Science

Forces

Water Resistance



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Quality Standard Approved

Aim

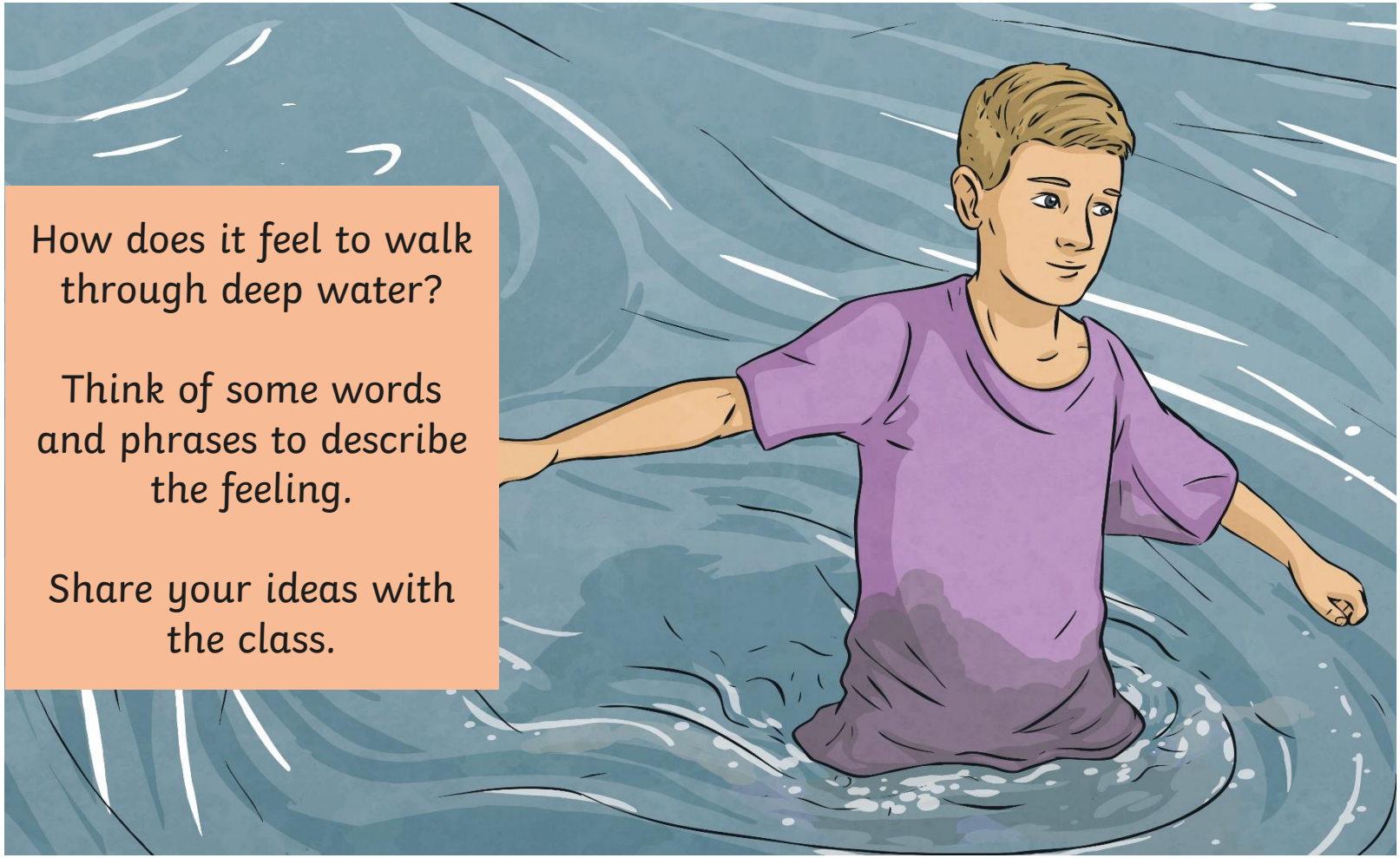
- To explore the effects of water resistance.

Success Criteria

- I can explain the effects of water resistance.
- I can identify streamlined shapes.
- I can minimise the effects of water resistance on an object.

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Water Resistance



How does it feel to walk through deep water?

Think of some words and phrases to describe the feeling.

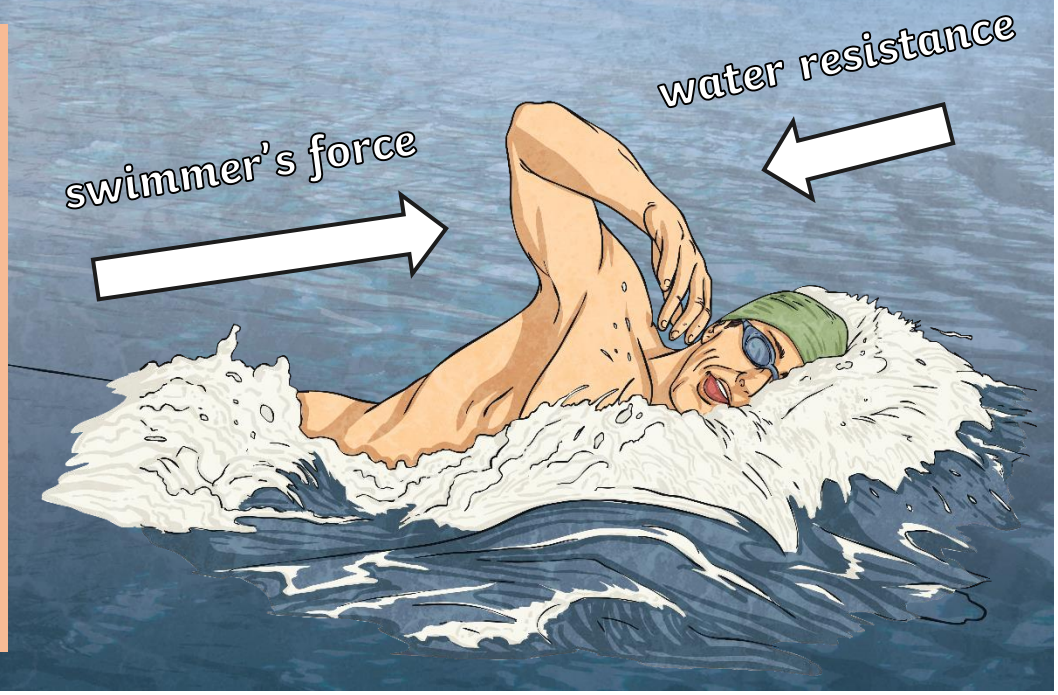
Share your ideas with the class.

