

What Is Science?



Learning Objectives

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

The Nature of Science

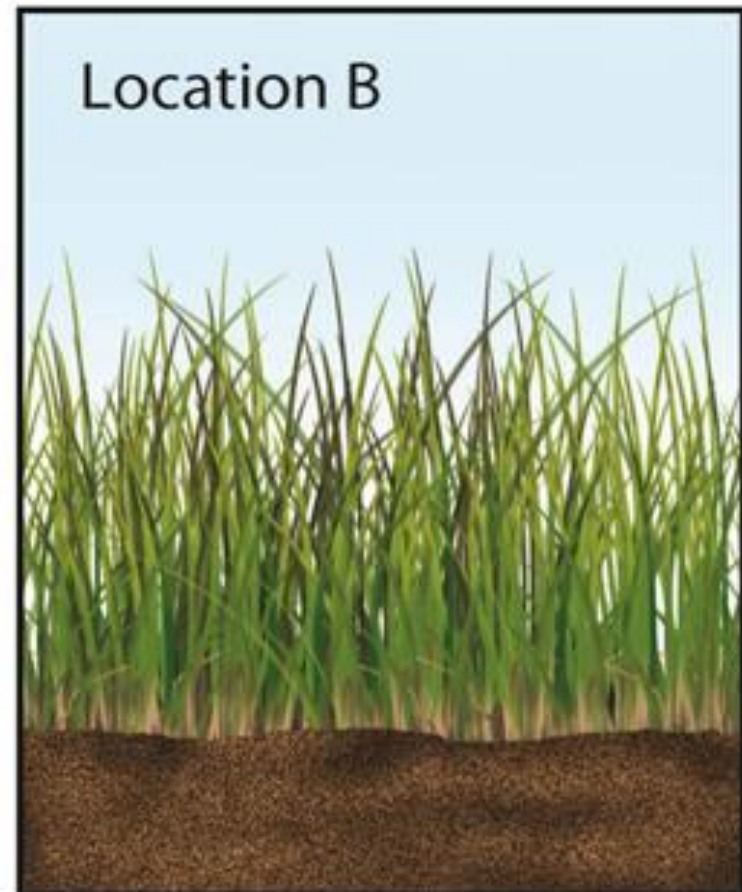
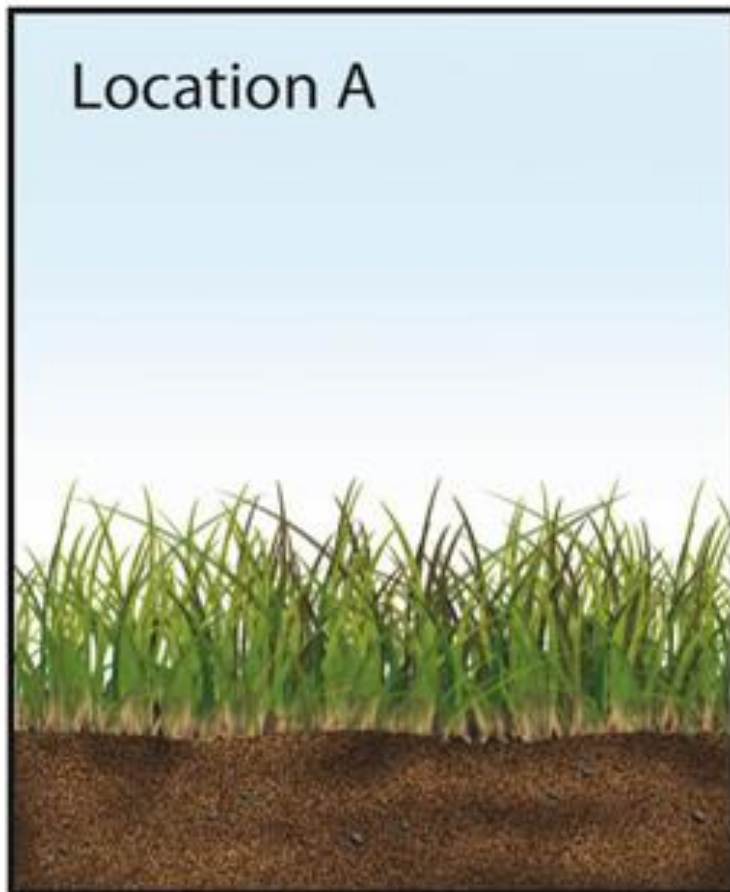
Science

