Build Your Own Roman Arch

The forces of a Roman arch so strong that arches can stand without any glue or other adhesive holding them together. Try it for yourself!

Step 1: Cut out 7 cardstock block templates.

Step 2: Fold templates along dotted lines.

Step 3: Glue flaps to form blocks shaped like trapezoidal prisms.

Step 4: Work with a buddy to assemble the blocks into an arch. No glue needed! Weigh down the end blocks with stones or coins to prevent sliding. The middle block is called the key-stone. Without the keystone, your arch will collapse.

How Does it Work?

Created by the ancient Romans in the first century A.D., the arch is an engineering marvel. How can this horseshoe-shaped structure withstand the strong downward forces acting on it? It's because of both its overall shape and the shape of its individual blocks. Precisely cut, wedge-shaped blocks are used to construct an arch. Downward forces pushing from the top of the arch squeeze the blocks together, and the forces are distributed evenly along the arch's curve. At the same time, the ground pushes up against the curve.