

Name: _____



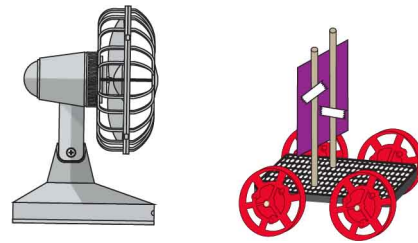
Check out the [Lab Set-Up Video](#) by scanning the QR Code or going to teachergeek.com/sailcar

WIND FORCES

Sails capture the force of the wind.

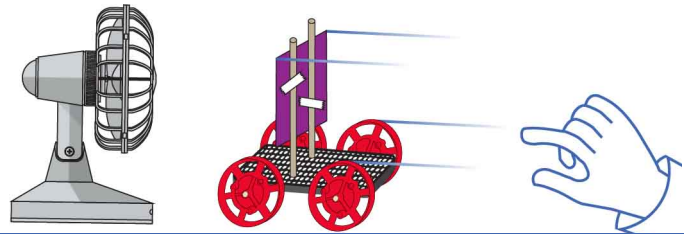
- 1 Test it out! Put your sail car in front of a running fan.

What happens to the sail car?



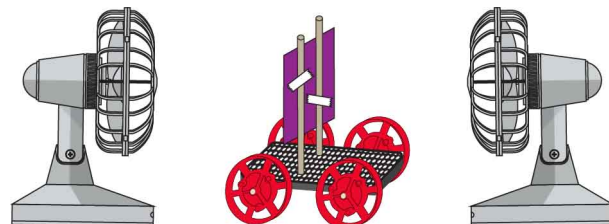
CAUSE	EFFECT

- 2 Roll your sail car towards the fan. What happens?



CAUSE	EFFECT

- 3 Put your car in the middle of two fans blowing in opposite directions. What happens?

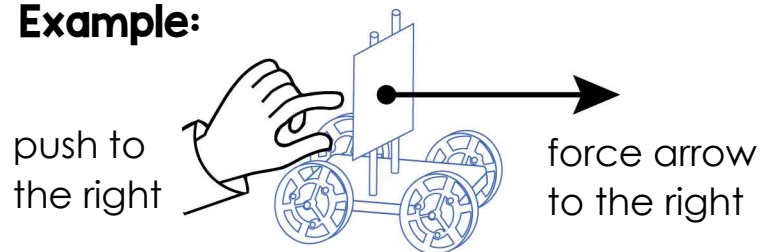


CAUSE	EFFECT

BALANCED FORCES

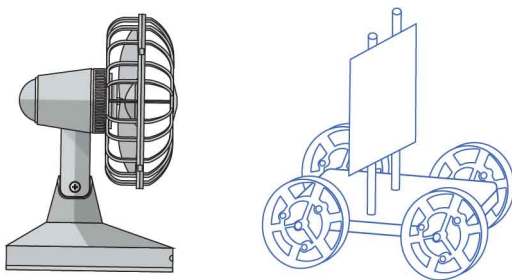
Force diagrams are used to show what forces are pushing and pulling on objects, like your car.

Example:



- ④ Add arrows to these force diagrams to represent the forces on your car.

Diagram 1

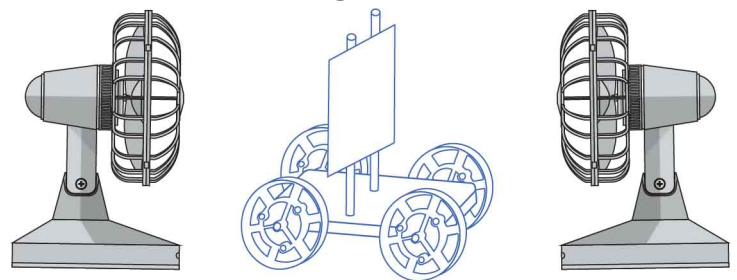


Are the forces balanced?

