



Activity: Tectonic Travel Jeopardy!

Purpose: To review the tectonic decal stories and the Franciscan Complex rocks using a fun and familiar format.

Duration: Approximately 20 minutes

Materials required:

- Tectonic Jeopardy categories A through F Tectonic Jeopardy category handout
- Final Jeopardy category
- [Tectonic Travel Decal information sheets](#)
- *Our Dynamic Earth* map (USGS I-2800)
- [Franciscan Rocks of the Golden Gate Headlands information cards](#)
- [Franciscan Rocks of the Marin Headlands Terrane poster](#)
- [Geology of the Golden Gate Headlands poster](#)
- Two bells or other type of signaling devices
- Board space to tally team points

Optional materials:

I Have Tectonics activity cards for plate tectonics vocabulary review. Available at <http://home.nps.gov/goga/forteachers/geo-speak.htm>.

Before playing *Tectonic Travel Jeopardy*:

Students should be familiar with the basic vocabulary of plate tectonics (*subduction; mid-ocean ridge; rift zone; convergent, divergent and transform plate boundaries; and crust, mantle, and hot spot*), the characteristics of the rocks of the Franciscan Complex (see the *Franciscan Rocks of the Golden Gate Headlands information cards*), and the stories behind the traveling trunk decals (see the *Tectonic Travel Decal information sheets*). If you would like to review the vocabulary of Franciscan Complex plate tectonics, have your class play *I Have Tectonics* before starting the Jeopardy game.

Directions:

- ✓ Print out the six Jeopardy category files and the final jeopardy page. Use these for your reference during the game.
- ✓ Post the tectonic map and posters in the classroom.
- ✓ Write the Jeopardy categories on the board.
- ✓ Divide the class into two teams. Have each team select a leader who will speak for the team. Let the teams know you may choose a new leader periodically throughout the game. Give each team leader a bell.
- ✓ Review the format of the Jeopardy game with the students. **Remember:** all responses are given in the form of a question!
- ✓ Call on a team and allow the team to confer with one another to select a Jeopardy category and an answer from the category.
- ✓ Read the selected Jeopardy answer. Allow both teams to confer with one another for a response (a question). When the quickest team rings its bell, have the leader state the question.
- ✓ If the question is correct, award the team points for their selection. If incorrect, give the other team a chance to respond.
- ✓ The team with the correct response makes the next selection.
- ✓ At the end of the game, announce the final Jeopardy category, and have each team make a wager.
- ✓ Post and read aloud the final Jeopardy "question." Allow 30 seconds for each team to write their response.
- ✓ Look at each team's response and tally the points.
- ✓ You may want to offer a token "prize" for the winning team, although the process of learning about our planet may be more important than achieving the most points!

Jeopardy Category: Explosive Situations!

<p style="text-align: center;">100 pts</p> <p>A volcanic eruption buried this Italian city in 79 AD.</p>	<p>What is Pompeii?</p>
<p style="text-align: center;">200 pts</p> <p>When this volcano exploded in 1883, people heard the blast 5,000 km (that's 3,000 miles) away!</p>	<p>What is Krakatau? or What is Krakatoa?</p>
<p style="text-align: center;">300 pts</p> <p>As more eruptions occur, this Pacific seamount will become Hawai'i's newest island.</p>	<p>What is Loihi?</p>
<p style="text-align: center;">400 pts</p> <p>Yellowstone and Hawaii are examples of this tectonic feature, found over a stable plume of magma.</p>	<p>What is a hot spot?</p>
<p style="text-align: center;">500 pts</p> <p>Its name means "shining mountain" in Swahili.</p>	<p>What is Kilimanjaro?</p>

Jeopardy Category: Tectonic Habitats

<p>100 pts</p> <p>Visit the ancient rift at Lake Baikal to see the only freshwater species of this mammal.</p>	<p>What is a seal?</p>
<p>200 pts</p> <p>Ride in a deep-sea submersible near these islands to see ecosystems requiring no sunlight, discovered in 1976.</p>	<p>What are the Galápagos Islands?</p>
<p>300 pts</p> <p>Penguins live at this Sub-Antarctic locale.</p>	<p>What are The Snares?</p>
<p>400 pts</p> <p>The largest population of brown bears shares this peninsula with 29 active volcanoes!</p>	<p>What is Kamchatka?</p>
<p>500 pts</p> <p>These 2-meter-long creatures thrive in scalding water and complete darkness!</p>	<p>What are tube worms?</p>

