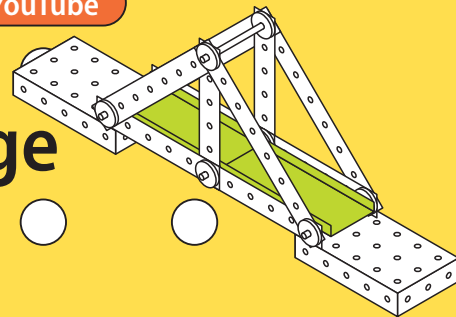




Visit TechCard at techcard.co.uk & Instagram & YouTube

Triangulated Bridge

Build-it Kit Skill Level ● ● ○ ○ ○

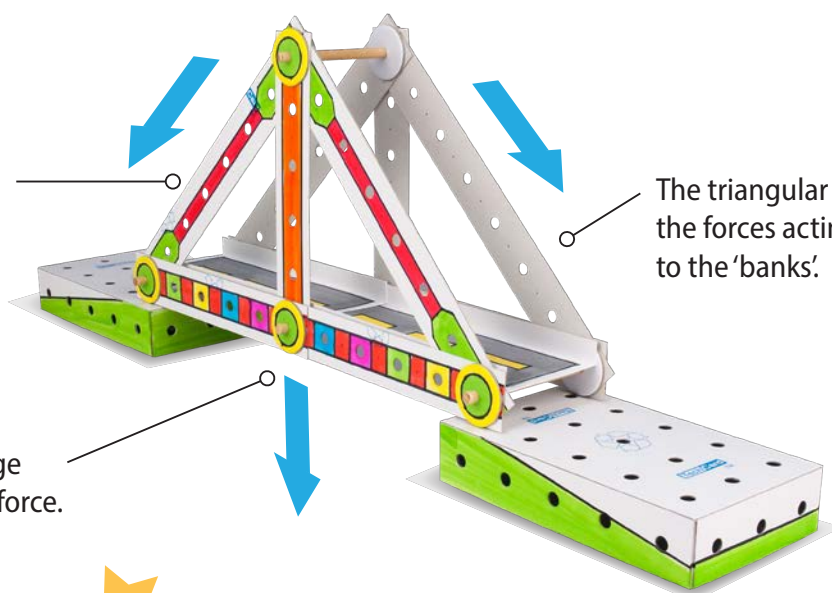


Discover how strong structures work in the real world!

Explore why triangles are important and strong shapes.

See how to make with TechCard on our website.

Triangles are strong structural shapes.



The triangular shape transfers the forces acting on the bridge to the 'banks'.

Objects on the bridge create a downward force.

[Assembly videos on YouTube!](#)

Parts to make 1 model

Structural Parts

TechCard Strip	7
TechCard Base	2

Mechanical Parts

25mm Disc	16
300mm Dowel Axle	1

Additional Materials

A5 Size Thin Card

You will have parts left over towards other models.

Parts to make 10 models

Structural Parts

TechCard Strip	70
TechCard Base	20

Mechanical Parts

25mm Disc	160
300mm Dowel Axle	10

Additional Materials

A5 Size Thin Card x 10

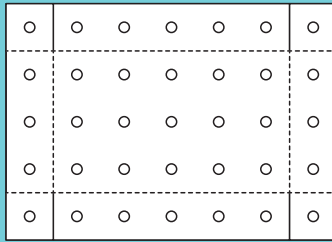
Based on pupils sharing off-cuts between them.

Make the Triangulated Bridge

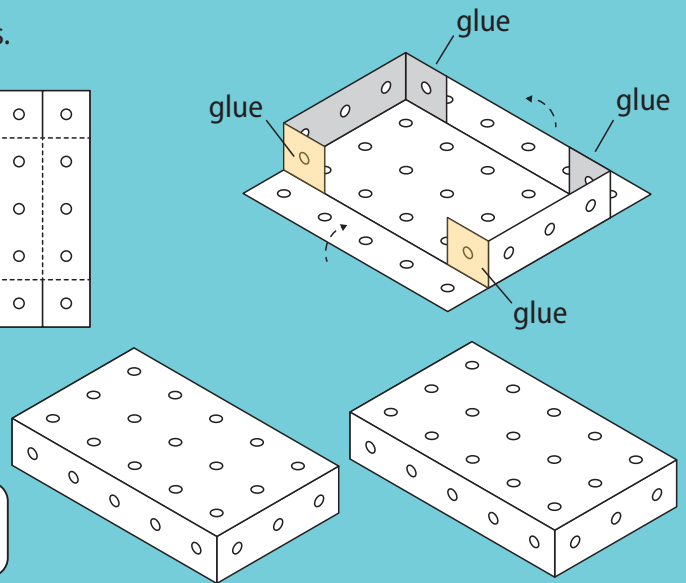


Before you start see
'Make with TechCard'
on our website.

