SCIENCE TEACHING MATERIALS

Wind and Rubber Mechanisms [Type DXII] Worksheet

Name

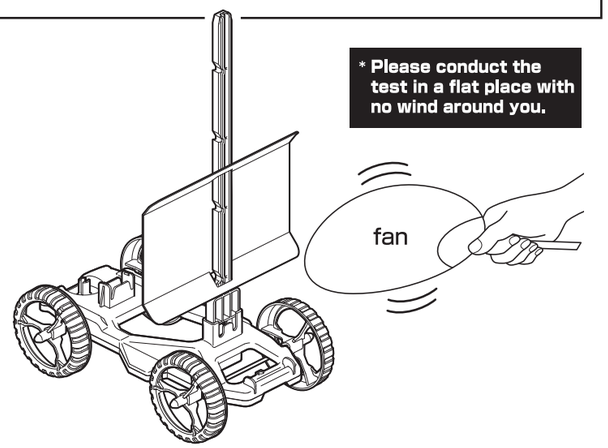
Wind Mechanisms

Introduction

Let's make the wind car move

☆ Write about your observation when you make the wind car move.

<Example>
I was able to make the wind car move by blowing wind at it.
The way it moves seems to change depending on how strong the wind is.

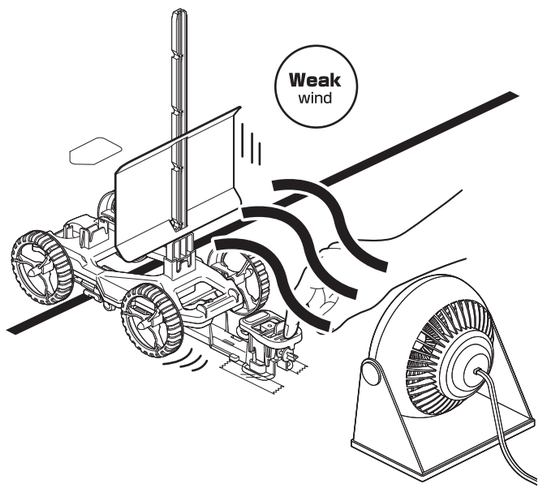


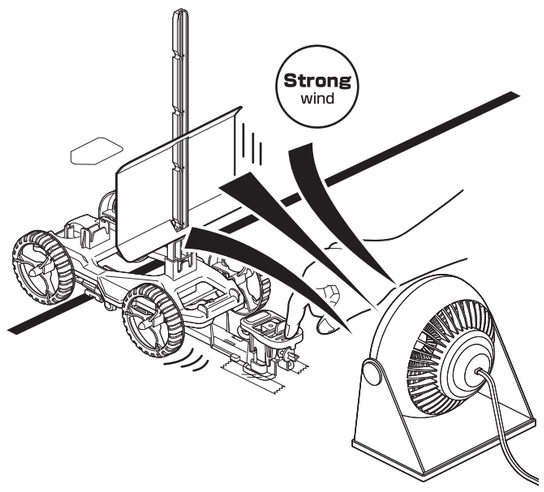
*** Please conduct the test in a flat place with no wind around you.**

Experiment 1

Wind strength and movement

• Move the wind car and see if there is a difference in the distance it travels when the wind is light and when it is strong.





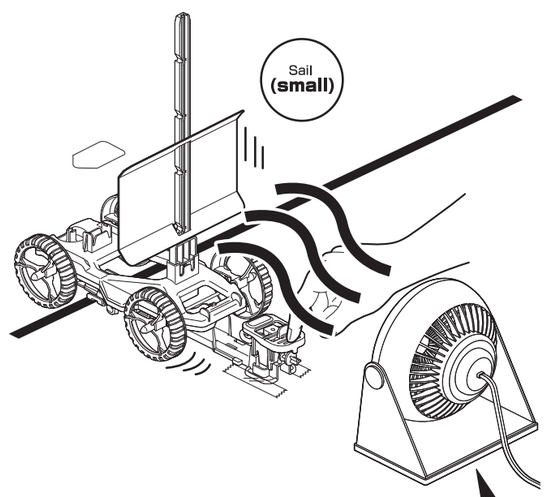
☆ Let's summarize the strength of the wind and how the car moves in the table below.

