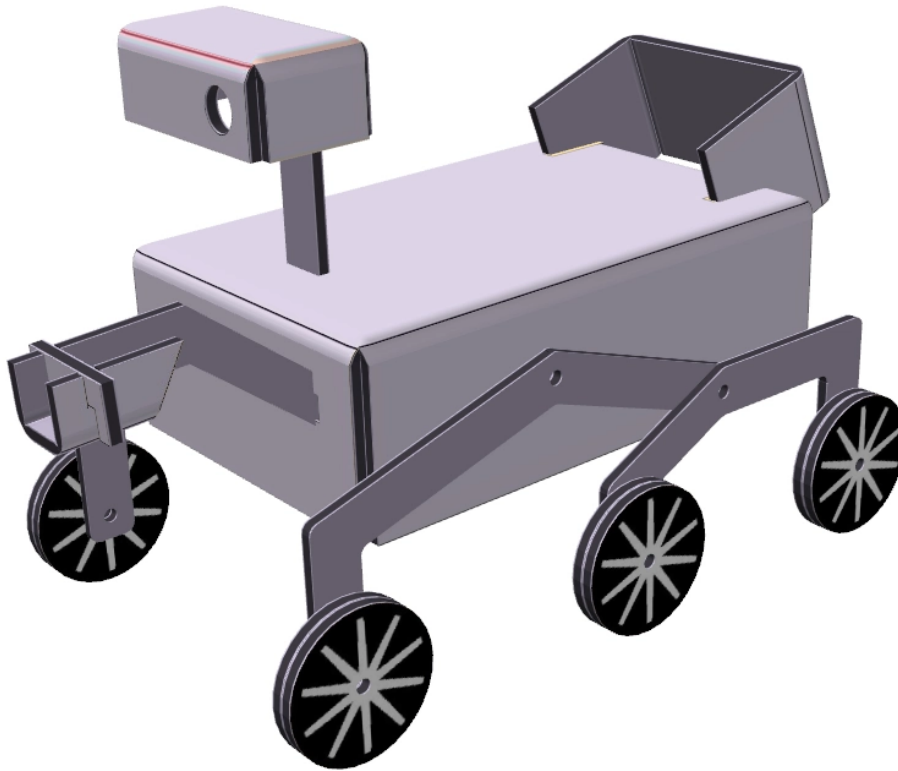


Mars Rover

Six wheels. One little explorer.



WATCH.
PAUSE.
BUILD.

Build the body.
Add the wheels.
Connect both sides.

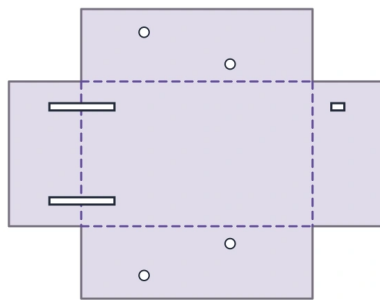
Cardboard + wooden skewers. Move your rover by hand.

STEP 1 OF 13

Find your pieces

Find the body, back plate, head and arm. Sort the leg layers and wheel discs.