1 Make the bases.



Fold and glue two
TechCard bases.



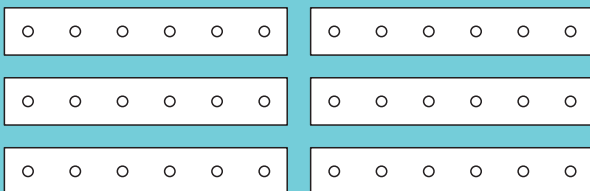
2 Prepare the axles.



Cut four 75mm axles.

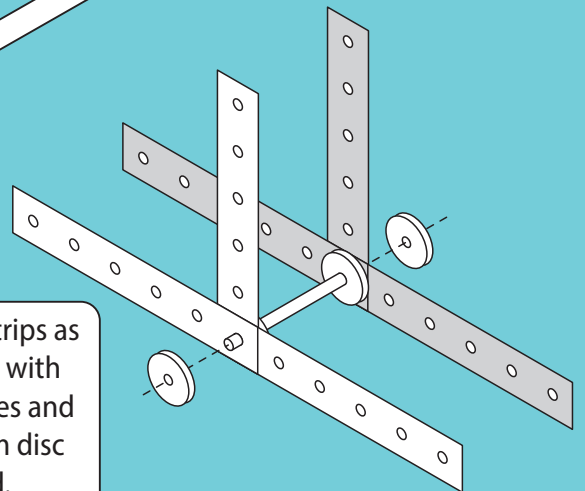
Fit 25mm discs onto the
ends of the axles as shown.

3 Begin the assembly.

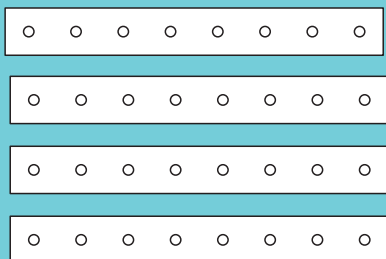


Cut six 150mm strips.

Arrange the strips as
shown and fix with
one of the axles and
fitting a 25mm disc
onto each end.

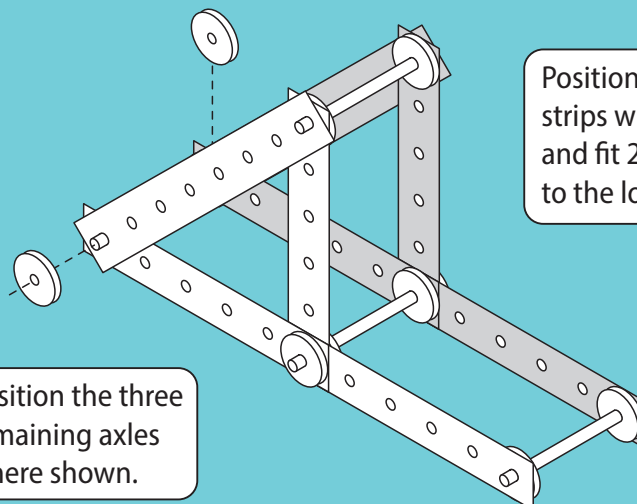


4 Form the first triangles.



Cut four 200mm strips.

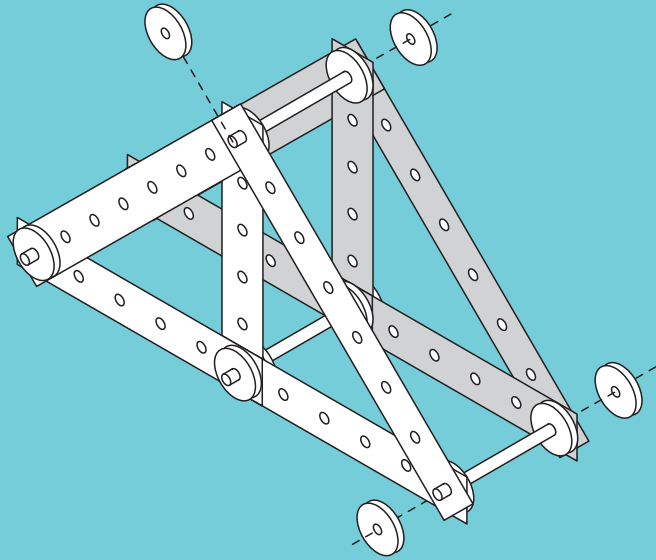
Position the three
remaining axles
where shown.



Position two 200mm
strips where shown
and fit 25mm discs
to the lower axle.

