

Lesson 3: Physical Features of San Diego

Focus Question:

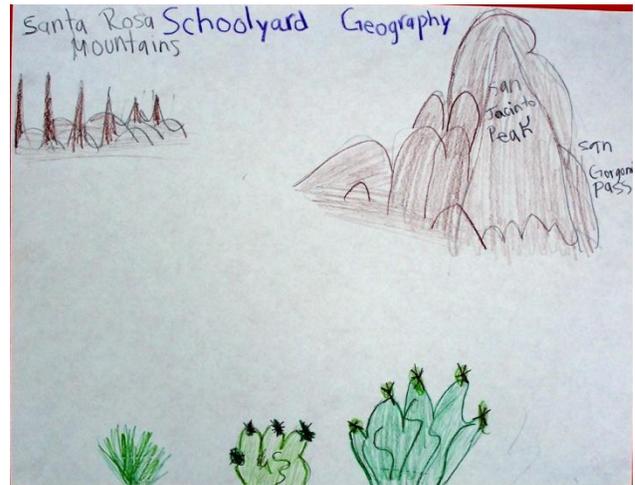
What physical features are unique to the San Diego region?

Activity #1 Neighborhood Walk – a Cartographer’s Notepad

Provide students with a cartographer’s notepad which can be made using notebook paper and a clipboard or piece of cardboard. Take a “sensory” walk with the students around the school play area and surrounding neighborhood. What sounds do you hear, what smells are there, and what are some of the different textures in the natural environment?

A digital camera may be used to take photos.

On their cartographer’s notepad, students list physical features they see, such as landforms, water, and vegetation. Parks or tree clusters may be noted as well. Students sketch physical features on their pad. Add the cartographer’s notepad to the *Atlas of the San Diego* compiled at the end of this unit.



(Optional) Have students write a short description of each entry using concrete sensory details. (Grade 3 Writing Applications Standard 2.2 Write Descriptions)

Activity #2 Map - Physical Features of San Diego

Materials needed: One or more maps of the San Diego area for each pair or group of students; large sheet of unlined chart paper or butcher paper; colored pencils or pens. For each student, a copy of *Geographic Landforms of San Diego* (Handout 3.1)



Procedure:

Step 1: Using a map of the San Diego region as a model, the teacher creates an “Input Chart” by tracing the outline of the region on a large sheet of unlined chart paper or butcher paper. Begin with the coastline. As you follow the coast, point out specific physical features such as the Pacific Ocean, Mission Bay, Point Loma, San Diego Bay, and Coronado. Label each feature. Moving inland, draw and label the San Diego River and Mission Valley. Continue to add other geographical features such as lakes, hills and mountains. Do not add man-made features at this time. They will be added in the next lesson.

Step 2: For reference while drawing their map, provide each pair or group of students with one or more **maps of the San Diego area**. On a blank sheet of paper, guide students as they draw the coast line and other geographic features.

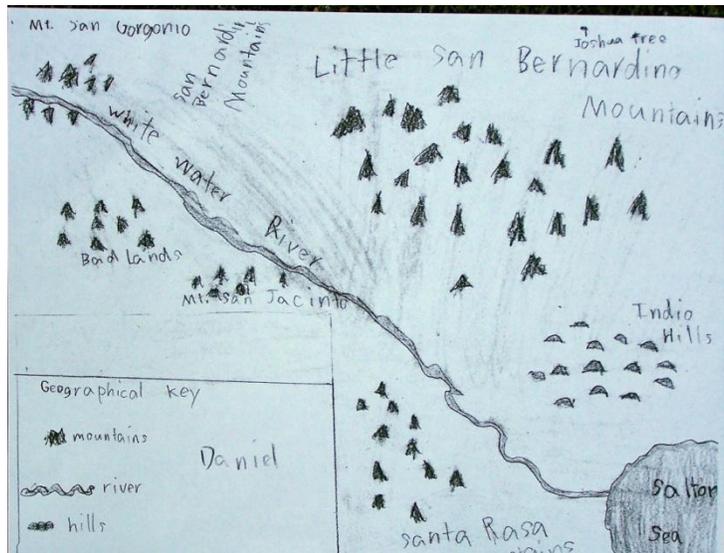
Label the following physical features:

Pacific Ocean	San Diego Bay	Point Loma	Mission Bay
Coronado	Mission Valley	San Diego River	

Step 3: Refer to *Physical Features of San Diego* (Handout #3.1) for a sample list of the physical features to include on the map. Adapt the list as desired. Each named feature should be labeled neatly on the map with small letters.

