

## Currents and Eddies



Water is a powerful mover of objects. Even relatively small streams can move boulders larger than houses during flood conditions!

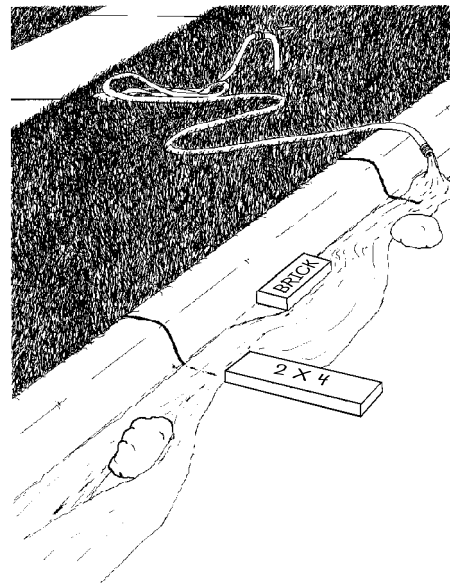
### Equipment/Materials

fine soil	rocks
sand	bits of cork or foam
pebbles or fine gravel	water source

**Time Required:** 20 minutes to more than an hour, depending upon set up used and level of discussion

### Preparation

Lay out a “stream bed” in a parking lot gutter or a similar location on the school grounds. Place large rocks (or bricks) in the middle and along the edge of the “stream” to create changes in both flow and direction. Test the flow to see that it changes direction and has a variety of flow rates. On the downstream end, build a low dam to slow the water before it runs off. Mix small rocks, fine gravel or pebbles, sand and finely divided soil near the “headwaters” of your stream, using enough material to show deposition downstream.



### Procedure

1. Have participants study the flow of water in a curbside gutter and record their observations.
2. Create an artificial stream bed in the gutter using bricks, clay or rocks. Be sure that the stream meanders somewhat and that it has variations in current speed.
3. Lay some obstructions in the mid current area of the “stream.”
4. Place a mixture of rocks, fine gravel, sand and silty soil near the water source.
5. Allow the water to run with enough volume to move the materials deposited, but not so much that it simply flushes them through the entire bed.
6. Have participants observe the flow rates and directions in the “stream” and record their observations. If desired, launch small bits of cork, balsa or sawdust to see where the flow takes it and how fast the surface water is moving in various places along the course.
7. Shut off the water and let the stream dry.
8. Note where materials are deposited and what materials are being deposited along the course of the stream.
9. Have participants compare their notes on flow rate and direction to see if they can explain why deposits are formed where they are observed.
10. Discuss the reasons for the directions and force of the current flows observed.
11. Have participants hypothesize how various materials would be affected by the flow and where they might be deposited.
12. Challenge them to consider how streams are formed, why they tend to meander, and where they would expect to find boulders, freestone bottoms, gravel, sand or mud.