

# Sedimentation

Always be sure to get an adult's permission and help before conducting this science experiment!

## Materials

- ◆ 2-liter plastic bottle (or equivalent)
- ◆ Bottle cap for the bottle
- ◆ Sand, soil, mud, and pebbles
- ◆ 3 toothpicks
- ◆ Ruler
- ◆ Masking tape

## How Long Will It Take?

About 40 minutes, then the rest of the day to think about what you learned!

## Procedure

1. Set an empty 2-liter bottle on the table. Measure 4 inches up from the bottom of the bottle. Use the masking tape to mark the 4-inch-high point.
2. Find a variety of sand, soil, mud, gravel, and pebbles. Fill the bottle up to the masking tape line with these sediments.
3. Slowly pour water into the bottle. Fill the bottle about  $\frac{3}{4}$  full with water. Be sure to leave about  $\frac{1}{4}$  of the bottle unfilled.
4. Securely twist the top onto the bottle.
5. Now, SHAKE, SHAKE, SHAKE the bottle. After it is all shaken up, quickly set it on the table and leave it undisturbed.
6. Make observations of what happens.

## Super Scientists

7. Open the bottle and add:
  - 1 full toothpick
  - 1 toothpick broken in half
  - 1 toothpick broken into several small pieces
8. Repeat the SHAKE, SHAKE, SHAKE step. Can you see where the toothpicks end up?

## What Did You Learn?

Imagine that your bottle was like a river carrying sediments (sand, soil, mud, gravel, and pebbles). What happened when the river slowed down, or in this experiment, when the bottle was left undisturbed? Did the sediment settle out and pile up? What settled out first? What took a while to settle out? This is similar to how the Badlands were formed. Of course it took large rivers and many millions of years!

What if those toothpicks were animal bones? Which ones do you think might become fossils? Why?