Step 4: Add symbols to the map. For example, try a wavy line for rivers, hill-shaped semicircles for hills, upside-down V's for steeper mountains, etc. Create a map legend for the symbols.

The student work at the right is a *sample* of a map of the Coachella Valley drawn by a student in that region.



Step 5: On the map, add a title and a compass rose to show cardinal directions.

Note: A beautiful, finished product is not expected at this time. This is a first, rough-draft. At the end of Lesson 4, students will label a blank outline map of the San Diego area with at least 7 physical features and at least 3 human-made features. In labeling their map, they may refer to a map of San Diego. Locations should be labeled in pen or pencil. The map may be shaded lightly using colored pencils or crayons.

Assessment:

Assessment of this lesson is integrated with the instruction and occurs throughout the lesson. The focus question provides a framework for the evaluation of the lesson. It is recommended you save student work to be included in the unit project, *An Atlas of San Diego*.

Student work to be assessed from this lesson includes:

- Cartographer’s notepad with sketches of physical features visible from the school yard (Activity # 1).
- Map - Physical Features of the San Diego Region (Activity # 2)

Refer to the next page for a list of optional activities.

(Optional) Language Arts Extension: Physical Features Postcard

Share a variety of postcards with students. Together, analyze the format and punctuation of the front and back of each postcard.

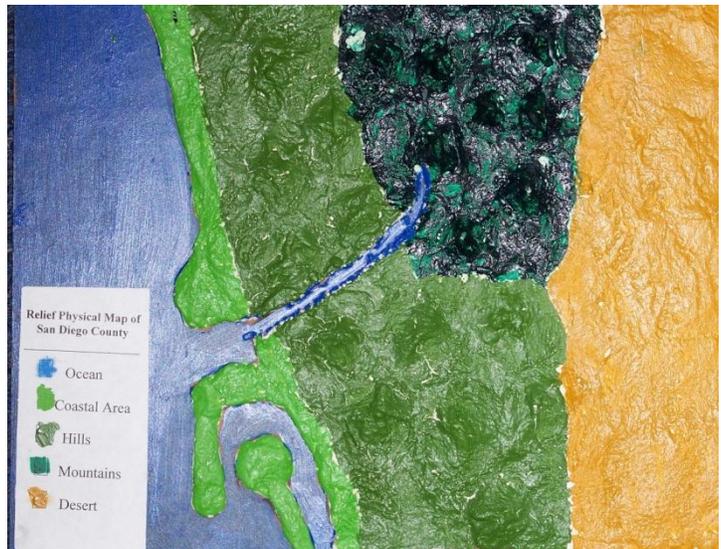
- Have students write a 4" x 6" postcard to a friend telling him/her what they have learned about the physical features of San Diego. Use concrete sensory details to present and support unified impressions of the place. (Writing Application Standard 2.2)
- The text should show an awareness of the knowledge and interests of the audience and establish a purpose and context. (Writing Application Standard 2.3 a)
- The left side of the postcard should also include the date, proper salutation, body, closing, and signature. (Writing Application Standard 2.3b)
- Students should punctuate dates, city and state. (Written Language Conventions 1.5)
- Students should use commas in the date and address. (Written Language Conventions 1.6)
- On the front side of the postcard, students draw a local landform or scene showing the physical features and/or human-made features of the San Diego region.

