

Ferry Forces: Maintaining the Balance!

Balanced and Unbalanced Forces

Student Introduction

- ▶ This activity is all about understanding how forces change during your ferry journey.
- ▶ You will also think about how the wind and tides affect the ferry.



Q1 You have just boarded the ferry to the Isle of Wight, and it is currently stationary and floating in the water. Book today with Education Destination and get full access to this and hundreds more quality resources

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- ▶ Add forces arrows to the diagram opposite to show why the ferry is stationary but floating.
- ▶ Label the forces.



Explain if they are balanced or unbalanced, give reasons why:

Q2

The ferry begins its journey to the Isle of Wight. This will take around an hour.

- ▶ Draw the forces which are now acting upon the ferry.



Are the forces balanced or unbalanced? Explain your reasons why.

Q3

What if the **wind speed** were to pick up in the direction that the ferry was moving?

Explain how this would affect the ferry's speed.

Add forces arrows to the ferry picture on the right to demonstrate your answer.



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Q4

Now have a good look around the boat. Can you see any other forces in action?



- ▶ Name the force
- ▶ Draw a forces diagram in the space below
- ▶ Explain if the forces are balanced or unbalanced

Q5

The tides in the Solent affect the ferry's direction of travel, pulling/pushing the ferry left or right. The captain takes this into account when steering the ferry.

Draw a forces diagram to represent these forces on the ferry.



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Q6

The ferry docks and you join your coach.

Add and label the forces acting upon the coach as it leaves the ferry.



Are the forces balanced or unbalanced? Explain your answer.

