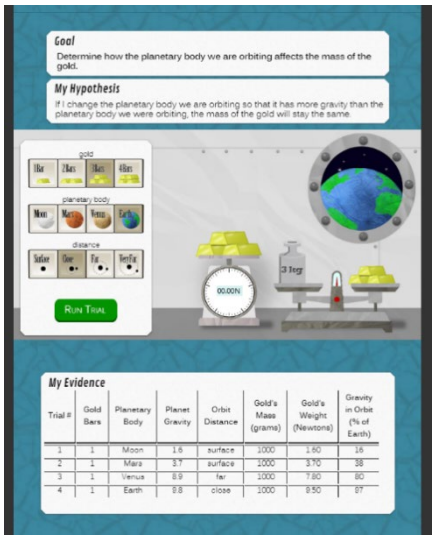


For each goal you will need to create a testable hypothesis with the Inq-ITS Hypothesis Generators. There are two different types of Hypothesis Generators. The first kind allows you to create a sentence from a series of choices available by pressing on the arrow in each box. The second type allows you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

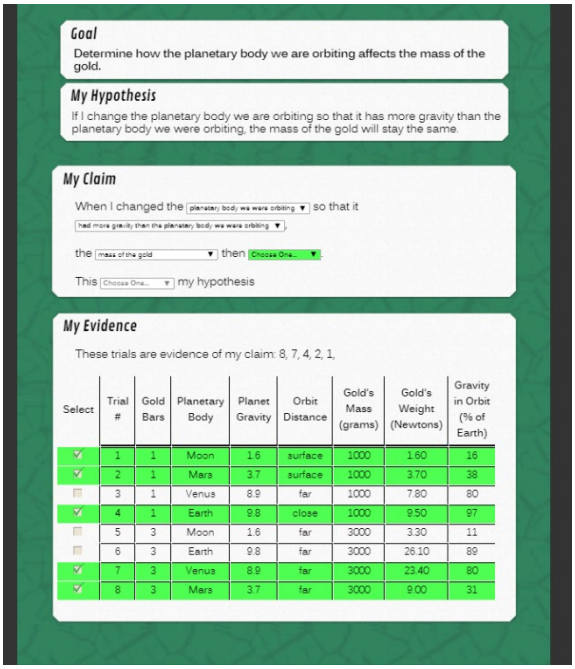
Analyze Data

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.

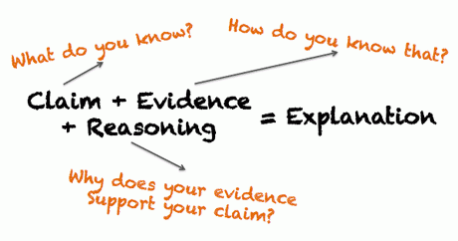
In order to complete the Analyze Data section, you will need to select which trials support your Claim.



Select	Trial #	Gold Bars	Planetary Body	Planet Gravity	Orbit Distance	Gold's Mass (grams)	Gold's Weight (Newtons)	Gravity in Orbit (% of Earth)
☑	1	1	Moon	1.6	surface	1000	1.60	16
☑	2	1	Mars	3.7	surface	1000	3.70	38
☐	3	1	Venus	8.9	far	1000	7.80	80
☑	4	1	Earth	9.8	close	1000	9.50	97
☐	5	3	Moon	1.6	far	3000	3.30	11
☐	6	3	Earth	9.8	far	3000	26.10	89
☑	7	3	Venus	8.9	far	3000	23.40	80
☑	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.