YES

NO

Diagram 2

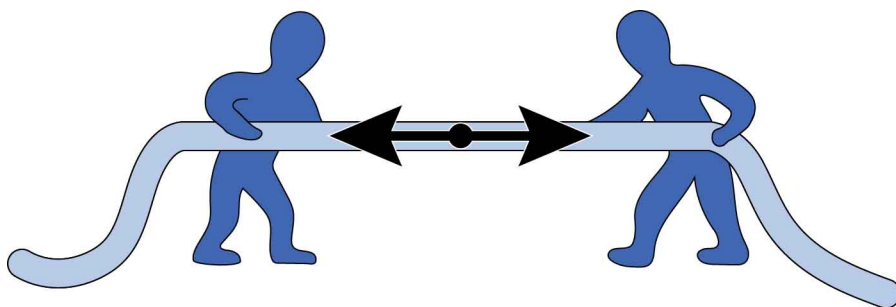


Are the forces balanced?

YES

NO

Balanced Forces



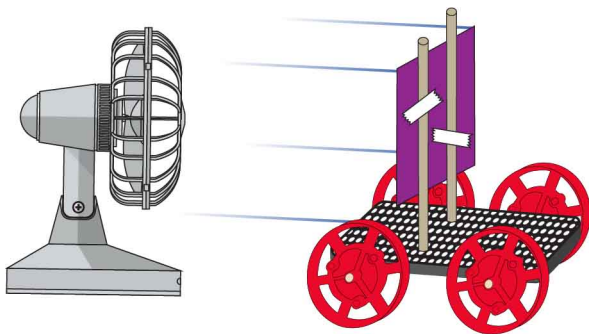
These forces are balanced because they are the push/pull against each other and undo each other.

AERODYNAMICS

Your car is **aerodynamic** if it can catch good wind without catching bad wind.

Good Wind

Wind from behind your sail car makes it go faster!

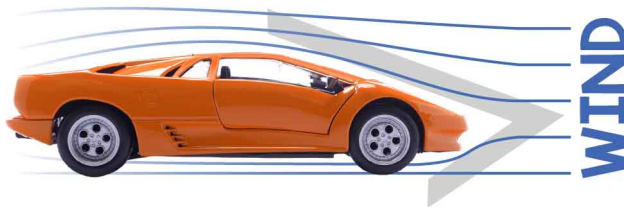


Bad Wind

Wind from the front slows your sail car down.



When your car is moving fast, it will feel wind from the front, just like when you put your hand out a car window.



The V-shape of this Lamborghini cuts through the air like a knife, so it doesn't catch bad wind.

