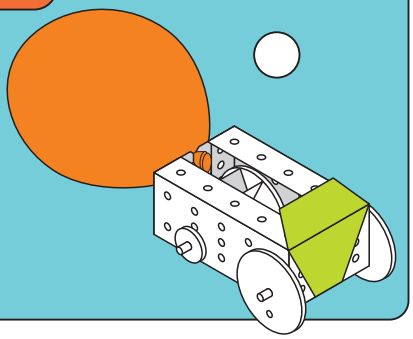
Visit TechCard at techcard.co.uk & Instagram & YouTube

Air Turbine Car

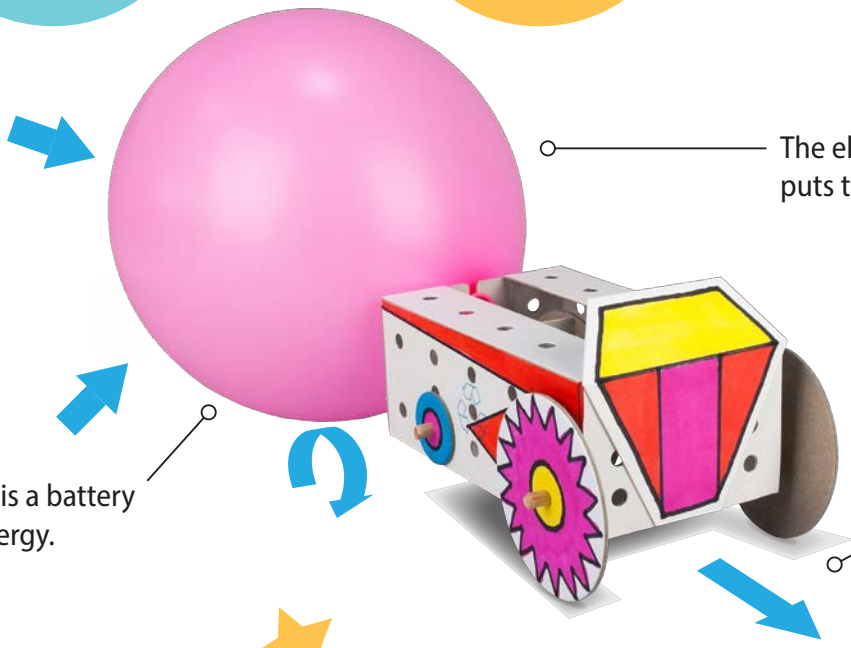


Power-it Kit Skill Level ●●●●○

Build a turbine powered car powered by moving air!

Explore how air under pressure generates 'thrust' when it is released.

See how to make with TechCard on our website.



The elastic material of the balloon puts the air inside under pressure.

The spinning turbine propels the car forward.

The balloon is a battery of stored energy.

Assembly videos on YouTube!

Parts to make **1** model

Structural Parts		Mechanical Parts	
TechCard Girder	1	25mm Disc	2
TechCard Project Base	1	60mm Wheel	4
		300mm Dowel Axle	1

Additional Materials
Balloon x 1
A5 Size Thin Card

You will have parts left over towards other models.

Parts to make **10** models

Structural Parts		Mechanical Parts	
TechCard Girder	5	25mm Disc	20
TechCard Project Base	10	60mm Wheel	40
		300mm Dowel Axle	8

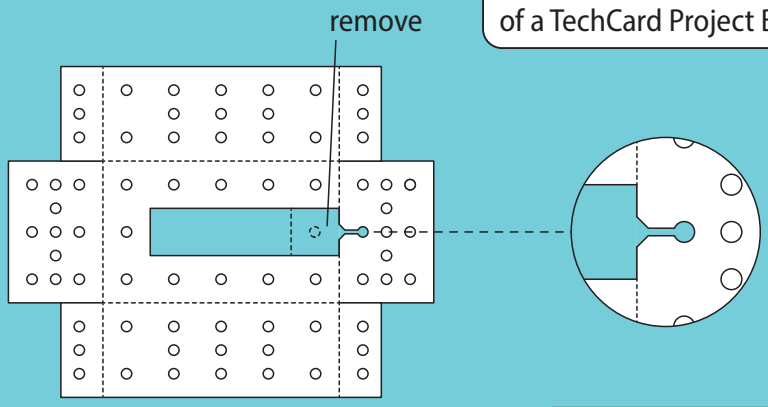
Additional Materials
Balloon x 10
A5 Size Thin Card x 10

Based on pupils sharing off-cuts between them.

