Hypothesis is one of the most frequently used terms in science teaching and usually means "an educated guess" or even just a simple "guess" but the reality is more complex.

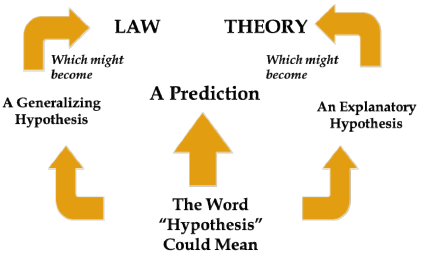
As frequently used, in classrooms and professional science settings, the word "hypothesis" has at least three meanings. Using the term one way when others hear it another way could cause problems, thus it is important to appreciate these distinctions and use the term very carefully, if at all.

Prediction; for many teachers, the term "hypothesis" simply means a prediction (a type of guess) about what is going to occur in a laboratory experiment or other investigation. Students are often asked to write their "hypothesis" before doing laboratory work. If the students do not have a clear view of the scientific principles, their hypotheses or predictions may be little more than guesses. Asking students to make hypotheses of this type can be misleading if students come to believe that scientists also make uninformed guesses as they engage in their work.

Trial Theory or Explanatory Hypothesis; if the hypothesis relates to an idea that may become a theory with more evidence and agreement from scientists, it would be best to call this an explanatory hypothesis. In other words, the trial idea (or hypothesis) is not yet validated, but if it is, it would be a scientific theory (Sonleitner, 1989).

Trial Law or Generalizing Hypothesis; if the hypothesis relates to an idea that may become a law with more evidence and agreement from scientists, it would be best to call this a generalizing hypothesis. In other words, the trial idea (or hypothesis) is not yet validated but if it is, it would be a scientific law (Sonleitner, 1989).

Refer to the illustration to visualize the relationship of the three ways that the term "hypothesis" may be used (prediction, generalizing hypothesis and explanatory hypothesis). The definitions of law and theory are themselves quite sophisticated and are defined in detail elsewhere in this glossary and in McComas 2003, 2004). (WM)



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