

# Map Activity

## California Geography, Natural Resources and Natural Hazards

**Directions:** Complete each step below as neatly as possible. Make sure to create a key on your California map and put all symbols used on your map in the key.

### **Part 1: Geography, Population, and Parks**

California has several major cities with densely populated urban areas. The state can also be divided into several provinces based on regional geology. It also has numerous national parks, lakes, rivers, and mountain ranges.

**Directions:** Use the *California Population* map, *Physiographic Provinces* map, *California's Parks and Public Lands* map, and *Figure 2 (Pg CA5)* to label the following on your map:

- a) All cities with a population over 400,000 (include Murrieta)
- b) Each of the 11 physiographic provinces
- c) Parks: Yosemite National Park (NP), Redwood NP, Death Valley NP, Sequoia NP
- d) The major mountains with elevation greater than 2000m
- e) Water: Lake Tahoe, Salton Sea, Colorado River, river where gold was discovered

### **Questions:**

- 1) In general, what part(s) of the state have the greatest population density?
- 2) What is the highest place in the state? The lowest?
- 3) What are the two major mountain ranges in the state?
- 4) What river creates our border with Arizona?

### **Part 2: Mineral and Energy Resources**

With a large land area and varied geology, California has numerous mineral and energy resources.

**Directions:** Use the *California Wind Resource* map, *Principle Mineral Producing Localities* map *Known Geothermal Resource Areas* map, *Figure 4 (Pg CA7)*, and *California Central Valley (Pg CA12)* to label the following on your map:

- a) Locations of each wind farm
- b) Locations of geothermal resources
- c) Locations of the following mineral resources: sand and gravel, cement (made of limestone and gypsum), borates (boron in book), stone (crushed in book) and gold.
- d) The primary agricultural region of California

### **Questions:**

- 1) What area has the greatest concentration of wind farms?
- 2) Where is the largest area of geothermal resources?
- 3) What are the two largest mineral resources in the state? What are these two resources used to make?

### **Part 3: Water Resources**

**Directions:** Use the *California Annual Precipitation* map (pg CA14), the *California Rivers* map, and the *California Water Projects* map (Pg CA16) to label the following on your map:

- a) Locations of the 9 aqueducts (label with the name)
- b) Note the areas with the greatest precipitation
- c) Lake Tahoe, Salton Sea, Colorado River, Sacramento River

#### **Questions:**

- 1) How is the water that California uses distributed around the state?
- 2) Which water projects serve the San Francisco Bay Area?
- 3) Which water projects serve the Los Angeles area?
- 4) On which water projects does our area rely?
- 5) What are three disadvantages to moving water through an open aqueduct rather than a closed pipeline?

### **Part 4: Natural Hazards**

**Directions:** Use the *Volcanoes and Volcanic Areas* map, the *Major Faults of California* map (Pg 325), and the *Tsunami Hazards* map (Pg CA21) to label the following on your map:

- a) Volcanoes: Lassen Peak, Mt. Shasta, Long Valley Caldera (Mammoth), Clear Lake, Medicine Lake, Amboy Crater, Salton Buttes
- b) Earthquake Faults: Elsinore Fault, San Jacinto Fault, San Andreas Fault, Hayward Fault, Calaveras Fault, Garlock Fault, Coyote Creek Fault, Imperial Fault
- c) Tsunami danger zones

#### **Questions:**

- 1) What are the two active volcanoes in the Cascade Range?
- 2) In what volcanic area is Mammoth located?
- 3) Which National Parks could be affected by a massive volcanic eruption at the Long Valley Caldera? Which water projects?
- 4) What two faults do we live by in Murrieta?
- 5) Which fault is the boundary between the Pacific and North American plates?
- 6) What water projects and cities would be affected by a massive earthquake on the Hayward Fault?
- 7) What cities and water projects would be affected by a massive earthquake on the Elsinore or San Jacinto Faults?
- 8) Where can you live in California that has a minimal risk for earthquakes, tsunamis or volcanic activity?
- 9) Based on your map, what is the risk from tsunamis in the following locations:
  - a. San Francisco, Monterey, Los Angeles, San Diego, Crescent City, Lake Forest, Murrieta, Death Valley, Napa Valley