**OC 4.3 – Waves and Surf Name: ……………………………………**

(based on the NOAA Ocean Explorer Animations)

**Catch a Wave**

1. What happens to a wave as it moves into shallow water?
2. Describe how the slope of the seafloor controls the way a wave breaks.
3. Which type of breaker - spilling, plunging, or surging – will cause the most coastal erosion? Explain.
4. Which type of breaker - spilling, plunging, or surging – will deposit sand onshore and expand beaches? Explain.

**Measure a Wave**

1. What is the wave period in the animation?
2. What is the relationship between wavelength and period? As wavelength increases, how is wave period affected?
3. 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?
4. What will happen to the wave period as the wave train reaches shallow water?