

What Is a Hypothesis?

Word Wise

The word hypothesis comes from the Greek word *hypotithenai*, meaning "to put under" or "to suppose."

What is a hypothesis (high-PAW-thuh-sis)? Sometimes people describe a hypothesis as a "good guess," but it is more than that. A good hypothesis is a statement that predicts how an experiment will turn out based on what you already know, and that proposes an explanation that can be tested.

There are five key elements to a good hypothesis. It should...



1 be a statement: Asking, "What will happen if I leave an ice cube on a plate for half an hour?" is not a hypothesis. If you rewrite the question as an "If..., then..." statement, such as, "If I leave an ice cube on a plate for an hour, then it will melt," it becomes a statement.



2 predict: A hypothesis predicts how the experiment will turn out before you know the results. Because a hypothesis is only a proposed explanation, it often takes the form of an "If..., then..." statement. It's okay if the experiment shows the hypothesis to be wrong. In that case, you've learned something and can make a more accurate hypothesis next time.



3 be testable: You must be able to test what the hypothesis predicts. That means you need to be able to observe and measure the results. For example, "My dog will think brown is the best color" is not testable, because you cannot measure your dog's opinion.



4 explain: Hypotheses don't simply predict outcomes, they explain why, with a specific relationship between variables. For instance, you know that temperature affects the rate at which ice melts. So you might include temperature and time in your hypothesis: "If an ice cube is left at a temperature of 72° F, it will melt completely in less than 30 minutes, because heat can change material from a solid into a liquid."



5 fit existing observations: A good hypothesis should not contradict anything you have already observed or researched about the topic. The more information you take into account while constructing a hypothesis, the better it will be.

A good hypothesis that contains all five key elements is the foundation for good science.



Brain Check

- How can you test a hypothesis?
- Name two variables mentioned in this article.
- How is a hypothesis different than a good guess?