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Twirling Birds

Maker Pack: Skill Level ● ● ● ○ ○

Upcycle a box to create birds that fly around and up and down!

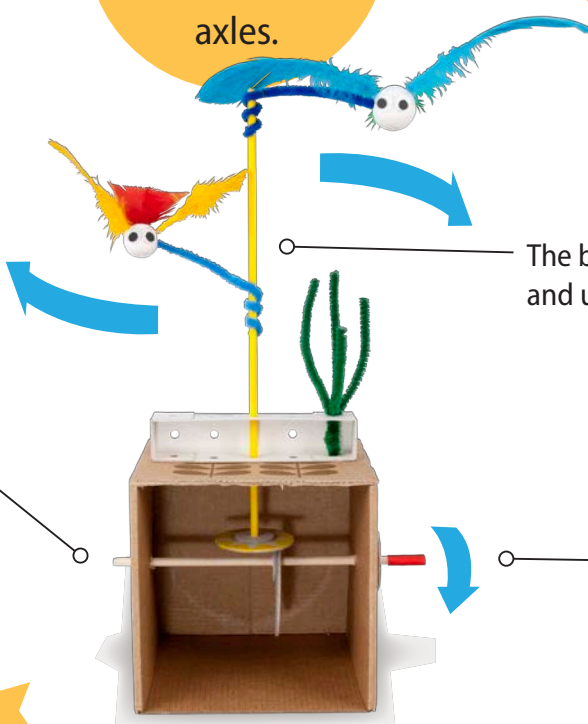
Explore mechanisms like cams, winders and wheels and axles.

See how to make with TechCard on our website.

The cam rotates and creates an up and down movement.

The birds fly around and up and down!

Turn the winder to power the ride.



Assembly videos on YouTube!

Parts to make 1 model

Structural Parts

TechCard Strip	1
TechCard Beam	1

Mechanical Parts

25mm Disc	2
40mm Wheel	1
50mm Wheel	1
60mm Wheel	1
300mm Dowel Axle	2

Additional Materials

Upcycled box about 140mm x 140mm x 140mm.
Thin card, paints, pipe cleaners, lolly sticks, upcycled bottle tops and packaging.

You will have parts left over towards other models.

Parts to make 10 models

Structural Parts

TechCard Strip	5
TechCard Beam	10

Mechanical Parts

25mm Disc	20
40mm Wheel	10
50mm Wheel	10
60mm Wheel	10
300mm Dowel Axle	20

Additional Materials

10 x Upcycled boxes about 140mm x 140mm x 140mm.
Thin card, paints, pipe cleaners, lolly sticks, upcycled bottle tops and packaging.

Based on pupils sharing off-cuts between them.

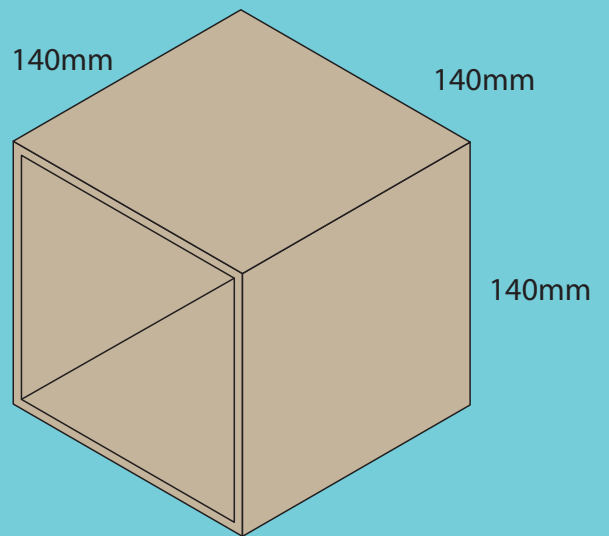
Make the Twirling Birds



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

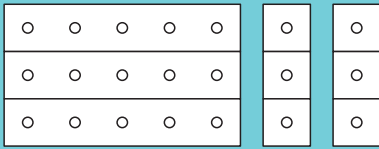
1 Choose your box.

This is the size of
the box we used.

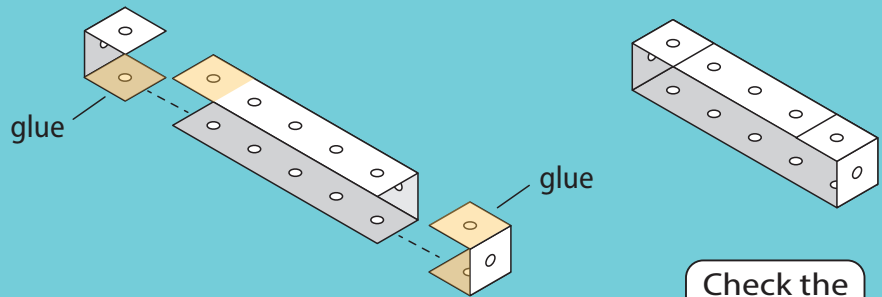


Choose a box that
is open at one end.