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Water Resistance

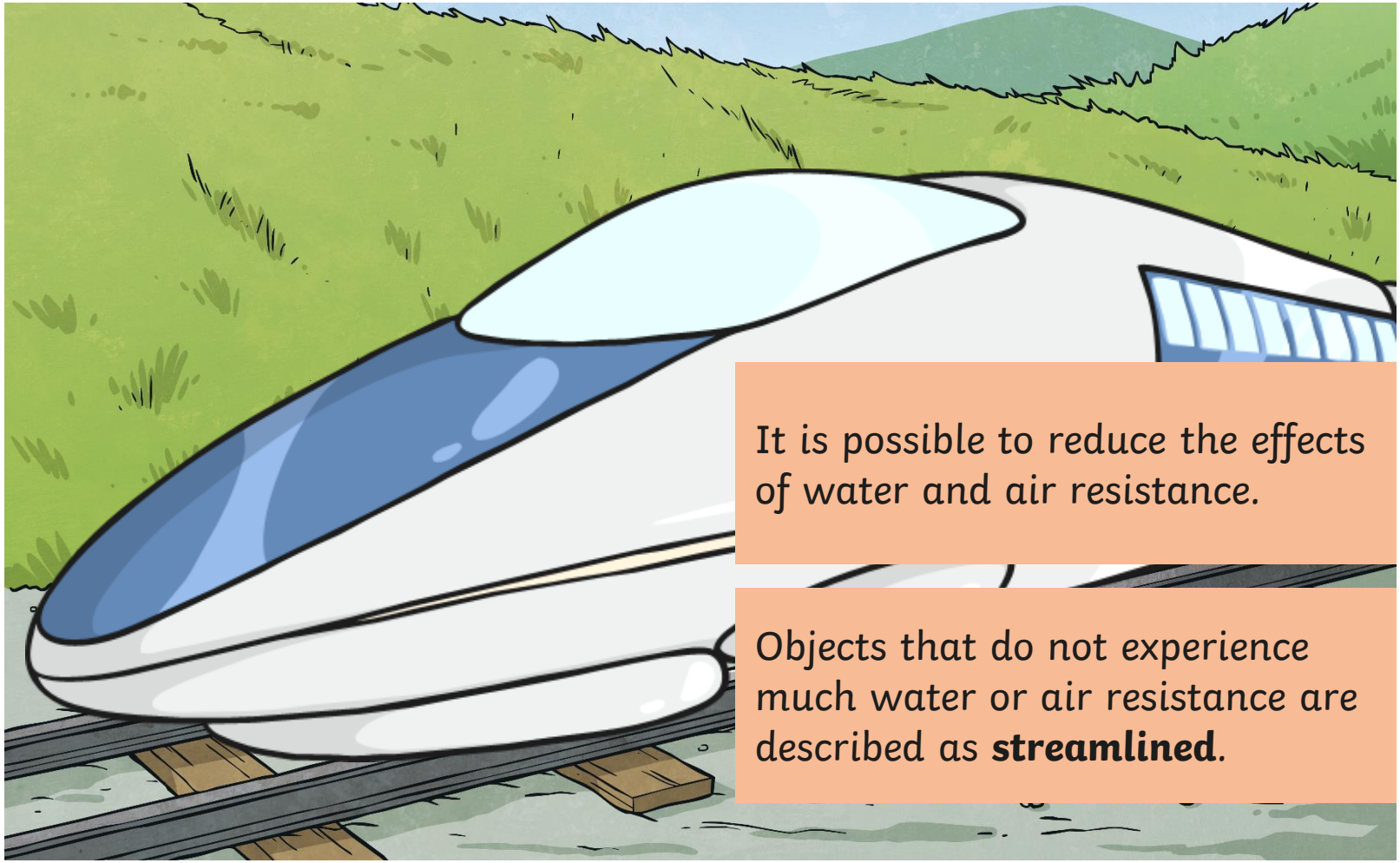
If you have ever walked through water, you will have felt the effects of **water resistance** pushing against you.

However, this also helps you to swim, as when you push against the water with your hands, the water resistance pushes back and helps you to move forward, like using oars to push against the water to row a boat.