5 Finish the triangulation.

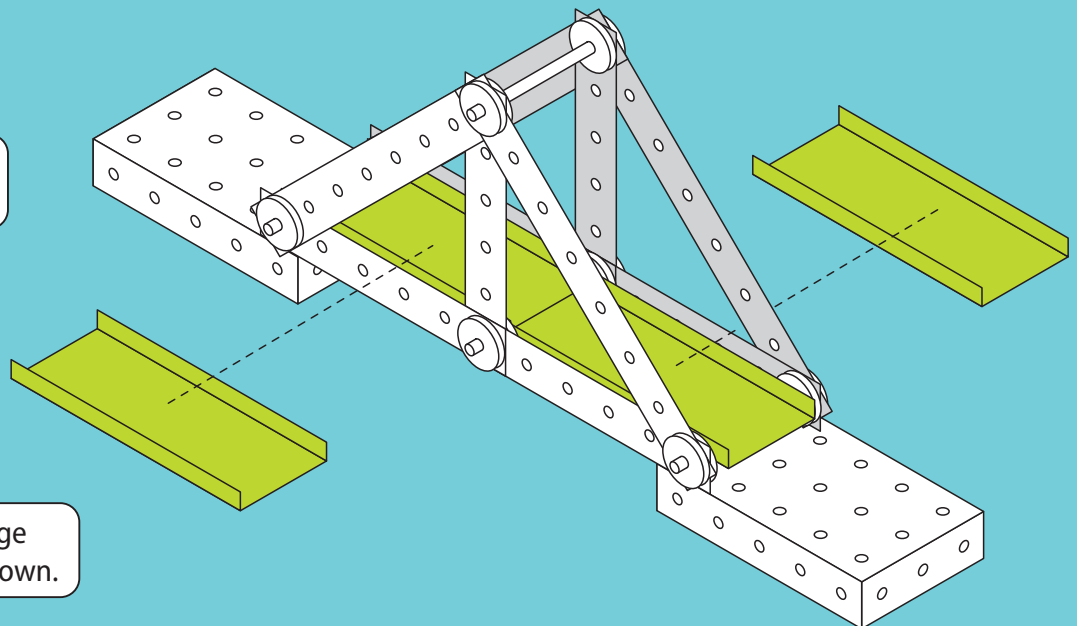
Fit the remaining two 200mm strips and fix with four 25mm discs as shown.



6 Finish the bridge.

Position the bridge between the two bases.

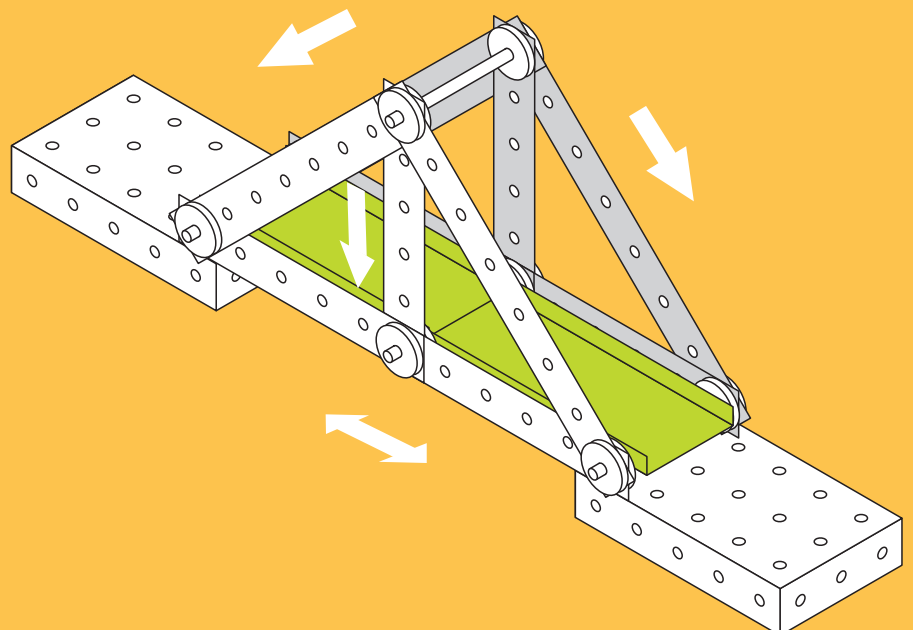
Fit the bridge decks as shown.



7 How the bridge works.

Triangles are strong shapes and are used in a lot of structures. Triangles are strong because they spread the load acting on them.

A load pressing down on the centre of the bridge pulls down on the vertical element. The top of this element is supported by the angled elements which split the force and direct it down where it is held by the horizontal elements.



Card Panels

Print and cut along the solid lines and fold along the dotted lines of the two panels.

25mm

25mm