**DrosophiLab: Using fruit flies as a model for genetic relationships (Standard Level)**

Fruit flies (*Drosophila melanogaster*), are a model species for observing genetic relationships. They breed quickly, and have clearly observable traits. By observing specific traits and selecting parents, we can deduce genotypes from phenotypes and analyse our data using the Chi-squared ( Χ2) test.

Complete the tutorial first, using *Example\_Male* and *Example\_Female* (monohybrid cross) and the presentation here: <http://wp.me/P7lr1-B6>



*As you work through these tasks, record all of your working on this document.*

**Introductory cross**

In this **monohybrid cross**, you are looking for another variation in wing shape – flat or curved.

**Follow the steps as outlined in the tutorial to determine the genotypes of the parents SL\_male1 and SL\_female1. Test your answer statistically, using the Chi-squared test.**

**Make notes on the following stages:**

1. Parent phenotypes
2. Initial cross and different phenotypes observed
3. Pedigree chart to show possible parental genotypes based on initial observations
4. Data collection and statistical test to confirm or refute your predicted genotypes
5. Conclusion

**Assessed Cross: Determine the genotypes of the parent flies *SL\_Male2* and *SL\_Female2*.**

Using these mystery flies, you must design and carry out an investigation which will allow you to correctly identify the genotypes of these two individuals. Show all of your steps – it is a complex process and should be recorded accurately.

 <http://www.drosophilab.com>