



Warm-up: Your homework assignment involved paying attention and observing something in the natural world. What was it like thinking of questions to ask? Did you find this task easy or difficult? Why?



Everybody should be quiet
near a little stream and listen

Illustration by Maurice Sendak in "Open House for Butterflies" by Ruth Krauss.



What Is Science?





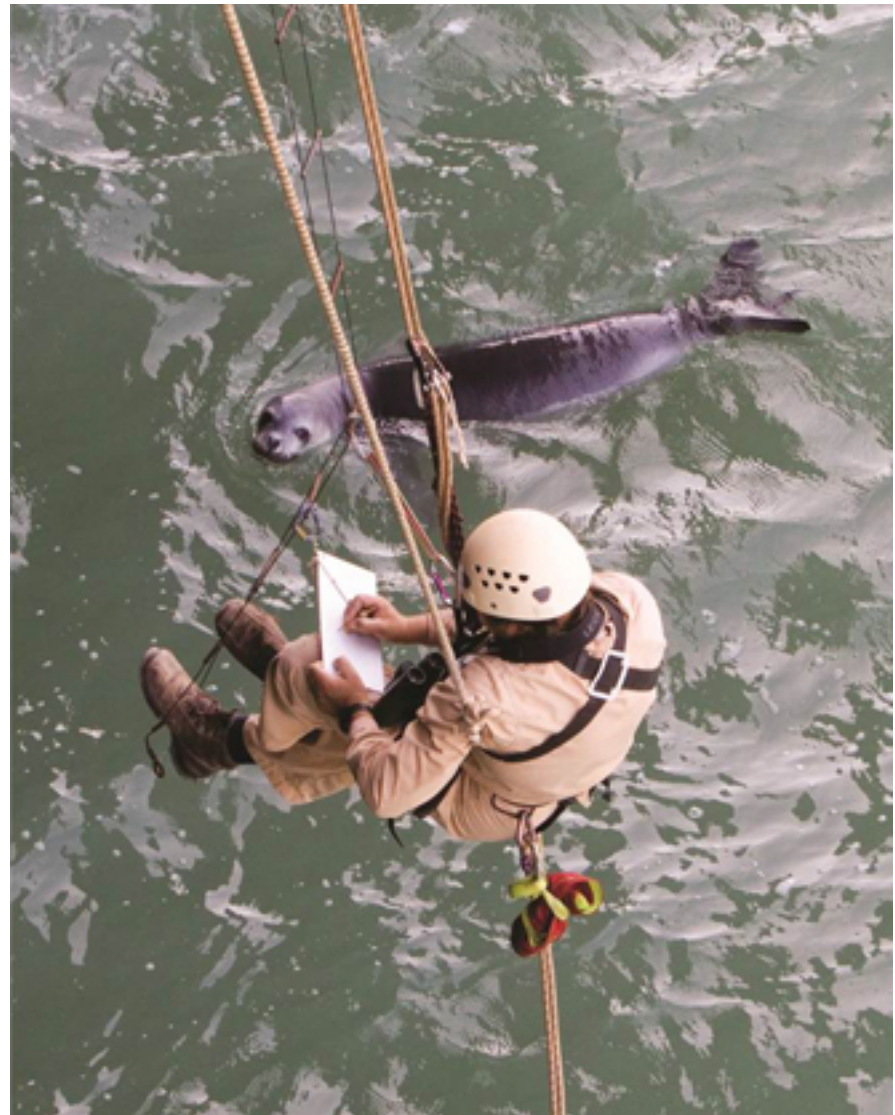
Learning Objectives

- State the goals of science.
- Describe the steps used in scientific methodology.