(Optional) Language Arts Extension: Description of a Physical Feature – a Written Paragraph

As a review, ask each student to make a list, from memory, of at least five physical features of the San Diego region. Have each student select one physical feature and write a paragraph to identify and describe the physical feature. The paragraph should include a topic sentence and simple supporting facts and details. **Grade 3 Writing Strategies Standard 1.1** and concrete sensory details to present and support unified impressions of the place. **Writing Application 2.2**

(Optional) Relief Map of the Local Region

Using the Map of the San Diego and the *Physical Features of San Diego* (Handout #3.1) and the *Directions - Relief Map of the San Diego Region* (Handout #3.2), students create a relief map (terrain model) of the region using salt-flour dough. Signs may be placed in the dough before it hardens to label physical features. Have students describe their relief map explaining the unique geographical features. For a detailed description of the steps to complete this project,



The relief map should include:

- a title (e.g., “Geographical Features of San Diego”)
- a legend or key to identify the symbols used for physical and human features
- labels for key geographical features (e.g. Pacific Ocean, Mission Bay)
- compass rose

Basic clay recipe for the relief map: (per student) 2 cups flour, 3/4 cup water, 1 cup salt

Physical Features of San Diego

Include the following geographical features on your landform map of the San Diego region:

Pacific Ocean
San Diego Bay
Mission Bay
Coronado

Mission Valley
Point Loma
San Diego River

Optional Features to Include:

Cowles Mountain
Fortuna Mountain
Harbor Island
Jamul Creek
Jamul Mountains
La Jolla Bay
Lake Jennings
Lake Miramar
Los Penasquitos Creek, Canyon

Lower Otay Lake and Upper Otay Lake
Otay Mountain EL 3566
Otay River
San Miguel Mt. EL 2565
San Pasqual Valley
Shelter Island
Soledad Canyon
Sweetwater River
Tijuana River

Note: Save the man-made reservoirs for the next lesson.

Directions - Relief Map of the San Diego Region

1. Students construct a flour and salt relief map of the San Diego region. There are three stages to making relief maps: forming, painting, and labeling. This will take several class periods. Arrange for a drying area for the maps. Allow about one week for the maps to thoroughly dry.
2. You need approximately 10 pounds of salt and flour for a class of 30. Send parents/ guardians a note informing them of the project and listing the materials each student will need to bring. Have additional flour and salt available in the event that some students do not bring supplies from home. Have a supply of wooden spoons or tongue depressors available for mixing. Working with students, determine an elevation color key for painting the maps.
3. Arrange in advance for parent volunteers or instructional aides to assist as students make their relief maps. It is helpful to use the cafeteria or lunch tables. Cover tables with butcher paper to facilitate clean-up. Review student behavior expectations. Have activities available for groups that finish early.

Materials needed:

For the class

Sample relief maps
Physical map of the Coachella Valley

For each table

Recipe (in a Ziploc bag)
Glue and tape
Measuring cups and spoons
Butcher paper

For each student

1 cup (250 ml) flour
½ cup (125 ml) salt
½ cup (125 ml) water, approximately
Cardboard (8 ½ X 11" or larger)
Outline map of the San Diego Region
fitted to the cardboard
Mixing container
Wooden spoon or tongue depressor
Toothpicks, Gummed labels or masking tape

Steps for Making a Relief Map (Duplicate these directions for each student.)

1. Glue outline maps of San Diego onto your cardboard base.
2. Mix the flour and salt in a bowl with wooden spoons or tongue depressors.
3. Add the water a little at a time until the mixture resembles play dough. You may not need to use all the water. **DO NOT MAKE THE MIXTURE RUNNY!**
4. Put the dough on the map and form the major physical features. Use maps in the room to guide you in molding the major physical features.
5. Press toothpicks in to each location that you will label.
6. Carefully place the maps in a drying area.
7. Clean up the work area.
8. After the maps are thoroughly dried, paint them using the elevation color key
9. When the paint has dried, label the physical features and major cities.
10. Write on the gummed label or strip of masking tape and fold it in half around the toothpick.

(From: California Department of Education. *Grade 4, Standard 1 Course Model Lesson*)