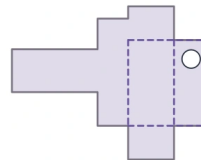
MATCH YOUR PIECES



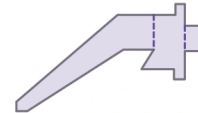
1× body



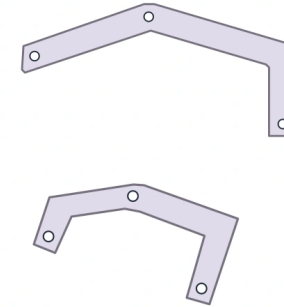
1× back plate



1× head



1× arm



8 leg layers



18 discs → 6 wheels

6 printed + 12 plain discs

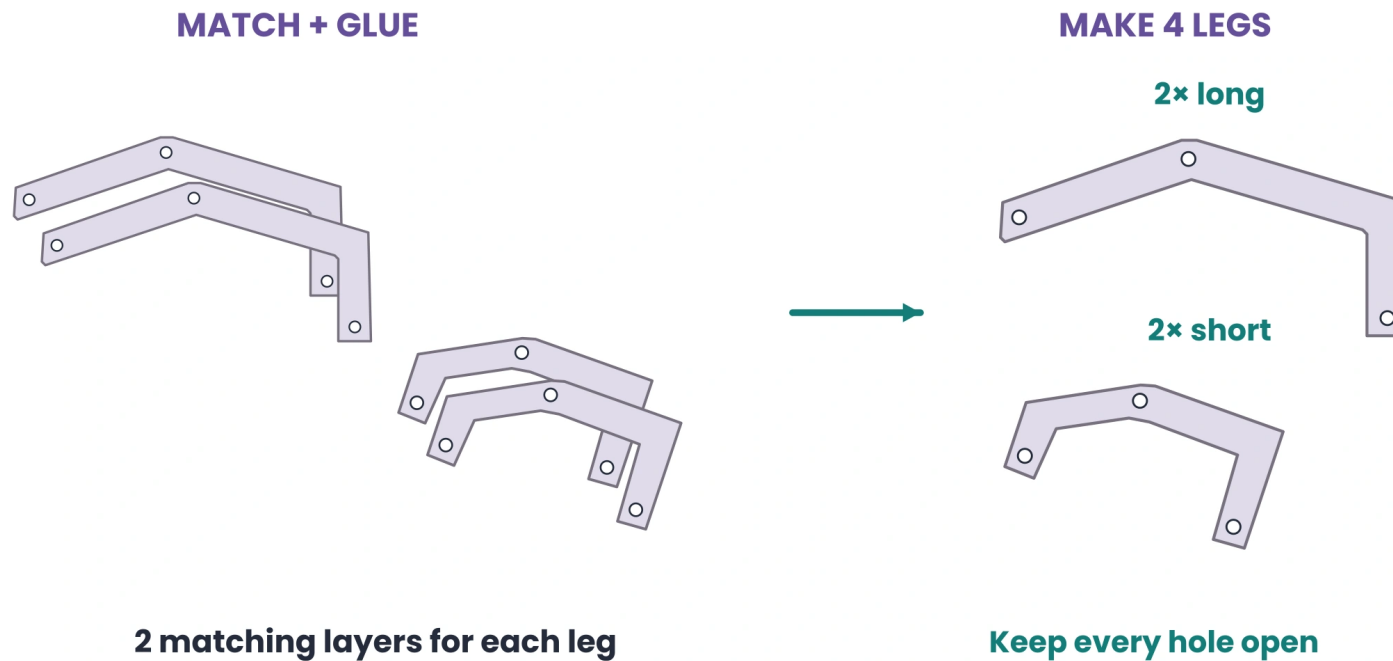
Also get wooden skewers, craft glue and tape. Ask a grown-up to help.

CHECK 8 leg layers and 18 wheel discs.

STEP 2 OF 13

Make the four legs

Match two layers of the same shape. Glue each pair together. Keep the holes lined up.



Make one matching pair for each side. Let the glue set before adding skewers.

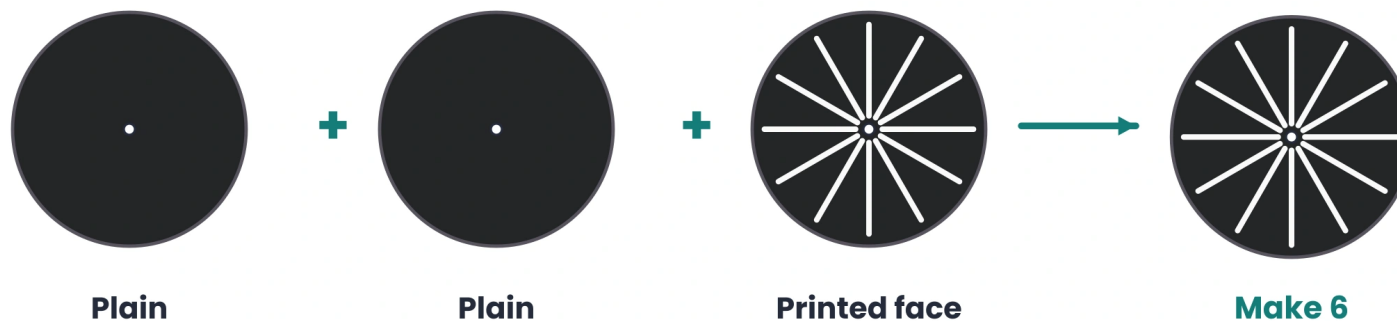
CHECK 2 long legs and 2 short legs.

