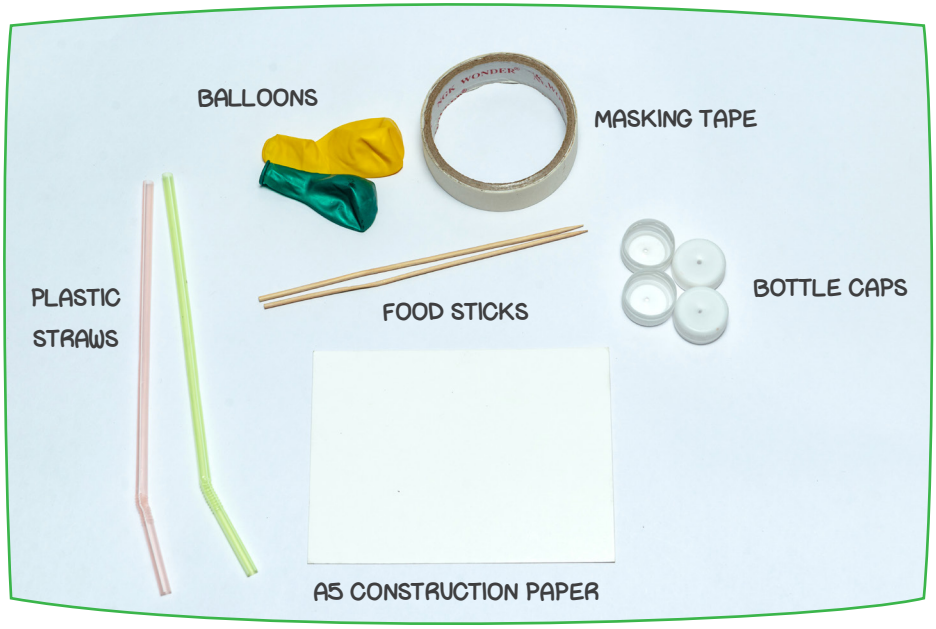
LESSON 1

Balloon-powered Car

Balloon-powered cars are simple toy vehicles that move by pushing air in the opposite direction. They use balloons to store and release the air.

WE WILL NEED THESE MATERIALS

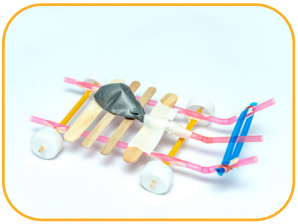


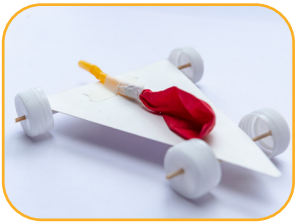
You can also use other materials you have, such as popsicle sticks, cardboard etc.

THESE IDEAS WILL HELP US GET STARTED

- What will your car look like?
- What will your car be made of?
- How many balloons will power your car?

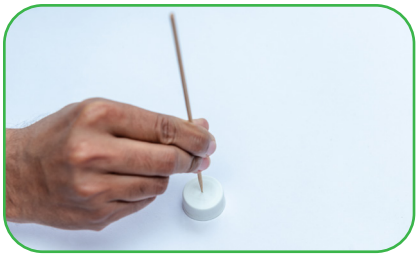
HERE ARE SOME SAMPLE MODELS TO HELP US GET IDEAS.



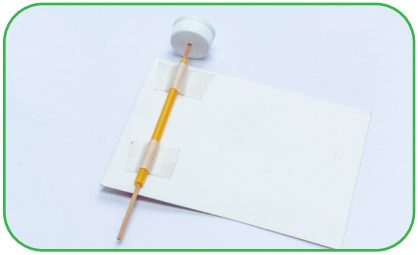


WE FOUND THESE TIPS HELPFUL WHILE BUILDING A BALLOON-POWERED CAR

If the bottle caps don't have holes in them, lay them inverted on the table and press downwards at the center using a food stick.



The food stick works like an axle in the balloon-powered car. Insert it inside a plastic straw to reduce friction between it and the construction paper.

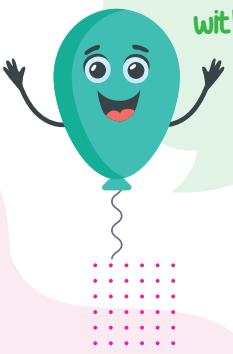


Make sure the balloon doesn't touch the wheels or the floor when inflated. Position the balloon on the car accordingly.

Use masking tape to seal the connection of the balloon with straw. The balloon-powered car won't run properly if there's air leakage so make sure you tightly tape the region.

ONCE YOUR BALLOON-POWERED CAR IS READY, LET'S TEST IT.

PLACE YOUR CAR ON THE FLOOR, BLOW THE BALLOON AND RELEASE THE CAR. MAKE SURE AIR IS BEING PUSHED OUT FROM THE STRAW CONNECTED TO YOUR BALLOON.



Let's experiment with different designs

- Can you design a balloon-powered car that moves in a curved path? Or a completely straight path?
- What might happen if you add multiple balloons to power the car?

Think like an engineer

Why does the car run faster when the balloon is about to run out of air?

Think like a physicist

How does releasing air from the balloon make the car move forward?

Reflection

- Which design of your balloon-powered car do you like the most? Why?

_____

_____

- What ideas did you get by looking at the cars made by your friends?

_____

_____