

## 1:4 Problem Solving Methods in Biology

Scientists discover problems by observing the world around them. Scientists solve problems using the steps of the scientific method.



**SCIENTIFIC METHOD:** a logical, orderly way to solve a problem or answer a question

### Steps of the Scientific Method

1. **State the problem.**
  - Example: Why doesn't the car start?
2. **Form a hypothesis.**
  - Example: Maybe the battery is dead.
3. **Perform an experiment to test the hypothesis.**
  - Example: Turn the lights on to test the battery.
4. **Observe, measure, and record data from the experiment.**
  - Example: The lights go on.
5. **Form a conclusion based on observations from the experiment. Refine question and problem if necessary.**
  - Therefore the battery is not dead. Are the ignition wires loose or wet?

HYPOTHESIS: a possible explanation of events based on observations

EXPERIMENT: a scientific test that will yield observations proving or disproving the predicted hypothesis

OBSERVATION: something seen or sensed, noted, and/or measured

DATA: information or measurements obtained from observations

CONCLUSION: explanation or answer to a problem based on data gathered in an experiment