

Fruit Fly Behavior

AP Biology Laboratory Kit—Big Idea 4, Investigation 12

Part A. Baseline Activity

Describe observations regarding the direction the fruit flies moved in the chamber. What possible explanation might there be for this behavior?

Part B. Opportunities for Inquiry

1. Consider the following questions while reflecting upon your knowledge of taxis and *Drosophila*.
 - a. How does the age of the fruit relate to the flies' tendency to be attracted or repelled to it?
 - b. How might *Drosophila* react to dilute acids or bases?
 - c. Is one taxis stronger than another taxis?
2. Plan, discuss, evaluate, execute and justify an experiment to test a question regarding taxis and *Drosophila*.
 - a. Decide upon one question your group would like to explore
 - b. Develop a testable hypothesis.
 - c. Discuss and design a controlled experiment to test the hypothesis using the behavior chamber.
 - d. List all materials required and research their safety precautions that will be implemented to keep yourself, your classmates and your instructor safe during the experimental phase of the laboratory.
 - e. Determine how to collect and record data.
 - f. Determine how the data will be analyzed to test the hypothesis.
 - g. Review your hypothesis, safety precautions, procedure, and proposed data analysis with your instructor to be approved prior to beginning the experiment.
 - h. Once the experiment and analysis are complete, evaluate your hypothesis and justify whether or not the hypothesis was supported by your data.
 - i. Present and defend your findings to the class.
 - j. Make suggestions for a revised or new experiment to modify or retest your hypothesis.