**Objective**

•Based on observations gathered about **precipitation, population, agriculture, landforms/topography, and other water usage** from various map overlays your group needs to develop a solution for how freshwater can be distributed to where it is needed around California.

•How will you solve the CA freshwater puzzle?

**Map Overlay Questions (part 1)**

| **Question** | **Answer** | **Which maps did you use?** |
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| 1. Describe where most rainfall occurs in California?
2. Describe what you notice when you overlay 1) where people live and 2) where rainfall occurs in CA.
3. In what six counties is the domestic water use the greatest?
4. In what four counties is irrigation (agriculture) water use the greatest?
5. Is more water in CA used domestically, or in agriculture? What part of the map(s) did you look to find your answer?
6. When you overlay 1) population and 2) total water use you may notice that they do not match. Why is this?
7. What do you notice when comparing the “Average Annual Precipitation” to the “Irrigation Water Use by County”?
8. Which maps show sources of water? What other sources of water might exist?
9. Based on your responses to questions 1, 2 and 6, what do you think the problem is with water distribution in California

(where does water come from and where is it used)1. What do you notice about the location of California roadways compared to natural topography around the state?
2. Why does CALTRANS need to examine topography when they are building new highways and roads?

(CALTRANS= CA Department of Transportation)1. Determine the direction of water flow for the Sacramento and San Joaquin rivers.
2. Use map overlays to determine where most of the precipitation that falls in the Sierra Nevada will enter the ocean.
3. What problems do the Tehachapi and San Bernardino Mountain ranges present for distributing fresh water to Coastal Southern California?
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| **Question (part 2)** |
| Develop a solution for how freshwater can be distributed in CA after you have thought about:•Where water is used.•Where water sources are located •What natural barrier/landforms exist.•What types of human made tools and structures can be used to distribute water?•What are some controversial issues with establishing a freshwater distribution system?a)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_b)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_c)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_d)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_e)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Explain and draw out your solution on the “California Landforms” map. |