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Streamlined Shapes



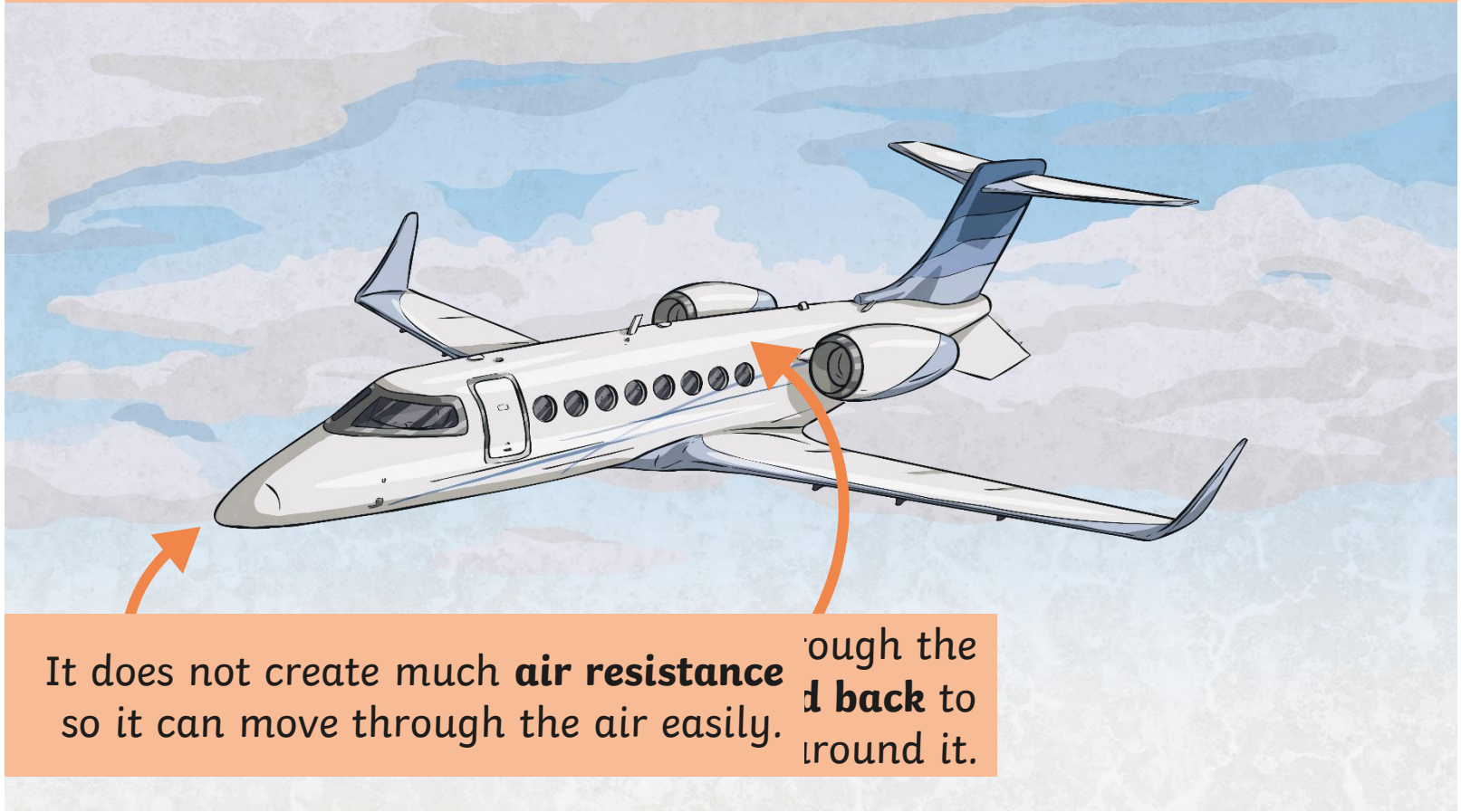
It is possible to reduce the effects of water and air resistance.

Objects that do not experience much water or air resistance are described as **streamlined**.

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Streamlined Shapes

This aeroplane is **streamlined**.



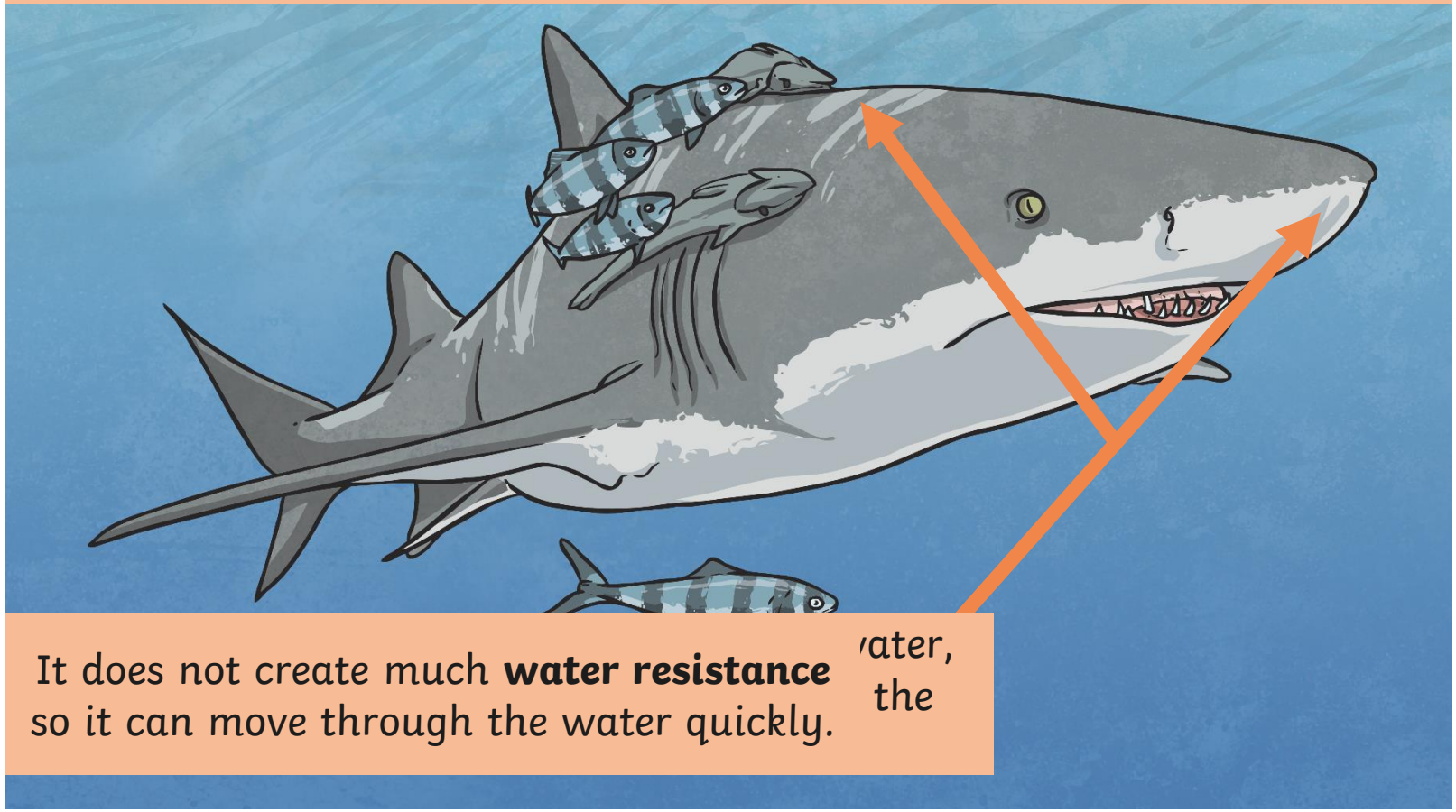
It does not create much **air resistance** so it can move through the air easily.

