The Great Walnut Chase

This exercise is adapted from Cutter, et al. (1997) *The Puzzle of Inheritance;* Biological Sciences Curriculum Series.

Objectives

The Goals of this exercise are for you to recognize and learn the importance of:

- Careful observation and recording of observations;
- Universality of descriptions that all scientists can understand; and
- distinguishing between observations and inferences.

Procedure 1

1. Select a walnut from the bowl on your bench. Working as a team, carefully study the walnut to determine its distinguishing characteristics. Record your observations on a piece of paper. **Do not mark, crack or otherwise alter the walnut.** You may use equipment available in the lab to aid in your observations.

2. Return the walnut to bowl and mix with the other walnuts.

3. Use your notes to find the walnut again, and inform the instructor when all team members agree that the same walnut has been found.

Procedure 2

1. Return the walnut to bowl and mix with the other walnuts.

2. Exchange your bowl and notes with that of another team.

3. Find the walnut described by the notes, and inform the instructor when all team members agree that the same walnut has been found.

Discussion questions:

1. Why was the process much harder the second time?
2. What types of descriptions were more or less valuable in finding the specific walnut? What are the characteristics of reliable scientific observations? Why is objectivity important when making observations?
3. What process did you use to find the walnut? What did this tell you about the value of different types of observations?
4. Is it possible to be absolutely certain that you found the same walnut as originally described? How is this limitation like all science knowledge?
5. How are observations of a walnut analogous to a scientific *model*?