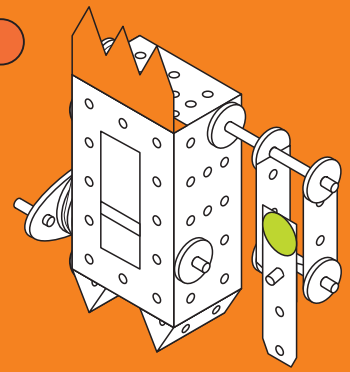




Visit TechCard at techcard.co.uk & Instagram & YouTube

Acrobat

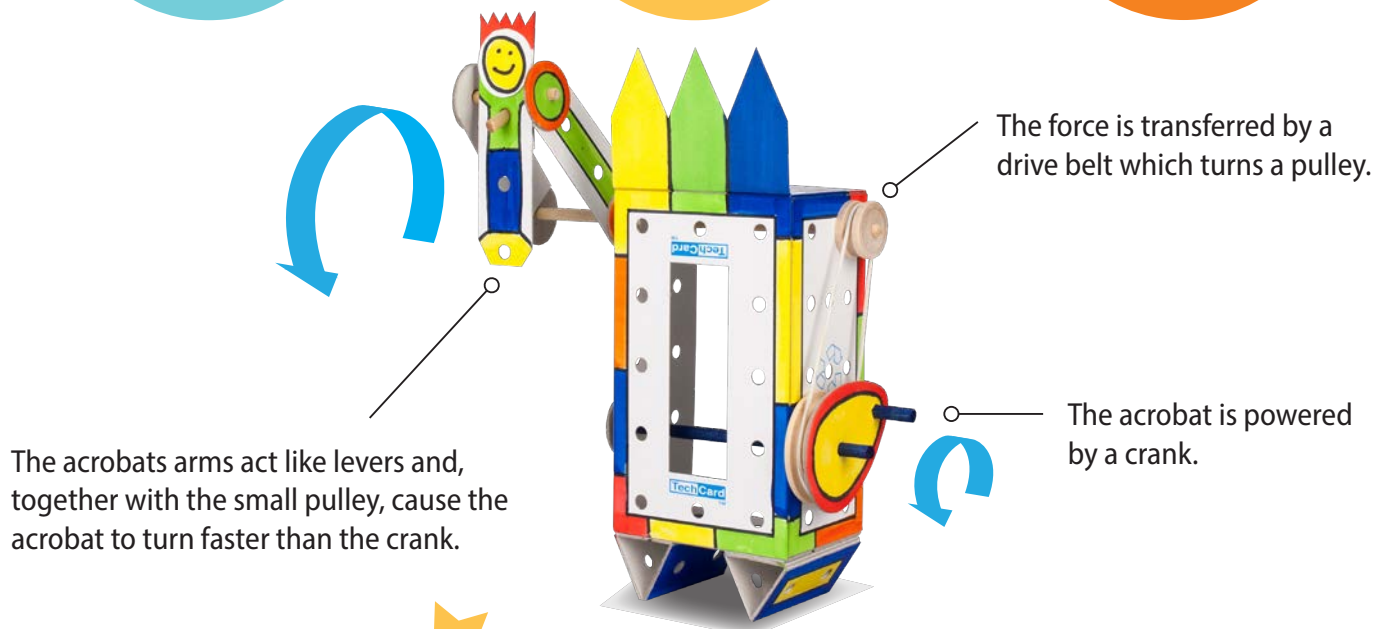
Move-it Kit Skill Level ● ● ● ○ ○



Build a somersaulting acrobat & see what tricks you can teach it!

Explore how pulleys & drive belts transfer and change forces.

See how to make with TechCard on our website.



The acrobats arms act like levers and, together with the small pulley, cause the acrobat to turn faster than the crank.

The force is transferred by a drive belt which turns a pulley.

The acrobat is powered by a crank.

Assembly videos on YouTube!