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



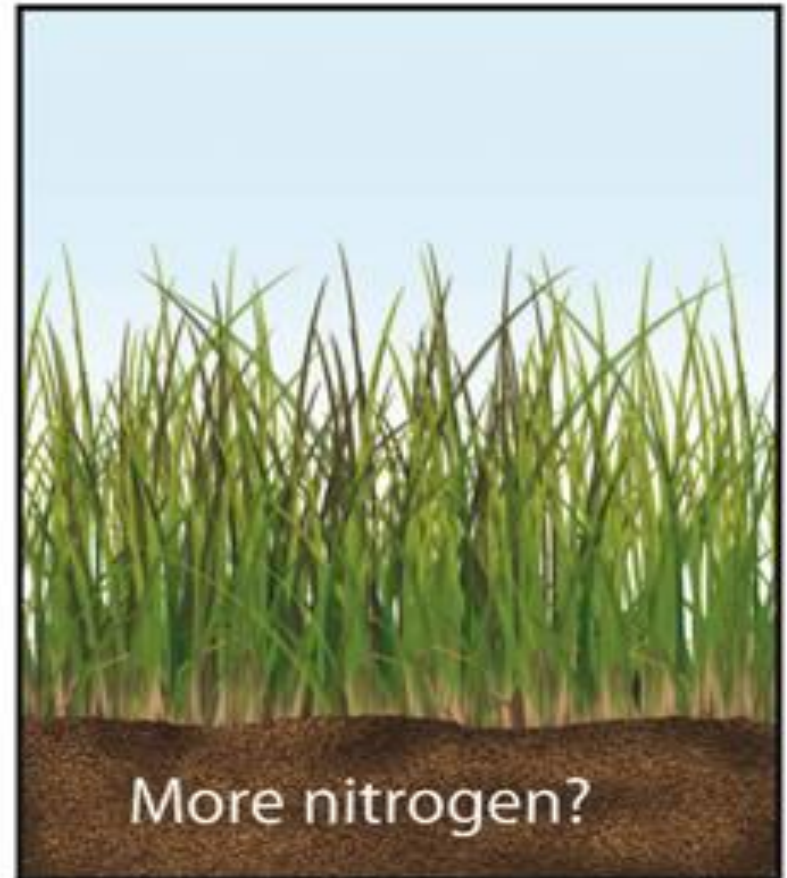
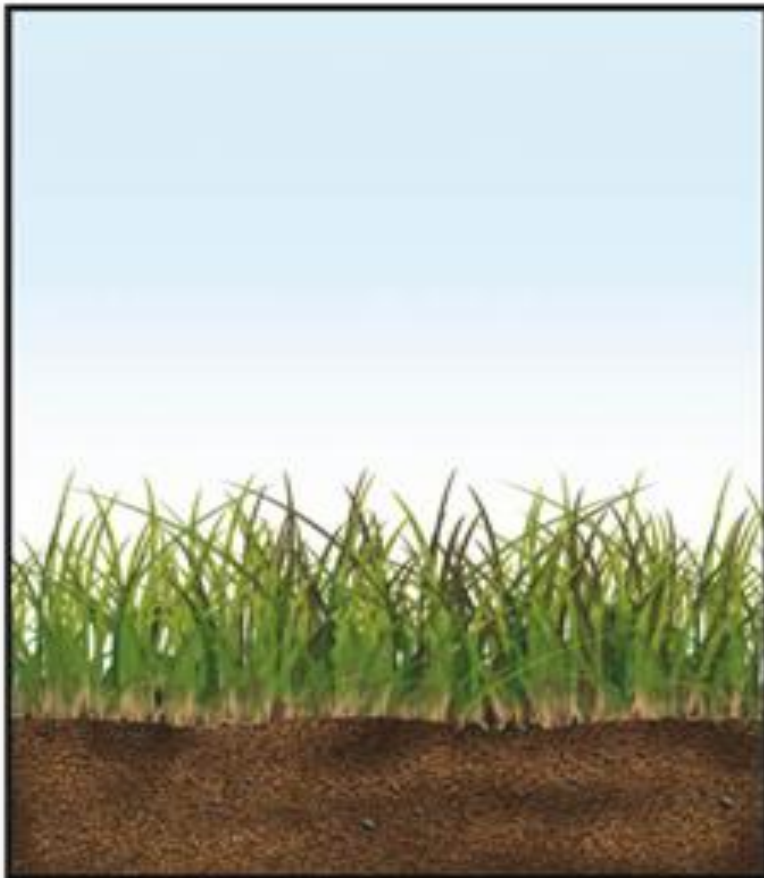
Scientific Methodology: Observation

