

ARBOR SLEUTH

AFTER 2: Erosion Control Planning a Hillside Garden

Background: Review Part II: Using Plants to Slow Erosion found at this link <http://sciencenetlinks.com/lessons/soil-erosion/> specifically the **Planting a Hillside Garden** activity.

VA Standards Addressed: Science (2018) 5.1, 6.1, LS.1. Math (2016) 5.19, 6.12

Instructional Strategy: (Taken from <http://sciencenetlinks.com/lessons/soil-erosion/> accessed 12/17/18)

Using Plants to Slow Erosion: Divide students into groups. Each group will create a hillside garden that they think will work to slow erosion on the hillside using the material listed on the [Planning a Hillside Garden](#) student sheet. Students should follow these steps:

1. Use the activity sheet to plan their hillside garden. Save the sheets for final discussion.
2. Using measured proportions, plant their garden in the foil tin following their garden plan.
3. Grow their gardens with equal amounts of water for each garden. Decide as a group what that measurement should be for all gardens.
4. Once the garden has grown to the point where the roots have been established (two weeks should be plenty), student groups will test their garden for erosion.
5. To perform the erosion test, students should place their gardens on a block so that one end of the tray is elevated 3-4 inches. Then, they should place the opposite end on a catch bin (use aluminum foil or some other type of material that will catch the dirt and water runoff.)
6. Students should sprinkle the gardens with equal amounts of water and collect the runoff in the tray at the bottom. The amount of water will depend on how much and how long they pour. Several cups of water should produce enough runoff to test but they can add more if needed.
7. Now students should measure the amount of soil/plant runoff from each garden. Have them record this amount on their [Planning a Hillside Garden](#) student sheet. Then they should drain off the water and only measure the soil/plant runoff. Record amounts on the student sheet.
8. Refresh everyone's memory as to the central question for this lesson by writing it in a visible place: "What can be used on the hillside to slow or stop the soil erosion? Can it be stopped? To what extent can erosion be slowed or stopped?"
9. Discuss each group's results and have students write these on the garden plan sheets. Use these questions to stimulate discussion:
 - a. Which group had the least amount of runoff? Which group had the most?
 - b. How did your garden plans differ?
 - c. What might be the cause of this difference?
 - d. Can you see examples of the specific types of erosion you studied? Describe.
 - e. How would you plant your garden differently next time to limit the amount of lost soil more effectively?
 - f. How does this experiment relate to the real world?
 - g. Can you see any examples of erosion on or around your school grounds?

