



Time Needed

One class period

Materials

- “At Your Service” article
- Blank piece of paper (one for each student, plus a blank paper for each group)
- Pencils (one for each student)
- Graphic organizers (in the following section)

A model is a simple representation of a system. The model can be an illustration (as **figures 3** and **4**), it can be a mathematical model and include symbols such as the equation $v = h * w * l$ (volume = height times width times length), or it can be a physical model, such as a model car. A map may also be considered a model.

In this FACTivity, you will create an illustration model of your schoolyard’s ecosystem. The question you will answer in this FACTivity is: How is a schoolyard ecosystem model similar to and different from the ecosystem model created for southeastern Alaska?

Methods

Your teacher will have you work with other students in small groups. First, you will critically review **figure 3** from this article. Based on what you learned in the article, draw a model of your schoolyard’s ecosystem. The goal is to produce a model that describes how the schoolyard ecosystem works. The model should include natural and human criteria. (You may go outside to observe and record your observations about the schoolyard ecosystem.)

Use your own paper and pencil to sketch ideas. The final model for each group should be developed as a group and drawn on the extra blank paper. Ask questions such as:

- What ecosystem services are provided by the schoolyard ecosystem?
- Is the schoolyard ecosystem used and if so, how and by whom?
- Does the schoolyard ecosystem experience disturbance and if so, what kinds?

You should also ask whether other criteria should be added to your schoolyard model. Use your imagination and creativity to create your model. Develop a list of criteria that will become a part of your model.

Think about every aspect of your schoolyard ecosystem. For example, think about the ecosystem services your schoolyard provides. One way to analyze this process is to identify variables for each identified criterion. Thoroughly label each model. After your group completes its model, compare and contrast it with **figure 3**. Use the graphic organizers on pages 32 and 33 to guide your work.

Your teacher will hold a class discussion about the model-building exercise. Compare and contrast each group’s model. What do the models reveal about the similarities and differences between the schoolyard ecosystem and the ecosystem studied in southeastern Alaska? The graphic organizers presented next may be used to guide the discussion and listing. Finally, as a class, brainstorm a list of model characteristics.

| Schoolyard ecosystem criteria | Schoolyard ecosystem variables |
|---|-----------------------------------|
| Example: Ecosystem: natural characteristics | Example: Number of trees |
| | Example: Number of acres/hectares |
| Example: Ecosystem services provided | Example: A place to play outside |
| | Example: Habitat for songbirds |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

| Similarities between schoolyard ecosystem and southeastern Alaska ecosystem | Differences between schoolyard ecosystem and southeastern Alaska ecosystem |
|---|--|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

Model characteristics

| |
|--|
| |
| |
| |
| |
| |
| |
| |
| |

FACTivity Extension



Time Needed

At least 30 minutes

Using the list of criteria and variables for the schoolyard ecosystem, develop ways to measure the variables you have identified. After this exercise has been completed, your teacher will hold a class discussion about measurement and its importance to scientific study.

Another FACTivity



In this FACTivity, you will create a management objective for your schoolyard. Then you will create an adaptive management process. Review the sidebar titled, “Adaptive Management in Your Life” on page 28. You may also review the adaptive management models on page 5.

Time Needed

One class period

Materials

- “At Your Service” article
- A blank piece of paper
- Pencils (one for each student)

Methods

Working in small groups with other students, draw a circle on your paper. Beginning at the top, write a statement that describes your management objective. Examples of management objectives include: (1) develop a wildflower garden, (2) reduce stormwater runoff from parking lots, (3) improve landscaping at the school’s entrance, and (4) provide habitat for three songbird species. Pretend you are a land manager

practicing adaptive management. Write the cyclical steps you would take to address your management objective. Your teacher should emphasize that adaptive management includes the following four steps:

- Plan (in which a management objective and actions are identified)
- Act (in which a management action is taken)
- Monitor (in which data are collected and analyzed to determine the effect of the management action)
- Evaluate (in which learning occurs and informs the next round of management actions)

Remember that adaptive management does not have an endpoint. Focus on developing a cyclical process where you are learning from experience.

Note that you can use the information and model created in the first FACTivity to help identify management objectives.

Your teacher will hold a class discussion about adaptive management. Explore whether this process could be used in other areas of an individual’s life. You may want to develop an adaptive management process for a personal objective.

Note to Educators: If you are a trained Project Learning Tree (PLT) educator, you may use “Forest Consequences” as an additional activity.



The title “At your service” is a phrase that means “Committed to satisfying you.” How do you think this title relates to the article you read?

Web Resources

Ecological Society of America: Ecosystem Services
<http://www.esa.org/ecoservices/comm/body.comm.fact.ecos.html>

Forest Service: Ecosystem Services
<http://www.fs.fed.us/ecosystems/services/>

Natural Inquirer Ecosystem Services edition
<http://www.naturalinquirer.org/Ecosystem-Services-Natural-Inquirer-i-26.html>

Ecological Disturbances
[http://en.wikipedia.org/wiki/Disturbance_\(ecology\)](http://en.wikipedia.org/wiki/Disturbance_(ecology))