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



Scientific Methodology: Asking Questions

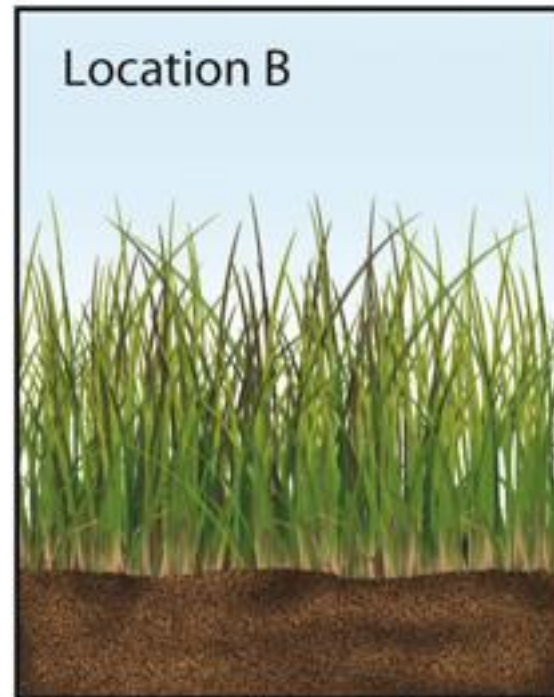
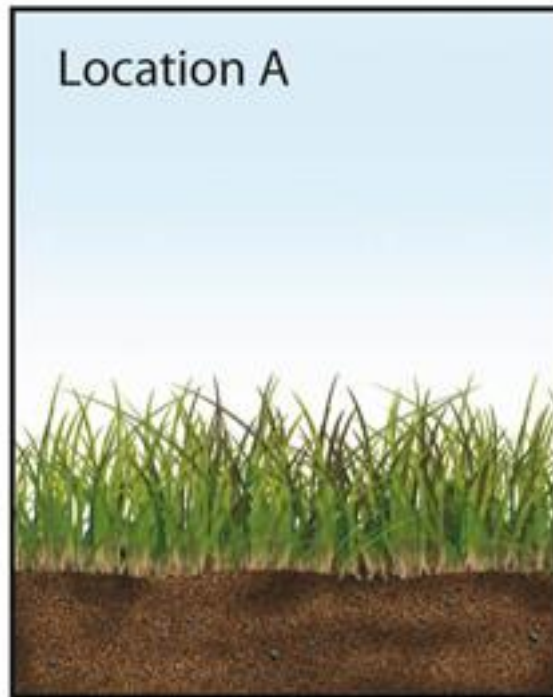
Why do marsh grasses grow to different heights in different places?



