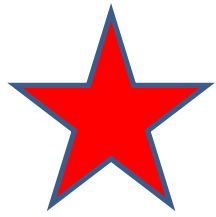
A photograph of various pieces of laboratory glassware. From left to right: a small flask containing a dark blue liquid; a graduated cylinder containing an orange liquid with markings at 10, 20, 30, 40, and 50; a small Erlenmeyer flask containing a yellow liquid with a 125 mL mark; a large Erlenmeyer flask containing a blue liquid with markings at 100, 200, 300, 400, and 500 mL, and a ±5% tolerance mark; and a flask containing a green liquid. A portion of a beaker with a dark red liquid is visible on the far right.

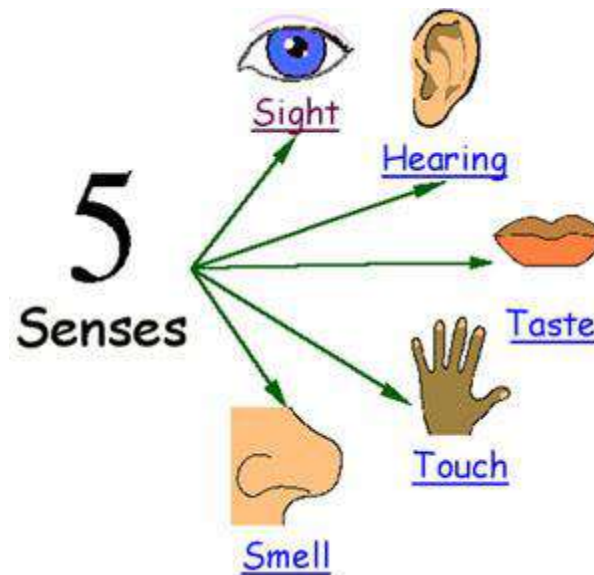
## Chapter 1, Section 3

# Scientific Inquiry



## KEY IDEA:

Scientific Inquiry refers to the many ways in which scientists investigate the natural world and make explanations based on evidence they gather.



# Steps to the Scientific Process



## 1. Question:

- Based on your observation
- Example: does the air temperature affect the chirping of crickets?

## 2. Hypothesis:

- An educated guess or possible explanation for your observation
- Must be testable
- Table talk: Guess how you think the frequency of cricket chirps would change with temperature.

Steps, cont'd.



### 3. Design an Experiment:

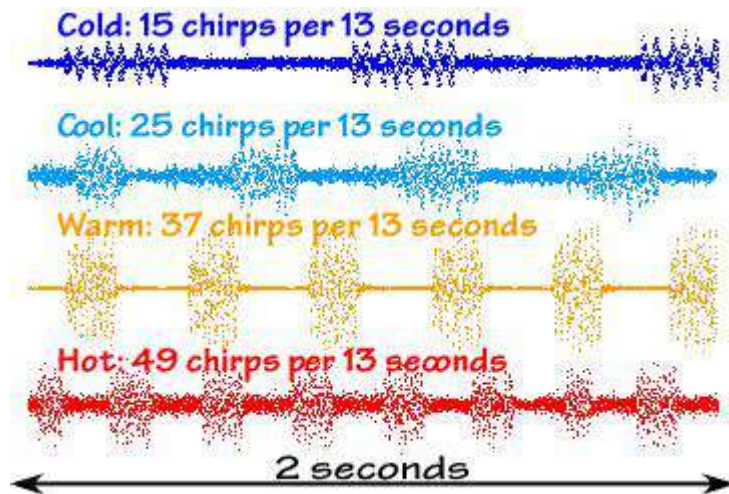
- To test your hypothesis
- Only change one variable at a time
  - variable** - a factor that can change in an experiment

(Example: temperature would be the variable that changes in studying crickets)

**control** - a part of the experiment to which you can compare other tests

(Example: control crickets have no temperature change)

## Steps, cont'd.



## 4. Collect and Interpret Data

**data** = facts, figures, & other evidence gathered through observations.

Example: a chart of the number of cricket chirps counted at different temperatures

## 5. Draw Conclusion

Decide if your original hypothesis was correct.



Steps, cont'd.

## 6. Communicate Results

Share results, ideas and experimental findings with others



See BrainPop, “Scientific Method”

See DiscoveryEd video: “How Scientists Work – What is the Scientific Method?” 21 min.

End