



Activity 2: Model Organisms

Curricular Unit Teacher Materials

Instructions: Complete the chart below using the links provided to retrieve information and to address each of the questions in the header.

	What is one area of research in which this organism is used?	Why is it a good model organism for this area of study?	What else makes it a good model organism?
<u>Fruit fly</u> (<i>Drosophila melanogaster</i>)	Learning and memory	Human genes involved in learning and memory are similar to those in the fly.	<ul style="list-style-type: none"> • short life cycle • inexpensive and easy to • studied extensively, so a lot is known about it • genome sequenced
<u>Wall cress</u> (<i>Arabidopsis thaliana</i>)	Plant development	Small number of genes compared to many plants, and the genes can be easily manipulated.	<ul style="list-style-type: none"> • short generations • easy to pollinate • lots of seeds • can be grown year-round in a greenhouse • genome sequenced • no specialized growth reqs. • Primarily self-fertilizing
<u>Nematode</u> (ex: <i>Caenorhabditis elegans</i> —called <i>C. elegans</i>)	Animal development	nearly transparent body lets researchers see and image stages of development.	<ul style="list-style-type: none"> • multicellular, but not an extensive number of different cells • easy to raise • short life cycle • genome sequenced
<u>Rodents</u> (ex: mouse, <i>Mus musculus</i>)	Human disease	The mouse is a mammal, so it shares more genes with us than nonmammalian model organisms.	<p>Relative to other mammals that are studied, such as dogs, the mouse</p> <ul style="list-style-type: none"> • has short generations • is easy to raise • genome sequenced