Scientific Methodology: Hypothesis

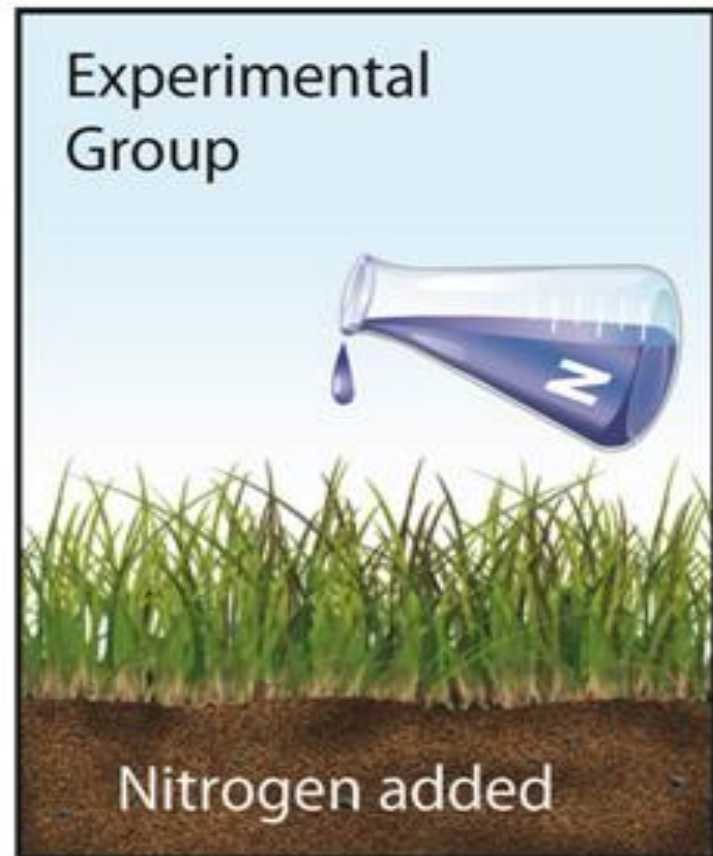
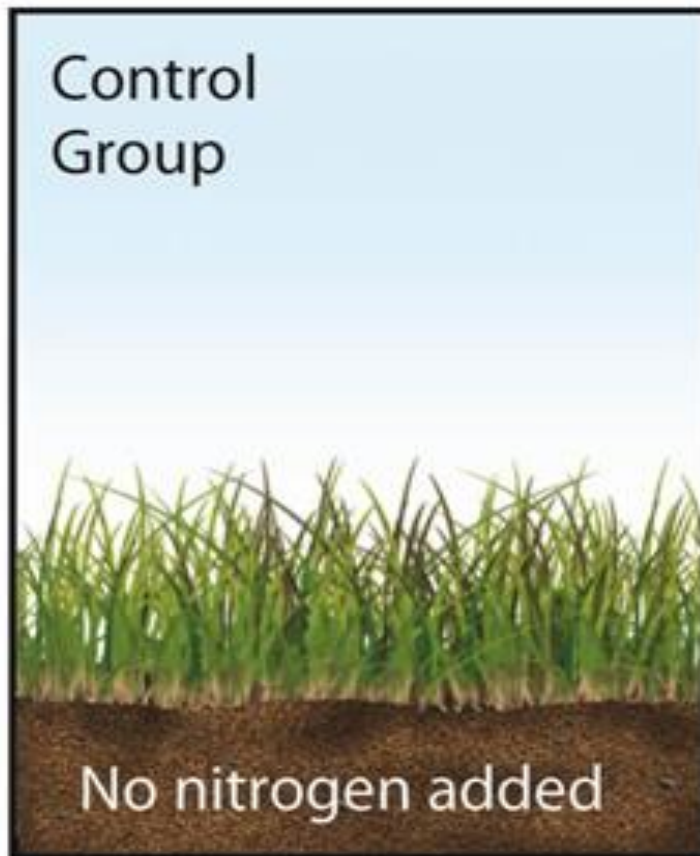
Inference: a logical interpretation based on what scientists already know

