

## ARCHES AND CORBELLED ARCHES

**Objective:** Students will be able to identify and build a corbelled arch structure.

**\*Vocabulary:** ARCH  
HORSESHOE ARCH  
SQUINCH ARCH  
CORBELLED ARCH  
TRIUMPHAL ARCH  
ARCH OF TITUS  
ARCH BRIDGE

**Materials:** BrickLab elements, Dictionary, Paper, Pencil

**Preparation:** Be familiar with BrickLab materials. Prepare a corbelled arch model.

**Discussion:** The instructor will lead a group discussion on the use of **arches** in architecture. Arches are curved structures that support the weight of material over a space. Arches span an opening in such a way as to transfer the load to lateral thrust on either side of the opening. This increases the ability of a structure to support a load. There are many different types of arches, such as **horseshoe arches**, **squinch arches**, and **corbelled arches**. A corbelled arch is two cantilevers that meet at a central point. The Romans of ancient history incorporated the arch shape in **triumphal arches** such as the **Arch of Titus**. Arches are often incorporated in modern structures, such as **arch bridges**.

**Activity 1:** Students will build a simple corbelled arch structure that can support the weight of a dictionary. The corbelled arch structure should stand at least 10 cm tall.

**Activity 2:** Students will build a personal triumphal arch. The arch should stand at least 15 cm tall. This triumphal arch should commemorate some important event.

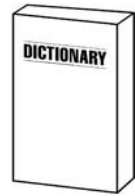
**Activity 3:** Students will identify and record four examples of arches in their community. Students should sketch their discoveries and identify the arch shapes.

**Activity 4:** Students will write a short essay describing an example of arch architecture and its importance in a structure.

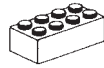


**ARCHES AND CORBELLED ARCHES**

**Required Materials:**

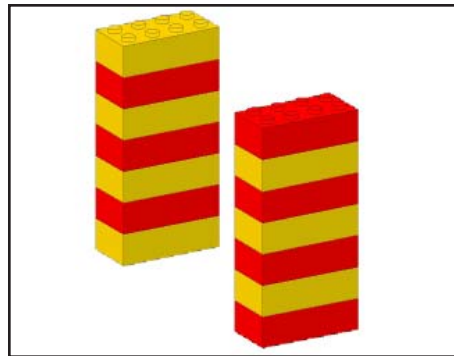


dictionary



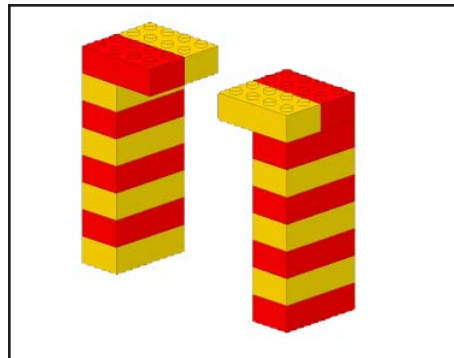
25 - 2x4  
bricks

**1.** Stack seven 2x4 bricks on top of one another. Create a second stack of seven 2x4 bricks.



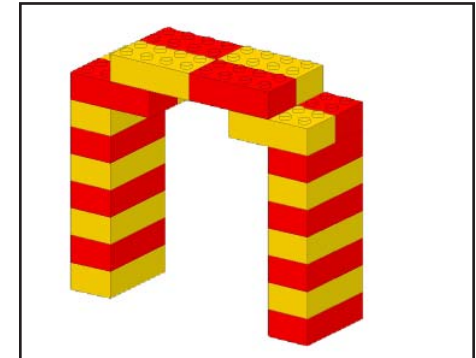
Check off when complete

**2.** Place two, 2x4 bricks cantilevering out from each of the stacks.



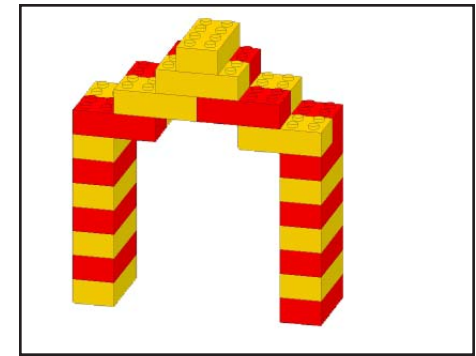
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**3.** Carefully place two 2x4 bricks cantilevering out from the previous 2x4 bricks.



Check off when complete

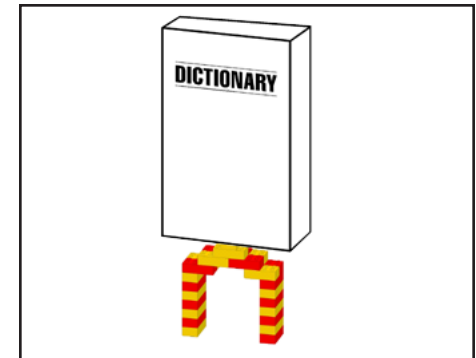
**4.** Attach the two sets of cantilevers with two 2x4 bricks. Cap the arch off with a single 2x4 across the top.



Check off when complete

**5.** Attempt to place a dictionary on the top of the arch.

Does the arch support it?



Check off when complete

