

Design your own bridge

How much weight can your bridge hold before it gives way?

THE CHALLENGE

Build a bridge from paper, and only paper, that holds as many books as possible. It must span a gap of 20 cm and lift the books at least 3 cm off the table.

STEP 1 - PICK YOUR DESIGN

☐ Flat beam bridge ☐ Triangular truss bridge ☐ Arch bridge

Which do you think will be strongest, and why? _____

STEP 2 - SKETCH YOUR BRIDGE

Draw your design

STEP 3 - BUILD IT AND TEST IT

Ask a grown-up to stack books one at a time in the middle.

It held _____ books before it began to bend. _____

STEP 4 - CHANGE ONE THING AND TRY AGAIN

What did you change? _____

New result: _____ books. Better? Yes / No _____

STEP 5 - THE BIG IDEA

Shape carries load, not just material. A triangle cannot be pushed out of shape without bending its sides - which is why bridges and cranes are full of them.

SIGNED BY ENGINEER

Name: _____ Date: _____