STEP 3 OF 13

Make six wheels

Stack two plain discs and one printed disc. Line up the middle holes. Glue the layers together.

3 DISCS MAKE 1 WHEEL



Line up the holes. Glue only between the discs.

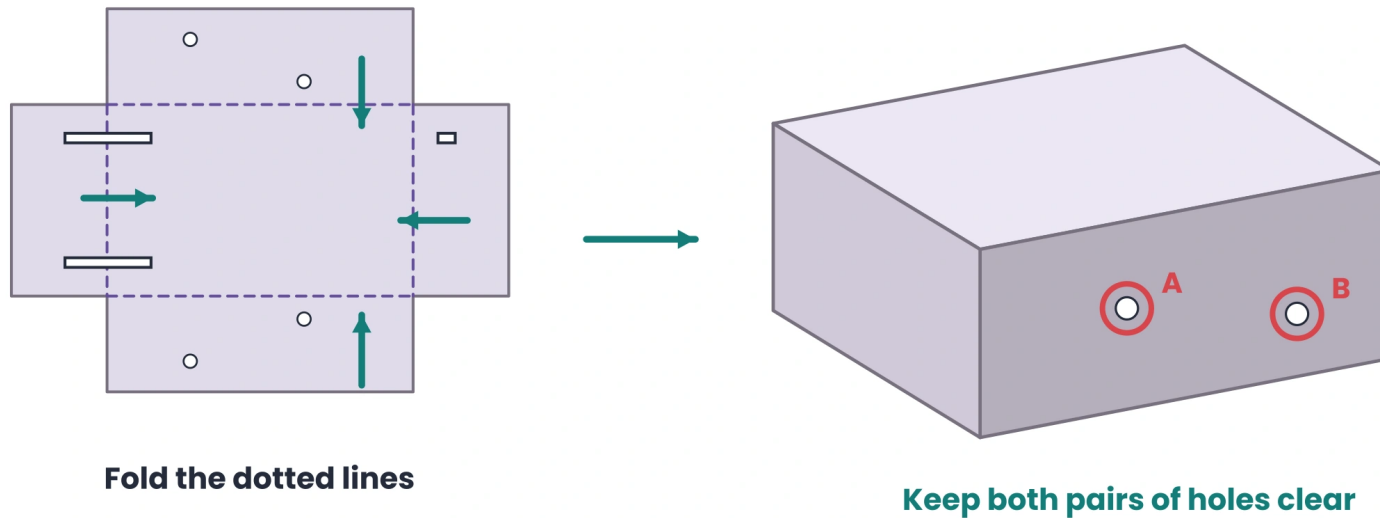
Keep glue out of the holes. The printed faces will point outwards.

CHECK 6 wheels, each with 3 layers.

STEP 4 OF 13

Fold the body

Fold the body panels on the marked lines. Bring the edges together to make the box shape.



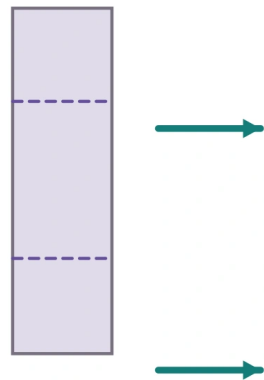
Tape the meeting edges from inside. Keep the small slot and the two long slots open.

CHECK Two open holes on each side.

