

# Forces In Action

## Learning Objective:

To identify and explain the effects of water resistance.

NEXT



Have you ever tried walking  
in water?

What did it feel like?

How is it different to  
walking on land?

Think, pair, share your ideas.

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For humans, it is much harder to walk in water than it is to walk on land. It takes a lot more force and so a lot more energy.



If walking in water is so hard for us, why are fish and boats able to move easily in water?

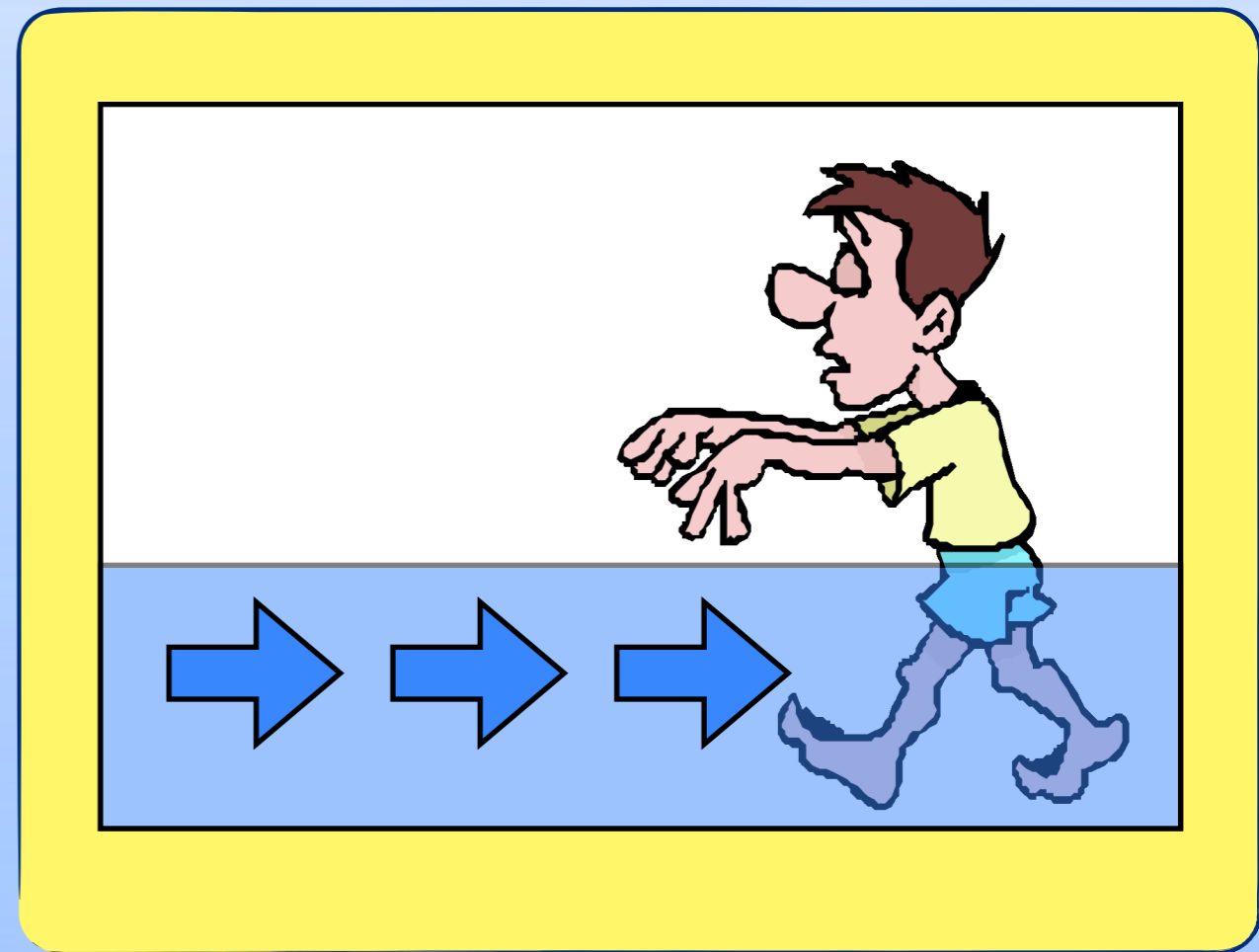
Think, pair, share your ideas.

