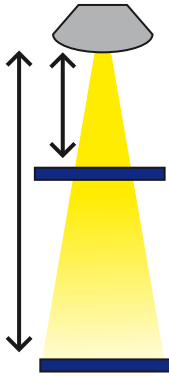


## Solar Power



These cars use solar panels to convert light into electricity. The electricity is then converted into mechanical motion through the motor.

You can test this using a bright light. Hold the light far away from the solar panels and see how fast the motor spins (if at all).

Gradually move the light closer to the solar panels and watch the motor. It should start to spin and then get quicker as the light is moved closer. This can also be tested outdoors, using your hands to shade the panels and then gradually letting through more light.

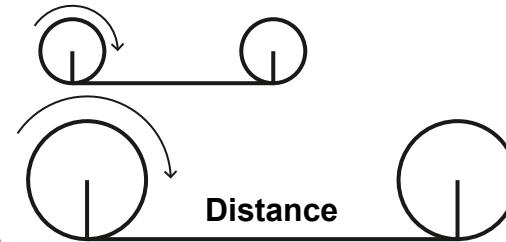
These cars use two solar panels. More area to catch the light means more power available. You can test this by covering on of the solar panels.

## Wheels & speed

There are a two different sized back wheels - large and small. These will affect the speed of the car.

Larger wheels go further for each rotation, so a car with larger wheels should go faster.

This can be tested by rolling each wheel one revolution along the ground and marking how far they have gone.



This only matters for the motorised wheels - the other wheels do not affect the speed.

## Friction & Grip

A wheel with better grip will ensure the power is transferred to moving forwards. The grip of a wheel depends upon the surface of the road it is on and the surface of the wheel.

You can test this by making the cars go up-hill on different surfaces. Surfaces with better grip will be able to go up a higher gradient. Try different surfaces from paper sheets to wooden table to sheets of sandpaper. Better grip means the car can drive up a steeper angle of hill.

This is one reason why wheels have rubber tyres, to ensure that the wheel has a good grip to the road surface.

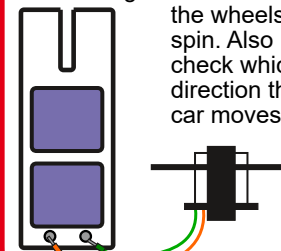


## Direction

The direction of the motor depends upon how it is connected to the solar panels.

Test this by swapping the crocodile clips around and seeing which direction

the wheels spin. Also check which direction the car moves.



## Weight

The weight of the car affects how fast it will go.

It will affect the acceleration of the car, hence it will take longer to get up to the same speed.

This can be tested by adding weights to the top of the car (being careful not to block the solar panels) and then timing how long it takes to go a measured distance. Try again with different weights.