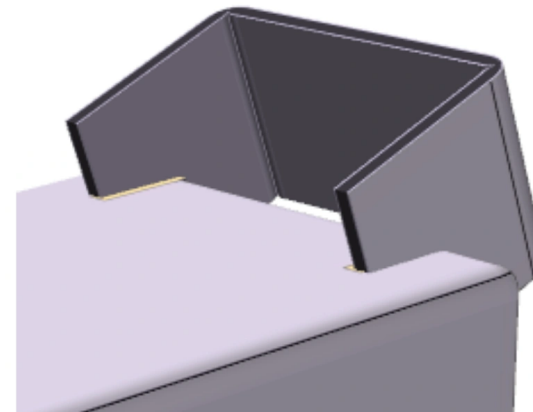
STEP 5 OF 13

Fit the back plate

Fold the back plate on its two lines. Fit the two ends into the long slots in the body.



Fold both ends



Fit into the 2 long body slots

The raised plate sits at the back

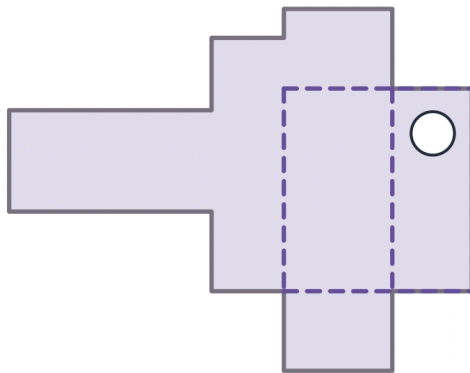
Compare its direction with the picture. Press gently.

CHECK The raised plate sits at the back.

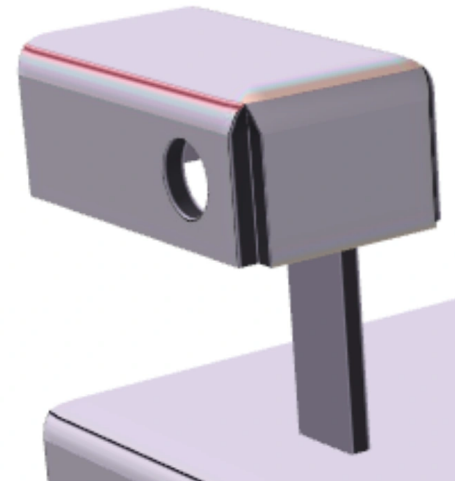
STEP 6 OF 13

Add the rover head

Fold the head into shape. Keep the long strip pointing down as its stem. Tape the stem firmly onto the body.



Fold the head. Keep the stem down.



Tape the stem firmly to the body

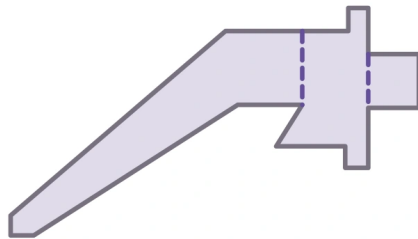
Fold only on the marked lines. The head is a cardboard model, not a working camera.

CHECK The head stands upright.

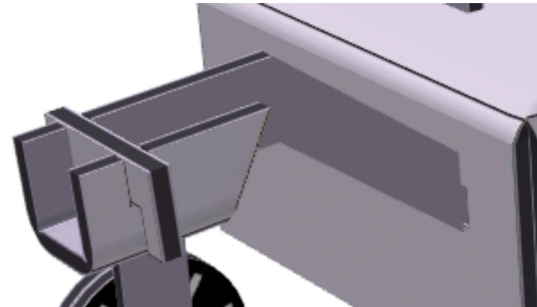
STEP 7 OF 13

Add the arm

Fold the small tabs at the end to make the scoop. Fit the straight tab into the small body slot.



Fold the little end tabs



Fit the straight tab in the small slot

Secure the tab from inside with a little tape if needed.

CHECK The arm points out from the body.

STEP 8 OF 13

Get the skewers ready

Ask a grown-up for 6 short wheel pins and 2 longer body skewers. Measure them against the parts before cutting.

6 SHORT PINS



Wheel → leg

2 LONG SKEWERS



Leg → body → opposite leg

A grown-up measures, cuts and smooths the ends.

Short: skewer preferred; a toothpick can also fit.

