Name_____ Period _____ Date _____

⩔⩔⩔ Scouring   STEM Sims

Lesson 1: Sand Land

Bridges are built partly in water, and the current from the moving water washes away the sediment around the base of the bridge, creating holes. This is called bridge scour, and is concerning because it weakens the bridge's support structure. There needs to be good support around the bridge base, but there are many options for making a strong foundation. Sand is a natural material that is cheap and heavy. Does sand have enough strength to hold up bridges? Find its scour power and analyze the results.

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 and 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 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. Would you recommend sand as a good material to support a bridge? Explain.