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It is difficult for humans to walk in water because of **WATER RESISTANCE**. Water resistance is the force that pushes against objects as they pass through the water. This is what you can feel pushing against you as you try to walk in water and why it makes it more difficult than walking on land.

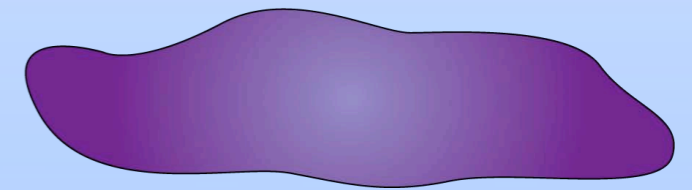
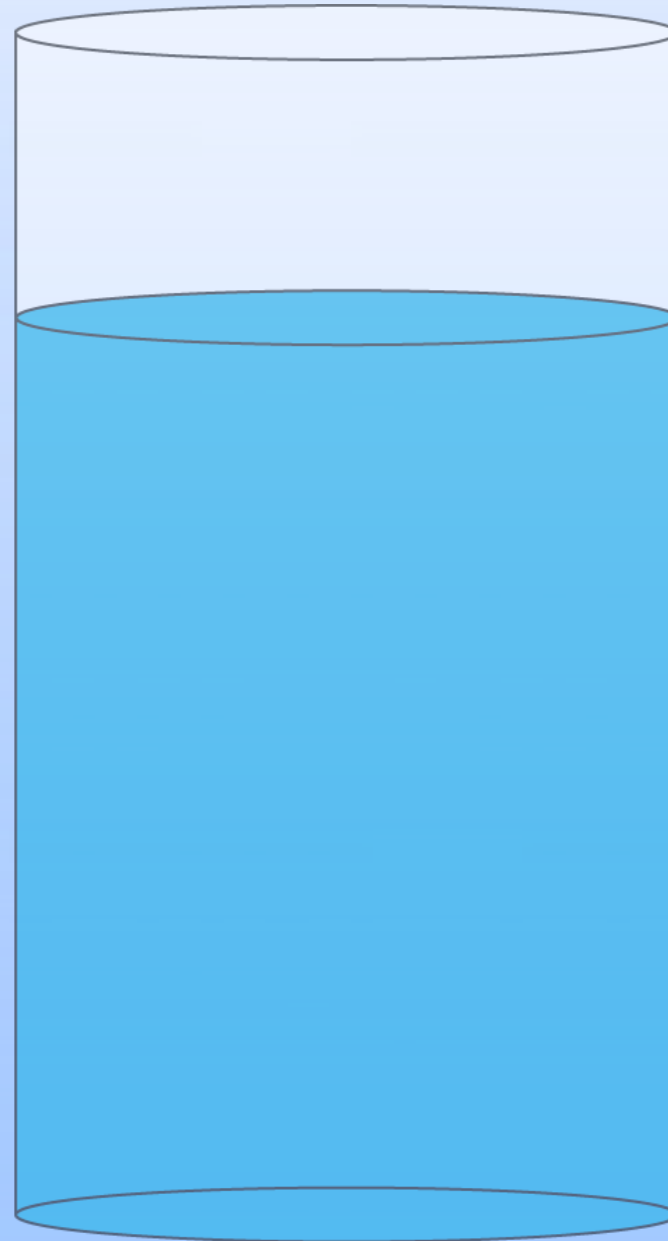
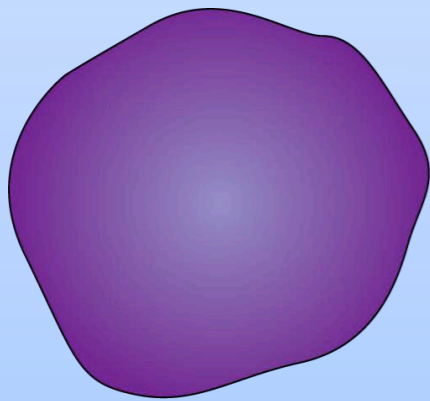
The shape of an object dictates how much water resistance it will meet as it moves through the water. This is why boats and fish are able to move easily through water. Their shapes are **STREAMLINED**. This means they encounter little resistance.