2 Make the support.



Cut one 125mm beam
and two 25mm beams.

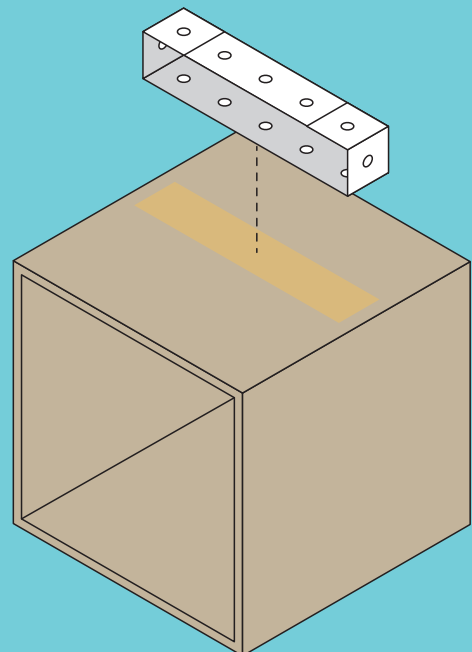


Fold and glue the
beams as shown.

Check the
assembly.

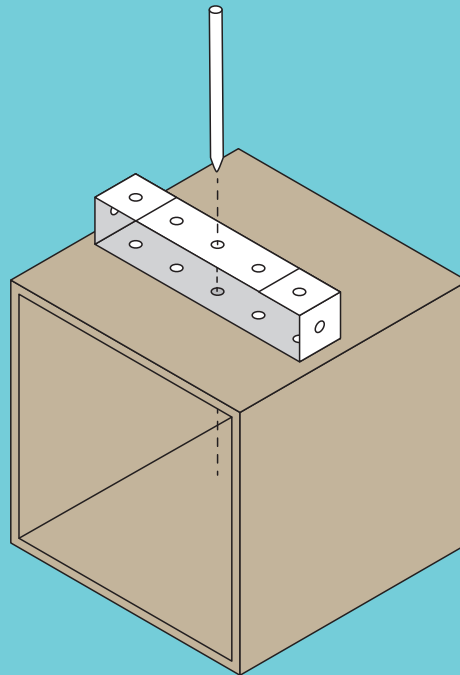
3 Fit the support.

Glue the support to the
middle of the top of the box.



4 Prepare the box.

Sharpen a piece of dowel and carefully put a hole in the top of the box using the support as a guide.

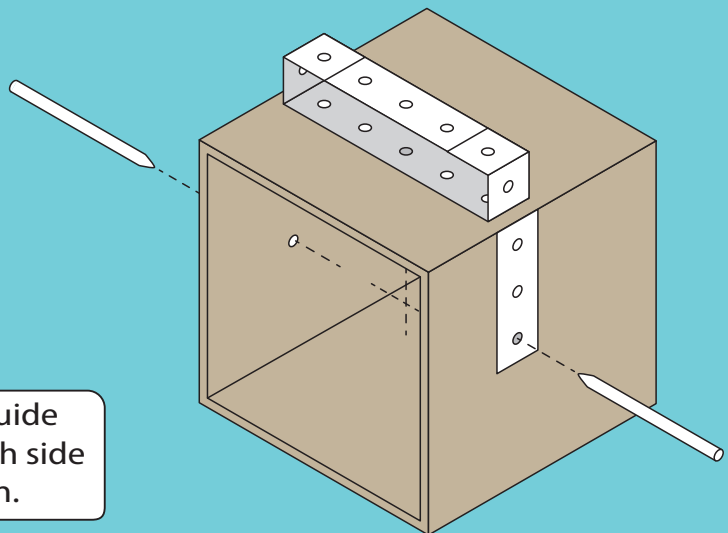


5 Finish the box.

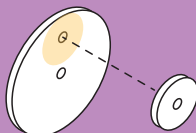


Cut a 75mm strip.

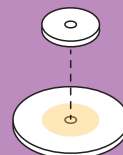
Use the strip as a guide to put a hole in each side of the box as shown.



6 Prepare the cam wheels.



Glue a 25mm disc over the top hole of a 60mm wheel.



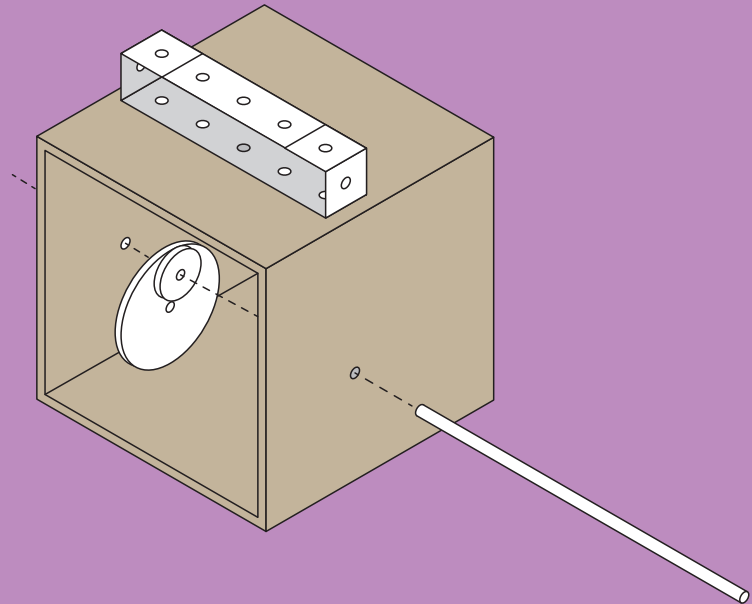
Glue a 25mm disc over the hole of a 50mm wheel.