The Nature of Science

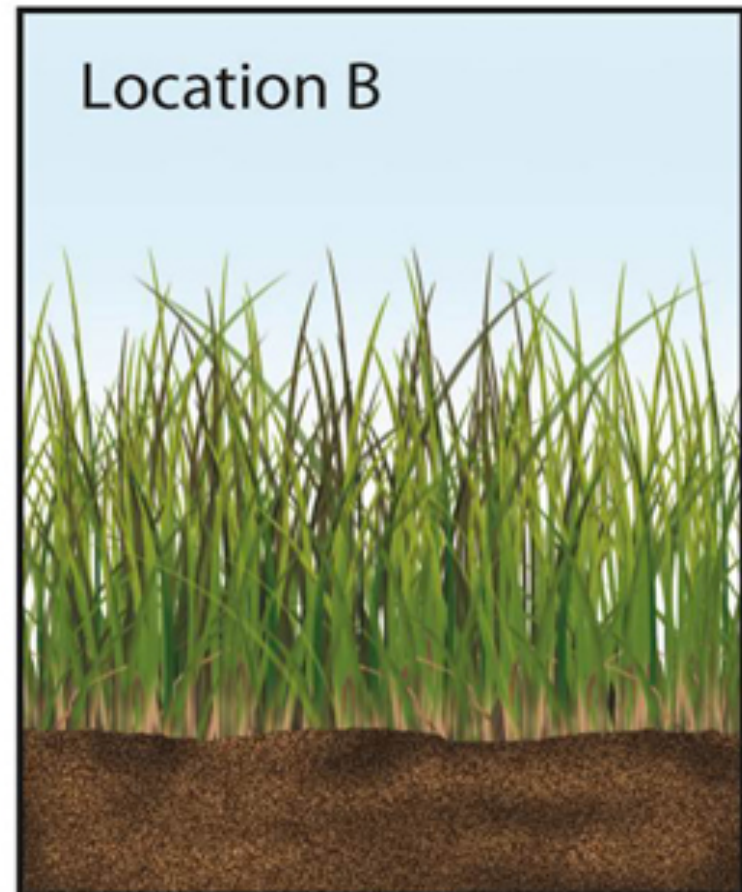
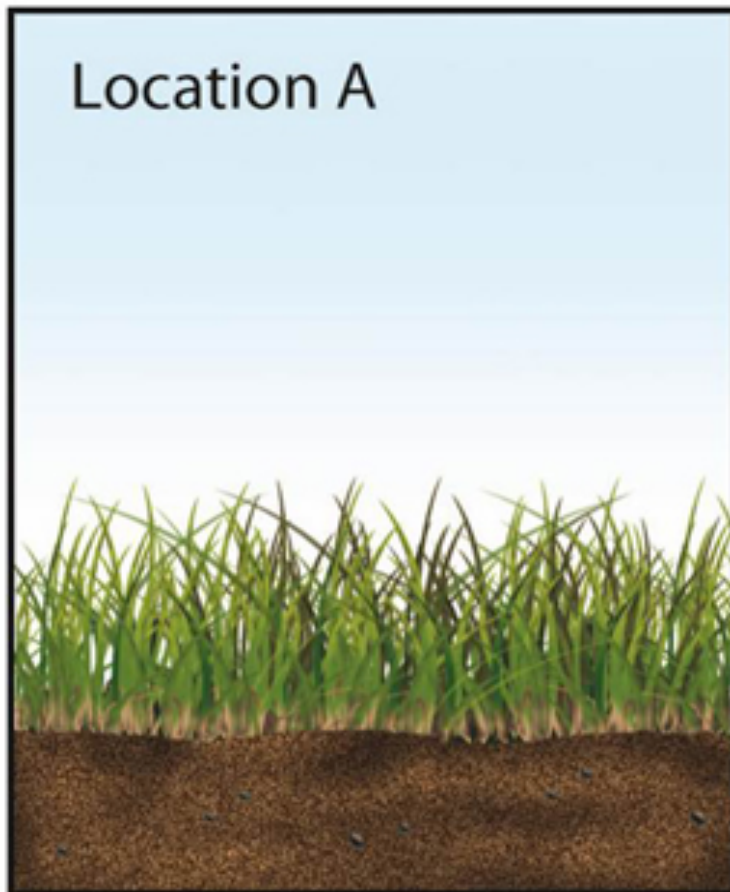
Science

- Uses evidence to construct testable explanations and predictions of natural phenomena
- Generates knowledge



