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Activities

Tsunamis

Name: _____ Date: _____

On December 26, 2004, the massive Sumatra earthquake triggered a deadly tsunami that swamped coasts along the Indian Ocean. In this Planet Diary activity, you'll explore how tsunamis spread and why they're so dangerous.

Directions

- Start with this Planet Diary report on the Sumatra earthquake and tsunami. Answer Workspace question 1.
- Try this tsunami simulator. Click anywhere on the left to start the tsunami. Experiment with changing the size of the waves and the shape of the sea bottom. Observe what happens when the tsunami hits the shoreline. Answer question 2.
- Go to this NOAA visualization of the Indian Ocean tsunami. Then see how the tsunami waves spread. Click *Next* at the lower left to advance, then answer question 3.
- Find out how the waves of a tsunami compare to wind-driven ocean waves. Answer question 4.
- Take a closer look at tsunami vs wind-driven waves. Answer question 5.
- This Indian Ocean tsunami animation has data (on the last screen) on the size of the ocean "run up" (wave height along the shore). Use the data to answer the last question.

Workspace

1. How fast did the Sumatra tsunami move across the ocean? How far did it reach?

2. What happens to the height of tsunami waves (as measured above the surface level) when they hit shallow water near the shore?

3. Where did the tsunami begin and how far across the Indian Ocean did it spread?

4. How does the wavelength of a tsunami wave compare to that of a wind-driven wave?

5. Why are tsunami waves more dangerous than wind-driven waves?

6. In which location was run-up the greatest? How large was it there?

7. How fast did the Sumatra tsunami move across the ocean?

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