California: A Changing State

Physical and Human Geographic Features that Define California

Coastal Exploration Museum Activity

Coastal exploration led to the discovery of a deep underwater canyon off the coast of Point Hueneme.

How do climate and geography vary throughout the state? How do these features affect how people live? How do natural resources, climate, and landforms affect how plants, animals, and people live?

Theme

- Geography

Disciplinary Thinking and Analysis Skills

- Use of maps and globes to describe environmental and cultural features of places and the relationships and interactions between them.
- Explain the relationship and interdependence of human activities and the environment, and how these relationships affect the distribution and movement of people, goods, and ideas.

History Social Science Content Standards

- **California: A Changing State -- 4.4 Students explain how California became an agricultural and industrial power, tracing the transformation of the California economy and its political and cultural development since the 1850s.**
  - 5. Discuss the effects of the Great Depression, the Dust Bowl, and World War II on California.
  - 6. Describe the development and locations of new industries since the nineteenth century, such as the aerospace industry, electronics industry, large-scale commercial agriculture and irrigation projects, the oil and automobile industries, communications and defense industries, and important trade links with the Pacific Basin.

Next Generation Science Standards

- **4-ESS2 Earth's Systems** Students who demonstrate understanding can:
  - **4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features.**
    - **ESS2.B: Plate Tectonics and Large-Scale System Interactions** The locations of mountain ranges, deep ocean trenches, ocean floor structures, earthquakes, and volcanoes occur in patterns. Most earthquakes and volcanoes occur in bands that are often along the boundaries between continents and oceans. Major mountain chains form inside continents or near their edges. Maps can help locate the different land and water features areas of Earth. (4-ESS2-2)

NOTE: The U.S. Navy Seabee Museum used the California History-Social Science Framework as a road map for curriculum and instruction for the Coastal Exploration Activity.
https://www.cde.ca.gov/ci/hs/cf/documents/hssfwchapter7.pdf

HISTORICAL NARRATIVE FOR EDUCATORS

During their study of California history, students will use maps, charts, and pictures to describe how California communities use the land and adapt to it in different ways. As they examine California's physical landscape, students should be encouraged to ask and answer questions about the role of geographic features in shaping settlement patterns, agricultural development, urbanization, and lifestyle in the state.

Around 1857 the U.S. Coast and Geodetic Survey learned of the existence of a submarine canyon off Point Hueneme. This natural underwater valley, called Hueneme Canyon, extends about nine miles offshore. On Oct. 31 1868, Thomas Robert Bard, on behalf of Thomas A. Scott, purchased the area around Point Hueneme called the Rancho El Rio de Santa Clara ó la Colonia for $150,000 in gold coin. It was a former Mexican Land Grant dating to May 22, 1837 and included 21,375 acres of land and several years later Bard began construction on a 900-feet-long wharf at that site. The wharf would be used by local farmers to ship and receive goods

From 1871 to 1895, Hueneme was the second largest port on the Pacific coast for grain shipments of barley, wheat and corn. Sheep, hogs and cattle joined loads of grain sailing to San Francisco as cargos of lumber and general merchandise flowed into the county. Warehouses joined the wharf to store grain until demand became advantageous to sell to buyers in San Francisco and Liverpool, England. As shipments increased, a lighthouse to improve navigation was erected and began shining 40 miles out to sea on Dec. 15, 1874. The light house is located at 120 W. Port Hueneme Road.

The wharf itself grew to accommodate greater traffic and larger vessels, being extended to 1,700 feet by 1912. Prior to the arrival of the railroad in Ventura County in 1887, and later Oxnard in 1898, the wharf provided the principal transportation route to and from the county south of the Santa Clara River. On April 29, 1937, Ventura County citizens voted to create the Oxnard Harbor District; the same year, Commander Ben Moreell (CEC) was selected by President Roosevelt to be Commander of the Bureau of Yards and Dock (BuDocks) and Chief of the Civil Engineer Corps (CEC) with the rank of Rear Admiral.

An election on May 5, 1938, approved a $1.75 million bond referendum to construct a harbor and on July 4, 1940, work on the port was officially complete and the new Port Hueneme was officially dedicated two days later. The port channel was 35 feet deep and 1,300 feet wide. The turning basin had a low tide depth of 31 feet, and measured 1,100 feet wide and 1,250 feet long. Overall, the harbor comprised a total of 319.4 acres, 67 of which were water and two wharfs that provided berths for loading and unloading ships.

