Explore

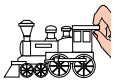
1. Explain that in the last inquiry, the students investigated **weathering,** the process by which rocks or the remains of plants and animals are broken into smaller pieces called sediments, and soil formation. In this inquiry, students will investigate **erosion,** the process by which these sediments are transported to new locations on the Earth's surface.

2. Show the students the second half of the *Weathering and Erosion* video, this sequence discusses agents of erosion.

3. Give each student a copy of Activity One: Agents of Erosion, and ask them to complete the activity as they view the video.

4. In small groups, have students brainstorm variables that may affect how much land is eroded (carried away) by flowing water. (These variables include the angle or slope of the land, the type and amount of ground cover, and the amount of rainfall. Your students may brainstorm additional variables.)

5. Record the variables on the board or overhead.



6. Organize the students into groups of four. Have each group choose the variable they wish to investigate, but make sure that each variable is chosen by at least one group.

Teacher Note: An investigation form is provided for this activity. You may use this form, or have your students design their investigations more independently.

7. Explain that in a scientific investigation only one variable (the independent variable) is changed at a time. All the other variables are held constant throughout the investigation. (See teacher background for a more detailed discussion of variables.)

8. Explain that each group will set up a control for their investigation. A **control** is used as a basis of comparison. The students **will compare the amount of sediment (dependent variable) that is produced before the independent variable is changed to the amount of sediment that each produced each time the independent variable is changed.**

9. Give each student a copy of Activity Two: Erosion Investigation, and have each group formulate a hypothesis. Remind students that their hypothesis should be written as an "If...then..." statement. Circulate throughout the room to check and initial Part II Hypothesis.

10. Have the groups fill in Part III Variables, which includes choosing an independent and dependent variable for their investigation. Again, you will need to circulate from group to group and initial Part III.

11. Give each group a large plastic container, metric ruler, and a graduated cylinder for measuring water. Place the soil, sand, gravel, and sod samples in a central location that is accessible to all groups. Have each group choose the samples they want to use in their investigation, and complete Part IV Materials needed.