

GED 2002 Teachers' Handbook of Lesson Plans

| Area/Skill - Science | Cognitive Skill Level - Application/Analysis | Correlation to Framework - 03.03/03.04 | Lesson Number - 29 |
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| <p>Activity Title - Gravity and Erosion</p> <p>Goal/Objective</p> <p>To understand how gravity affects erosion and deposition through observation.</p> <p>Lesson Outline</p> <p>Introduction</p> <p>Place a ball on the table and ask the class what happens (nothing). Place the ball on a slanted surface and have the students predict what will happen (it will roll down and land at the end of the table). Discuss that the ball staying or rolling down is the result of gravity. Gravity also causes erosion. Have students define the term erosion. Discuss that today's lesson will help students understand the basic effects of erosion and what occurs to the sediments that are eroded - deposition.</p> <p>Activity</p> <p>Write the following words on the board: rapid mass wasting, slow mass wasting, talus slope. Explain that all of these terms deal with erosion and deposition and are the result of gravity. Have students define each of the terms and provide examples of both rapid mass wasting and slow mass wasting. Rapid mass wasting includes: landslides, mudflows, and slumps. Slow mass wasting includes: earth flow and soil creep (the kind of erosion from rain on the land). To assist students in understanding the basics of erosion (wasting) and deposition (talus slope or the resulting particles that eroded), show the students the following experiment. Construct a model mountain from soil and rock in a large tray. Shake the tray to simulate an earthquake. Have students observe what happens. Next, pour water on the model to simulate a rainfall. Debrief the activity.</p> <p>Debriefing/Evaluation Activity</p> <p>To debrief the experiment, have students answer the following two questions: How did the water cause the mountain to erode? In both the rainfall and the earthquake experiments, what happened to the particles that moved downhill?</p> | | <p>Materials/Texts/Realia/Handouts</p> <ul style="list-style-type: none"> • Chart paper/board and markers • Paper and pencils • Large trays • Soil and rock • Water containers and water • Ball • Table | |
| <p>Real-Life Connection</p> <p>Have students discuss how the effects of erosion and deposition can impact their communities. Examples could be the erosion of beach areas or the flooding of areas where homes are located. Discuss how the impact of erosion and deposition can be decreased.</p> | | <p>Extension Activity</p> <p>As a follow-up activity, have students research wind as an agent of erosion and deposition. Have the students create an experiment to show the class how wind causes erosion.</p> <p>ESE/ESOL Accommodations</p> <p>Have students work in small groups where research can be read orally.</p> <p>Have students use tape recorders to interview individuals.</p> <p>Have students respond orally to questions.</p> | |

GED 2002 Teachers' Handbook of Lesson Plans - Script

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Activity Title - Gravity and Erosion

Introduction

Place a ball on the table. *Ask:* What is happening? (nothing) Place the ball on a slanted surface. *Ask:* What do you predict will happen now? (It will roll down and land at the end of the table.). *Say:* The reason that the ball stayed sitting on the table, as well as the reason the ball rolled down the slant is the force of gravity. Without gravity, things would “fly” right out of the atmosphere. Just like with either holding the ball in place or allowing it to roll down the slanted table, gravity also causes erosion.

Ask: What is erosion? Today's lesson is about the basic effects of erosion and what occurs to the sediments that are eroded which is called deposition.

Main Activity

Write the following words on the board: rapid mass wasting, slow mass wasting, talus slope.

Say: These terms deal with erosion and deposition and are the result of gravity. I want you to look up these three terms, define each of them, and then provide examples of both rapid mass wasting and slow mass wasting.

Review the students' answers. They should state something such as: rapid mass wasting includes landslides, mudflows, and slumps whereas, slow mass wasting includes earth flow and soil creep (the kind of erosion from rain on the land).

Say: Today, you will watch a short experiment on the results of two forces of erosion - earthquakes and rain and how a talus slope results.

Show the students the following experiment. Construct a model mountain from soil and rock in a large tray. Shake the tray to simulate an earthquake. Have students observe what happens. Next, pour water on the model to simulate a rainfall.

Ask: How did the water cause the mountain to erode? In both the rainfall and the earthquake experiments, what happened to the particles that moved downhill? (The sediment or particles that ended up at the bottom of the mountain are called the talus slope.) Which of the forms of erosion caused the most immediate damage? Why?

Closure/Conclusion

Have students discuss how the effects of erosion and deposition can impact their own communities. Identify local forces of erosion and their result, such as the ocean waves eroding the sand on the beaches or a river overflowing and causing top soil to be removed.

Follow-Up Lessons/Activities

Have students identify other means of erosion and report to the class their findings. An example of another common type of erosion is wind erosion.