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d back to
round it.

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Streamlined Shapes

This shark is **streamlined**.



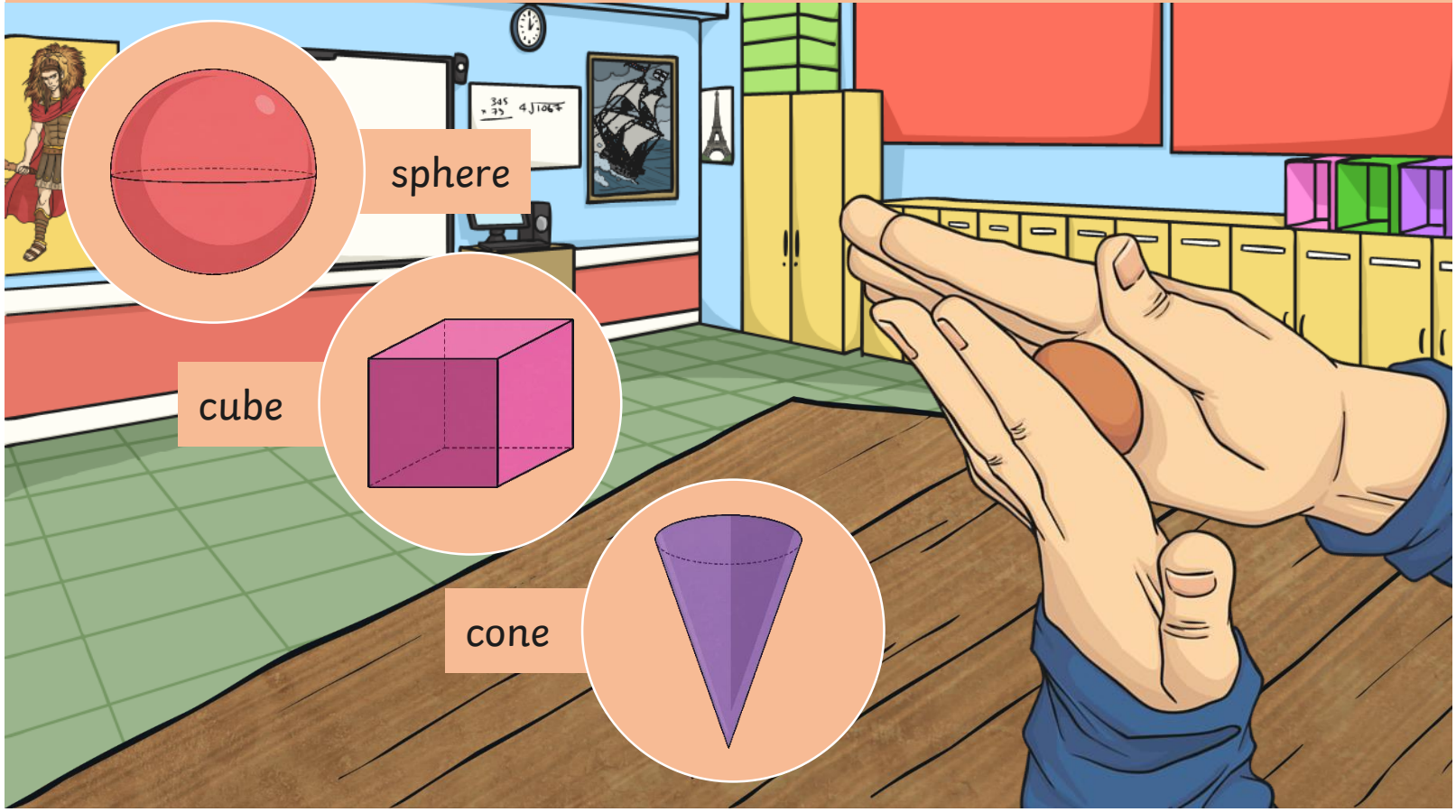
It does not create much **water resistance** so it can move through the water quickly.

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Streamlined Shapes

Then mould each piece into one of the three different shapes shown below.