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Which of these two pieces of plasticine do you think will fall to the bottom of this water more quickly and why?



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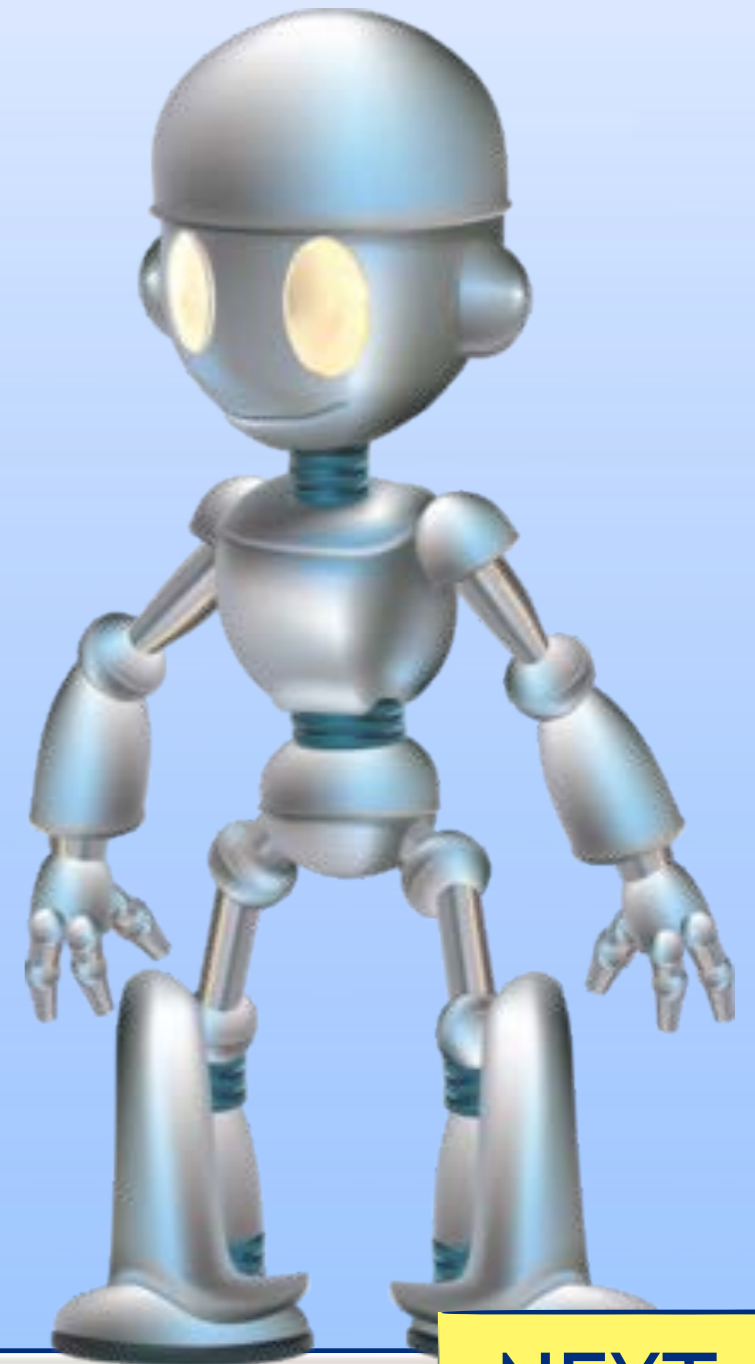
NEXT

Today you will be investigating the amount of water resistance on different shapes and how different shapes move in water.

How do you think you could do this?

How would you make it a fair test?