On December 7th, 1941, the United States was attacked by the Japanese Empire leading the U.S. to enter the ongoing Second World War (WWII). The U.S. would join Great Britain and the Soviet Union as one of the principle members of the Allies, and oppose the Axis powers, made up of Nazi Germany, Imperial Japan, and Fascist Italy.

On December 28th, 1941, Moreell requested the authority to recruit men with construction training, an authority that was granted on January 5th, 1942. These men would become the first members of the Naval Construction Force and would be used to build the bases, airfields, repair facilities and depots that would be necessary to lead the U.S. to victory over Japan in Asia, and Germany in Europe. Rear Admiral Moreell also gave these units their official motto: Construimus, Batuimus, "We Build, We Fight." On March 5th, 1942, the Bureau of Navigation (the predecessor to the Bureau of Naval Personnel, NAVPERS) accepted the name "Seabees" based on the letters "C" and "B" in Construction Battalion, and a logo for uniform wear. Though there is no "official bee" the logo that was drawn by Seabee Frank J. Lafrate of a bee with Gunner's, Machinist's, and Carpenter's Mate ratings

and CEC officer's insignia on the sleeves surrounded by nautical rope, has changed little since WWII.

To supply the ever increasing size and number of naval construction projects overseas, BuDocks created several advance base depots to collect, assemble, store, and ship construction materials. The advance base depots ensured a continuous ready supply of men, equipment, and materials to ship around the globe.

The Navy intended to take over Port Hueneme for its second advance base depot evicting farmers. The Navy would acquire 1,500 acres, including the entire port, and invest $4.5 million on top of the purchase price of the land and port to improve facilities, hiring 2,500 laborers and bringing in 5,000 new county residents. In April 1942, an advance base depot covering 600 acres opened in Port Hueneme, California for the Navy.

After the war the Oxnard Harbor District, in October 1947, secured a lease on 17 acres of Wharf No. 1 and Wharf F to enable county farmers to once more ship their produce to markets worldwide. Successive leases and purchases of land at the port accompanied expansions in imports and exports. In the 1970s, the influx of Asian automakers saw Port Hueneme secure a niche in auto imports. Today, thousands of vehicles can be seen either stored on acres of the port area, or being loaded and shipped out to dealers across the country. Bard's vision for economic opportunity continues to flourish, to the mutual benefit of the residents of Ventura County and to the defense of the American people at home and abroad.

http://seabeemagazine.navylive.dodlive.mil/2014/11/26/harbor-base-neighbors-when-the-navy-came-to-port-hueneme-1942-1945-and-beyond/

OPTIONAL CLASSROOM PRE-WORK

Materials

- **Activity Sheet**: *How to Read a Topographic Map* (see page 6)
- Pencil

Teaching Instructions

Are your students familiar with topographical maps? We recommend completing the "How to Read a Topographic Map" worksheet before visiting the museum.

A topographic map is a representation of a three-dimensional surface on a flat piece of paper. Contour lines, sometimes called "level lines," join points of equal elevation. The closer together the contour lines appear on a topographic map, the steeper the slope, (assuming constant contour intervals). Topographic maps have a variety of uses, from planning the best route for a hike to determining a location for a school or an airport.

1. **Discuss the word "topographic."** Remind students that there are many different types of maps. Tell them that they are going to learn about a specific type of map—the topographic map. Begin the lesson by introducing students to the word "topographic." Write the word on the board. Tell students the word is derived from two Greek words—"topo," meaning "place," and "graphos," meaning "drawn or written." Ask students if they can use that information to figure out what "topographic" might mean. Then ask a student to look up the word "topography" in the dictionary to see whether their guess was correct.

   According to Merriam-Webster for Kids, "topography" is defined as the art of practice of showing on maps or charts the heights and depths of the features of a place. *http://www.wordcentral.com/cgi-bin/student?book=Student&va=topography*

2. **Hand out Activity Sheet: *How to Read a Topographic Map* on page 6.** The top illustration introduces students to contour lines. Point out that a contour line joins points of equal elevation. Think of it as an imaginary line on the ground that takes any path necessary to maintain constant elevation.