Jeopardy Category: Famous Rifts

<p>A deep gorge along the Rio Grande Rift protected this community for many centuries.</p>	<p>100 pts</p>	<p>What is Pueblo de Taos? or What is Taos?</p>
<p>This famous volcano is part of the East African Rift.</p>	<p>200 pts</p>	<p>What is Kilimanjaro?</p>
<p>Earthquakes along this rift caused the Mississippi River to “flow” backwards!</p>	<p>300 pts</p>	<p>What is New Madrid?</p>
<p><u>DAILY DOUBLE!</u> Ecosystems dependent on <i>chemosynthesis</i> rather than <i>photosynthesis</i> were first seen at this rift.</p>	<p>400 pts</p>	<p><u>DAILY DOUBLE!</u> What is the Galápagos Rift?</p>
<p>It first formed 25 million years ago when a rift developed in Siberia.</p>	<p>500 pts</p>	<p>What is Lake Baikal?</p>

Jeopardy Category: On The Edge

<p>100 pts</p> <p>Movement along the fault beneath this lake caused the San Francisco Earthquake in 1906.</p>	<p>What is San Andreas Lake?</p>
<p>200 pts</p> <p>Visit this country to see the eastern edge of the North American Plate.</p>	<p>What is Iceland?</p>
<p>300 pts</p> <p>The Juan de Fuca Plate, near this California community, marks the northern reach of the San Andreas Fault.</p>	<p>What is Mendocino?</p>
<p>400 pts</p> <p>Travel to the Rivera Plate, just west of this country, to see the southern limit of the San Andreas Fault.</p>	<p>What is Mexico?</p>
<p>500 pts</p> <p>This is the name for the subduction zones that encircle the Pacific Ocean.</p>	<p>What is the Ring of Fire?</p>

Jeopardy Category: Franciscan Rocks

<p>The name for this gritty rock means "gray gravel rock" in German.</p>	<p>100 pts</p>	<p>What is graywacke? or What is graywacke sandstone?</p>
<p>This greenish, speckled, intrusive igneous rock forms beneath basaltic volcanoes.</p>	<p>200 pts</p>	<p>What is diabase?</p>
<p>These are the plankton whose fossilized skeletons are found in Franciscan ribbon chert.</p>	<p>300 pts</p>	<p>What is Radiolaria? or What are radiolarians?</p>
<p>The result of underwater eruptions, this rock is named for its distinctive shape.</p>	<p>400 pts</p>	<p>What is pillow basalt?</p>
<p>When material in the Earth's mantle is altered by seawater and pressure, it forms this rock, which produces soils toxic to most plants.</p>	<p>500 pts</p>	<p>What is serpentine? or What is serpentinite?</p>

Jeopardy Category: Tectonic Potpourri

<p>The San Andreas Fault is a famous example of this type of plate boundary.</p>	<p>100 pts</p>	<p>What is a transform plate boundary?</p>
<p>Expect to find evidence of mountain-building, volcanoes, and these unsettling events at many plate boundaries.</p>	<p>200 pts</p>	<p>What are earthquakes?</p>
<p>Oceanic crust is consumed and returns to the Earth's mantle during this process at some convergent plate boundaries.</p>	<p>300 pts</p>	<p>What is subduction?</p>
<p>The Mid-Atlantic Ridge runs through the middle of this country.</p>	<p>400 pts</p>	<p>What is Iceland?</p>
<p>The collision of Asia and this tectonic plate formed the Himalaya.</p>	<p>500 pts</p>	<p>What is the India Plate?</p>

FINAL JEOPARDY!

The Final Jeopardy Category is:

"SINKING FEELINGS"

Make your wager.

Name two tectonic travel
decal locations that are next
to **active** subduction zones.

You have 30 seconds to write your response!

What are (choose any two):

*Kamchatka, Mendocino,
Krakatau or The Snares?*