Skewers are best. Toothpicks may be used for wheels only. A grown-up cuts and smooths all sharp ends.

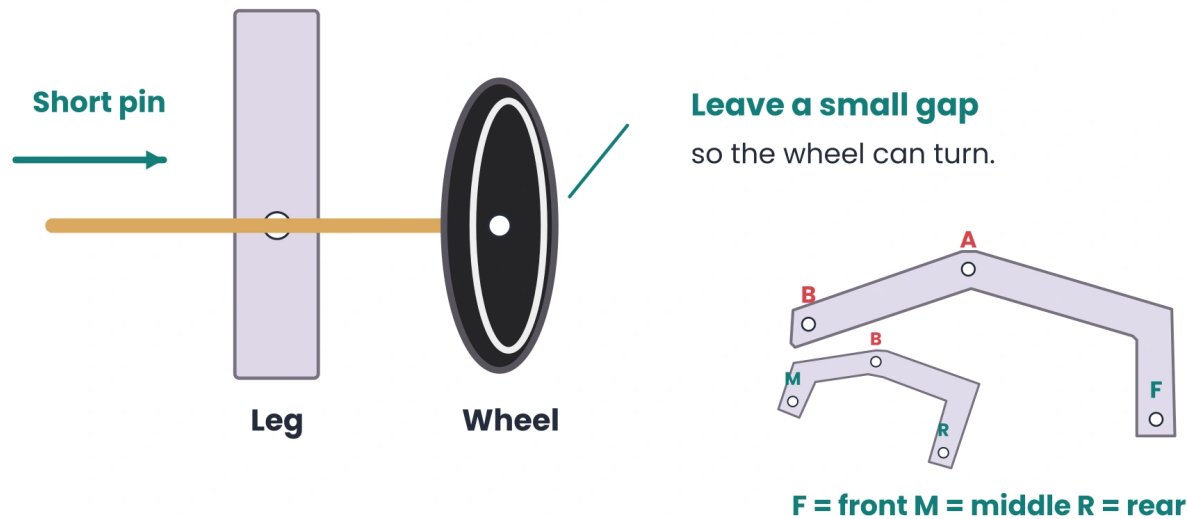
CHECK The long skewers reach both sides.

STEP 9 OF 13

Fix wheels to the legs

Push a short skewer through a wheel and its leg hole. Repeat for all six wheels. Keep the printed faces out.

ONE WHEEL CONNECTION



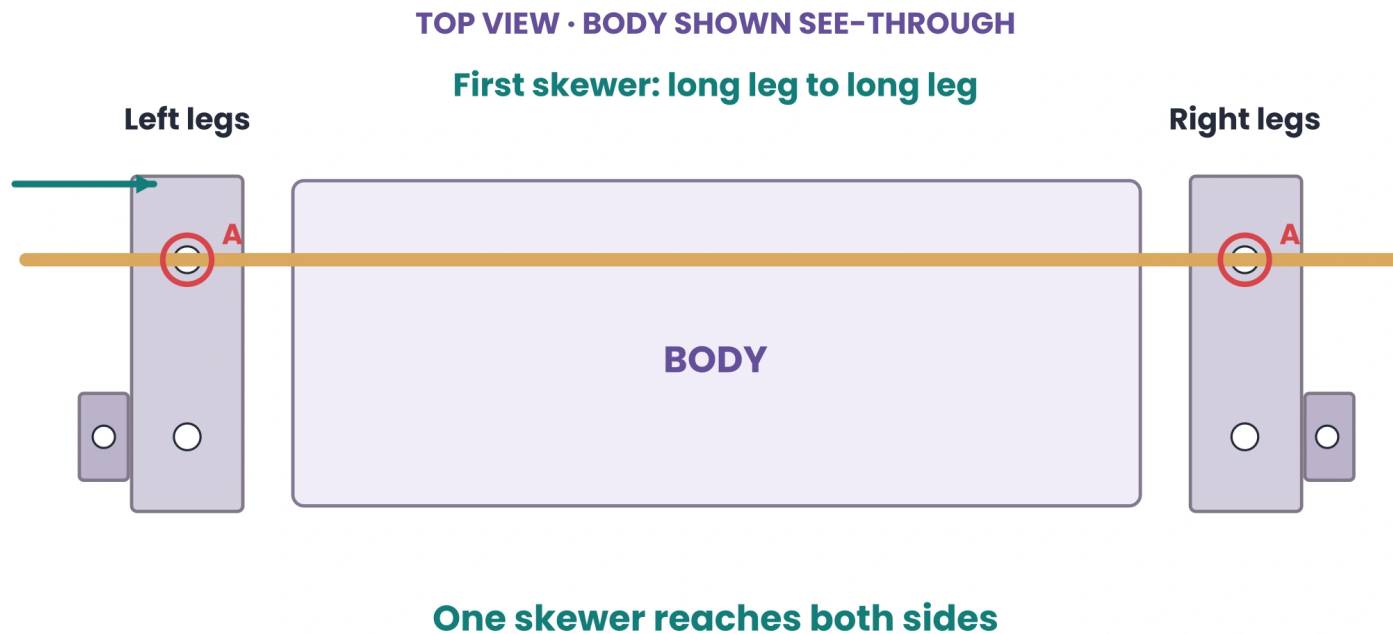
F is front, M is middle and R is rear. Leave a small gap so each wheel can turn.

