**Competition Exploration**

***Paramecium Virtual Lab***

How to get there: [http://www.mhhe.com/biosci/genbio/virtual\_labs/BL\_04/BL\_04.html](http://www.mhhe.com/biosci/genbio/virtual_labs/BL_04/BL_04.html%20)

Alternately: you can type "virtual lab: population ecology" into google and the lab should pop up.

Instructions: This lab has instructions on the left hand side of the screen. Follow these instructions step-by-step with your group to learn how competition can affect your population size. It also contains pages to enter data. Use the chart below to fill in your data as a backup set (the online data chart will sometimes clear your data if you click it open more than once for each day on the experiment calendar. Your will need this data that will create an online chart. Otherwise you group will need to start over).

1. 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. Use the information button to learn about these species before making your hypothesis.

Answer the questions after you have collected and graphed your data

1. Explain how you tested your hypothesis.
2. On what day did the Paramecium caudatum population reach the carrying capacity of the environment when it was grown alone? How do you know?
3. On what day did the Paramecium aurelia population reach the carrying capacity of the environment? How do you know?
4. Explain the differences in the population growth patterns of the two Paramecium species. What does this tell you about how Paramecium aurelia uses available resources?
5. Describe what happened when the Paramecium populations were mixed in the same test tube. Do the results support the principle of competitive exclusion?
6. Explain how this experiment demonstrates that no two species can occupy the same niche.