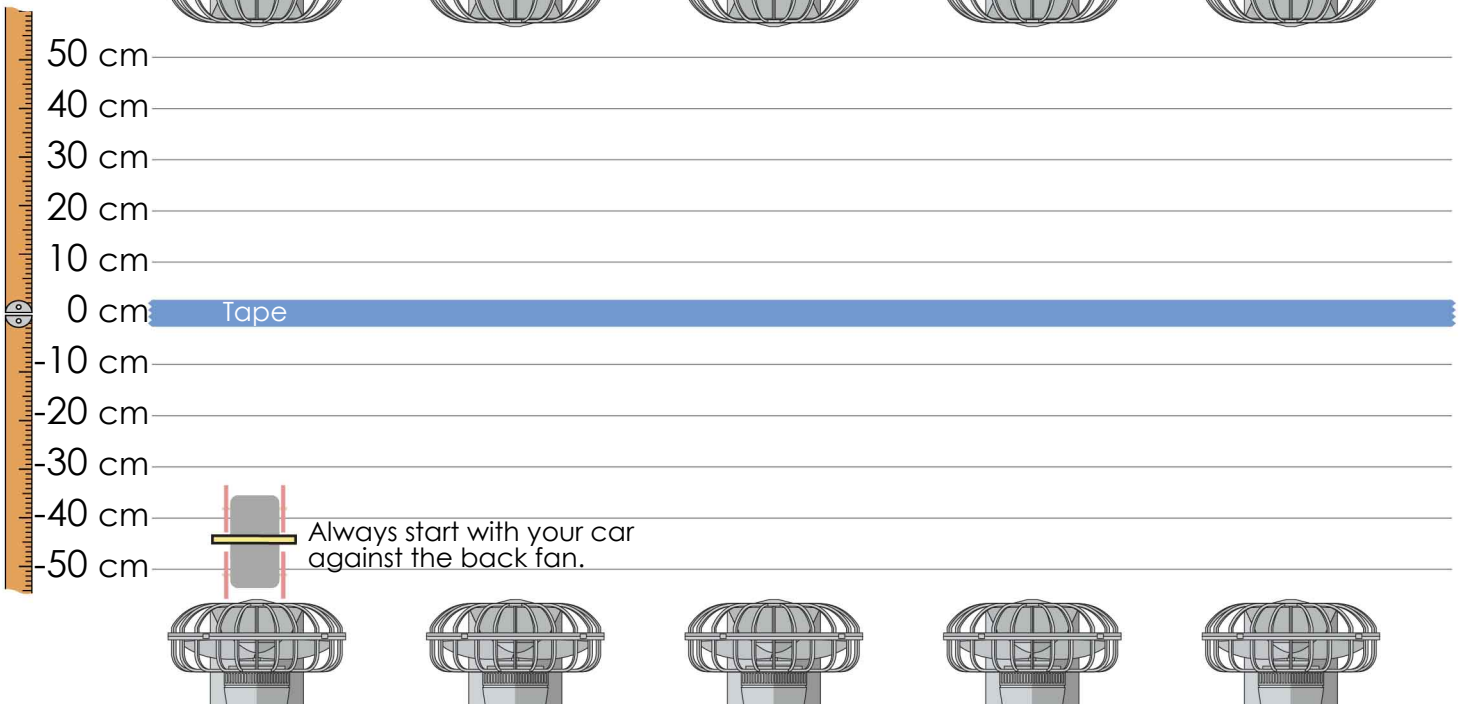
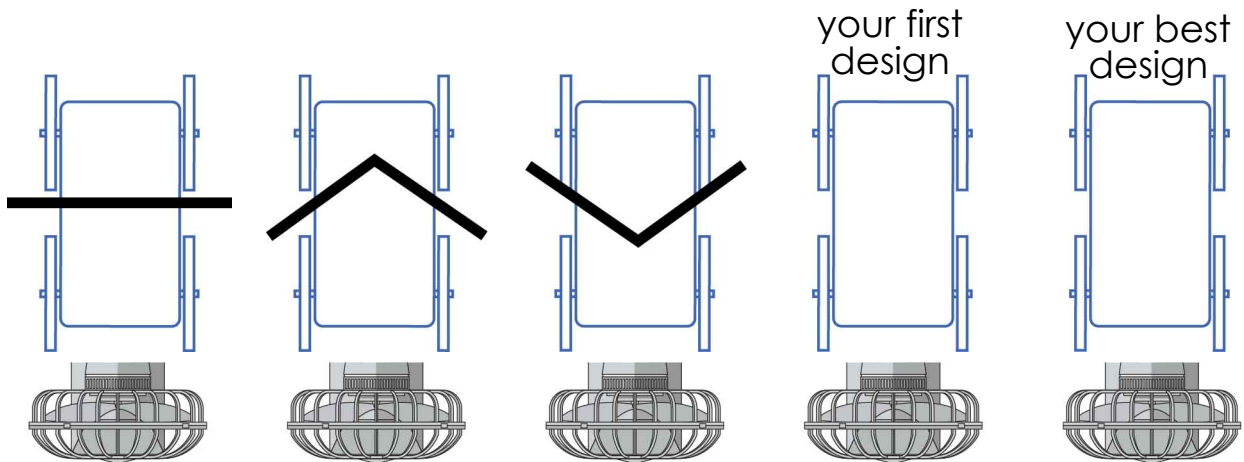
You are going to use two fans to test your sail car's aerodynamics.

MORE AERODYNAMIC



TEST SOME SAILS!

- 5** Test the sails below, then design some of your own to test!
For each design, graph an X where your sail car stops.



- 6** What shape sail will you put on your car? Why?
