

BRIDGE BUILD

Become a designer and engineer to create and build a sturdy bridge from recycled materials.

WATCH
THE VIDEO

 tinyurl.com/HOC106

Please note: These videos were created to assist home learning during lockdown. They are still great to use in the classroom though.

Takes: 20 mins+

Where? An appropriate space, indoors or outdoors, with a gap to span your bridge across

Who? Individual, pairs or small groups work great for this

You will need:

A suitable gap (ideally of around 30cm). This could be between two chairs, a chair and a table and so on

Bridge material – scrap paper and card work well, as well as any spare packaging you have lying around at home

Sticky tape and scissors

Objects to test the sturdiness of your bridge. Scrap paper and card work well, as well as any recycled packaging

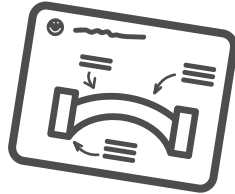
Safety

Children should remain supervised throughout especially with the use of scissors when cutting materials to build the bridge

How to build your bridge

1 Set your design area. Think about the function of bridges and what qualities a bridge must have to be successful. You'll need a gap: we've found 30cm, or about ruler's length work well, but if you don't have a lot of materials to build your bridge with, you may find a smaller gap is better. If you're competing with someone at home or a friend or relative online, make sure your gaps are similar in size so it's a fair test, or appoint a judge for your bridges.

2 Plan your bridge. Come up with your own bridge building company name – a strong name conveys a good reputation! Draw some sketches of how you want the bridge to look and work. Make notes about how to solve problems with materials you'll have at hand.



3 Gather materials ready to build your bridge. Your bridge needs to be strong, so think about how you can maximise your materials for the sturdiest bridge possible.



Hint: rolling paper can help here.

You can use sticky tape to help build your bridge but if you are taping the bridge to the gap this is cheating a little bit, and we don't want you to damage any furniture you have at home. Perhaps agree on a set amount of tape, especially if you are competing with a family member.



4 Build your bridge using the plans and materials you've collected.

5 Once your bridge is complete, it's time for the official launch. Unveil your bridge to any family members, highlighting any particular design features or parts you are proud of. If you wish, you could ask for family members to award points for design, your company name and so on.

6 It's time to test your bridge. You can either place objects on your bridge to see if it can withstand the weight or, using some string, attach items carefully to the bridge. Start with very light objects, and if successful, keep going until your bridge can no longer withstand the weight. If you were competing with a friend or relative, who had the strongest bridge?

7 Don't forget to tidy up. Make sure you recycle any paper, card or packaging that can be recycled, remembering to remove any sticky tape.



Review and reflection

By creating your own bridge, you have the opportunity to be creative but also think scientifically and engage with your inner engineer.

Here are some questions to help you reflect on this activity. We use this kind of reflective exercise to get the most out of the activities at our centres.

Which materials proved to be the strongest?

What is more important – how attractive your bridge design is or how functional the bridge is? How important are these two factors when bridges are built outside by professional builders?

Was this challenge easier or harder than you thought it would be? Why?

If you worked in a team to create this bridge, did you work well together? Do you think this made a difference to the success of your bridge?

Share your creation with us at
#outdoorcentresathome