Make the Air Turbine Car

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

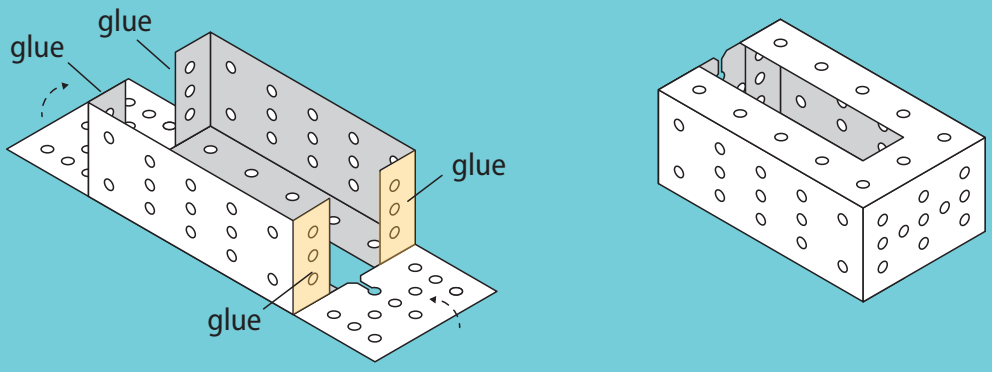
1 Prepare the chassis.



Cut a section from the top of a TechCard Project Base.

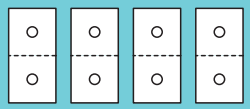
Cut a narrow slot to the hole as shown.

2 Make the chassis.



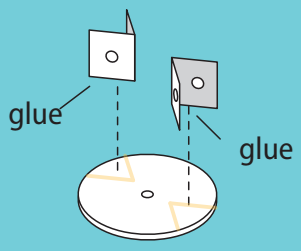
Fold the base to shape and glue.

3 Make the turbine.

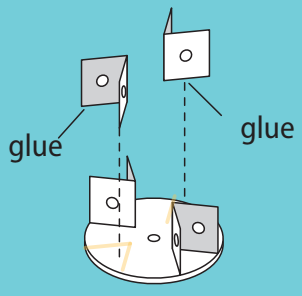


Cut four 25mm girders.

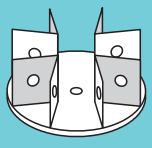
Use the template on the last page of these instructions to help assemble the turbine.



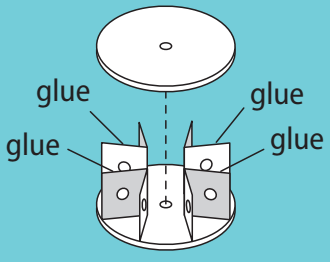
Fold and glue two girders to a 60mm wheel as shown.



Fold and glue two more girders to wheel as shown.



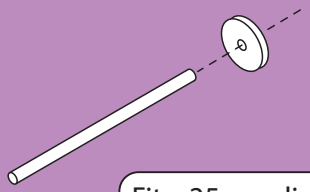
The girders should be opposite each other.



Glue a second 60mm wheel to the top of the girders.

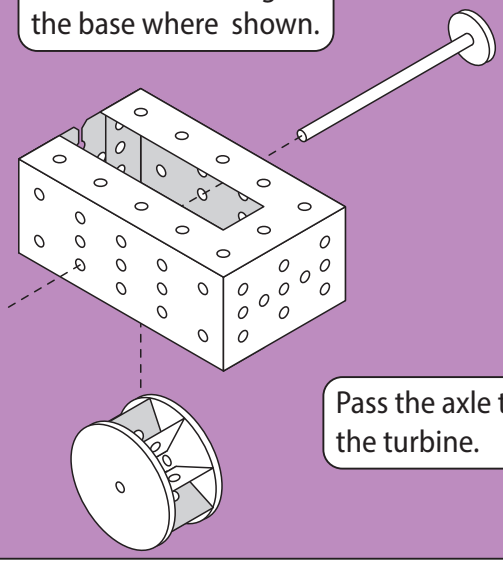
4 Fit the turbine.

Cut a 100mm axle.



Fit a 25mm disc to the end of the axle.

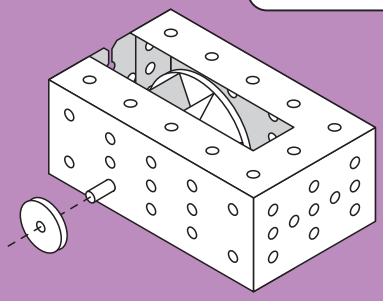
Pass the axle through the base where shown.