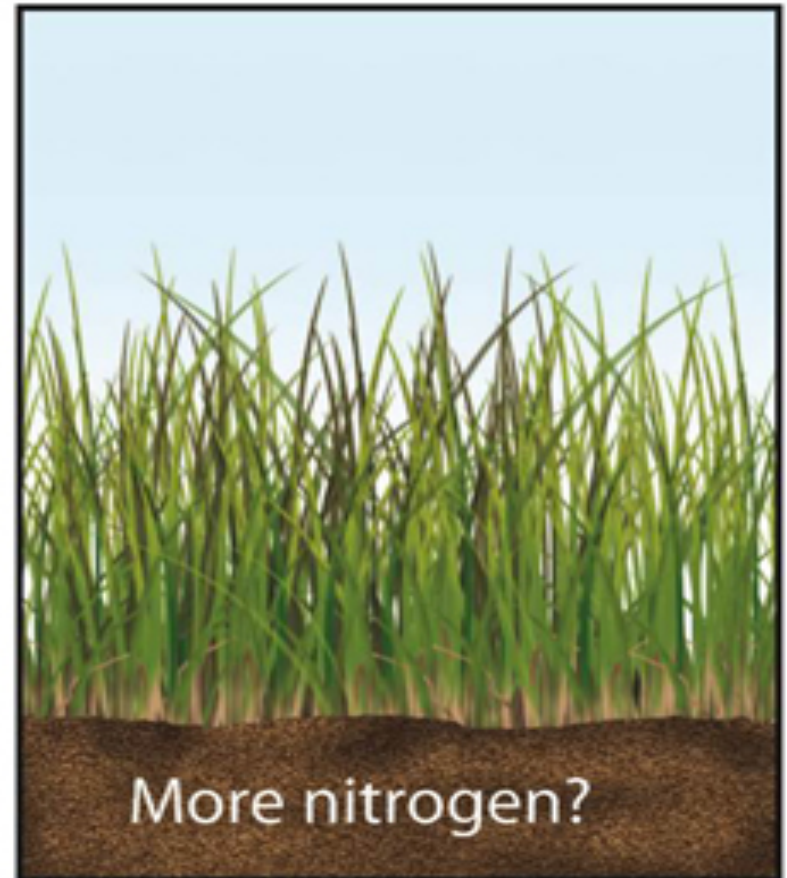
Scientific Methodology: Observation

Science is a general style of investigation, not a rigid step-by-step process.



Scientific Methodology: Asking Questions

Why do marsh grasses grow to different heights in different places?



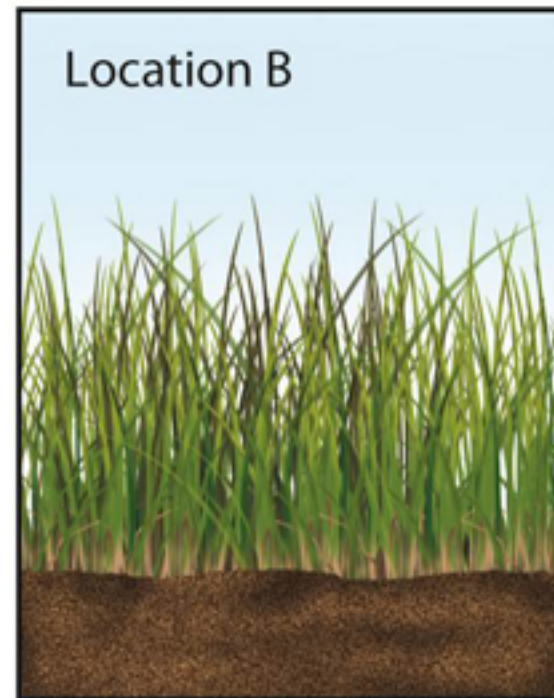
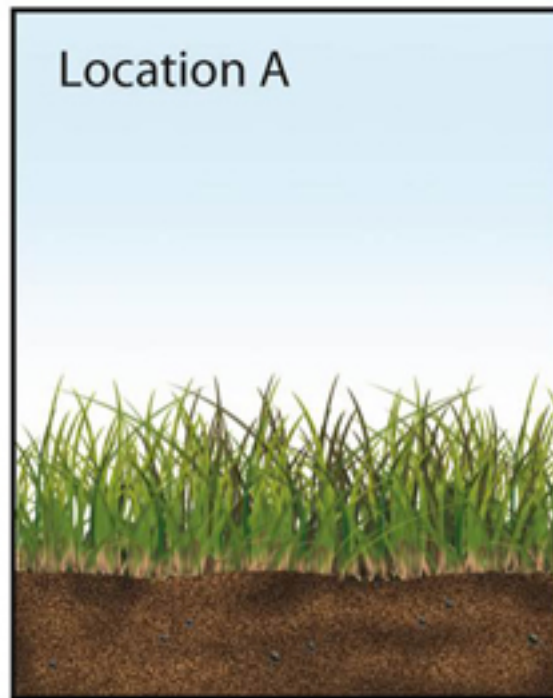
Scientific Methodology: Hypothesis