CHECK 3 wheels on each side.

STEP 10 OF 13

Push the first skewer through

Line up a long leg with hole A. Push one long skewer through the leg, across the body and out through the opposite long leg.



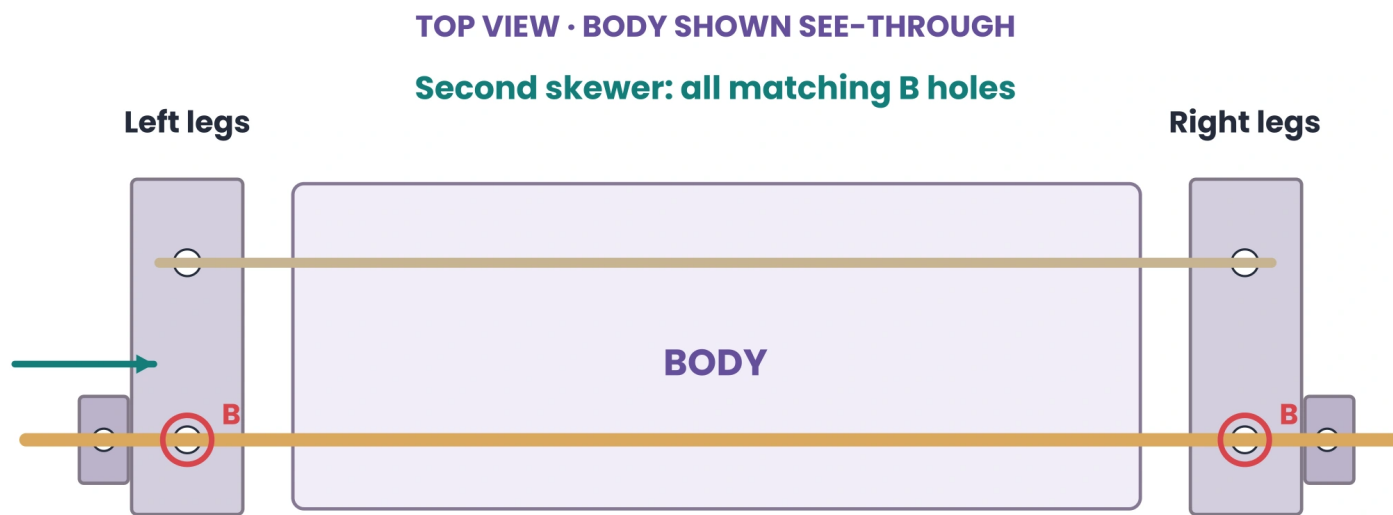
The red circles highlight the holes. Guide the skewer through the existing holes; do not pierce new ones.

CHECK One skewer joins both long legs.

