BRIDGES
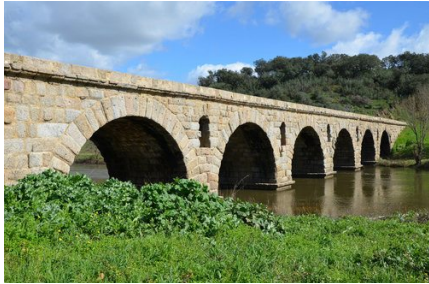
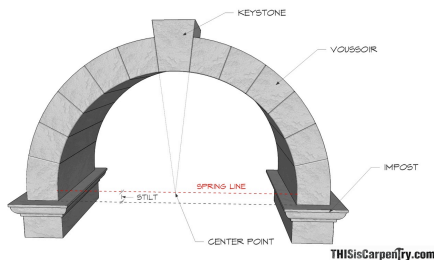## Roman Arch Bridges

Grab all the **cushions, books or Jenga blocks** at home and try to build an arch bridge.

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!

Roman Bridge, Ponte da Vila Formosa, Portugal

How it works:

Its semicircular structure elegantly distributes compression through its entire form and diverts weight onto its two legs, the components of the bridge that directly take on pressure.

Image attributions:
https://www.ancient.eu/image/4407/roman-bridge-ponte-da-vila-formosa-portugal/
https://www.thisiscarpentry.com/2012/01/06/circular-based-arches-part-1/
https://www.thelistlab.net/blog/how-to-make-a-book-arch
Resources:
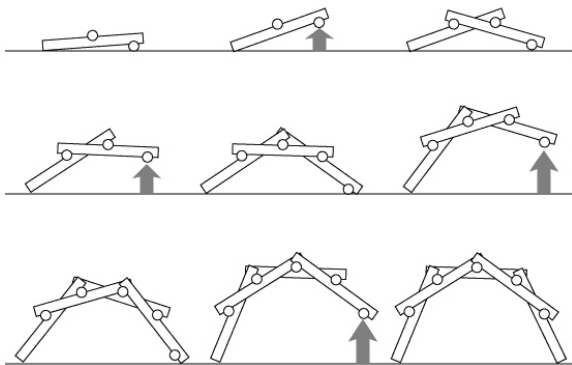https://kids.nationalgeographic.com/explore/books/make-this/roman-ice-arch/

Leonardo Da Vinci's Famous Self-Supporting Bridge

Do you have **popsicles** at home? I did not try with **toothpicks or q-tips**, but I think that, they may also work. Other than those, "Patience" will be the main thing you will need.

Leonardo Da Vinci's Self-Supporting Bridge is also known as the emergency bridge. No nails, screws, rope, glues, notches, or other fasteners are holding the bridge in place...

You can also watch the step by step instruction video (https://www.youtube.com/watch?v=8sEa3MXXzw8) but first I suggest you try by looking at the image below.

How it works:
You will be weaving the sticks together so that the tension between the sticks keeps the bridge together and lifts it off of the ground.

You may also watch the video on YouTube https://www.youtube.com/watch?v=bnzIhY_2wfo how a father and son builds the bridge at their backyards to motivate yourself to keep going ☺