what scientists already know

Inference: a logical interpretation based on _____

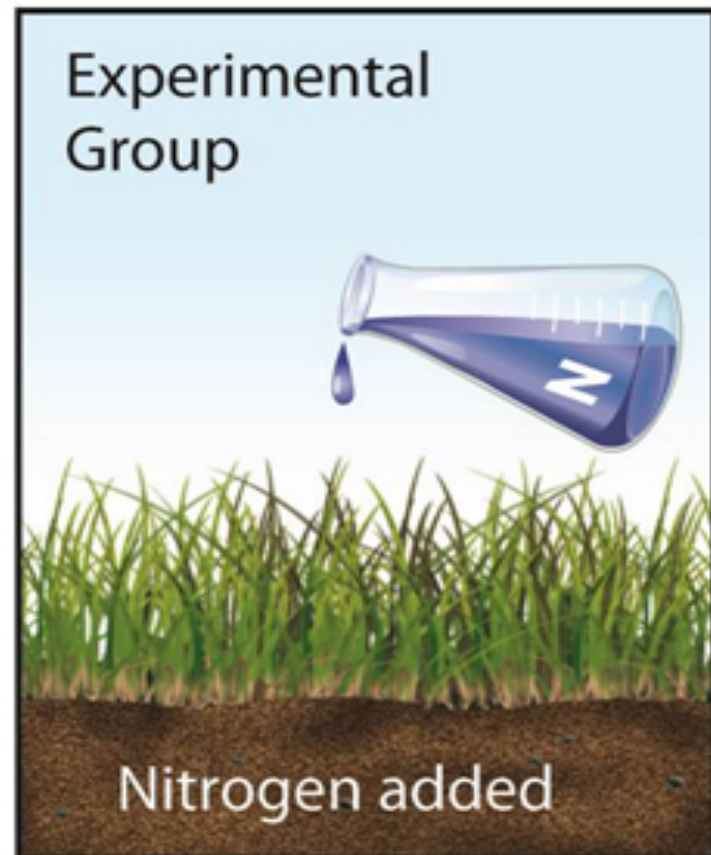
tested further

Hypothesis: a tentative scientific explanation that can be _____



Scientific Methodology: Experiment

Testing hypotheses often involves designing experiments that measure factors that can change, or variables.



