

Grade(s) : 4-5  
Subject Area: Science

EALR/Standard:

4-5ES2 C: Erosion processes

4-5ES2 F: Erosion and soil loss

4-5APPA, C, D, F: Design technology to solve a problem; communicate ideas.

4-5APPB: Different cultures use different technologies to solve the same problem

Activity:

Look for areas of erosion in the garden. Discuss different techniques cultures through out time have used to hold soil in place. Design a way to prevent erosion in a section of the garden.

*Created by Carrie Reinhart, Environmental studies intern for Whitman College, Spring 2010*

Goals:

Understand the process of erosion, and how too much erosion is detrimental for farming processes.

Discuss different cultural approaches to agriculture.

Carry out the design process to design a way to prevent soil loss in the garden.

Brief description:

After a discussion of the erosion process in the classroom, look for signs of erosion in the garden. Discuss why this might be a problem for growing plants. Discuss different technologies used through out time, areas of the world to combat excessive erosion. As a class, design a way to prevent erosion in a section of the garden.

Materials:

For the discussion and brainstorming steps, students should record observations in a notebook.

The design process may involve making drawings with rulers, etc.

For the long-term implementation of the design, materials such as lumber or rocks, a groundcover plant, shovels, etc. will be needed depending on how the class decides to combat erosion.

Procedure:

This project may be best broken up into a few days.

Discuss the erosion and soil formation processes in the classroom to lay the groundwork for this project. As a class, walk through the garden looking for signs of erosion. Find a portion of the garden that is being negatively affected by erosion and make observations.

In the classroom, give out a few readings discussing ways various agricultural societies throughout time have combated erosion, and discuss the designs of the technology each has implemented. After analyzing a few technologies, make a list as a class of design criteria for a technology that could feasibly be implemented in the garden to prevent erosion.

Have groups of students draw designs that meet the criteria to stop erosion in the portion of the garden. Designs may implement several ideas from the readings. As a

class, decide on a design and make a materials list. Give the design to the garden club to implement, or carry it out as a class. Throughout the rest of the year, make trips to the garden to see if the design is working; modify the design if it can be improved.

New vocabulary:

Erosion    Design