

# **NOAA Online Activity: Ocean Waves**

URL: <http://oceanexplorer.noaa.gov/edu/learning/>

## **Directions:**

- View Lesson 9 - Ocean Waves
- Under the “Lesson” tab, watch the film clip “Ocean Waves”. Stop the film when you get to tsunamis. We will cover this later.
- After watching the animation, click on the “Breaking Waves” link to the right of the page. Read the introduction.
- You will now complete two activities: “Catch a Wave” and “Measuring Waves”.

**Activity #1: Catch a Wave:** *Study the animation and then answer the following questions.*

**Answer the questions below BEFORE checking your answers.**

A. What happens to a wave as it moves into shallow water?

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B. Describe how the slope of the seafloor controls the way a wave breaks.

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C. Which type of breaker - spilling, plunging, or surging – will cause the most coastal erosion? Explain.

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D. Which type of breaker - spilling, plunging, or surging – will deposit sand onshore and expand beaches?

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HIT THE BACK BUTTON!

**Activity #2: Measuring a Wave:** *Study the animation and then answer the following questions.*

**Answer the questions below BEFORE checking your answers.**

A. What is the *wave period* (the actual number) in the animation?

*Wave period* = \_\_\_\_\_

B. What is the relationship between wavelength and period? As wavelength increases, how is the wave period affected?

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C. The approximate speed of a wave train can be calculated from the average period of the waves in the train, using a simple formula: speed (in knots, which are nautical miles per hour) = 1.5 x period (in seconds). If NOAA reports that a gale 400 nautical miles offshore has kicked up high waves with a period of 12 seconds, when should you go to the beach to catch the best waves?

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D. What will happen to the wave period as the wave train reaches shallow water?

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