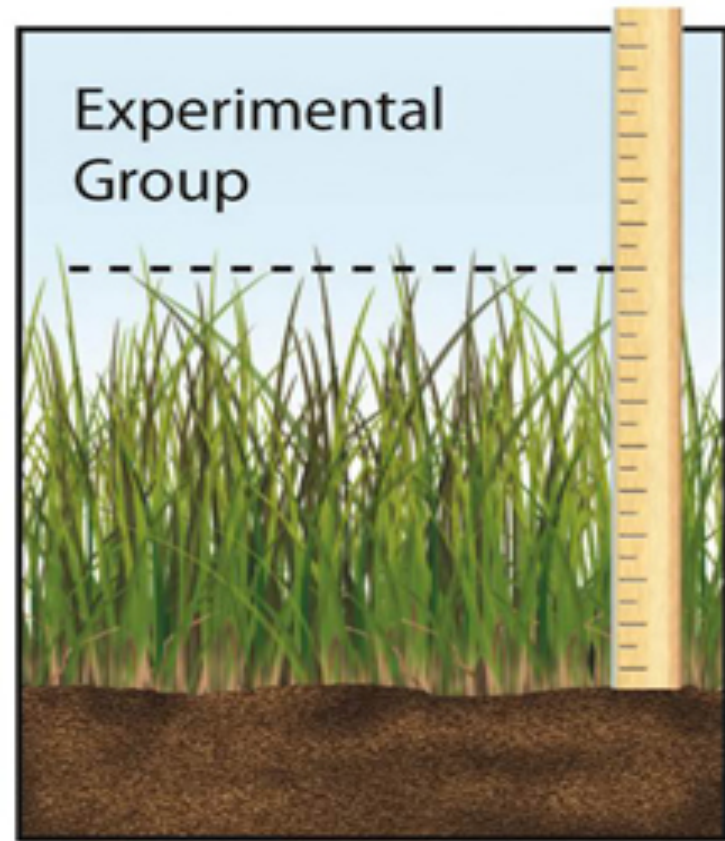
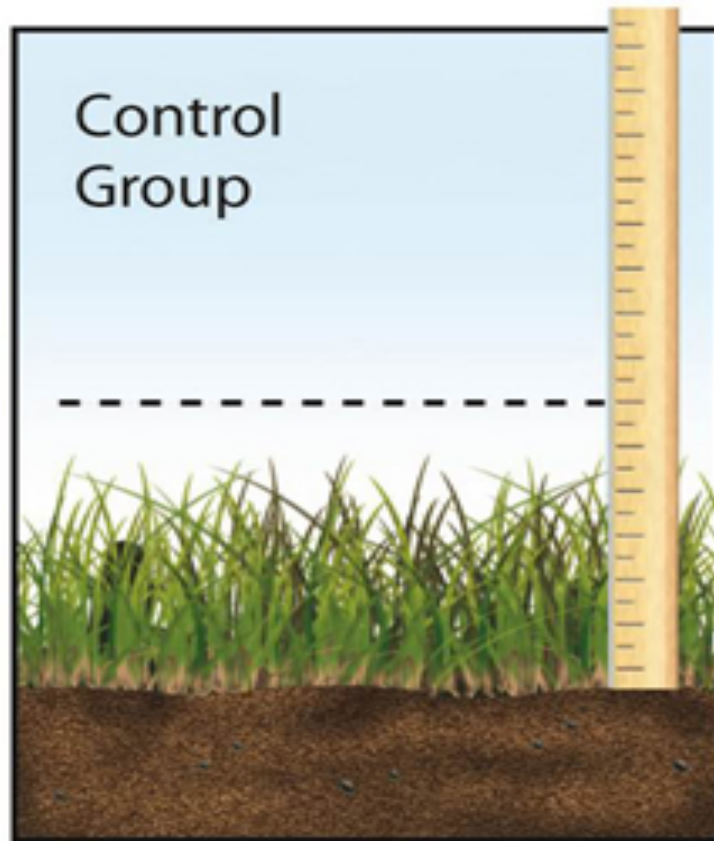
Scientific Methodology: Collecting Data