Hypothesis: a tentative scientific explanation that can be tested further



Scientific Methodology: Experiment

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



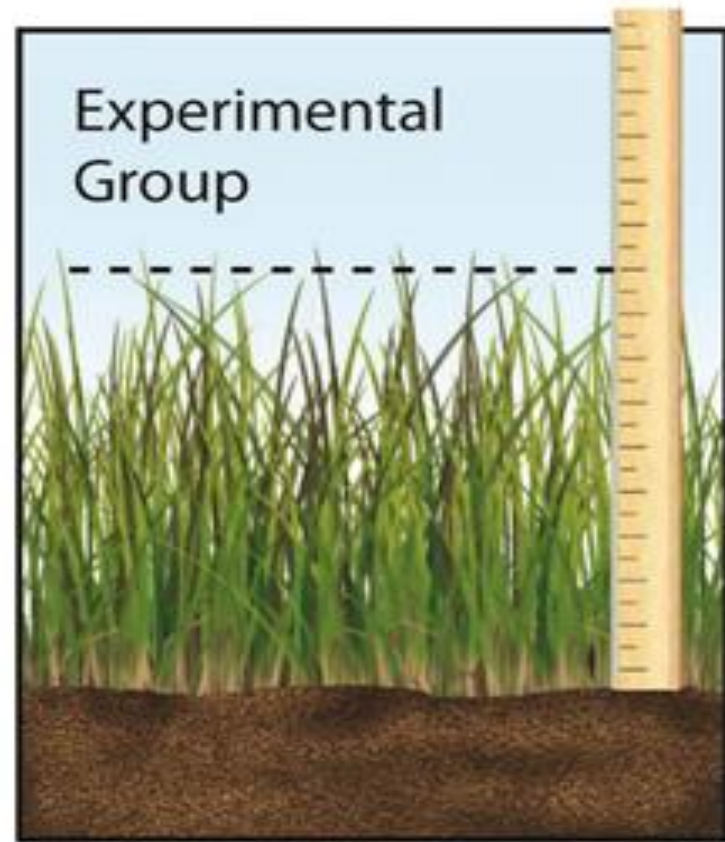
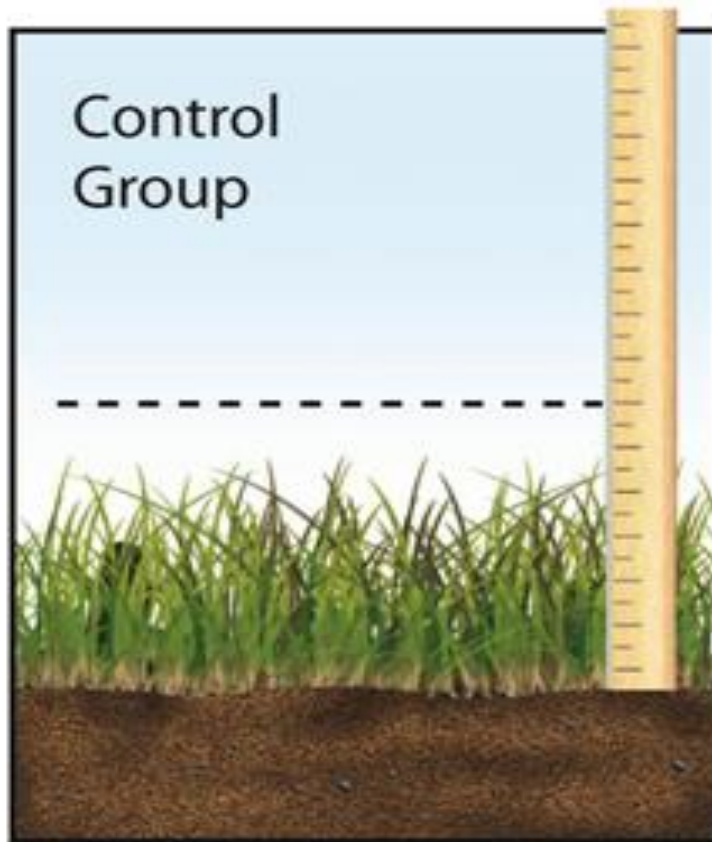
Scientific Methodology: Collecting Data

