

Expand utility of fly-through. Provide a teacher's guide for the Teacher's Corner.

- ❖ For this lesson you will need:
  - computer internet link to FLaSH website and the Tampa Bay Fly-Through ready to run
  - Student copies of Tampa Bay .pdf for student groups
  - Teacher copy of Tampa Bay .pdf with labels
  - General map of Tampa Bay area with features (suggest Map Quest or foldout street map)
- ❖ Students may work in small groups with a copy of the student map.
- ❖ Introduction: Imagine what the earth would look like without the oceans and bays filled with water. Take a look at Tampa Bay Florida with the water removed. The topography (land elevations) and bathymetry (water depth measurements) are merged to make one map. You can see the shape of the land above and below the water line. Shallow water is light blue. Low elevation land is white. Today's shoreline is between white and light blue (0 meters Mean Sea Level)
- ❖ Before you fly, take a look at the colors of Tampa Bay. Deep water is dark blue. Find the ship channel. Highest points of land are between 10-20 meters above mean sea level. They are colored dark green. Find the "island of St. Petersburg". Low elevations along the coast are white. Find the Hillsborough River. Ask students to draw lines and label their map copy.
- ❖ Your fly-through will start in the Gulf of Mexico at the entrance to Tampa Bay. Fly east over the ship channel. As the plane heads toward Hillsborough County, your plane turns to look west from Ruskin to Pinellas County. Pause to look down the Little Manatee River into Tampa Bay. Next fly north over Hillsborough County and turn to look south over the city of Tampa. Notice how the Interbay Peninsula divides Tampa Bay, Hillsborough Bay, and Old Tampa Bay. As you fly out to the coast notice the elevation difference between Safety Harbor and Palm Harbor. Now you'll find yourself over the Gulf of Mexico again, looking east across Pinellas County. Notice the barrier islands where the beach communities, such as Treasure Island, are located. Your tour ends as you pass over Fort de Soto and return to normal map-view with north at the top.
- ❖ If students have seen the movie, Finding Nemo, they may recall a song about how all water flows to the ocean. Invite a discussion on rivers, estuaries, the Gulf of Mexico and other oceans. Introduce the vocabulary term: watershed (grades 1-5).
- ❖ Discuss the location of your school, neighborhoods, and other cultural features. Did you notice the low-lying bridge, Campbell Causeway, crossing Old Tampa Bay? Did you notice a creek or bayou running from Old Tampa Bay to Treasure Island? What else was interesting about the fly-through?
- ❖ Introduce vocabulary such as elevation, topography, mean sea level, water depth and bathymetry. Ask students to draw a blue line at current mean sea level (0 meters). What would change if the water level was higher? Draw a new line in red along the 10 meter contour. What would change if the water level was lower? Draw a new line at the -10 bathymetric contour.
- ❖ Unit conversions: to convert meters to feet multiply by 3.28. Discuss use of metric units by scientists. Explore the concept of international standards.

- ❖ Use recent grounding of 27-foot draft freighter to discuss the utility of bathymetric soundings for boating and ship traffic.
- ❖ Find out how topographic and bathymetric maps are made. Do scientists and surveyors use different equipment for each type of map? Why?

Visit the DLESE website (<http://www.dlese.org/library/index.jsp>) for in-depth lessons in bathymetry and topography, such as “Mapping Potato Island”:

[http://www.windows.ucar.edu/tour/link=/teacher\\_resources/teach\\_taterland.htm](http://www.windows.ucar.edu/tour/link=/teacher_resources/teach_taterland.htm)