

Name _____ Period _____ Date _____



STEM Sims

Lesson 3: How Do Changing Ocean Tides Affect Storm Surge Damage?

Most coastlines on Earth experience two low tides and two high tides each day. The tides are caused by the gravitational attraction of the Earth, Moon, and Sun System. How do changing ocean tides impact the damage done on property and people due to a storm surge?

Doing the Science

1. Start the Storm Surge Simulation by clicking on the “Sim” tab.
2. Select “Basic Factors.”
3. Select “Tides.”
4. Choose one of the two different tides.
5. Make sure to keep all other factors constant, that is, do not change shelf width, water depth, or location.
6. Click on the “Run” icon.
7. Record the Cost and Damage values displayed in the Damage Assessment portion of the screen in Table 1 below.
8. Again, click on “Tides.” Select a different tide from step 3. Repeat steps 5 – 7.

Table 1.

Tide	Cost of Damage (\$)	Damage Factor
High		
Low		

Do You Understand?

1. Why did you keep all factors other than tides constant for this experiment?
2. How do changing tides impact the damage done by a storm surge?
3. What other factor is related to the changing tides in this simulation?