



## Paper Bridge Science

Stem Activities



Ages: 3-5



Less than 30 minutes



Grownup needed



Can thin, flexible paper support weight? Through some physical modifications, we can increase paper's load-bearing capacity and make it support surprisingly heavy objects. Let's explore!

### Materials Needed

Card paper  
Three identical bowls  
A cup of water



### Step-by-step tutorial

#### Step 1

Fold the card paper in an accordion pattern as shown.



#### Step 2

Place two bowls in a straight line, then put the folded card paper across them. Make sure to leave a gap of one bowl's width between them.



#### Step 3

Next, place the third bowl on top of the card paper.



#### Step 4

Now pour water into the bowl on top of the paper bridge - the bowl won't fall! You can try adding more weight to test how much the paper bridge can support.



### The Science Behind It:

Folding creates multiple layers in the paper, and these layers stack together to make the paper more rigid and better able to distribute and support pressure. Just like folded boxes or cardboard, the folded paper increases its structural stability to enhance its supporting strength.

Using the same paper, try creating more or fewer folds to test which configuration provides the strongest support. Which works better?