

Scouring

STEM Sims

Lesson 5: Material Comparison

How do the four materials compare directly to each other in terms of their ability to prevent scouring? By keeping a constant current speed, you can determine how the type of material affects scouring.

Doing the Science

1. Start the Scouring Simulation by clicking on the “Sim” tab.
2. Click on the “Current” button. Click the right arrow two times. Click the “OK” button to select Speed 3.
3. Click on the “Build” button. Clicking on the left and right arrows will change the build material. Click the “OK” button for Sand.
4. Click on “Inspect” to view the sand 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 sand 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 build materials.

Table 1.

	Sand	Pebbles	Rock	Concrete
Top View				
Side View				

Do You Understand?

1. Which material would you recommended for bridges? Explain.

2. If the bridge was over a lake and there was no current, what material would you recommended? Explain.

3. How does current create scour and how can scouring be prevented?