



## Pre-lab: Model Organisms

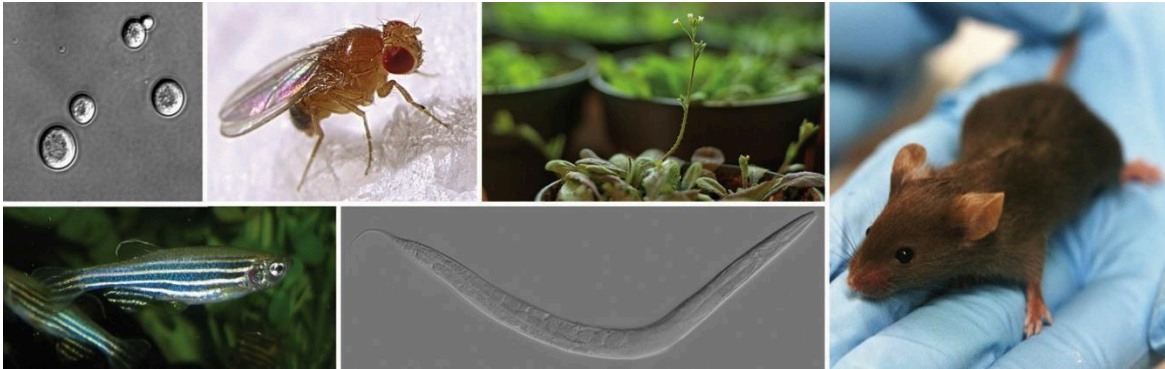


Image credit: [Max Westby](#). Some of the most important genetic model organisms in use today. Clockwise from top left: yeast, fruit fly, arabidopsis, mouse, roundworm, zebrafish. License: [CC BY-NC 4.0](#)

### Purpose

The two activities in this assignment will familiarize you with the concepts of model organisms, with an emphasis on *Drosophila* (fruit flies).

### Learning Objectives

1. Explain the importance of model organisms and identify some of their desirable characteristics.
2. Describe the usefulness of *Drosophila* as a model system.

### Introduction

Scientists frequently use a few specific organisms, called **model organisms** for their experiments. The first activity will give a general overview of model organisms, introduce a few of the most popular model organisms and discuss why these organisms were chosen and what they are useful for.

The fruit fly (*Drosophila melanogaster*) is a popular model organism used to study a wide range of biological questions. The second activity will introduce you to some of the types of research being conducted with fruit flies, give a brief overview of *Drosophila* biology, and show you what it's like to work with *Drosophila* in the lab.

### Activity 1 - Model Organisms

Estimated time: 10 min

#### Instructions

1. Work through the Introduction to Model Organisms tutorial on SciServer.
  1. If you can't access the tutorial on SciServer, [click here to read a static copy of the Introduction to Model Organisms tutorial](#).

2. To move through the activities click “Continue” at the bottom of the screen. When you are done with a topic, click “Next Topic” to move on.
3. As you complete the lesson, answer the questions below.

### Questions

1A. Explain what a “model organism” is and why they are useful.

1B. Define ortholog and explain how model organisms can be used to understand human genes.

1C. Name 4 commonly used model organisms.

## Activity 2 - *Drosophila melanogaster*

Estimated time: 20 min

### Instructions

1. Work through the *Drosophila melanogaster* tutorial on SciServer.
  1. If you can’t access the tutorial on SciServer, [click here to read a static copy of the \*Drosophila melanogaster\* tutorial](#).
2. To move through the activities click “Continue” at the bottom of the screen. When you are done with a topic, click “Next Topic” to move on.
3. As you complete the lesson, answer the questions below.

### Questions

2A. Provide 3 reasons why fruit flies are useful for scientific research.

2B. List 3 ways in which fruit flies are similar to humans.

2C. Compare and contrast the fruit fly genome to the human genome.

2D. Briefly describe the fruit fly life cycle.

## Contributions and Affiliations

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