THE GOLDEN GATE BRIDGE: SAN FRANCISCO, CALIFORNIA, UNITED STATES

- **TYPE:** Steel-cable suspension bridge with two main towers
- **TOWER HEIGHT:** 746 feet (227 meters)
- **TOTAL LENGTH:** 8,981 feet (2,737 meters), or 1.7 miles (2.75 kilometers)
- **SPANS:** Golden Gate inlet between San Francisco and the Pacific Ocean
- **CONSTRUCTION DATES:** 1933–1937

As the port city of San Francisco, California, boomed in the 1920s, traffic exploded. Motorists clogged congested streets. Commuters crammed ferries to cross the wide and dangerous San Francisco Bay to suburbs outside the city. Ferry lines seemed endless. Frazzled commuters were trapped in cars as long as 18 hours. As they had in New York, people rallied for new bridges to get them where they needed to go. Bridges would provide shorter routes and speedier journeys. They would ease congestion.

DID YOU KNOW?

According to the Golden Gate Bridge Highway and Transportation District, 600,000 **rivets** secure each of the bridge's two towers. Riveters heated metal fasteners and flung them to workers who caught them in a mitt before pounding them in place.

The Golden Gate is an inlet, a narrow stretch of water between San Francisco Bay and the Pacific Ocean. It presented a unique engineering challenge. Its turbulent winds, churning waves, and dense fog are famous. Worse, it sprawls between the Hayward and San Andreas **fault zones**, near the epicenter of the San Francisco Earthquake of 1906. This earthquake killed 3,000 people and was the most disastrous quake in United States history.

WORDS to KNOW

rivet: a short metal pin or bolt for holding together two plates of metal.

fault zone: an area that is at risk of earthquakes.

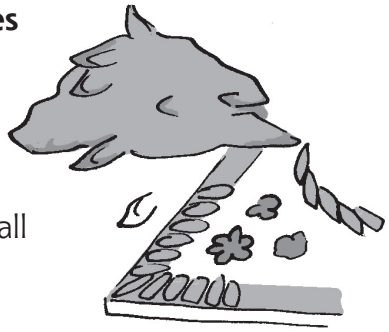
Could any bridge possibly stand up to a similar catastrophe?

United States' engineers had never before constructed a bridge like it. Engineer Joseph B. Strauss got to work. He planned a marvel over the misty bay that would stand 4,200 feet high (1,280 meters) and 90 feet wide (27 meters). A suspension bridge high enough to accommodate waves at high tide turned out to be the ideal design for the wide span of water.

Geometric Shape Mosaic

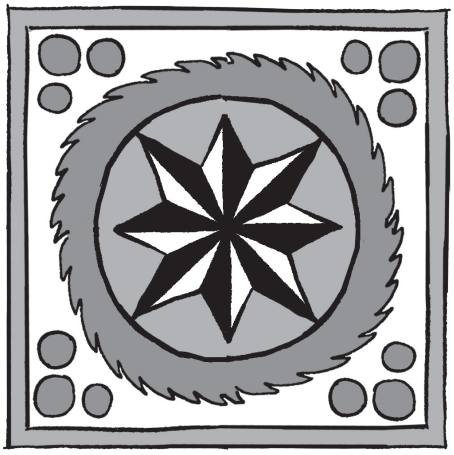
SUPPLIES: *dried pumpkin seeds in shells, wax paper, different colored paints, paint brushes, paper, colored pencils, ceramic tile, glue*

A mosaic is a design or picture made with tiles or stones. Iran's spectacular Khaju Bridge is decorated with dazzling tiles. Make a mosaic tile using geometric shapes and patterns.



1 Spread the seeds over a sheet of wax paper. Paint all the seeds, front and back, using a variety of colors. Let the seeds dry completely.

2 While the seeds dry, sketch a geometric design out of shapes on paper. Use the colored pencils to fill in areas of the design with the colors you'll use in your mosaic.



3 Once the seeds have dried, arrange them on the tile according to your design. Use glue to secure them to the tile and to one another. Allow your tile to dry completely.

DID YOU KNOW?

Michael Williams of Shoebury, England, used 1.6 million wooden matches to construct a dazzling replica of London's Tower Bridge. It took 10 years to complete. That's two years longer than it took to build the actual suspension bridge!