Parts to make 1 model

Structural Parts

TechCard Strip	1
TechCard Girder	1
TechCard Beam	1
TechCard Project Base	1

Mechanical Parts

25mm Disc	6
60mm Cam	1
20mm Pulley	1
40mm Pulley	1
300mm Dowel Axle	1

Additional Materials

Rubber Band (75mm x 1.5mm. Size No. 18) x1
A5 Size Thin Card

You will have parts left over towards other models.

Parts to make 10 models

Structural Parts

TechCard Strip	10
TechCard Girder	5
TechCard Beam	5
TechCard Project Base	10

Mechanical Parts

25mm Disc	60
60mm Cam	10
20mm Pulley	10
40mm Pulley	10
300mm Dowel Axle	10

Additional Materials

Rubber Band (75mm x 1.5mm. Size No. 18) x10
A5 Size Thin Card x 10

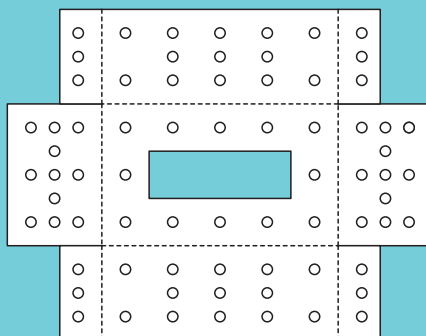
Based on pupils sharing off-cuts between them.

Make the Acrobat

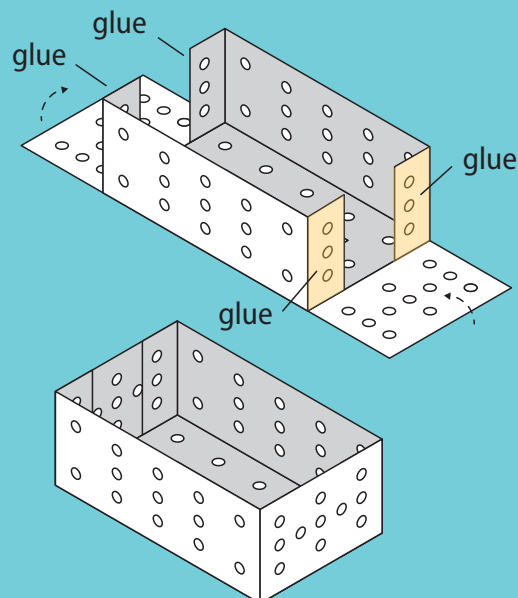


Before you start see
'Make with TechCard'
on our website.

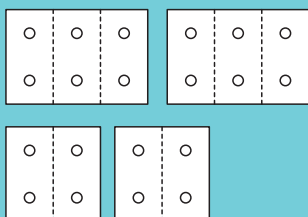
1 Make the base.



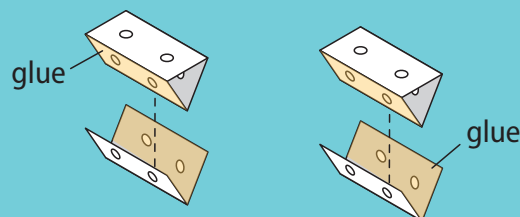
Fold and glue a TechCard
Project base.



2 Make the feet.

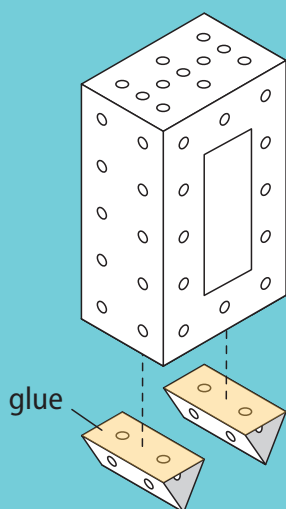


Cut two 50mm beams
and two 50mm girders.



Fold and glue the beams and
girders as shown to make two feet.

3 Fit the feet.



Glue the feet to the
base as shown.