Pass the axle through the turbine.

5 Secure the axle.

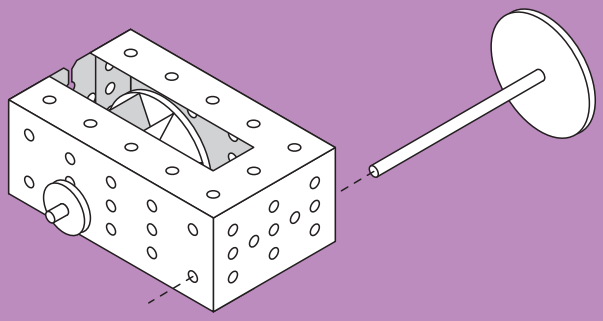
Check the turbine is in the middle of the axle.



Fit a 25mm disc to the end of the axle.

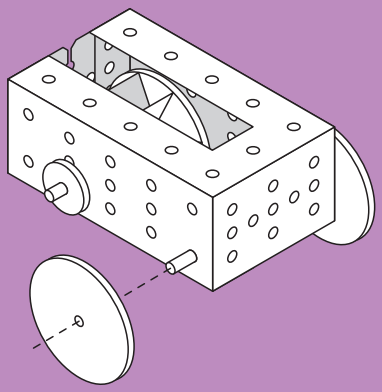
6 Fit the front axle.

Cut a 110mm axle.



Fit a 60mm wheel to the end of the axle and pass it through the base where shown.

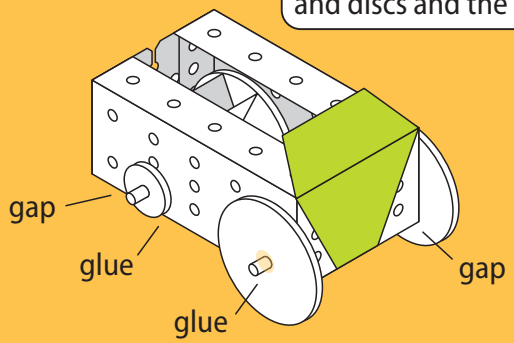
7 Fit the front wheels.



Fit a 60mm wheel to the end of the axle.

8 Finish your model.

Check there are gaps between the wheels and discs and the base.



Glue the turbine and the front wheels to the axles.

Cut and glue the body panel.

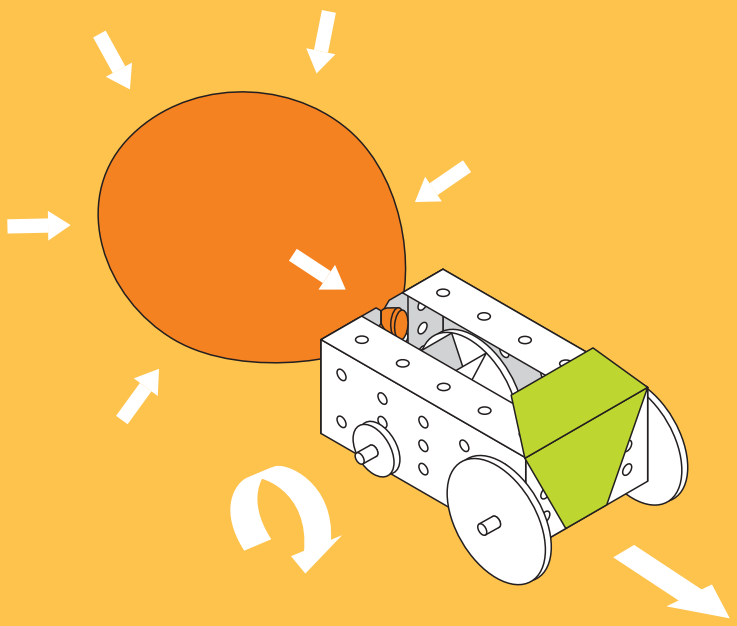
9 Operate your Air Turbine Car.

Inflate the balloon and the rubber material stretches. The material is 'elastic' and tries to return to its original size. This puts the air inside under pressure.

The inflated balloon is like a battery and is full of 'potential energy'.

When the nozzle is released the pressurized air rushes out generating a force called thrust.

The thrust is directed at the turbine which is moved by the force of the passing air and propels the car forward.



Card Panel

Print and cut along the solid lines of the panel.