Advanced Site Inventory Activity

Summary:

Students investigate various elements of their Schoolyard Habitats site, including climate, land use, and human impact.

Grade Level:

9 –12

Time:

2—3 class periods

Subjects:

Biology, Environmental Science/Studies, Geography

Skills:

Observation, Investigation, Data Processing, Critical Thinking

Learning Objectives

Students will be able to:

- Examine factors influencing suitability of a potential Schoolyard Habitats site
- Observe various physical and environmental characteristics of the site
- Record and critically examine data

Materials:

- Schoolyard Habitats Site Inventory worksheets (p. x)
- Testing kits for pH
- Thermometers

Background

Potential Schoolyard Habitats sites are affected by many factors: climate, topography, land use, and even the site's history. Before deciding which native plants you will use to attract wildlife to your Schoolyard Habitats, conduct the following site inventory, a comprehensive survey of all the factors, both physical and environmental, that will affect the project. Factors to investigate include the site's topography, soil, existing vegetation, sun and shade, as well as historical and current land use.

Procedure

Divide the class into small groups. The class can focus on a small section of the schoolyard, with each group completing each part of the inventory; or each group can be responsible for a different component. Each group's findings should be added to the base map created in Part I to generate a total picture of the current uses and features of your Schoolyard Habitats site. Findings can be written directly on the base map or on transparencies that can be placed directly over the base map. If each student group is responsible for a different inventory component, make sure that all groups first complete Part I:Topography together to ensure that everyone begins with a base map of the same scale. (See Appendix E for information on base mapping strategies.)

Advanced Site Inventory 9-12 Worksheet

Part I: Topography

1. Measure the dimensions of your Schoolyard Habitats site. _____
2. Describe the size and location of any hills, valleys, or slopes on the site. _____

_____

3. Determine run off paths for rainfall. Note any areas that usually hold puddles. _____

_____

4. How often does the site get rainfall (approximately)? _____
5. How much rain does the site get per month? _____ per year? _____
6. How will the shape of the site affect your potential habitat plans? _____

_____

7. When you have finished this section, create a base map of the site, using the contour and water runoff information above. Include any pipes, storm drains, and sewers on your map.

Part II: Soil

Gather at least 5 soil samples from different areas of your schoolyard on a day at least 3 days after the last rain. Pick areas that have different kinds of vegetation growing, or different topography—such as a hill, by a stream, under a tree, on the open ground, etc. Compare the color, texture, and moisture content of each sample. Use pH-testing kits to determine the acidity of the soil in each location; soil acidity determines which kinds of plants can grow in a location.

SAMPLE #	LOCATION	COLOR	TEXTURE	MOISTURE	pH
1					
2					
3					
4					

1. Check native plant guides to determine which plants will grow best in your soil type. Make a list. ____

_____

2. What other questions do you have about the soils found at your site? _____

_____

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Part III: Vegetation

Use the following charts to record the numbers and types of vegetation found on your schoolyard. Field guides can help you with identifying individual species.

1. Identify all the large trees found in your schoolyard. Are they deciduous or evergreen? If possible, identify the type of tree either by its common or scientific name. Is the tree native or non-native? Does this tree provide food for wildlife? Does it provide shelter? Does it provide space (places to raise young)?

DESCRIPTION	DECIDUOUS/ EVERGREEN	NAME	TOTAL NUMBER	NATIVE/ NON-NATIVE	FOOD? FOR WHOM?	COVER? FOR WHOM?	SPACE? FOR WHOM?

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2. Identify all of the small trees and shrubs found in your schoolyard. If you do not know the names of the trees or shrubs, try your best to describe their shape and other characteristics. Taking pictures may also help with identification at a later date.

DESCRIPTION	DECIDUOUS/ CONIFER	NAME	TOTAL NUMBER	NATIVE/ NON-NATIVE	FOOD? FOR WHOM?	COVER? FOR WHOM?	SPACE? FOR WHOM?

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3. Identify and estimate the numbers of different species of wildflowers on the schoolgrounds.

DESCRIPTION	NAME	TOTAL NUMBER	NATIVE/ NON-NATIVE	FOOD? FOR WHOM?	COVER? FOR WHOM?	SPACE? FOR WHOM

4. Identify and list all the areas in your schoolyard that are covered with grass or lawn, weeds, or other ground cover. _____

5. Use the information gathered from the above site inventory to create a base map overlay of the existing vegetation in your schoolyard.

6. Which types of vegetation are most prevalent on your site? Explain why this might be. _____

7. What other questions do you have about the existing vegetation on your site? _____

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Part IV: Sun and Shade

Choose a sunny day to do your investigation. Using a Likert scale (1 to 5), record on your base map how much sun is falling on at least four different areas of the potential Schoolyard Habitats site. Places that have no shade at all and are under bright sun should get a ranking of "1," while those that are under complete shade should get a ranking of "5." Use your judgement for areas in between.

Use thermometers to record air and soil temperatures at each location. When taking soil temperatures, carefully insert the thermometer about three inches into the soil, shield the remaining portion of the thermometer, and take your reading.

To compare, repeat your observations and measurements at two other times of day.

LOCATION	TIME RECORDED	SUN/SHADE RATING	AIR TEMPERATURE	SOIL TEMPERATURE

1. Why is it important to know which areas are sunny or shady before choosing plants for your habitat site? _____

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Part V: Site History

Knowing your site's history is an important part of planning the site's future. For example, if the site is located near an industrial center, soils may contain residues of chemicals generated by the adjacent industry. Generate a list of questions about your site and a list of people who you think might be able to help you answer them. Some suggestions are listed below.

Questions about your Schoolyard Habitats site:

1. How long has the site been here? _____

_____

_____

2. What type of ecosystem was here before the school was built? _____

_____

_____

_____

_____

_____

3. Were any industrial centers near the site in the past? _____

_____

_____

_____

_____

_____

_____

Who Can Help:

- Long-time town residents
- Principal
- Local farmer
- Local Businesspeople
- Long-time teacher
- County Planning Office
- Conservation District

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Part VI: Land Use

1. How is the potential Schoolyard Habitats site currently used? _____

_____

2. How do your site's current neighbors use their land? _____

_____

3. How might current uses, either on or near the site, affect your Schoolyard Habitats plans? _____

_____

Note any buildings, bodies of water, forests, etc. near your potential site. Record findings in the chart below, as well as on your site map.

DIRECTION FROM SITE	LAND USE	POSSIBLE EFFECTS ON SYH SITE
Example: N, S, E, W	**Road**	**May generate fumes, noise**

Part VII: Traffic Patterns

Observe your site on different days and at different times of day to collect the following information.

1. How do pedestrians use the site? (i.e., Where do people gather, walk, etc.?) _____

_____

2. How do bicyclists use the site? _____

_____

3. Describe any vehicle traffic on or near the site. _____

_____

4. Describe any existing pathways or wildlife trails. _____

_____

_____

5. Describe any potential conflicts with this area for a Schoolyard Habitats project.

_____

_____