Quantitative

_____ data are numbers.

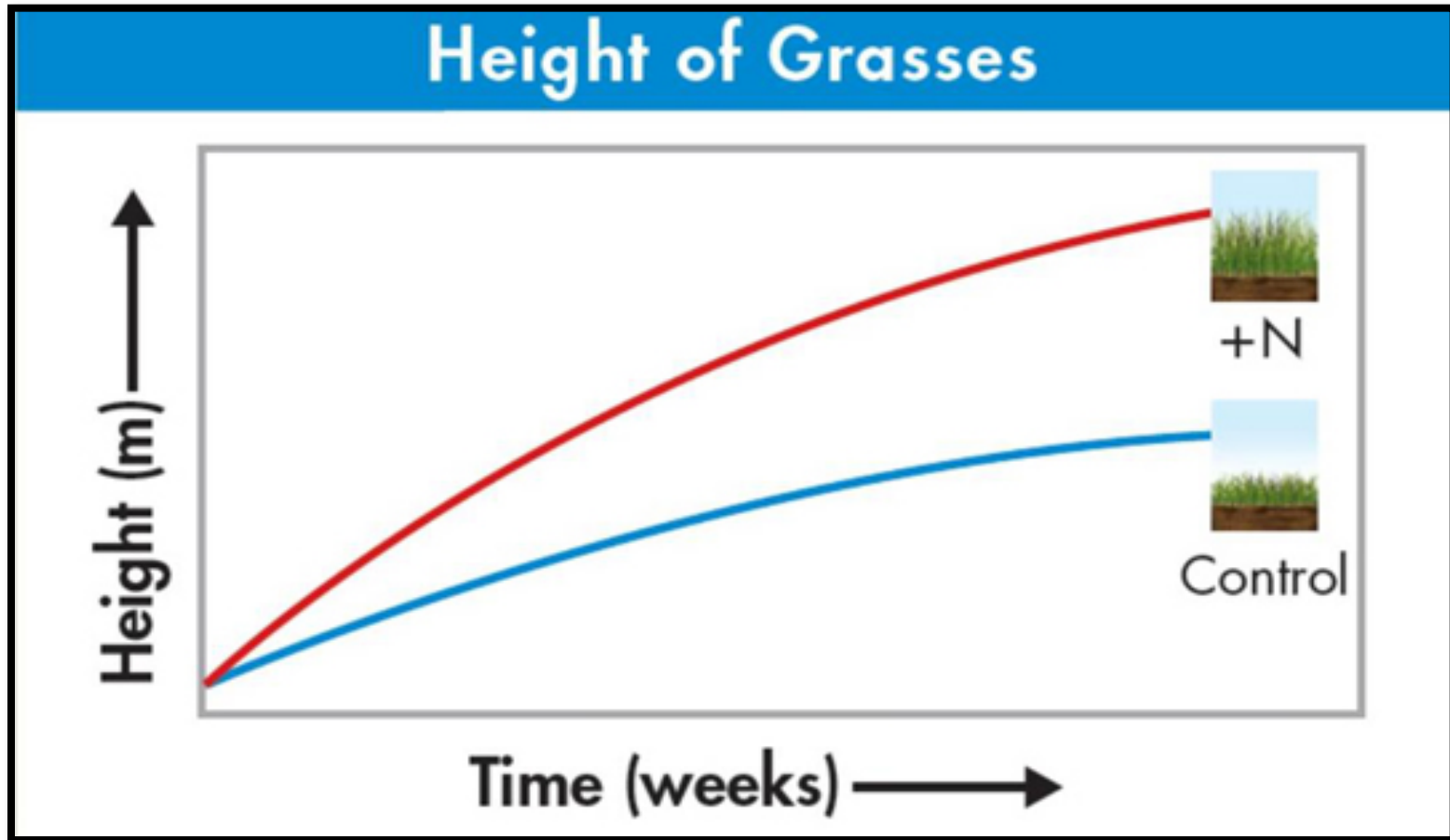
Qualitative

_____ data are descriptive.

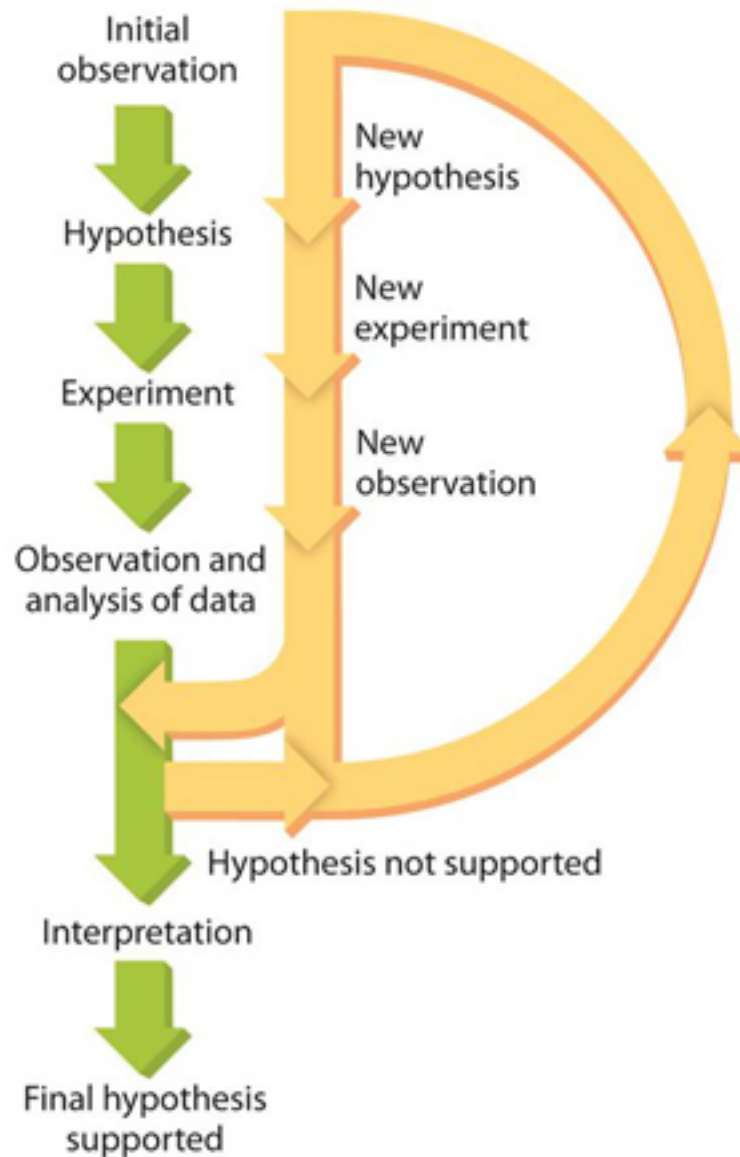


Scientific Methodology: Analyzing Data

Data analysis in science often relies on the use of statistics.



Scientific Methodology: Review

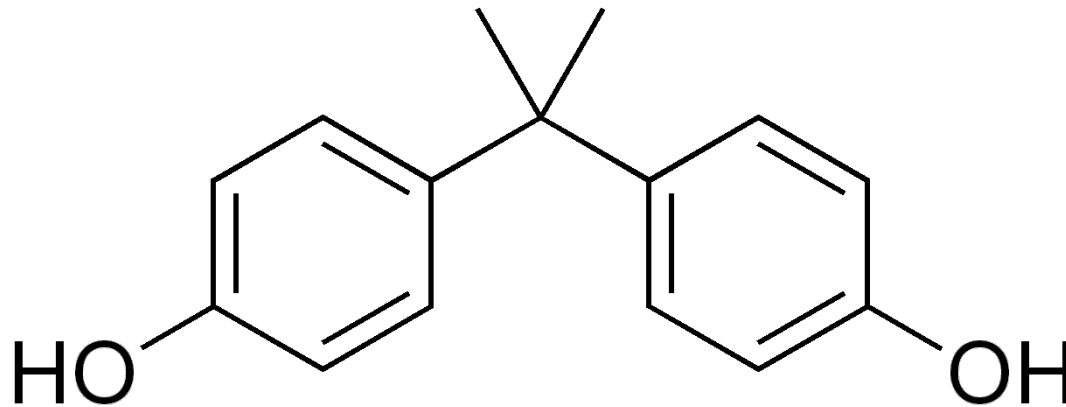


Why should we care about how science is done, beyond our classroom?

Let's consider an example: BPA (bisphenol A)

an additive to plastics

concerns over health effects have prompted investigations all over the world



Who should do the investigating?



See page 16 in your textbook.

**Industry that created it
Or
Independent Scientists**

While we watch the following video clip, write down 2 questions that you have, in your notes.

<https://www.youtube.com/watch?v=tEfLI3HFddY>