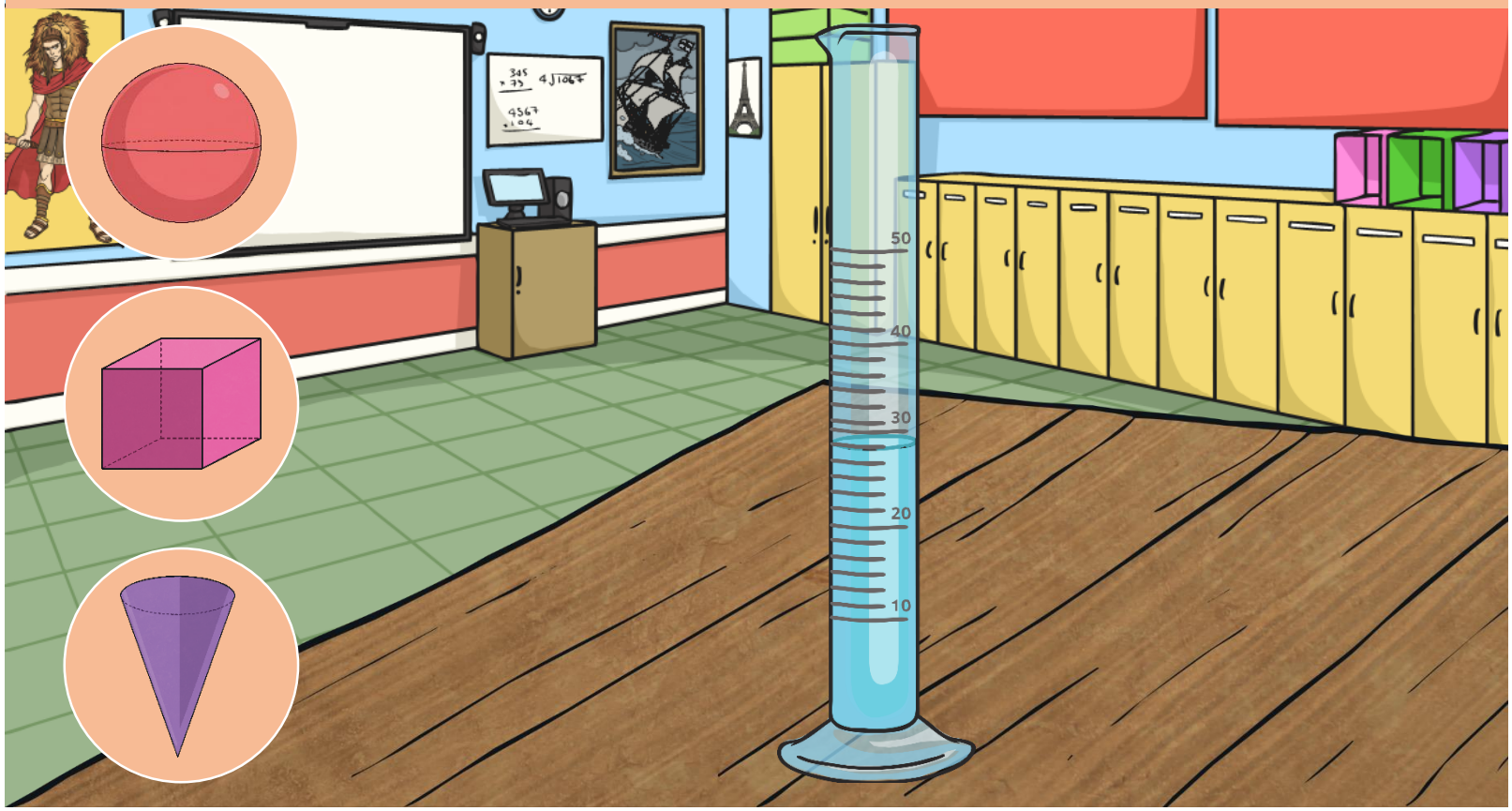


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Streamlined Shapes

Which shape do you think will fall the **fastest**? Which will fall the **slowest**?