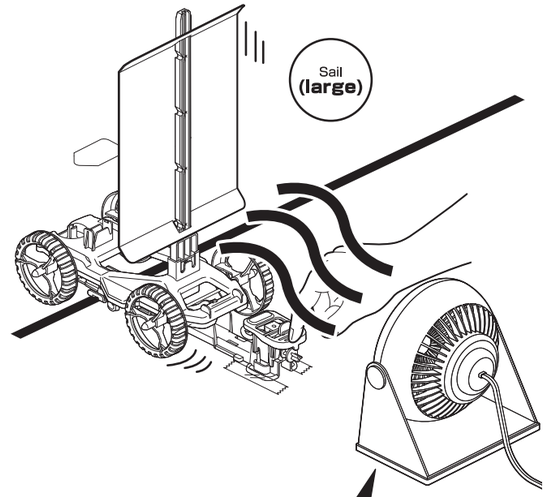
		When the wind is **weak**		When the wind is **strong**	
Distance	1st time	Write down the measured distance in each column m	cm	m	cm
	2nd time	m	cm	m	cm
	3rd time	m	cm	m	cm
Summary	<Example> The stronger the wind, the longer the distance the wind car can move.				

Let's do it!

Sail size and movement

• Find out if there is a difference in distance the vehicle can run depending on the size of the sail.





The strength of the air blower should be the same.

☆ Summarise your findings in the table below.

		Sail (**small**)		Sail (**large**)	
Distance	1st time	Write down the measured distance in each column m	cm	m	cm
	2nd time	m	cm	m	cm
	3rd time	m	cm	m	cm
Summary	<Example> The larger the sail, the longer the distance the wind car can move.				

☆ Write down what you have learnt about the effect of wind on the distance travelled.

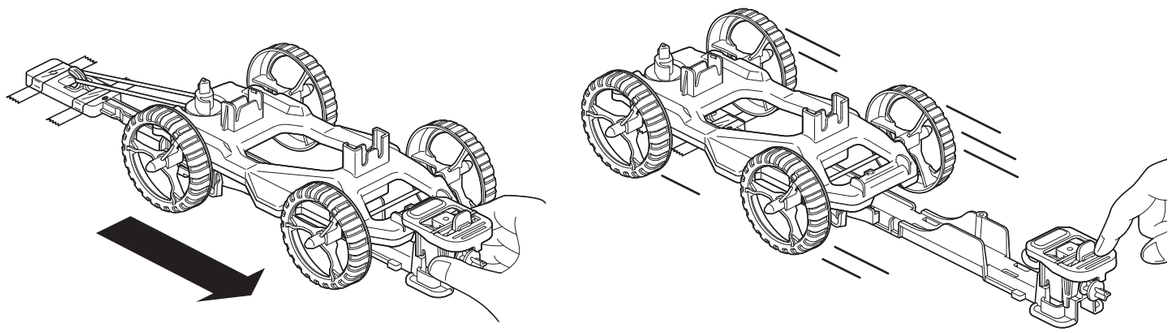
• When the wind is weak, the distance between the objects becomes (short), and the distance between the objects becomes (far) when the wind is strong.
• The (smaller) the area exposed to the wind, the shorter the distance traveled; the (larger) the area exposed to the wind, the longer the distance traveled.

☆ Discuss and summarise how you can use the wind to move objects.

<Example>
The stronger the wind, the more objects you can move, and the bigger the wind area, the more objects you can move.