STEP 11 OF 13

Push the second skewer through

Match each short leg to the B hole at the end of its long leg. Pass the second long skewer through all matching holes and across the body.



One skewer reaches both sides

B also joins each short leg to the end of its long leg.

Order: short leg, long-leg end, body, opposite long-leg end, opposite short leg. Use the other body-hole pair.

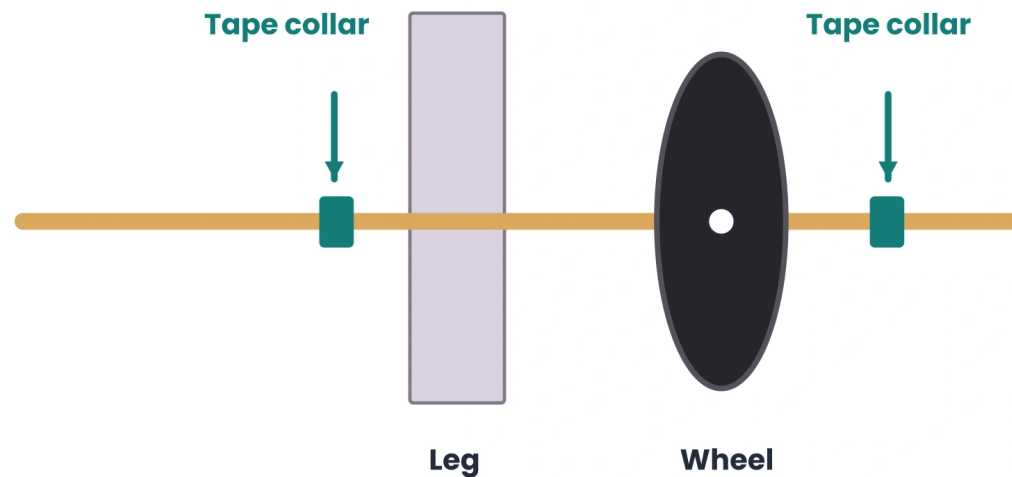
CHECK Both short legs share one long skewer.

STEP 12 OF 13

Keep the pins in place

Ask a grown-up to wrap tiny tape collars around the exposed skewer ends. Leave room for the wheels to turn.

SMALL TAPE COLLARS KEEP THE PIN IN PLACE



Do not squeeze the wheel or glue the moving holes.

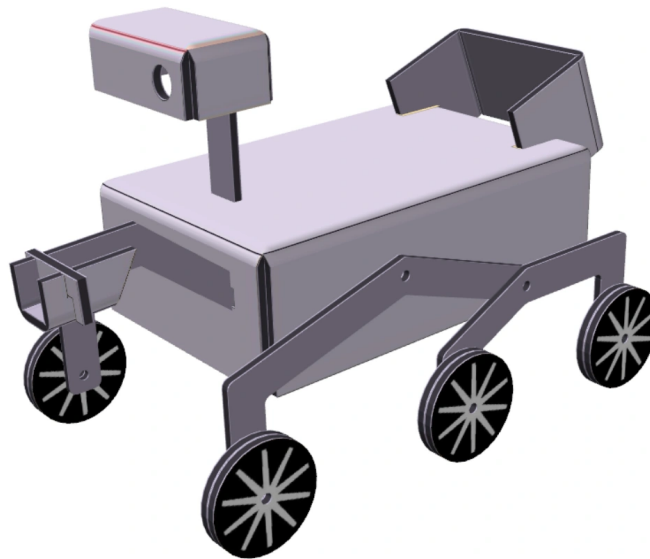
Keep tape off the wheel faces and moving holes. Trim and smooth any long, sharp ends after the fit check.

CHECK The pins stay in. The wheels turn.

STEP 13 OF 13

Ready for a test drive

Set your rover on a flat table. Turn each wheel gently, then push the rover slowly.



6 wheels · 2 long body skewers · 6 short wheel pins

If a wheel rubs, ask a grown-up to loosen its collar and check the gap. Carry the rover by its body.

CHECK All 6 wheels touch the table.