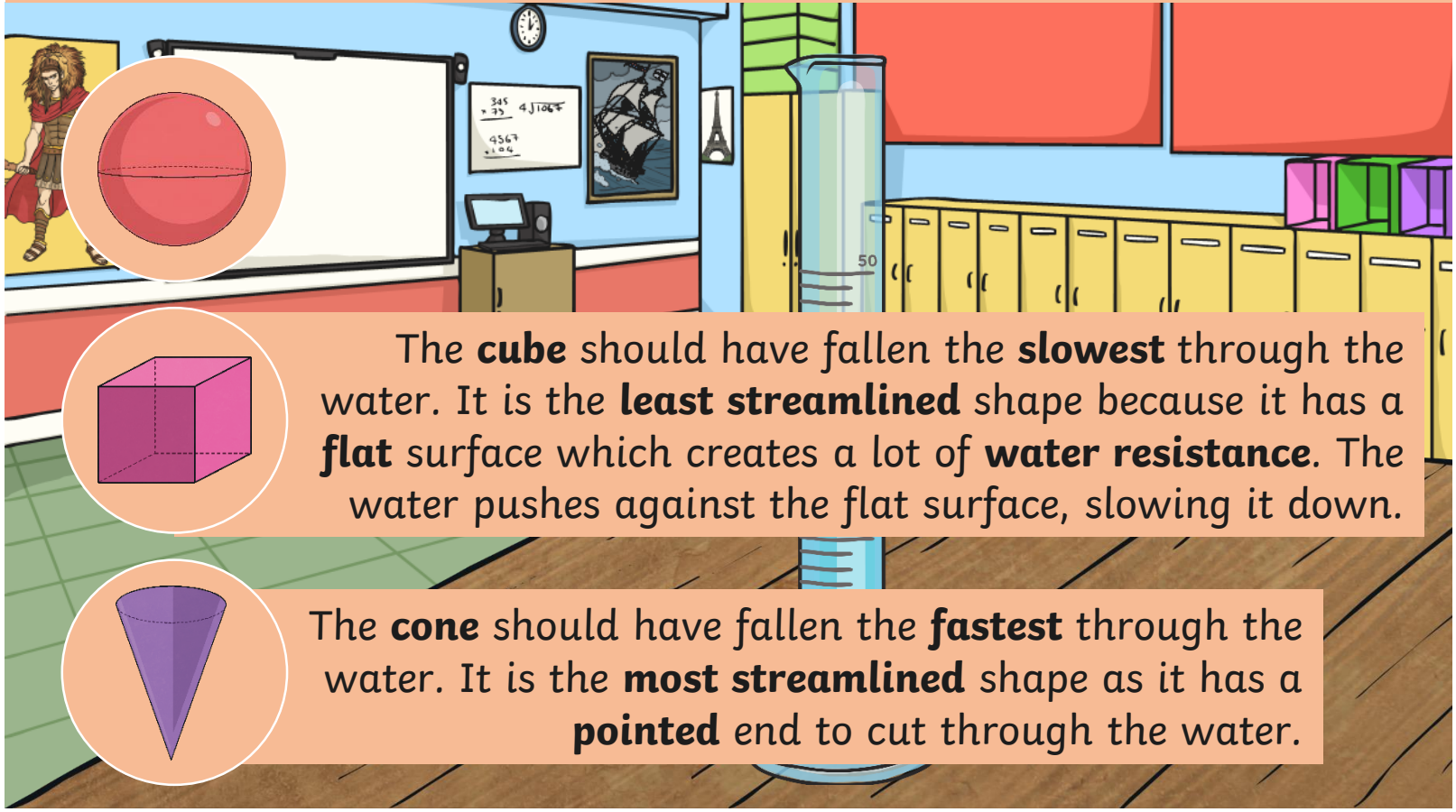
Try it out!



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Streamlined Shapes

Can you give an example of an animal that has a streamlined shape?

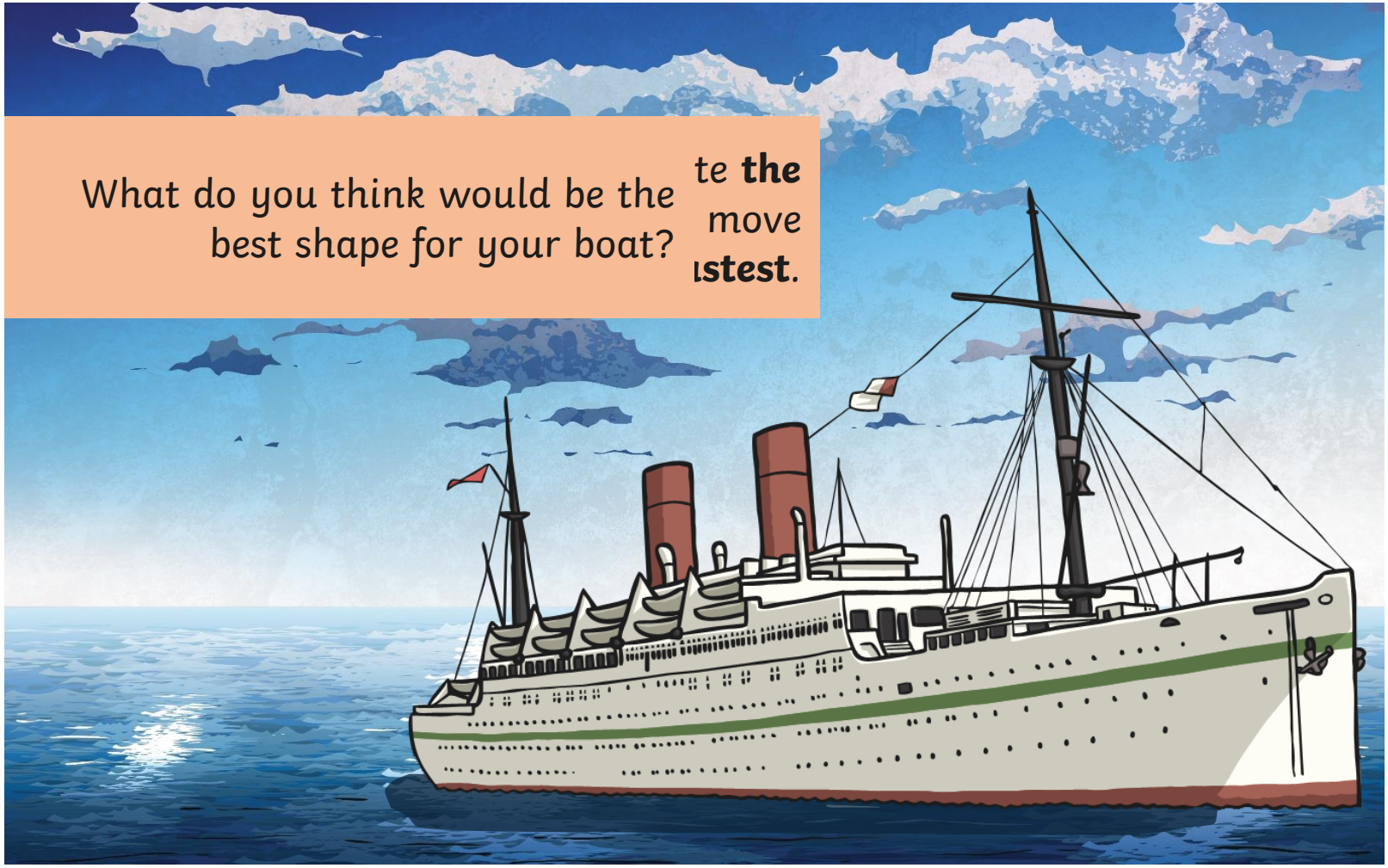


The **cube** should have fallen the **slowest** through the water. It is the **least streamlined** shape because it has a **flat** surface which creates a lot of **water resistance**. The water pushes against the flat surface, slowing it down.