7 Fit the horizontal axle.



Cut a 200mm axle.

Pass the axle through the box and 60mm wheel as shown.



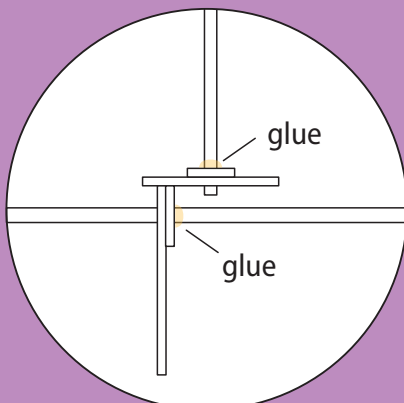
8 Fit the vertical axle.



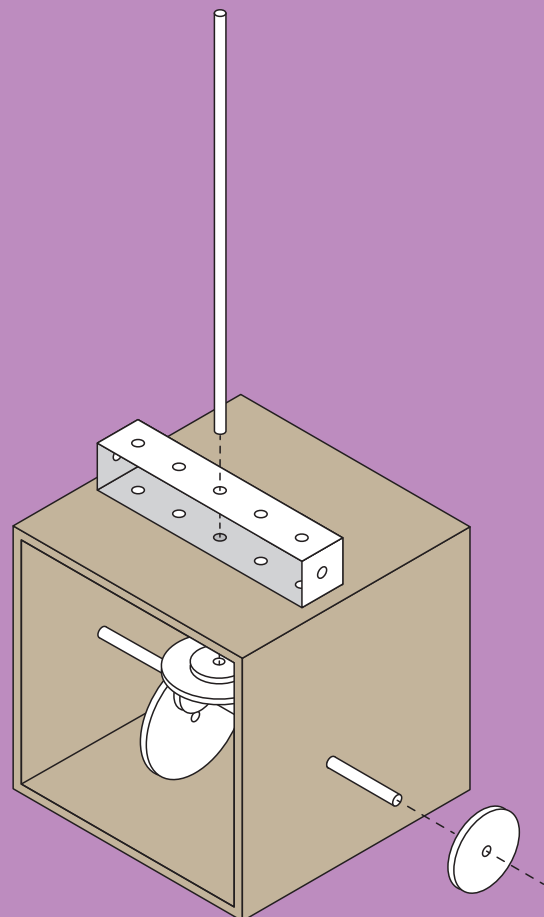
Use a 300mm axle.

Check that the axle can move up and down easily through the bracket and box. Widen the hole through the box if needed.

Pass the axle through the support and into the 50mm wheel. The axle should only pass through the wheel a little.



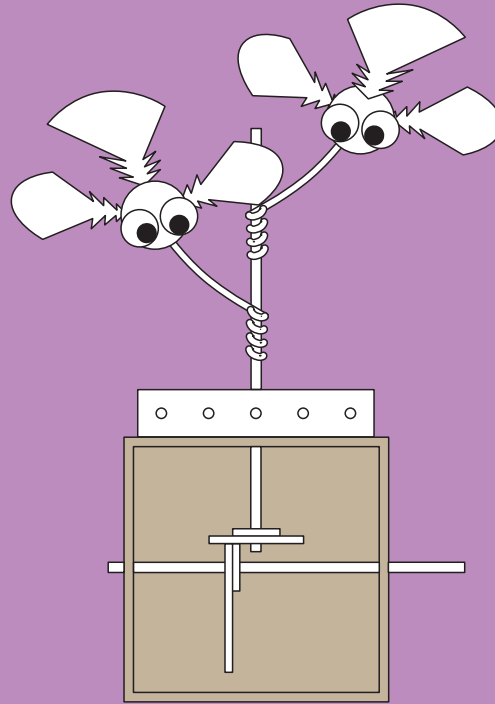
Check the wheels are aligned as shown and glue in place.



Fit a 40mm wheel to keep the axle in position.

9 Finish the model.

Use pipe cleaners, feathers and upcycled bottle tops to decorate the model and make it your own!



10 Operate your Twirling Birds!

Turn the winder and the vertical wheel drives the horizontal wheel.

The rotating force is transferred from the horizontal to the vertical axle.

The 60mm wheel also acts like a cam and creates an up and down movement.

