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| GRACE<br>Educational Curriculum<br>OCEANS |            |
| Teachers                                  | Grades 6-8 |
| Science                                   |            |

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## Would Your Hometown be a Coastal City?

### Background Information:

GRACE is the name of a pair of satellites that will measure the gravity field of Earth. GRACE stands for Gravity Recovery and Climate Experiment. GRACE will help study problems in geophysics, oceanography and atmospheric science.

The sources of global sea level rise (between 1.0 and 2.5 mm/yr over the last century) are uncertain. Most, but not all, of the likely mechanisms involve the redistribution of mass from the continents to the ocean. Gravity measurements from GRACE will help discriminate between these sources through the continual monitoring of geoid changes, not only on global scales, but also on regional scales.

In the last 18,000 years, since the last ice age, the sea level has risen more than 300 feet. Scientists estimate that the present sea level would rise by another 200 feet if the polar ice caps and remaining glaciers melted.

**Objective:** To observe the effect of a rise in sea level on the coastline of the United States

**Standards:** Science: Unifying Concepts & Processes: Science as Inquiry; Physical Science; Earth & Space Science  
Math: Computation & Estimation; Measurement

**Vocabulary:** sea level      polar ice caps      glacier  
coastline      global warming

**Materials:** Colored pencils  
United States topographic map

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