SCIENCE

# BUILD A SAIL-CAR OF THE FUTURE

## Worksheet

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one stop clil

## Exercise 1 — Vocabulary

**Label the diagram with the materials you used for this experiment.**

| axles | base | mast | sail | wheels |
|---|---|---|---|---|

## Exercise 2 — Grammar

**a) Match the half sentences in column A with an appropriate ending from column B.**

| Column A | Column B |
|---|---|
| 1. If there wasn't any wind ... | a) you might end up crashing. |
| 2. If everyone owned a sail-car ... | b) there wouldn't be as much pollution. |
| 3. If we run out of oil ... | c) it becomes far more practical. |
| 4. If you add a steering wheel to the car ... | d) the sail-car wouldn't work. |
| 5. If the wind is really strong ... | e) conventional cars are going to be useless. |

**b) Now write three sentences of your own starting with 'If'.**



science museum

## Exercise 3 — Speaking

**Work in groups and discuss these questions.**

1. Where could you use a sail-car?
2. When would you be able to use it?
3. Are there any conditions when it wouldn't work or wouldn't be safe?
4. How big would a sail-car have to be to be useful?
5. What changes would you make to the sail-car to improve it?
6. Do you think sail-cars will become popular in the future? Why (not)?

## Exercise 4 — Project work

**Work in groups. Design your own car of the future. Draw a picture of your car and label it. Can you write information about how it will work?**

# Build a sail-car of the future

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## Learning objectives

Pupils make a sail-car and learn how to harness the energy from the wind and use it to power the sail-car.

## Content summary

Pupils make a sail-car and discuss how the design can be improved. As a project, pupils design their own car of the future.

## Skills

Speaking, writing

## Grammar

Conditionals - first and second.
Future tense
Modals of prediction

## Vocabulary

*mast, wheels, sail, base, axle, pollution, wind, steering wheel, conventional, practical, conditions, improve.*

## Time needed

30–60 minutes

## Age group

7–11

## Materials needed

For each group of pupils:-

a sheet of stiff card
a sheet of thick paper
3 bendy drinking straws
2 short lengths of dowel (light wood like a stick)
4 cotton bobbins (empty cotton reels) or wheels
glue and sticky tape
scissors
a copy of the sail-car template

## Practicalities

You will need enough material for each group. The larger the groups the harder it will be to ensure that all the pupils feel included - so it might well be that you need to manage the group make-up and dynamics as much as the actual experiment.

For the project work access to the internet would be useful.

## Procedure

1. Tell pupils they are going to make a sail-car and then try and see how well it works.
2. Introduce/pre-teach the following vocabulary that pupils will need to understand: *mast, wheels, sail, base, axle, pollution, wind, steering wheel, conventional, practical, conditions, improve.*
3. Hand out the experiment sheet and have pupils read out the instructions in class.
4. Give all the groups the necessary materials.
5. Have the pupils follow the instructions and make the sail-car. Monitor and help where necessary.
6. Once the pupils have made the sail-car have them take turns trying it out.
7. Hand out the worksheet and ask pupils to work with a partner and do exercises 1 & 2.
8. Check the answers as a class.
9. Put pupils in groups and ask them to discuss the questions in exercise 3.
10. Finally, ask the pupils to work in their groups and do the project (exercise 4). Monitor, and, at the end, display the finished projects around the classroom on the walls.

## Links to everyday life

It's worth getting pupils to think about the current energy situation regarding fuel prices and get them to look into alternative energy sources such as solar and wind as well as things such as electric cars and methane fuel.

# Build a sail-car of the future

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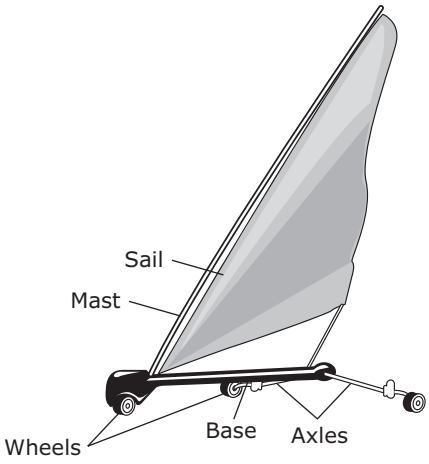
## Exercise 1




## Exercise 2a

1d 2b 3e 4c 5a

## Exercise 2b

Depends on the pupils individual answers

## Exercise 3

Depends on the pupils individual answers