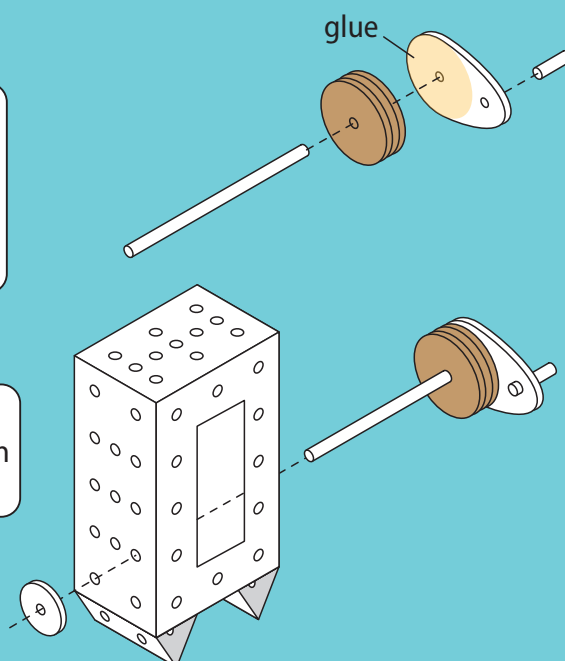
4 Fit the large pulley.

Cut a 110mm and
a 20mm axle.

Fit a 40mm pulley onto
the long axle. Fit a cam
onto the axle glueing it to
the pulley. Fit the 20mm
axle to form a handle.

Fit the axle through
the base where shown
and fit a 25mm disc.

If the pulley is tight, sand the dowel a
little. If it is loose, pass thread through
the pulley hole and then fit to the axle.



5 Fit the small pulley.

Cut a 165mm axle.

Fit a 20mm pulley to the end of the axle. Pass the axle through the base and fit a 25mm disc.

6 Fit the drive belt.

gap

gap

Adjust the discs so there is a gap and the axles turn easily.. Fit the rubber band.

7 Make the acrobat arms.

Cut and shape two 75mm strips.

Glue two 25mm discs to the strips as

glue

glue

Cut a 45mm axle.

Join the two arms with the axle as shown.

8 Fit the acrobat arms.

Fit the arms onto the long axle.

9 Make the acrobat body.

Cut a 100mm strip to the shape shown. Cut an angled slot as shown.

10 Fit the acrobat body.

glue
glue

Check the mechanism and glue the arms to the axle. Fit the body.

11 Finish the model.

Cut, fold and glue the body panels to the model.

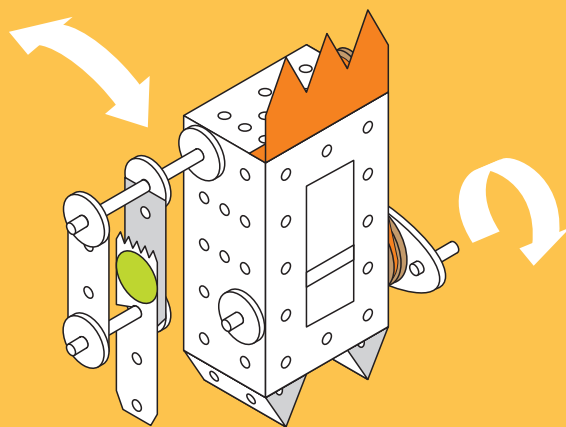
12 Operate your acrobat!

Turn the crank and the force is transferred by the 'drive belt' from the large pulley to the small pulley.

Because the large pulley is twice the size, the small pulley rotates twice for each single rotation of the large pulley.

The small pulley turns twice as fast so this pulley system is increasing the speed of the force applied to it.

As the crank is turned the acrobat begins to tumble. Try varying the speed and direction to see what tricks your acrobat can perform!



Card Panels

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

Alternatively, copy the panels onto thin card and cut and fold in the same way. Or you can design and make your own body panels!

