Fruit Fly Behavior

What environmental factors trigger a fruit fly response?

Name: _____ Date: _____ Class/period: _____

Dataset ID: _____

https://biologylabbench.com/lab12

How to use this guide

Check off each numbered step as you work in the online simulation. Follow your teacher's assigned sections and repeat counts. This guide explains the workflow; enter your measurements and responses in the lab or your assigned worksheet.

Use Data for tables and editable calculations, Graph for plots, and Scene for the simulation. Some controls are under More options. Write predictions before running an experiment and scroll below the simulation for response boxes.

Overview

- ☐ 1. Read the driving question and your teacher's assignment. Note which sections, optional extensions, and number of trials your teacher wants you to complete.
- ☐ 2. Sign in with your name and class period. Copy your Dataset ID onto this guide. Keep using the same dataset for the investigation; classmates may have different numbers.

Background

- ☐ 1. Read the background explanations, diagrams, and vocabulary. Review the reference formulas you will need and identify the variables you will measure.

Pre-lab

- ☐ 1. Read the reference card and focus the sexing microscope. Identify a fly as Female or Male, then Next fly; identify at least five, aiming for four correct identifications.
- ☐ 2. Complete the pre-lab quiz and the question about where you see fruit flies. If assigned, Play demo and compare the taxis/kinesis panels.

Geotaxis vial

- ☐ 1. Write your prediction. Set the number and age of flies, then Tap down and watch 30 s.
- ☐ 2. Run at least three trials, comparing young and old flies as assigned. Record counts and timing from Data and answer the three questions below.

Choice chamber

- ☐ 1. Write your preference predictions. Run a distilled-water versus distilled-water control first; keep track of End A and End B.
- ☐ 2. Test four substances against water, completing each trial and recording interval/final counts as prompted. Stopping mid-run does not record a completed trial.
- ☐ 3. Use Swap ends and repeat if assigned to investigate position effects. Examine χ^2 and the decision for each completed trial in Data; explain the result using your actual counts.

Design

- ☐ 1. Write your question and hypothesis and identify variables, controls, and constants. Choose the stimuli and other settings for a control and treatment comparison.
- ☐ 2. Run trials for at least two conditions that differ only in the independent variable. Compare the graphs and counts and explain preference, variability, and possible position effects.

Analyze

- ☐ 1. Answer every assigned analysis question using your own recorded data. Include numbers, units, and comparisons from the appropriate Data and Graph panels.
- ☐ 2. Complete the requested calculations or statistical comparisons. Show your method and explain what the result means biologically. Write the claim, evidence, and reasoning response if shown.

Evaluate

- [ ] 1. Compare your original predictions with your results. Explain any disagreement, limitations of the simulation, and one way to improve the investigation.
- [ ] 2. Complete the assigned reflection/evaluation questions and AP-style response if shown. Use your own data where requested. Rate your confidence if you wish; ask your teacher about any unfinished or unclear work.

Submit

- [ ] 1. Review the completion checklist and Preview my report. Check your name, period, Dataset ID, calculations, units, graphs, and written responses.
- [ ] 2. Download .docx or use Save as PDF as directed by your teacher. Open the downloaded file and check that it contains your work, then upload or hand it in where your teacher specifies. Downloading alone does not submit it.
- [ ] 3. Save a progress file using Move your work to another computer if you need a backup or will change devices. Keep recordings separately if assigned; a report cannot restore editable progress.

Teacher instructions / notes