

Virtual Population Lab

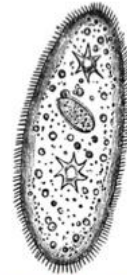
Lab Directions

This lab activity is a *virtual lab*, meaning you will conduct all of it online. Read through all the directions before beginning.

Overview:

In this lab, you will visit the [Glencoe Population Biology Lab](http://glencoe.com/population-biology) to experiment with two different species of *Paramecium* and examine how they compete for resources.

You will not be submitting a full lab report, but rather a hypothesis, table, graph and answers to thought-provoking discussion questions. The rubric for grading is below.



Paramecium.
A unicellular protistan.

Click to access the website we will use in this lab:

http://glencoe.mheducation.com/sites/dl/free/0078802849/383928/BL_04.html

Directions:

Complete the lab according to the directions in the sidebar.

Hypothesis:

Make a **hypothesis** about how you think the two species of *Paramecium* will grow alone and how they will grow when they are grown together. Jot it down here to put in your report:

Data Table

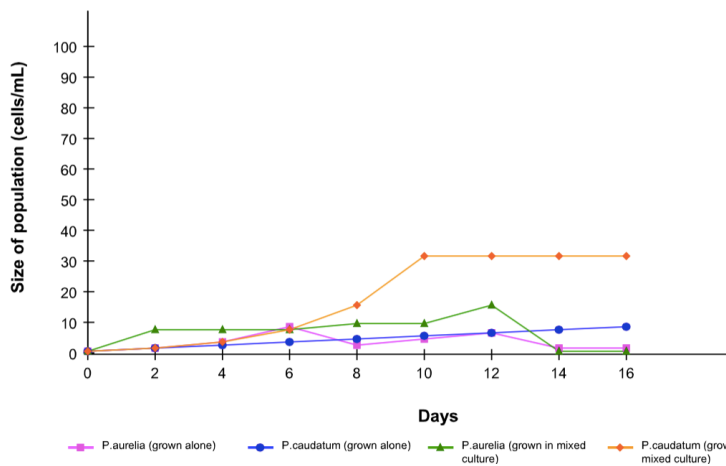
Table 1. (Your title here)

	<i>P. aurelia</i> , grown alone (cells/mL)	<i>P. caudatum</i> , grown alone (cells/mL)	<i>P. aurelia</i> grown in mixed culture (cells/mL)	<i>P. caudatum</i> grown in mixed culture (cells/mL)
Day 0				
Day 2				
Day 4				
Day 6				
Day 8				
Day 10				
Day 12				
Day 14				
Day 16				

Graph

Make a graph of population growth for each of the four columns (populations.) You can do this within the virtual lab (see image below) or feel free to create your graph with another program or website. In either case, be sure to take a *screenshot* of your graph and include it in your report

with a proper title. Resources on taking a screenshot are provided in the sidebar in the content.



*Here is a sample graph so that you have an idea what type of graph is expected. It does not show **correct** data for this experiment.*

Do not answer the journal questions listed on the website. Use the modified questions here to include with your lab report.

Discussion Questions:

Answer each question in thoughtful, detailed and complete sentences.

1. Describe or sketch the food chain in each test tube. (what is eating what?)
2. What was the resource that *Paramecium* were competing for in the mixed test tube?
3. Did your data support your hypothesis? Explain.
4. When did *Paramecium caudatum* (grown alone) reach carrying capacity? How do you know?
5. When did *Paramecium aurelia* (grown alone) reach the carrying capacity? How do you know?
6. Based on the data, which species of *Paramecium* was more efficient at using resources? Explain.

Grading: The following criteria will be used to evaluate your lab:

Criteria	Points Possible
Introduction State Hypothesis only <ul style="list-style-type: none"> ● If-then statement ● Directly relates to experiment ● Includes prediction for each test tube ● Testable ● Full sentence, proper spelling/grammar 	5
Results Data Table (5) <ul style="list-style-type: none"> ● Properly set up per example ● Data included for each of four columns Graph (10) <ul style="list-style-type: none"> ● digital or hand drawn on graph paper properly ● Proper title ● Four lines ● Axes placed properly and labeled with units ● Each of four groups labeled 	15
Discussion Questions <ul style="list-style-type: none"> ● 3 points per question ● Answered in complete sentences 	18
TOTAL	38

from http://cms.gavirtualschool.org/Shared/Science/Biology17/Ecology/Biology_Ecology_Shared8.html