

Scouring

STEM Sims

Lesson 2: Pebble Power

Like sand, pebbles are also natural materials except larger and heavier. Often riverbeds already consist of pebbles and rocks. Can pebbles hold down and support the bridge bases? Analyze the bridge scour and find out!

Doing the Science

1. Start the Scouring Simulation by clicking on the “Sim” tab.
2. Click on the “Current” button. Clicking the left and right arrows will change the current speed. Click the “OK” button to select Speed 1.
3. Click on the “Build” button then click on the right arrow. Click the “OK” button for Pebbles.
4. Click on “Inspect” to view the pebble level around the bridge. Click on the “X” button to close the inspection menu.
5. Click on “Run” to start the current.
6. Click on “Inspect” to view the pebble level around the bridge.
7. Draw the top view and the side view of the bridge base into Table 1 below. Click on the “X” button to exit the inspection menu.
8. Click on the “Reset” button.
9. Repeat steps 2-7 for the remaining five current speeds.

Table 1.

	Current Speed 1	Current Speed 2	Current Speed 3	Current Speed 4	Current Speed 5	Current Speed 6
Top View						
Side View						

Do You Understand?

1. Was there a steady increase in the size of the hole from the slowest current (Current 1) to the fastest current (Current 6)?

2. Are pebbles better or worse at preventing bridge scour than sand? Why?