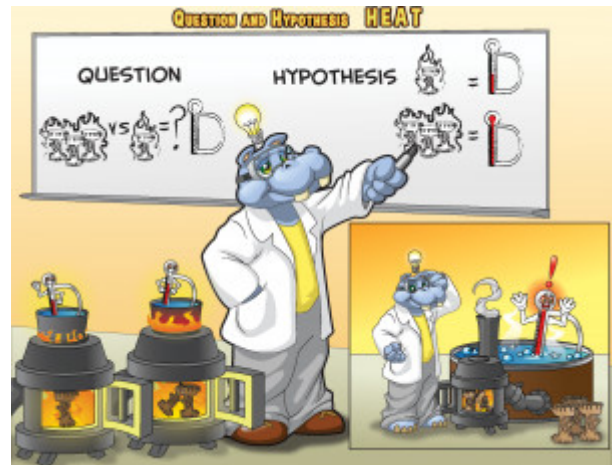


## Question and Hypothesis - Heat

When designing an experiment, it's important to create a question and a hypothesis. The question is WHETHER the independent variable affects the dependent variable. The hypothesis is HOW the independent variable affects the dependent variable. It frequently uses words like "increase" or "decrease", because we want to know the specific way in which the IV affects the DV. Finally, it's important for the hypothesis to be testable. If scientists create a hypothesis that isn't testable, they can't design an experiment around it.

An example is a scenario in which a scientist has logs and wants to heat a hot tub. The amount of logs is the independent variable, and the temperature of the hot tub is the dependent variable. The question is WHETHER the amount of logs AFFECTS the temperature. The hypothesis is HOW the amount of logs AFFECTS the temperature. The hypothesis is that MORE logs will INCREASE the temperature. It can be tested by adding a small amount of logs to the furnace and checking the temperature of the hot tub. After cooling to a normal temperature, the scientist can add a larger amount of logs and see if the temperature rises to a higher value than the previous run.



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### Question: Does the independent variable effect the dependent variable?

[Question about whether the amount of I-Shaped Logs affect the D-Shaped Thermometer](#)

The question is whether the independent variable affects the dependent variable. We don't want to get into any predictions about how it works with the question. We just want to know IF the independent variable affects the dependent variable.

### Hypothesis: Proposed explanation for how the independent variable effects the dependent variable

[Hypothesis-Hippo describing amount of I-Shaped Logs as Increasing temperature shown by D-Shaped Thermometer](#)

The hypothesis states HOW the independent variable affects the dependent variable. Does the independent variable increase the dependent variable? Does it decrease the dependent variable? The words "increase" and "decrease" are used frequently in hypotheses.

### The hypothesis must be testable

[Hypothesis-Hippo Testing Hypothesis](#)

The question is whether the independent variable affects the dependent variable. We don't want to get into any predictions about how it works with the question. We just want to know IF the independent variable affects the dependent variable.