

Do the Erosion Boogie!

Essential Question(s):

How does erosion occur and how does it impact the Soil & Recycling Department?

At a Glance:

Learners will perform physical ‘dance’ motions to better understand how erosion occurs as well as its effects on ecosystems.

Background Information:

Erosion is a natural occurrence caused by water, wind, freeze thaw action, and gravity, but also may be caused or compounded by human-induced actions. Poor farming practices, deforestation and other plant removal, improper irrigation, and increase in grey-space (pavement and buildings) all contribute to the erosion of valuable top soil. Erosion of topsoil means less soil fertility, yielding lower or no production. The National Sustainable Agriculture Information Service states that erosion is the single greatest threat to soil productivity. Eroded soil also often ends up in our waterways, causing reduced oxygen-intake for water organisms and also reduces stream depth. The U.S. spends hundreds of millions of dollars each year dredging waterways clogged with soil sediment.

How do humans contribute to natural erosion? The main human-induced sources are poor agricultural methods and deforestation. Over-plowing of croplands and leaving fields barren in off-seasons allows wind and water erosion to greatly reduce topsoil. The use of no-till agricultural techniques keeps soil in place and hence, keeps nutrients in the soil. If the soil is completely depleted of nutrients, desertification occurs and the soil is no longer productive. This often occurs in countries where appropriate agricultural practices are not known. Using cover crops during off-seasons also retains and adds nutrients, as well as stabilizing soil from water and wind impacts. Deforestation is another large contributor, as the roots of trees and other plants are not available to help keep soil in place. This is a major source of erosion throughout planet earth.

Procedure:

1. Review the topic of erosion from previous lessons. Ask learners to describe the different ways in which erosion can occur (moving water, rain, freeze/thaw, wind, deforestation, plowing, etc.).
2. Tell learners that many types of soil erosion occur today all over the world and still greatly impacts ecosystems. Poor agricultural practices, deforestation, and drought are major contributors to severe soil erosion.
3. Explain to learners that they are going to perform motions, or dance moves, to mimic different types and causes of erosion. You, the instructor, will mimic the action first and they are to practice with you. After everyone has the moves down, you may either tell a story of erosion and act out the moves OR put on some music (no words) and dance an ‘Erosion Boogie’!

Location: Gymnasium, outdoors or other large open area

Objectives: *Learners will*

- 1) list 4 contributors to soil erosion.
- 2) name 3 ways erosion impacts ecosystems.

Skills: reflection, questioning, physical expression

Supplies:

- Optional: stereo, dance music

Subjects: science, physical education, history

Time: 20-30 minutes

4. The moves are as follows,
 - Erosion (pick up and move things): picking up motion with hands and moving an ‘object’ to another location.
 - Wind blowing; arms waving, as in the wind; make the sound of wind blowing “Whooh”.
 - Water rushing: mimic flowing water using hands/arms; sound of rushing water “whoosh”.
 - Raindrops: hands up in air, balled into a fist. As bring hands down, open into a ‘splat’ and making ‘plop, plop’ sound.
 - Gravity: act as though pushing against an object to hold it to the ground.
 - Ice (freeze): wrap arms around self like you are chilly; then briskly stretch all limbs outward to mimic how ice expands.
 - Man-made:
 - Deforestation: act as if cutting trees down with an ax or chainsaw.
 - Plowing: act as if plowing using a hoe or following behind an ox and plow.
5. Once all the learners have the moves down, start the Erosion Boogie Dance Party! Put on some music (instrumental – no words) and call out the Erosion terms/steps. You may allow the children to make up a routine or have a free for all dance-off. Alternatively, you may do the steps without music. Call out the steps or make them part of an informative story. The learners are to act out the forms of erosion as you describe them.
 - a. For example: “**Erosion** may be caused by many forces - natural or man-made. The **Wind** blows important topsoil away and can be severe, as in the Dust Bowl in the 1930s. **Water** running down into valleys carries soil away from mountains and hillsides. Water erosion helps create beautiful mountains, canyons, and valleys, but can also cause mudslides, landslides, and heavy sediment build-up in water bodies.” Make up your own story and/or use information from the ‘Background’ section.
6. Once the learners are ‘danced-out’, gather the group to discuss the feeling about the activity. Go through each cause/form or erosion and ask for ideas on how to stop or limit each type of erosion. Remind learners that erosion is a natural occurrence on Garden Earth, but can be compounded by human activity.

Discussion:

What are some different types or causes for soil erosion?

What are the negative impacts of soil erosion?

What can be done to reduce these impacts of soil erosion?