Introduction

Let's make the rubber car move

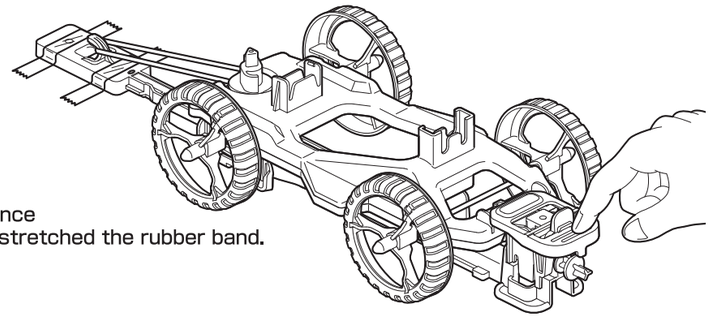


☆ Let's move the rubber car and write down our observation!

<Example>
I was able to make the rubber car move using the force of the rubber band.
It seems that the way it moves can be changed by changing the force exerted on the rubber band.

Experiment 2

Stretching the rubber band and movement



● Find out if there is a difference in the distance travelled depending on how long you have stretched the rubber band.

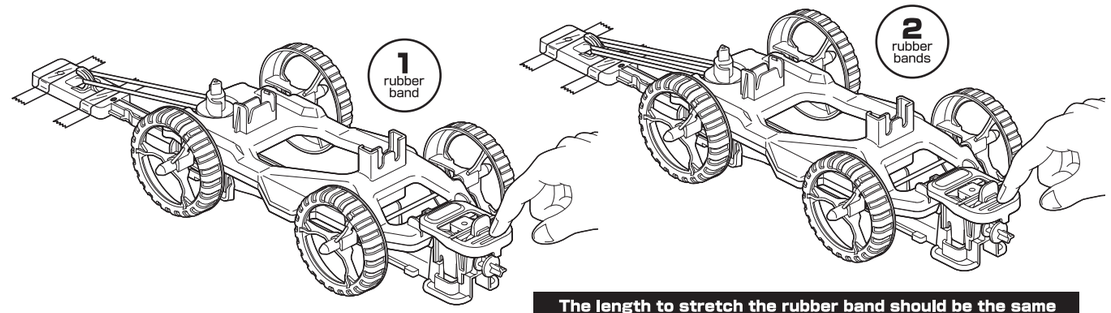
☆ Let's summarise your findings in the table below.

		When stretched to **5**	When stretched to **10**	When stretched to **15**
Distance	1st time	Write down the measured distance in each column m cm	m cm	m cm
	2nd time	m cm	m cm	m cm
	3rd time	m cm	m cm	m cm
Summary	<Example> The longer the rubber band is stretched, the stronger the force exerted, and the further the rubber car can move.			

Experiment 3

Number of rubber bands and movement

● Compare the difference in the distance travelled when you use 1 rubber band and 2 rubber bands.



The length to stretch the rubber band should be the same (5 on the scale) for the experiments.

☆ Let's summarise your findings in the table below.

		When there is only **1** rubber band	When there are **2** rubber bands
Distance	1st time	Write down the measured distance in each column m cm	m cm
	2nd time	m cm	m cm
	3rd time	m cm	m cm
Summary	<Example> The more rubber bands are used, the stronger the force exerted, and the further the rubber car can move.		

☆ For Experiments 2 and 3, write down what you have learnt about the effect of the number of rubber bands on the distance travelled.

● When the rubber is stretched to a (shorter) length, the distance travelled by the object is shorter, when the rubber is stretched to a (longer) length, the distance travelled by the object is longer.

● As the number of rubbers band increases, the distance the object moves becomes (longer).

☆ Let's discuss and summarise how to use the force exerted by rubber ands to make an object move.

<Example>
The stronger the fore exerted by the rubber band,the more objects can be moved.
The force exerted by the rubber band can be increased by stretching it further or by increasing the number of rubber bands used.

Let's do it!

Let's make a propeller car move
Let's spin the top

☆ Write about your impressions of driving a propeller car and spinning a top.

Write down your own opinions.