



Course Building Construction
Section: Masonry



James Rumsey
Technical Institute

Build an Arch

What You Will Do

Build a paper arch to learn how arches support weight, why they are strong, and what the keystone does in an arch structure.

Materials You Will Need

- Pencil
- Paper
- Ruler
- Scissors
- Tape
- Computer with printer (optional)

What Is an Arch?

An arch is a curved structure that spreads weight outward and downward instead of straight down.

Arches are used in:

- Bridges
- Doorways
- Windows
- Tunnels
- Historic buildings

What Is a Keystone?

The keystone is the center top stone or block placed last. It locks the other pieces together and helps the arch carry weight.

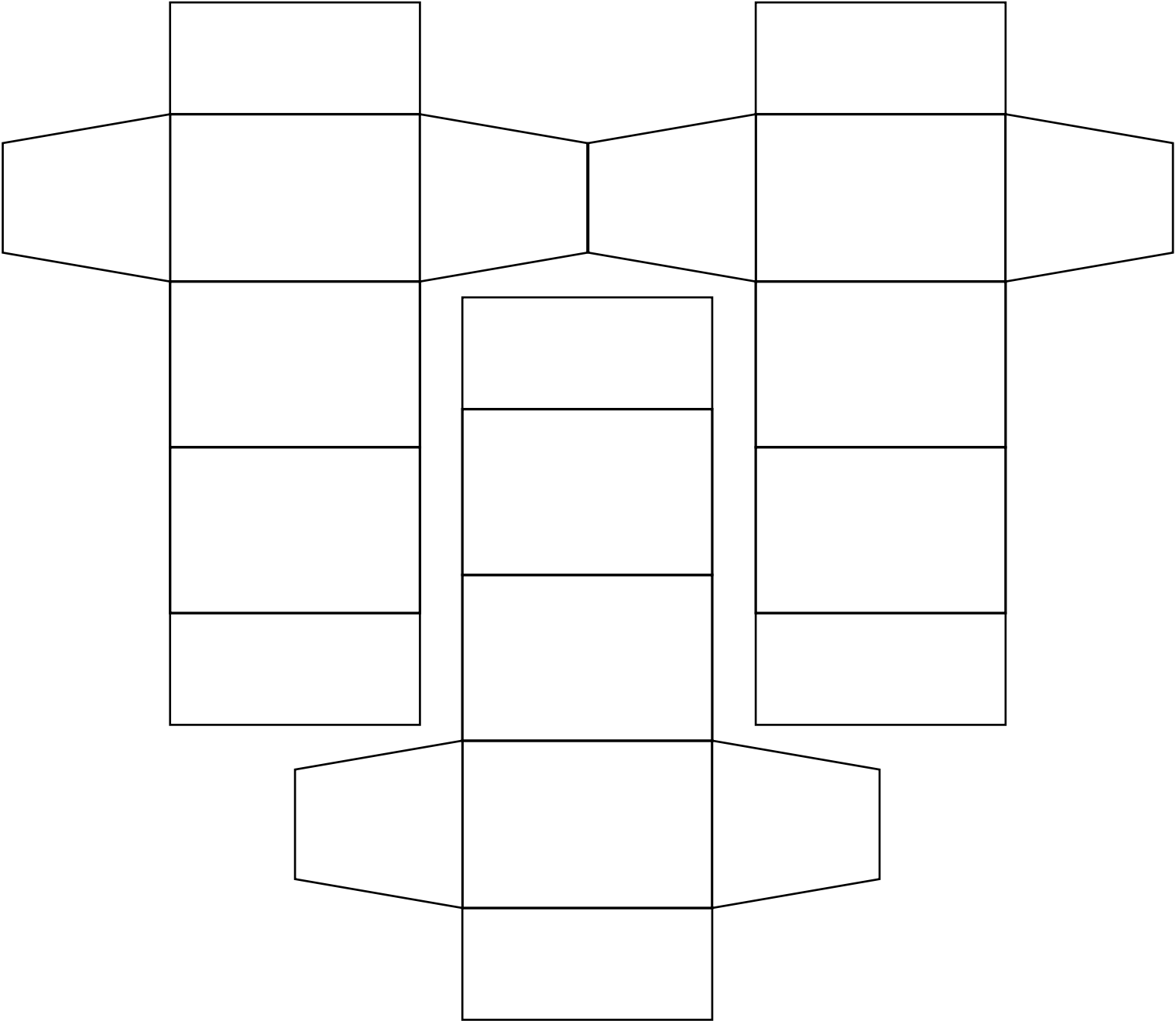
Part 1: Create Paper Blocks

If you have a computer with a printer, print 2 copies of the template included in this activity. If you can't print the template, use a ruler to draw similar shapes on a sheet of paper. The goal is to create 6 blocks that slightly taper on one end and 1 more that tapers a little more. The block that tapers more will be the keystone.

Part 2: Build the Arch

Stack the blocks with tapered sides touching each other. Have a helper hold the blocks in place while you stack them. When you get to the center, add the keystone. Tape the 2 bottom blocks to the table. All of the blocks are now pushing inward on the keystone. This is where the arch's gets its strength

Arch Template



Keystone

