

Ferry Forces!

What can you learn about Water Resistance, Air Resistance and Friction?

Student Introduction

- ▶ You are going to test some different boat shapes to see which will move fastest through water...
- ▶ See how different forces affect your experiment!



Teaching resources by Education Destination Ltd.

Curriculum relevant materials supporting school trips to the Isle of Wight

Book today with Education Destination and get full access to this and hundreds more quality resources

www.edudest.uk

Q1. List 5 things which travel **through** water:

1.
2.
3.
4.
5.

Q2. How do they move? Do they **float**? Discuss in a group and make notes below:

--

Q3. Think about a boat you have seen or travelled on. Draw a picture of it in the box below.

Teaching resources by Education Destination Ltd.

Curriculum relevant materials supporting school trips to the Isle of Wight

Book today with Education Destination and get full access to this and hundreds more quality resources

www.edudest.uk

Q4. Name the forces which act upon the boat (the first letter is given to you):

W _____ R _____

A _____ R _____

U _____

F _____

Q5. What may slow the boat down? Say why.

What slows the boat?	Why?



Boat Race Challenge!

There are lots of different boat races which take place around the world. We are going to have our own!

First you will watch a 5 minute video of the Oxford and Cambridge Boat Race which takes place between two English universities every year. This race first started in 1829 - nearly 200 years ago!

Watch the clip by visiting www.edudest.uk/followup and typing this worksheet's number, **10704**.

To save time, start watching the race about 15 minutes from the start. Did your favourite win?

Brainstorming Time!

Your teacher will now lead a session of "brainstorming" on the whiteboard or blackboard.

Teaching resources by Education Destination Ltd.

Think **HOW** much you could conduct a range of your own to test different boat shapes.

The **OBJECTIVE** is to find the shape which will move the fastest through the water.

Book today with Education Destination and get full access to this and hundreds more quality resources

List reasons why it may not be a fair test www.edudest.uk

-
-
-

Now that you've had time to think, the class needs to decide on the following:

- ▶ **Equipment list:** What you will need.
- ▶ **Prediction:** What shape do you think will move the fastest through the water?
- ▶ **Method:** Step by step instructions about what you are doing.
- ▶ **Results:** Draw a table for your results, boat shape, time it took.
- ▶ **Conclusion:** What did you find out, was your prediction right?
- ▶ **Evaluation:** what would you change or do differently next time.



NOW IT'S BOAT RACE TIME!

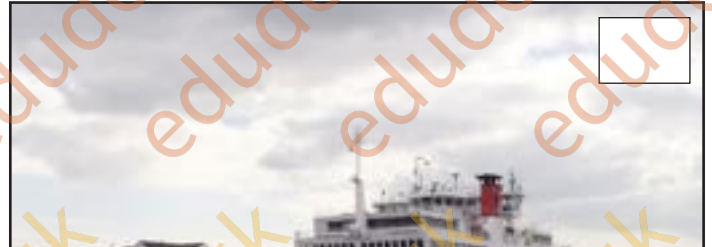


AFTER YOUR TRIP

Consider different ferry types, and design your own!

Q1. Which of these ferries did you travel on? Tick yours...





Teaching resources by Education Destination Ltd.

Curriculum relevant materials supporting school trips to the Isle of Wight

Book today with Education Destination and get full access to this and hundreds more quality resources

www.edudest.uk

Q2. How long were you on the ferry for? minutes

Q3. Which do you think this is the faster of the two ferries? Why?

CHALLENGE!

Your task is to design a new ferry for Red Funnel.

Spend 10 minutes planning your new ferry before you start to draw it.

Things to consider:

- What is it used for - car or foot passengers?
- What materials will it be made of?
- Is it streamline?
- How can you reduce water and air resistance?
- Will it be safe in windy or rough sea conditions?

On a blank sheet, draw your new ferry!

Your teacher might even send the best designs to Red Funnel for their consideration!

Task checklist:

- ✓ Creative ferry design
- ✓ Drawn with a ruler
- ✓ Key features clearly named
- ✓ Explanations given with regards to forces acting upon it.
- ✓ Be original.
- ✓ Think of a name for your new ferry!

