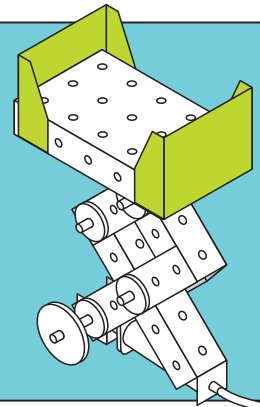




Visit TechCard at techcard.co.uk & Instagram & YouTube

Scissor Lift

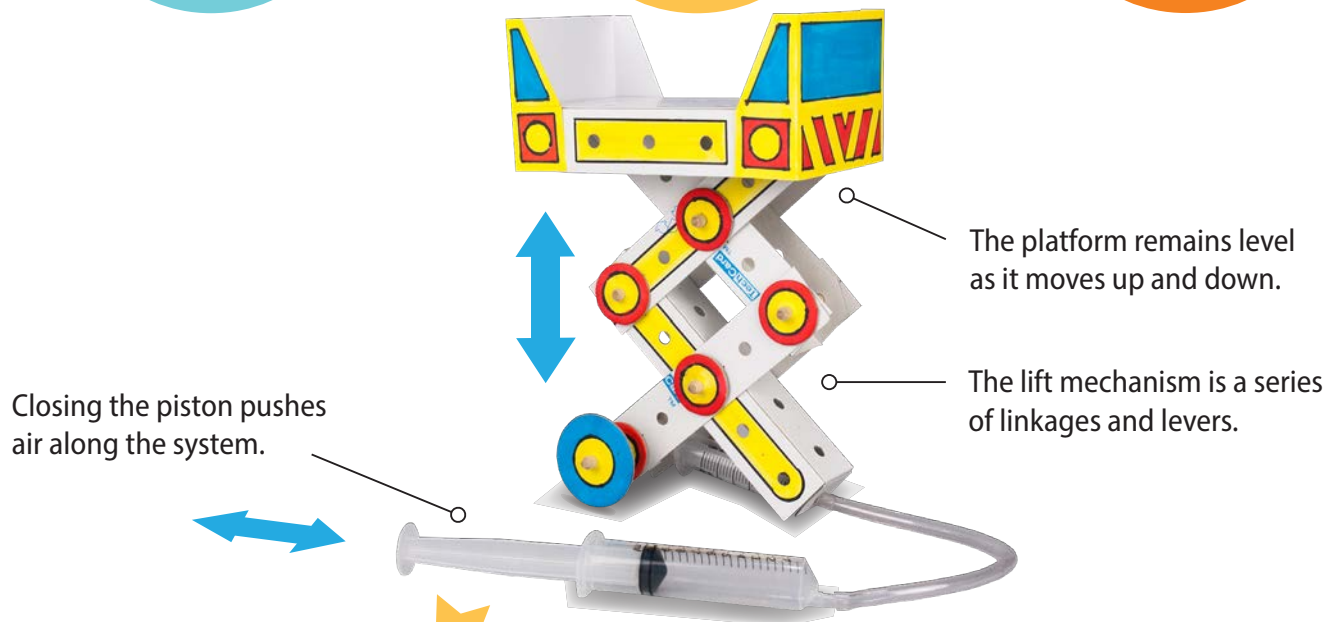
Power-it Kit Skill Level ● ● ● ● ○



Build a
pneumatic
scissor lift that
works like the
real thing!

Explore
how linkages &
levers can be
controlled
by air.

See how
to make with
TechCard
on our
website.



Assembly videos on YouTube!

Parts to make 1 model

Structural Parts

TechCard Strip	2
TechCard Girder	1
TechCard Beam	2
TechCard Base	1

Mechanical Parts

25mm Disc	12
40mm Wheel	2
300mm Dowel Axle	2

Additional Materials

5ml Syringe x 1	A5 Size Thin Card x 1
10ml Syringe x 1	Small Sticky Foam Pad x 1
200mm Plastic Tube x 1	

You will have parts left over towards other models.

Parts to make 10 models

Structural Parts

TechCard Strip	20
TechCard Girder	10
TechCard Beam	14
TechCard Base	10

Mechanical Parts

25mm Disc	120
40mm Wheel	20
300mm Dowel Axle	20

Additional Materials

5ml Syringe x 10	A5 Size Thin Card x 10
10ml Syringe x 10	Small Sticky Foam Pad x 10
200mm Plastic Tube x 10	

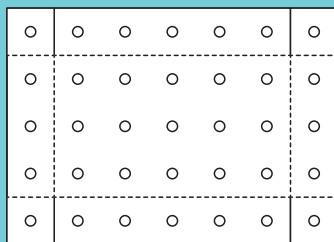
Based on pupils sharing off-cuts between them.

Make the Scissor Lift

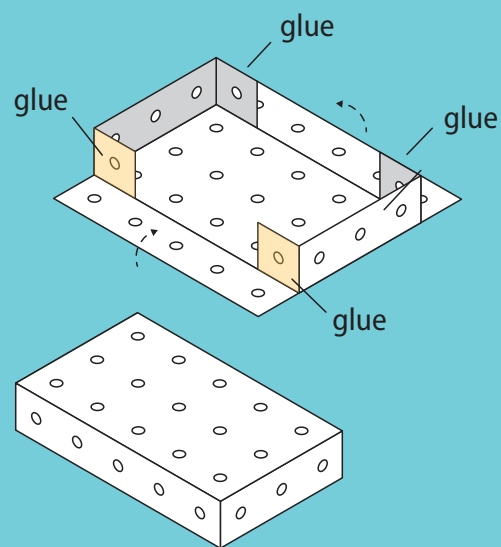


Before you start see
'Make with TechCard'
on our website.

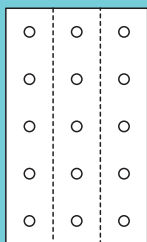
1 Make the deck.



Fold and glue a TechCard
base to make the deck.



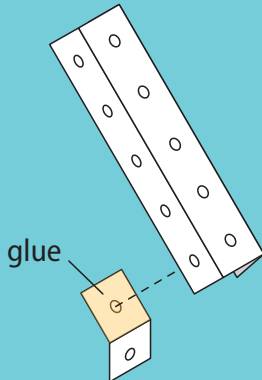
2 Make the first section.



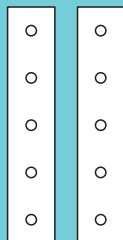
Cut a 125mm beam. Cut
and trim a 25mm girder.

Fold the beam
to shape.

Fold and glue the
girder into the beam

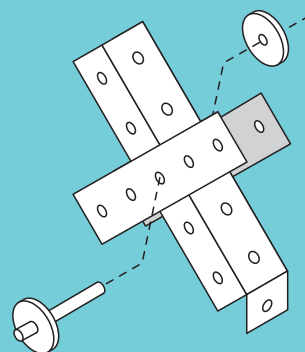


3 Finish the first section.



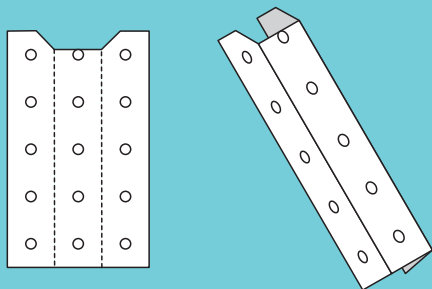
Cut two 125mm strips.
Cut a 50mm axle.

Fit a 25mm disc to
the end of the axle
and pass it through
the strips and beam
as shown.



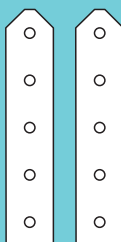
Fit a second
25mm disc.

4 Make the second section.



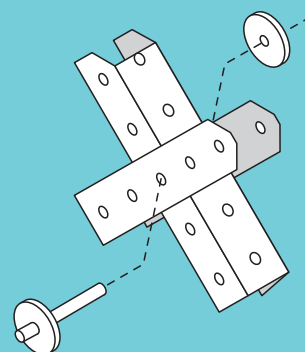
Cut a 125mm beam to the shape
shown and fold to shape.

5 Finish the second section.



Cut and trim two 125mm
strips. Cut a 50mm axle.

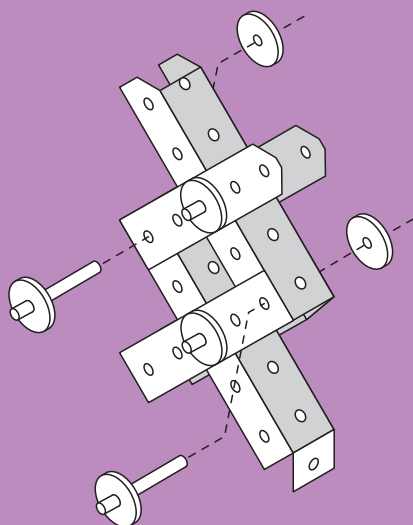
Join the strips and beam with the
axle and two 25mm discs as shown.



6 Assemble the sections.



Cut two 50mm axles.

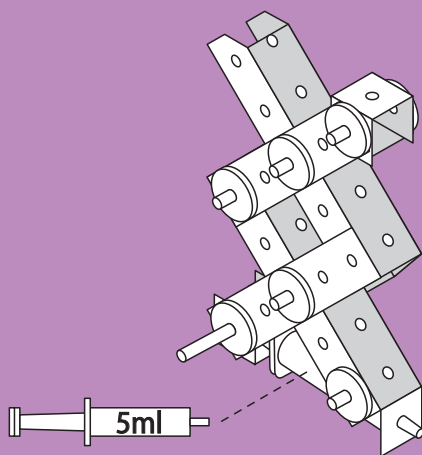


Position the two sections as shown. Use two axles and four 25mm discs to join the sections.

8 Fit the piston.

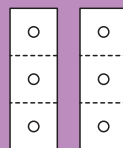


Trim a sticky foam pad to fit the end of a 5ml piston.



Fit the nozzle of the piston through the girder. Stick the plunger to the bracket.

7 Fit the brackets.



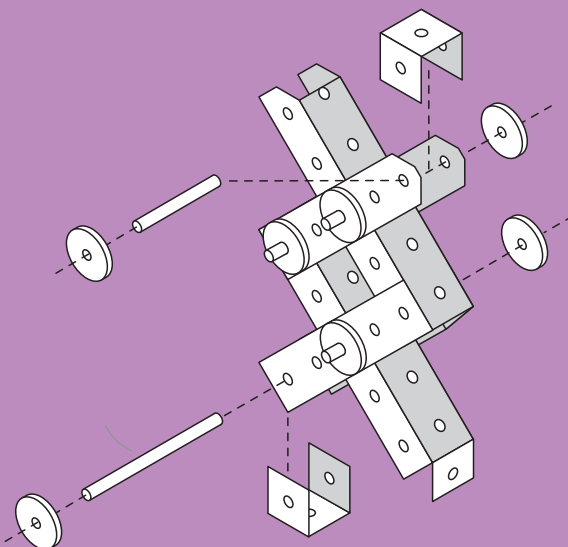
Cut two 25mm beams.



Cut a 50mm and a 100mm axle.

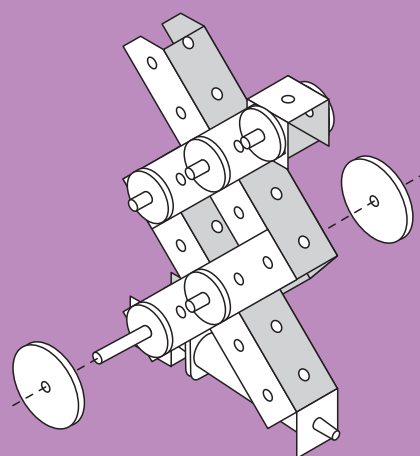
Fold the beams to form two brackets.

Use the 50mm axle and two 25mm discs to fit a bracket to the top section.



Use the 100mm axle and two 25mm discs to fit a bracket to the bottom section.

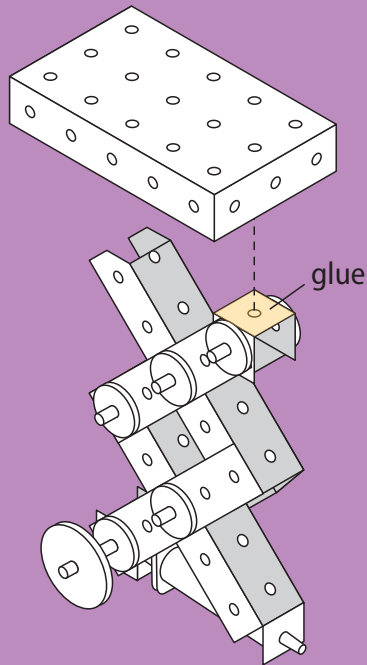
9 Add the wheels.



Fit two 40mm wheels to the long axle.

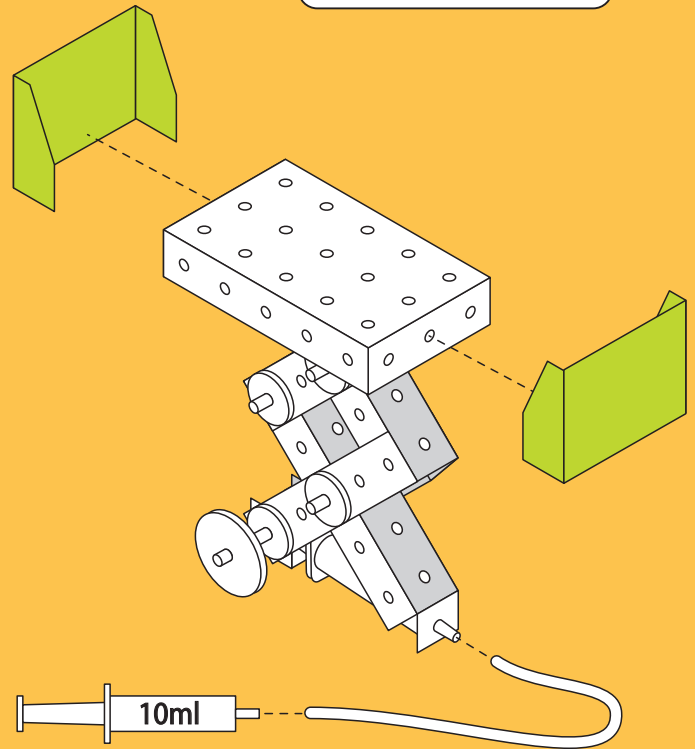
10 Fit the platform.

Glue the top bracket to the inside of the deck as shown.



11 Finish your model.

Cut, fold and glue the body panels as shown.



Fit a 200mm length of tube to the 5ml piston and fit a 10ml piston to the other end.

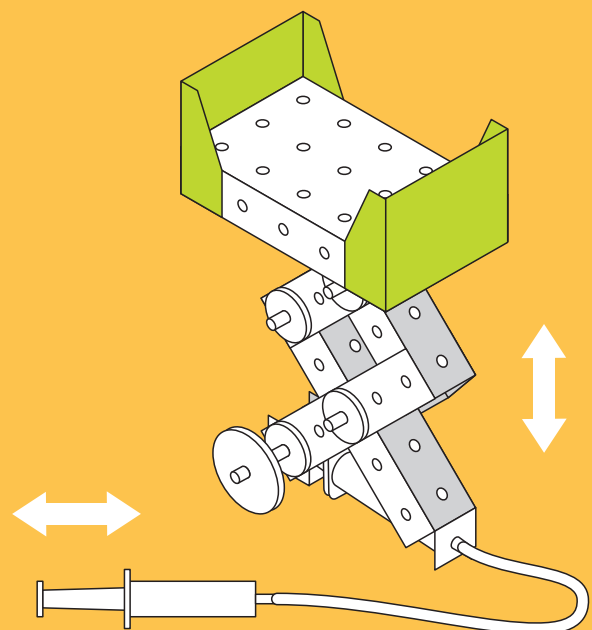
12 Operate your Scissor Lift!

Close the lower control piston and the small piston will open causing the platform to lower. Open the control piston and the platform will rise.

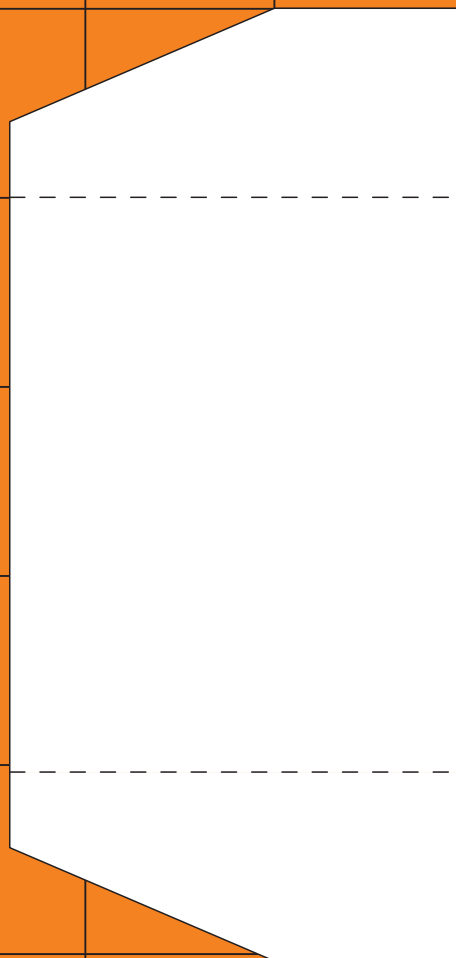
Air in the 'pneumatic system' is pushed and pulled by the pistons. This shows that, although air is invisible, it is a substance that takes up space and can transmit force.

Real scissor lifts use an oil filled hydraulic system rather than air as oil does not compress or squash as much as air so it is better for heavy loads.

Pneumatic systems are used for finer work like robots on production lines.



Card Panels



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

25mm

25mm