The **cone** should have fallen the **fastest** through the water. It is the **most streamlined** shape as it has a **pointed** end to cut through the water.

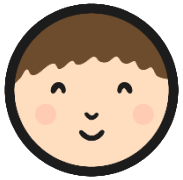
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Boat Building



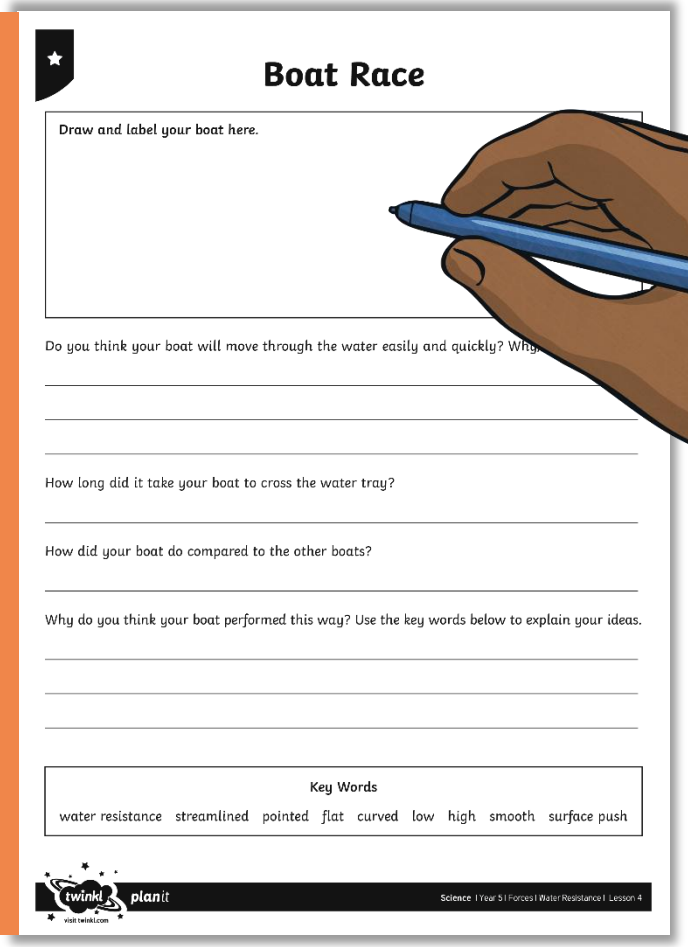
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Boat Building



Evaluate your boat's performance on your Boat Race Activity Sheet.

Make sure to explain the effects of water resistance and how you designed your boat to minimise these effects.



Boat Race

Draw and label your boat here.

Do you think your boat will move through the water easily and quickly? Why

How long did it take your boat to cross the water tray?

How did your boat do compared to the other boats?

Why do you think your boat performed this way? Use the key words below to explain your ideas.

