

Learning Objective

To explore ways in which arches are used to strengthen bridges.



<i>Success Criteria</i>	<i>Self-Assessment</i>
<ul style="list-style-type: none"><i>Use technical vocabulary to explain how arch bridges are constructed.</i>	
<ul style="list-style-type: none"><i>Use technical vocabulary to explain how arch bridges work.</i>	
<ul style="list-style-type: none"><i>Build and test models to find a strong bridge design.</i>	



Stick one end of a piece of thin card to your desk with a piece of sticky tape. Gently push the other end of the card so that it bends up to form an arch. Measure both sides of the arch to ensure they are of equal height. How much weight can the arch support before it bends or creases, causing the weights to fall or slide off the top of the arch? Record your findings on the table below.

Arch height (cm)	Maximum load (g)
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Which arch height supported the most weight?

Which arch height supported the least weight?

Can you think of some ways to make an unsupported arch like this stronger? Describe them below: