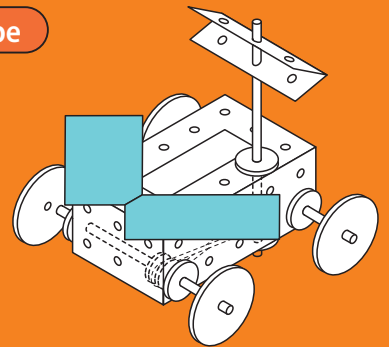




Visit TechCard at techcard.co.uk & Instagram & YouTube

Mars Rover

Move-it Kit Skill Level ● ● ● ● ○

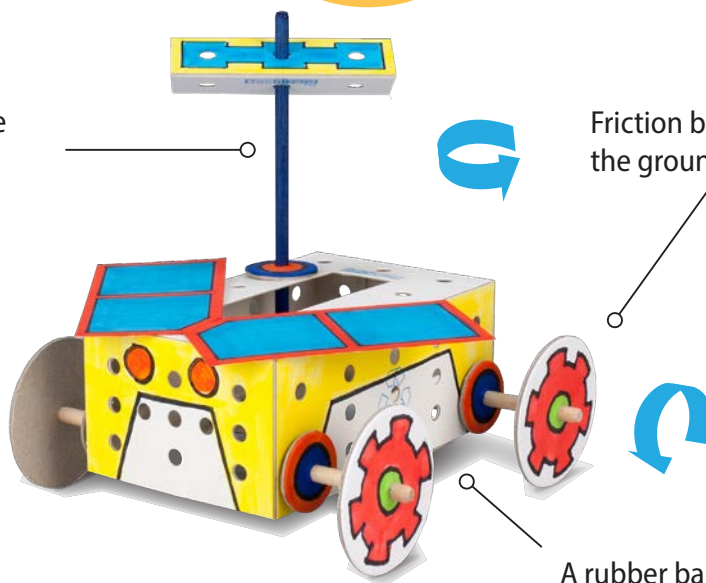


Build a Mars Rover with a radar that turns as it moves forward!

Explore wheels & axles and transfer force with pulleys & drive belts.

See how to make with TechCard on our website.

The radar turns as the rover moves forward.



Friction between the wheel and the ground makes the wheel turn.

A rubber band between pulleys transfers the force from the wheel axle to the radar.



Assembly videos on YouTube!

Parts to make 1 model

Structural Parts

TechCard Strip	1
TechCard Girder	1
TechCard Project Base	1

Mechanical Parts

25mm Disc	6
50mm Wheel	4
300mm Dowel Axle	2

Additional Materials

Rubber Band (75mm x 1.5mm. Size No. 18) x 1
A5 Size Thin Card

You will have parts left over towards other models.

Parts to make 10 models

Structural Parts

TechCard Strip	4
TechCard Girder	5
TechCard Project Base	10

Mechanical Parts

325mm Disc	60
50mm Wheel	40
300mm Dowel Axle	8

Additional Materials

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

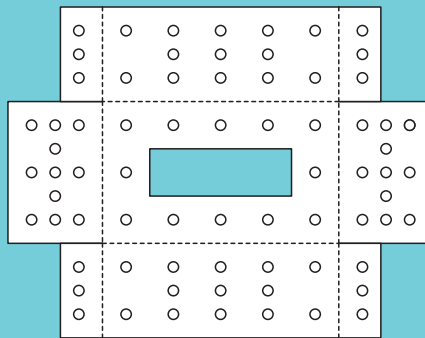
Based on pupils sharing off-cuts between them.

Make the Mars Rover

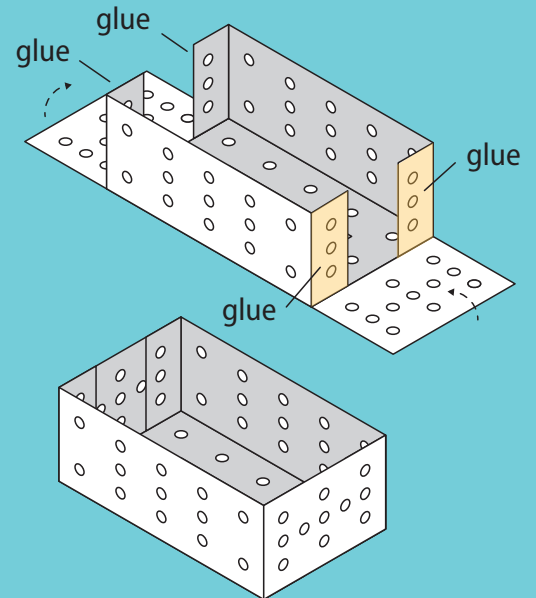


Before you start see
'Make with TechCard'
on our website.

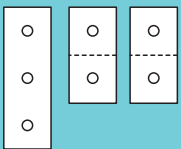
1 Make the chassis.



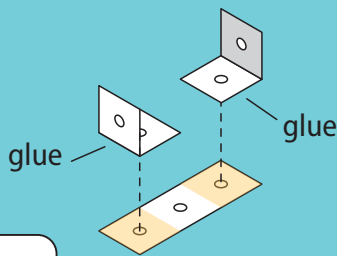
Fold and glue a TechCard
project base.



2 Make the bracket.

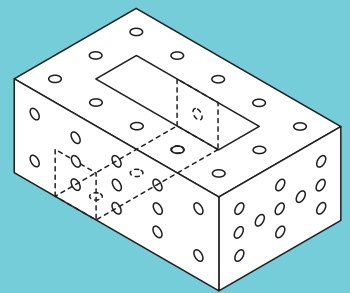
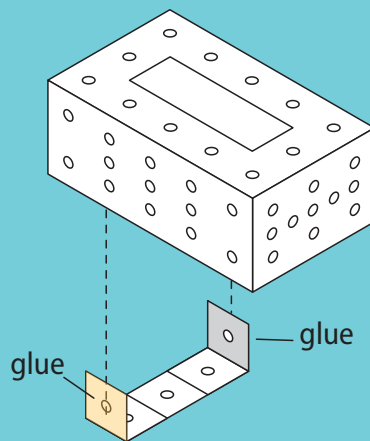


Cut a 75mm strip and
two 25mm girders.



Fold and glue the
girders to the strip.

3 Fit the bracket.



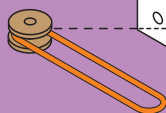
Glue the bracket into
the base where shown.

4 Fit the small pulley.

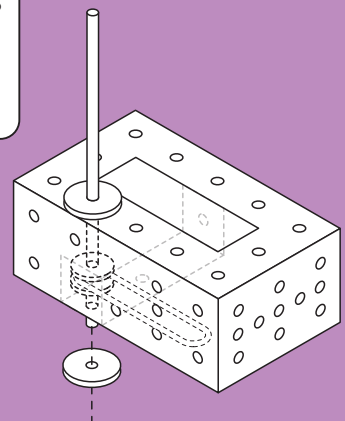
Cut a 150mm axle.



Fit a 25mm disc to
the axle. Pass the
axle through the
base, a 20mm pulley
and the bracket.



Check the axle sticks
through the bracket
by about 10mm 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 back axle.

Cut a 150mm axle.

Fit a 25mm disc and 50mm wheel to the axle.

Pass the axle through the base where shown and fit a 25mm disc and 50mm wheel.

Check the axle is central, the discs are near the base and the wheels are at the ends of the axle.

6 Fit the front axle and pulley.

Cut a 150mm axle.

Fit a 25mm disc and 50mm wheel to the axle.

Check the position of the wheels and axle. Check the rubber band is as shown.

Pass the axle through the base where shown and through a 20mm pulley and rubber band.

7 Finish the model.

Fold and fit the girder.

Cut a 75mm girder.

glue

glue

glue

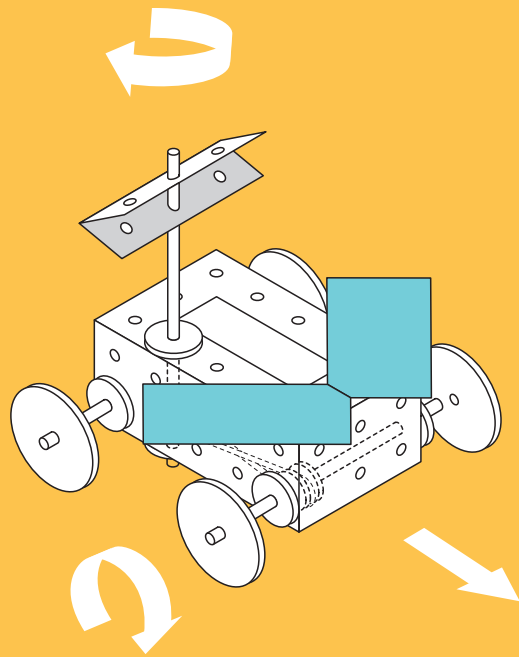
Cut and glue the solar panels.

8 Operate your Mars Rover.

Move the Mars Rover forward and the force is transferred from the front axle to the vertical axle by the drive belt causing the antennae to rotate.

Drive belts and pulleys are important 'simple machines' used to transfer and change the speed, power and direction of a force.

Pulleys work in the same way as gears. Gears have the advantage that they don't slip but pulleys can operate at varying distances apart and can cope with movement within the mechanism.



Solar Panels



25mm

25mm

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