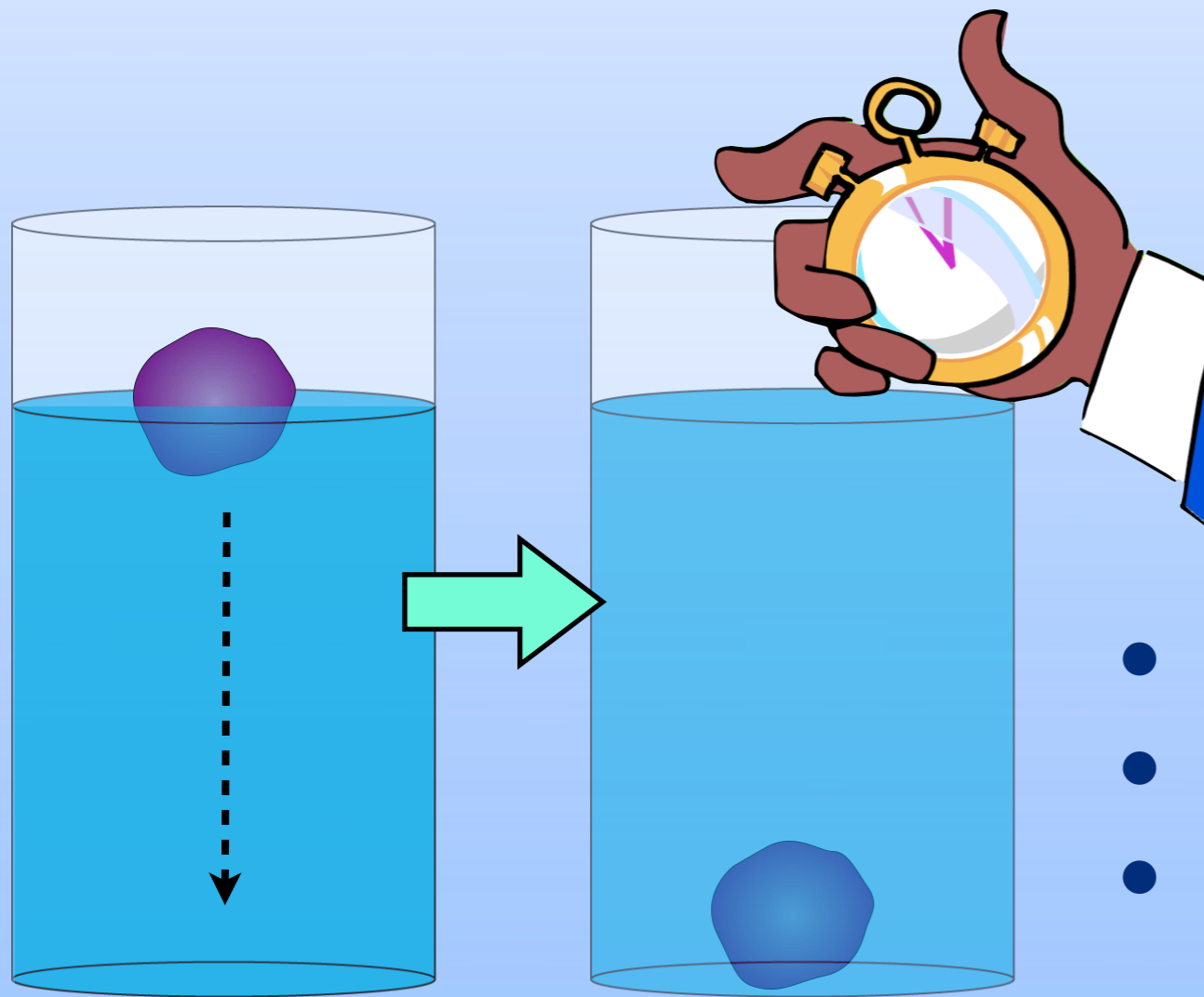
How would you record the results?



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One way you could do this is to have a cylinder of water, drop a piece of plasticine in and time how long it takes to reach the bottom with a stopwatch. You could change the shape of the plasticine each time to see if flat, round, knobbly, smooth or any other shapes encounter the most water resistance.



To make this a fair test, each test would need to have:

- The same cylinder
- The same amount of water
- The same piece of plasticine

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