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Building Bridges in Earthquake Country: From the Past to the Present

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In order for students to be motivated and concerned for their community, I have designed an integrated curriculum unit called, "Building Bridges in Earthquake Country: From the Past to the Present" to be taught to sixth grade students. In the Bay Area there are numerous bridges that are the key to the economic growth, transportation, and cultural diversity. In a given day in the Bay Area, an individual can expect to travel over at least two to three bridges. Over time, many geologists have stated, "Earthquakes do not kill people, but buildings do". The centerpiece of the unit is the connection of the structural design of bridges being built in Earthquake Country. In order for the students to apply their knowledge, the integrated unit includes the content areas of Earth Science, Ancient History, Language Arts, Technology, Art and Physical Science. There are five goals in this unit. The first goal in this unit is for the student to use the scientific method as well as an inquiry based labs to decide the structural design of bridges being built in the Bay Area. The second goal is the building of a bridge to be placed on a shake table to interact with an earthquake. The third goal is for students to role-play and apply an active approach in the decision process of building bridges in Earthquake Country. The fourth goal is for the students to use technology to build a bridge, to withstand a simulated earthquake, with epicenters located on the San Andreas or the Hayward Fault. The final goal is for the students to summarize their knowledge as well as their application of studying bridges in Earthquake Country with a poster presentation.

As an educator, the labs and the activities are designed to be station driven, but the lessons can be used in a small group or a whole group setting. The teaching strategies as well as the modifications that are addressed in this unit, can apply to a special needs student, the gifted student, as well as the English language learner in the classroom. Through the exposure to the content, along with an integrated curriculum unit, which includes a variety of labs, technology, and project-based activities, the students will be inspired to be an active participant in the development of structures in Earthquake Country.

(Developed for Earth Science and Ancient History, grade 6; recommended for Science, upper Elementary and Middle School grades 5-8)