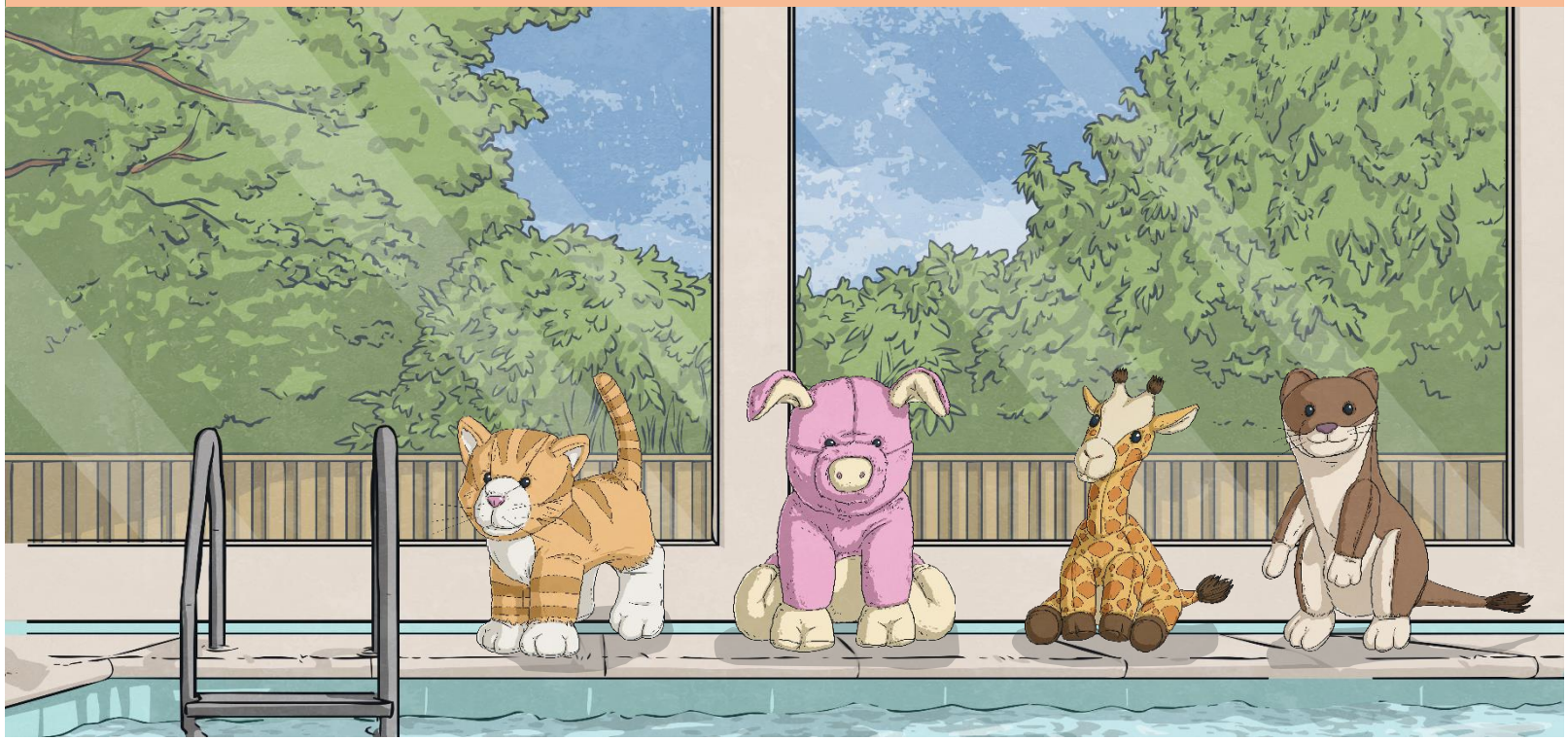
Key Words

water resistance streamlined pointed flat curved low high smooth surface push

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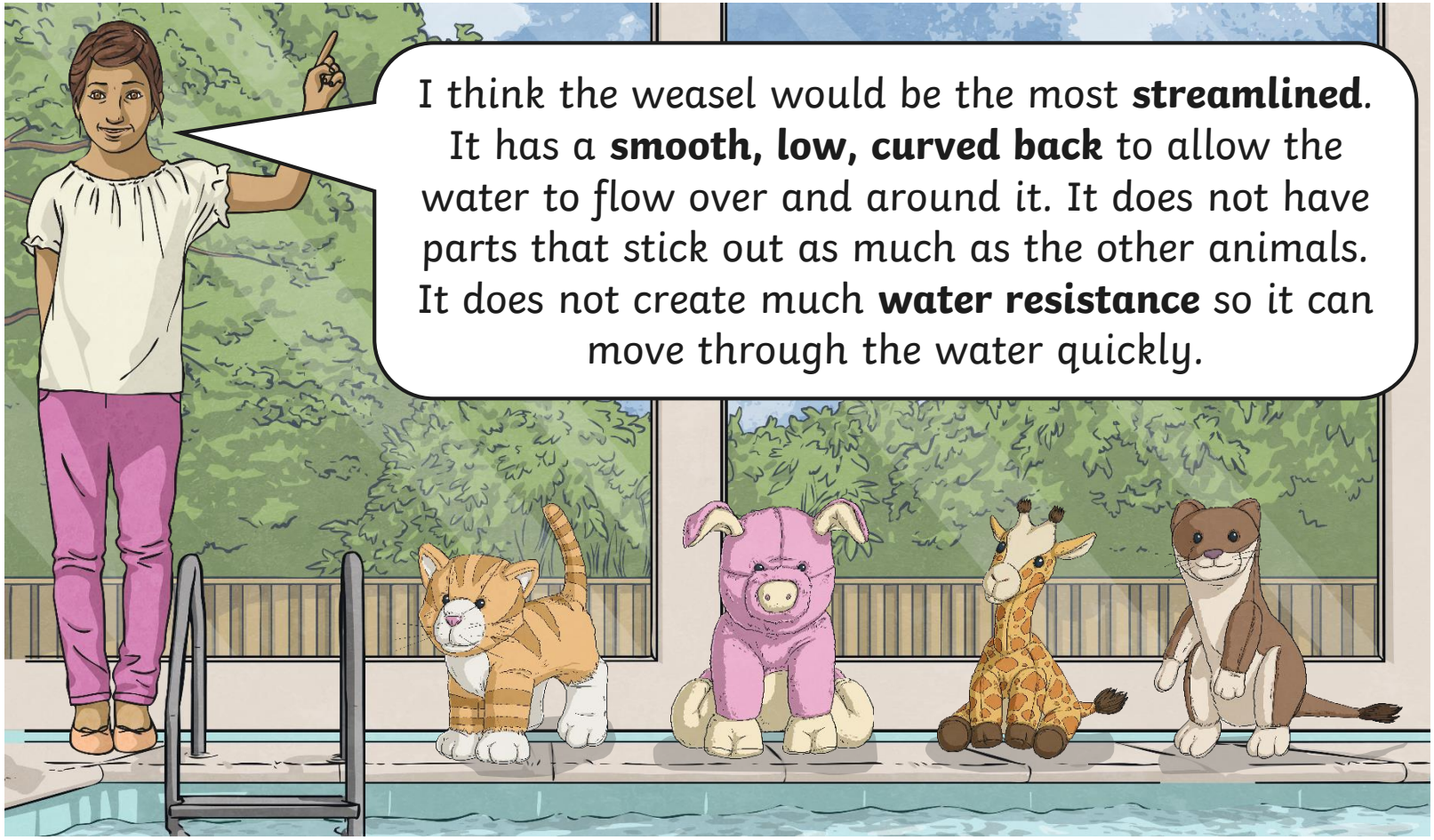
Apply Your Knowledge

Talk to your partner about your ideas.



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