A quick grown-up check

Measure the skewers on the real model

Prepare 6 short wheel pins and 2 long skewers. Each long skewer must pass through the body and the matching legs on both sides, with a little space for retaining collars. Skewer lengths depend on your cardboard thickness; do not copy a length from a screen picture.

Keep the wheels free

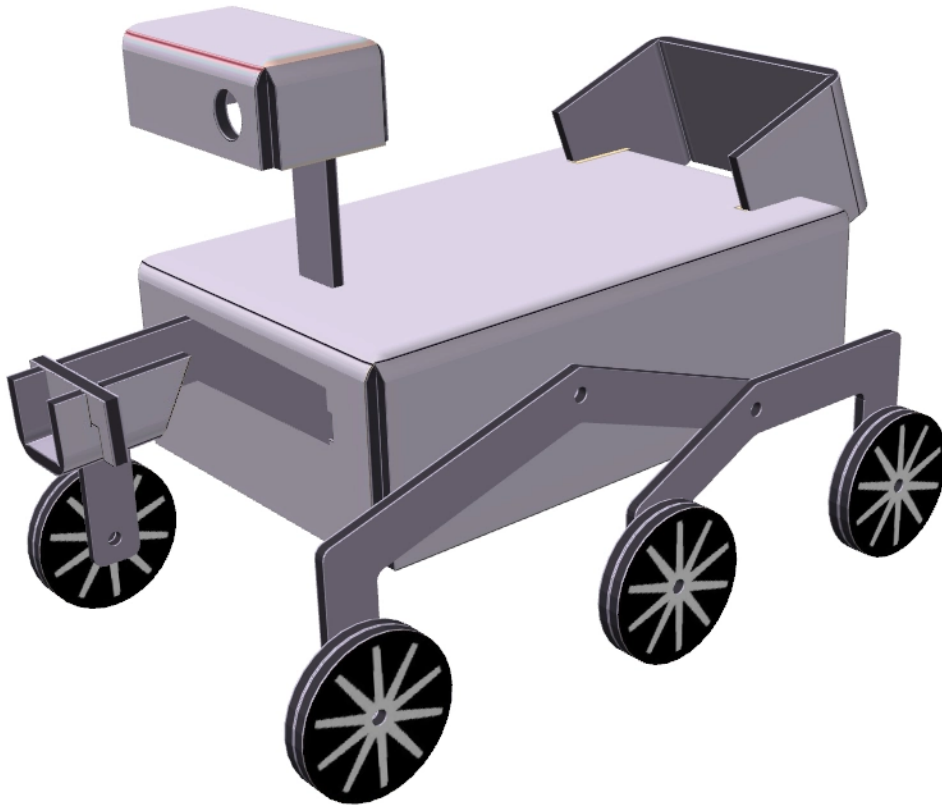
A grown-up cuts and smooths the ends. Use small tape collars on exposed ends to stop the pins sliding out. Leave a small running gap. Keep glue out of the holes. Do not glue the wheel to its leg. Check the connections before each play session.

Match the marked kit

A and B identify the two hole pairs highlighted in the supplied model. B passes through both leg pieces on each side. Use the existing holes and stop if they do not line up. Test the physical kit fit before a classroom build.

Keep pointed skewers with the grown-up. Carry the finished rover by its body.

Your rover has a mission!



LOOK + DISCOVER

Which pins hold the wheels?

Which skewers reach through the body?

Give your rover a mission name.

A model inspired by space exploration. No electronics are needed for this build.

Meet the real Perseverance

NASA's rover has six wheels. Its moving rocker-bogie suspension helps the wheels follow uneven ground. The long rocker supports the front wheel; the shorter bogie supports the middle and rear wheels.

Your Cardbriks guide follows the supplied cardboard template and two through-body skewers. Its joints do not reproduce all of the real rover's suspension movement.

Watch with a grown-up

Jared Owen: How does a Mars Rover work? (Perseverance)

Read about the wheels and legs

NASA: Perseverance Rover Components

Kit pictures and shapes: supplied Cardbriks model and marked layout. Connection diagrams: Cardbriks build guide.