

**Drosophila Basics – Studying the Monohybrid Cross**  
Evaluated by Alvin Essenburg (Covenant Christian School)

**Drosophila Basics – Studying the Monohybrid Cross (Flinn FB1955, \$87.95)**

Includes: Anesthetizer, Sorting brushes, Culture containers,  
Instant Drosophila medium, Teacher's Notes

**Items not provided:**

Drosophila, Wild-Type (Flinn LM1115, \$6.30)  
Drosophila, Sepia (Flinn LM1125, \$6.30)  
Stereoscope

**Objective:**

Students will perform an actual monohybrid cross for two generations.

**Procedure:**

- Step 1: Remove all Sepia adults from the culture. Mature adult females can't be used because they can store sperm for their entire reproductive life.
- Step 2: When new fruit flies hatch in the Sepia culture, remove all the adults as they emerge within 6-8 hrs. before the flies begin to reproduce. Sort the flies. Males can be disposed of while the females should be isolated for 3-4 days in a new culture tube. Collect about 15 females.
- Step 3: Setup three new culture tubes. Place 5 Sepia females that have been isolated and 5 Wild males from the original Wild-Type culture in each new tube. These are the P generation.
- Step 4: The flies will breed and lay eggs. After 7-10 days, before the new flies hatch, remove all adults.
- Step 5: The new flies will be the F<sub>1</sub> generation, remove adults within 6-8 hours before they begin to reproduce and tally each species. Collect about 200 flies.
- Step 6: As the new F<sub>1</sub> generation flies hatch, place 5 male and 5 female F<sub>1</sub> in three new culture tubes.
- Step 7: Remove adults after 7-10 days, before new flies hatch, and tally each species as they hatch out. Collect about 200 flies. The new flies will be the F<sub>2</sub> generation.

**Comments:**

In this lab the students get to do a monohybrid cross instead of just talk about it. The strength of this lab is that it will be a high interest lab as students get to work with flies. However, this lab does have a few challenges. It is a very time consuming and scheduled activity. Flies need to be removed and sorted every 6-8 hours. This doesn't fit into scheduled class times so either the teacher needs to spend their evenings and weekends doing this activity or students need to be entrusted with the flies outside of school. However students may have difficulty sorting flies with magnifying glasses, and sending stereoscopes home with students may not be an option. A big problem was that the food medium when added with water to a new culture tube molded easily. It happened so much that it seems like the medium was contaminated.

For more information go to:

<http://retmbw.wikispaces.com/Drosophila+Basics+-+Studying+the+Monohybrid+Cross>