   ✓ **First, have the students look at the side view of the hills. (Bottom of the illustration)**

   Ask students to answer the following questions and fill in their answers on **Activity Sheet**: *How to Read a Topographic Map*:

   Which is higher, hill A or hill B?
   (Answer: hill B)

   Which is steeper, hill A or hill B?
   (Answer: hill B)

   ✓ Now have the students look at the topographic map of the same two hills. Say, "The lines you see on this map are called contour lines. Can you see why they are sometimes called 'level lines'?" Ask the students to trace with their fingers around the 40-foot contour line on the map. Then ask the students to draw

their fingers along the 20-foot contour line on the topographic map. Then draw their fingers along the 20-foot line on the picture of the hill. This exercise will help those students who are kinesthetic learners.

Ask students to answer this question and fill in the answer on **Activity Sheet**: *How to Read a Topographic Map*:

How many feet of elevation are there between contour lines?
(Answer: 10 feet)

Show the students that some contour lines are thicker than others. These "index contours" include labels to make it easier to read elevations from the maps.

Ask students to answer the following questions and fill in their answers on **Activity Sheet**: *How to Read a Topographic Map*:

How high is hill A?
(Answer: about 42 feet)
How high is hill B?
(Answer: about 54 feet)

Circle one: Are the contour lines closer together on hill A or hill B?
(Answer: hill B)

Help students understand that the closer the lines, the steeper the slope. Have students point out other places on the map that have a very steep slope.

- ✓ Discuss how topographic maps are used. Maps are developed for special purposes. Topographic maps are used in a variety of ways.

  Ask the students to verbally answer the following questions:

  How might you use a topographic map if you were selecting:

  A route for a hike
  (Choose route that's not too steep. When planning a long hike, you may want to see whether water is available or whether it should be carried in. Woods tint may indicate whether the route is shaded).

  The best location for an airport
  (Make sure airplanes have plenty of room to take off and land before the ground rises. Do not let students suggest building in a swamp, in the woods, or in a built-up area).

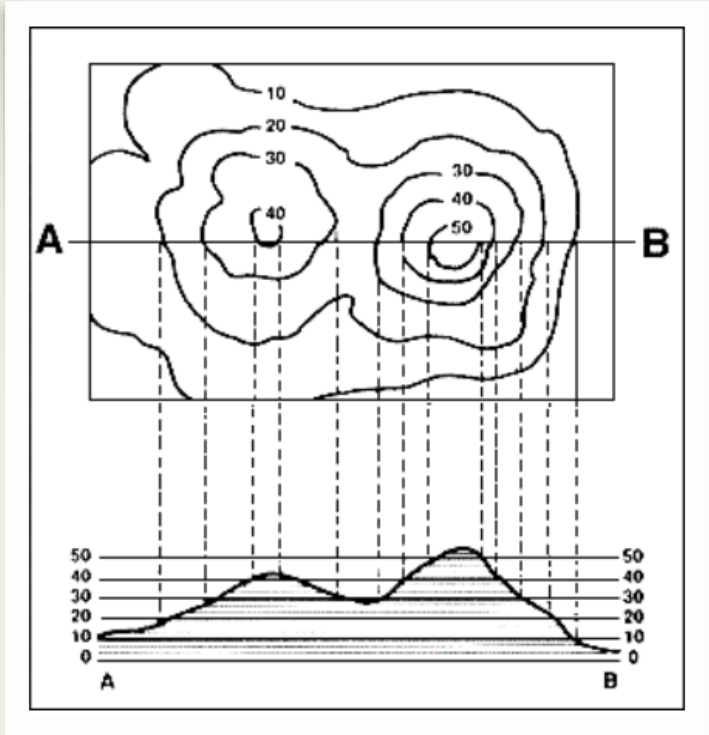
  A route for a new road
  (Find a shallow grade rather than a steep one. Do not allow them to cross too many rivers because bridges are expensive.)

This activity was modified. The original activity and worksheet are available from the U.S. Geological Survey at the following URL: https://egsc.usgs.gov/isb//pubs/teachers-packets/mapshow/lesson4.html

How to Read a Topographic Map

One special kind of map is called a topographic map. It has contour lines to show the shape and elevation of the land. They are sometimes called "level lines" because they show points that are at the same level.

The top of this drawing is a contour map showing the hills that are illustrated at the bottom. On this map, the vertical distance between each contour line is 10 feet.



1. Which is higher, hill A or hill B?

_____

2. Which is steeper, hill A or hill B?

_____

3. How many feet of elevation are there between contour lines?

_____

4. How high is hill A? _____

5. How high is hill B? _____

6. Circle one: Are the contour lines closer together on hill A or hill B?

Let's talk about it! Tell how you might use a topographic map if you were selecting:

A route for a hike?

The best location for an airport?

A route for a new road?