Name_____ Period _____ Date _____

Storm Surge STEM Sims

Lesson 1: How Does Shelf Width Affect Storm Surge Damage?

Shelf width is defined as the part of the continental plate that extends into the ocean and is submerged to a relatively shallow depth. The shelf varies in width from a few meters to over 1,500 kilometers wide. How does the width of an ocean shelf 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 "Shelf Width."
4. Choose one of the three different shelf widths.
5. Make sure to keep all other factors constant, that is, do not change water depth, tides, 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 "Shelf Width." Select a different shelf width from step 3. Repeat steps 5 – 7.
9. Repeat step 8 for the remaining shelf width.

Table 1.

Shelf Width	Cost of Damage ($)	Damage Factor
Wide		
Medium		
Narrow		

Do You Understand?

1. Why did you keep all factors other than shelf width constant for this experiment?

2. How does shelf width impact the damage done by a storm surge?