

If You Mess With A Wetland, At Least Try To Make Amends!

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WETLANDS PERFORMANCE ASSESSMENT

WATER UNIT

WETLANDS SECTION

GRADE LEVEL: 8th

INQUIRY QUESTION: How can a wetland be recreated after it has been disturbed by human activity?

GEOGRAPHY STANDARDS FOR GRADES 5-8:

Standard #1: How to use maps and other geographic representations, tools and technologies to acquire, process and report information from a spatial perspective.

Standard # 8: The characteristics and spatial distribution of ecosystems on the earth's surface.

Standard #14: How human actions modify the physical environment.

OREGON DEPARTMENT OF EDUCATION GEOGRAPHY BENCHMARK FOR 8TH GRADE:

Explain how human modification of the physical environment in a place affects both that place and other places.

OREGON DEPARTMENT OF EDUCATION CONTENT STANDARDS FOR SCIENCE (BENCHMARKS) FOR 8TH GRADE:

I. LIFE SCIENCE:

1. COMMON CURRICULUM GOALS FOR DIVERSITY/INTERDEPENDENCE:

a. Identify and describe the factors that influence or change the balance of populations in their environment.

II. EARTH AND SPACE SCIENCE:

1. COMMON CURRICULUM GOALS FOR THE DYNAMIC EARTH:

a. Describe how the Earth's surface changes over time.

TIME REQUIRED:

Three class periods.

MODIFICATIONS:

This task performance could be made more challenging for TAG students by requiring the design to be three-dimensional or by creating extension activities. Modifications for students on IEP could include deleting some of the required design features.

MATERIALS:

- White drawing paper or poster board at least 20"x20" but no larger than 30"x30".
- Pencil.
- Eraser.
- Ruler.
- Compass.
- List of wetland plants of Oregon.

OVERVIEW:

Wetlands are an integral part of our local environment. Wetlands serve as habitat for a variety of plants and animals, and also act as natural sponges absorbing large quantities of water during times of heavy precipitation. Though beneficial in many ways, wetlands are still quite misunderstood and are often considered a waste of land. It is only recently that people have learned it is better to leave a wetlands undisturbed so they may continue to benefit many living creatures, including ourselves. When wetlands are disturbed, it has been noticed that a man-

made wetland in its place, is better than no wetland at all. Humans cannot build a wetland as well as nature, but it at least provides something remotely similar to the original.

PRIOR KNOWLEDGE:

Students will have completed a variety of in class readings related to the three types of wetlands and where they exist in the United States, as well as what types of wetlands we have here in Oregon. Students will also have completed a cross-sectional drawing of a marsh and a bog showing the strata below the water as well as typical native plants. Class discussions will have covered the types of wetlands in the local area, where they are located and what they “look like”, as well as effects of human impact.

Students will have also researched and created a list of plants and animals that exist in Oregon wetlands.

ACTIVITIES INTRODUCTION:

In this activity, you will work independently and assume the role of a landscape architect who is in charge of recreating a wetland marsh (approximately 800 square meters in size, after alteration) that has been almost entirely devastated by the development of an apartment complex. Trees were cut down, smaller plants plowed under and/or removed, birds have lost nesting areas, land and water animals have lost their homes and the natural water absorbing ability of the wetland has been lost! The construction company that built the apartment complex is required by county and environmental laws to reestablish a wetland as close to the original as possible. This is why they have hired you for this task. The key difference here is that the new wetland will be like a “nature park” where people from the neighboring apartments can stroll along paths in the wetland and view the wildlife. Some secondary questions you may wish to consider before taking on this task are...

-What kind of ecosystem was this place?

-How DO you “create” a wetland?

-Why would it be beneficial to have a wetland?

- What types of native plants existed in the wetland?
- How will you reestablish the bodies of water?
- How will the new wetland react during heavy rains?
- What environmental resources would be helpful during this task?

GETTING UNDERWAY:

Given this situation, design a “new” wetland using the following criteria...

- Draw the new wetland on white drawing paper or poster board that is at least 20” x 20”, but no larger than 30” x 30”. The design will serve as a map of the wetland.
- Use of color for map features is left to your discretion.
- You will decide where to plot/draw the following features...
- Your map design should include different symbols for each type of native tree, shrub and ground cover.
- Draw in the location of the newly established pond and outflow creek.
- Draw in the locations paths and footbridges.
- Include a compass rose showing points north, south, east and west.
- Draw the map to scale.
- Provide a key that explains what each plant symbol represents, a scale and symbols that represent paths and footbridges.
- Write the name of the new wetland at the top (north) of your drawing.
- Include any other features that you think are necessary for the nature park.
- Drawings must be neatly prepared, i.e. no double lines, stray pencil marks, etc.
- THIS IS SPECIFICALLY AN **IN** CLASS EXERCISE!! YOU HAVE THREE CLASS PERIODS IN WHICH TO WORK ON THIS PROJECT!!!

PRESENTATIONS:

You will be expected to present your design to the class. The class will hear your plan and provide feedback and ask questions. Be prepared to explain the following...

- Why you designed the wetland the way that you chose?
- What native plants did you select for planting and why?
- How will the public access satisfy the visitors and be kind to the flora and fauna?
- How well will the new wetland absorb water during the first rainy season?
- How well do you think the new wetland compares to the old wetland?
- What benefits will the wetland provide to nature and humans?
- Any additional thoughts, concerns, comments about the design you created?

SCORING GUIDE FOR WETLANDS TASK:

This guide will be broken into three parts including...

- The National Geography Standards for this task, as listed on page one.
- The Oregon Department of Education Geography Benchmark for 8th Grade, as listed on page one.
- The Oregon Department of Education Science Benchmarks for 8th Grade, as listed on pages one and two.
- A scoring guide specific to the design you created and how well you followed the criteria. This portion will be a culmination of points for each of five categories with “5” being the highest and “1” being the lowest .

NATIONAL GEOGRAPHY STANDARDS:

Standard #1: Met___ Not Met___

Standard #8: Met___ Not Met___

Standard #14 Met___ Not Met___

O.D.E. GEOGRAPHY BENCHMARK:

Explain how human modification of the physical environment of a place affects both that place and other places.

Met___

Not Met___

O.D.E. SCIENCE BENCHMARKS:

Identify and describe the factors that influence or change the balance of populations in their environments.

Met___

Not Met___

Describe how the Earth's surface changes over time.

Met___

Not Met___