Quantitative

_____ data are numbers.

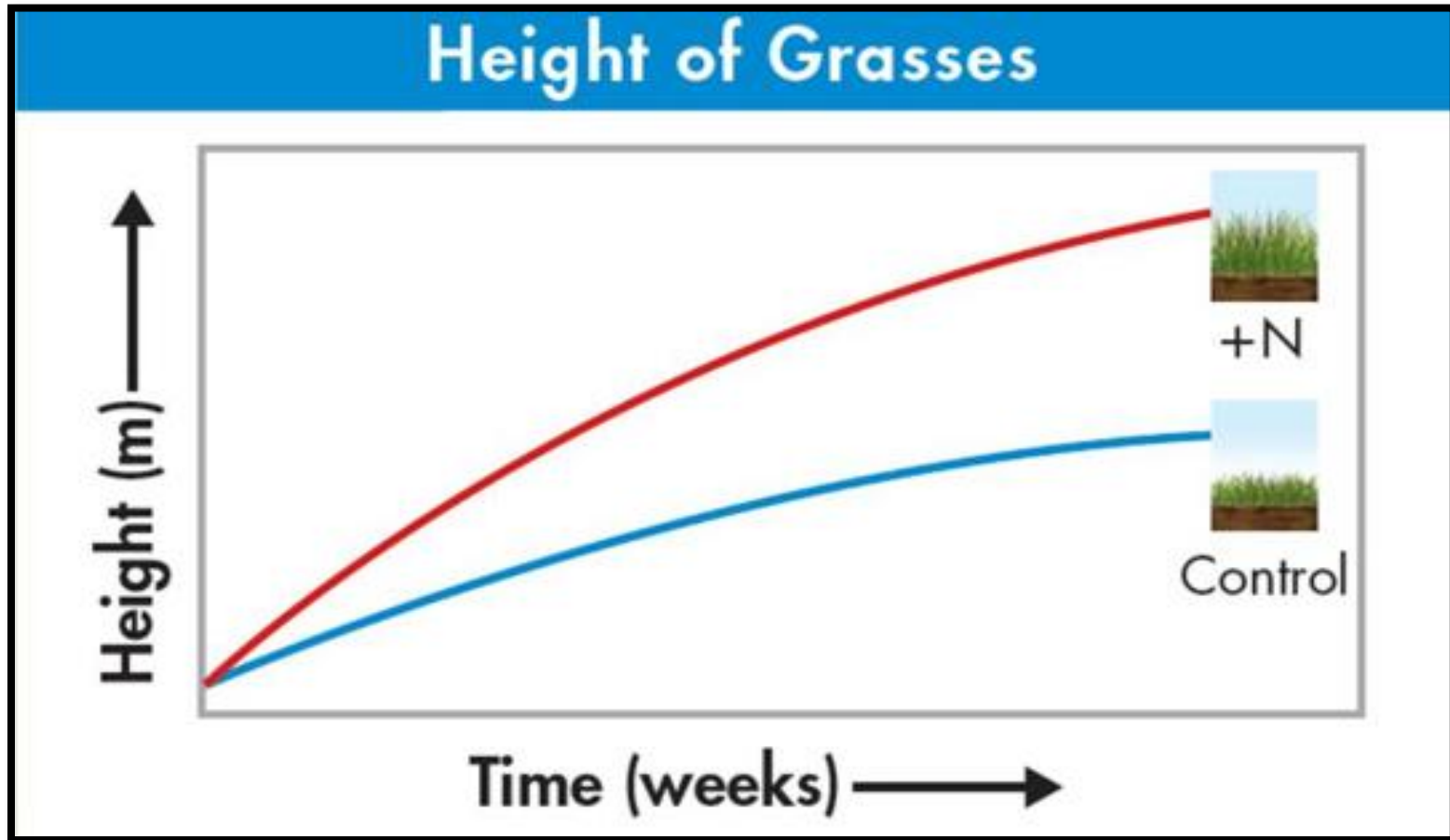
Qualitative

_____ data are descriptive.



Scientific Methodology: Analyzing Data

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



Scientific Methodology: Review

