



## Lesson Plan: Drowsy Drosophila

Grades: 10 – 12

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(Lesson edited and formatted  
by Real Curriculum, Inc.)

<b>Summary</b>	Students use the ProScope to observe characteristics of two generations of <i>Drosophila</i> “fruit flies” in an investigation of the laws of genetics.
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### Discussion

Name one of the top ten things an AP biology teacher dreads hearing: the moans and groans from students when it’s time to count *Drosophila* (fruit flies) and record their traits! I watch as my students have various means of deciding which member of the lab group must sit – paintbrush in hand and eyeballs glued to a microscope – ready to sort and count *Drosophila*. I would consider it fun, but they don’t seem to find the same pleasure in such a daunting task!

This year, we used ProScopes to view the cultures of *Drosophila*. What a difference these made! Now, every student can view and help count the flies. It’s no longer the chore of one “unlucky” student. The students loved working with the ProScopes and laptops, and it made my day to hear, “this is the best lab yet!” and, “these things are so cool!” Kind of makes a teacher remember what it’s all about – to provide opportunities and equipment for “real” learning. Viewing the flies’ traits as they truly appear (versus two-dimensional black and white) made quite an impact on each student. They realized how easy the task could be! Each student clearly viewed all of the required traits, and as a result could accurately record, calculate, and interpret data. They didn’t realize that in the midst of their fun they were fulfilling AP lab requirements!

### Objectives:

- 1) Use *Drosophila melanogaster* to perform genetic crosses.
- 2) Learn how to determine the sex of fruit flies and recognize contrasting phenotypes.
- 3) Collect and analyze data from the F<sub>1</sub> and F<sub>2</sub> generations to determine patterns of inheritance.



Sample Images



The distinct differences in male and female Drosophila - males have shorter bodies than do females, the female has a point at the tip of her abdomen (ovipositor), and males tend to have darker abdomen tips than do females.



Two female flies with sepia eye color. The fly on the left has a mutated wing shape (vestigial) while the fly on the right has wild type (normal wings.)



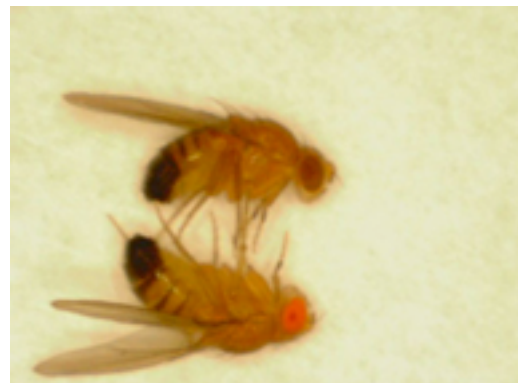
Two female flies with red eyes. The top fly has vestigial wings, the bottom fly has normal wings.



Two females. The one on top has red eyes, the one on the bottom has white eyes.



A red-eyed male on the left and a white-eyed male on the right.



A male with sepia eyes on top, and a male with red eyes on the bottom.