Float or Sink

STEM Activity

Is It Possible to Walk on Water?

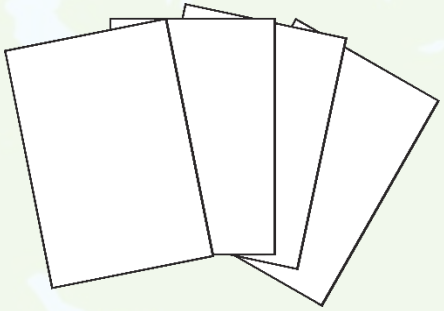
No - Why not? That's right, because you'd probably sink to the bottom.

Do all materials sink to the bottom if you place them on water?

What about...

wood

stone



paper

a feather

a metal pin

Make a guess before we test each object and see if you were right.

Float or Sink

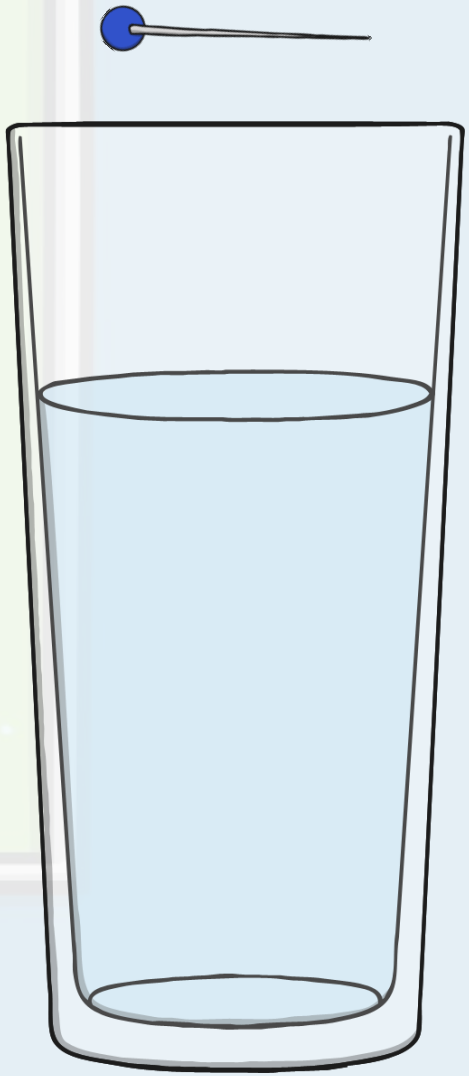
Now we are going to look a little closer at the metal pin.

Did it float?
(No, it sank straight to the bottom!)

But what if I told you we could make this pin float.

Want to know how?

Let's find out...



What You Need

- A large container to hold water
- Water
- Metal pins
- Washing-up liquid

What to Do

1. Fill the bowl full of water and let the water settle.

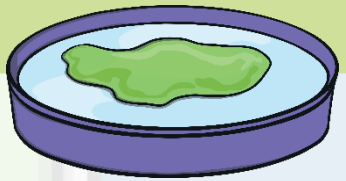
2. Raise the pin above the bowl of water and drop it on top of the water.

   (It should sink to the bottom!)

3. This time, try to place the pin gently on to the surface of the water.

   (It should still sink to the bottom!)

4. Now, add two or three drops of washing-up liquid to the water. Stir this in gently without making bubbles!



5. Now try placing the pin back on top of the water gently again.

6. Ta da!

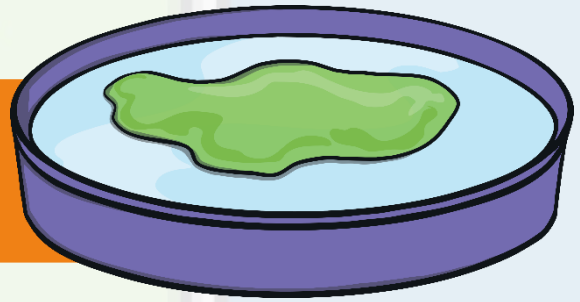
   You have managed to get your pin to float.

Here's What's Happening...

No matter how you would have placed the pin onto the water, before you add the washing-up liquid, it still would have sunk to the bottom.

When you added the washing-up liquid, it changed how thick the surface of the water was. It formed a layer of water and washing-up liquid that was thicker than the rest of the water below. This allowed the pin to 'sit' or 'float' on top.

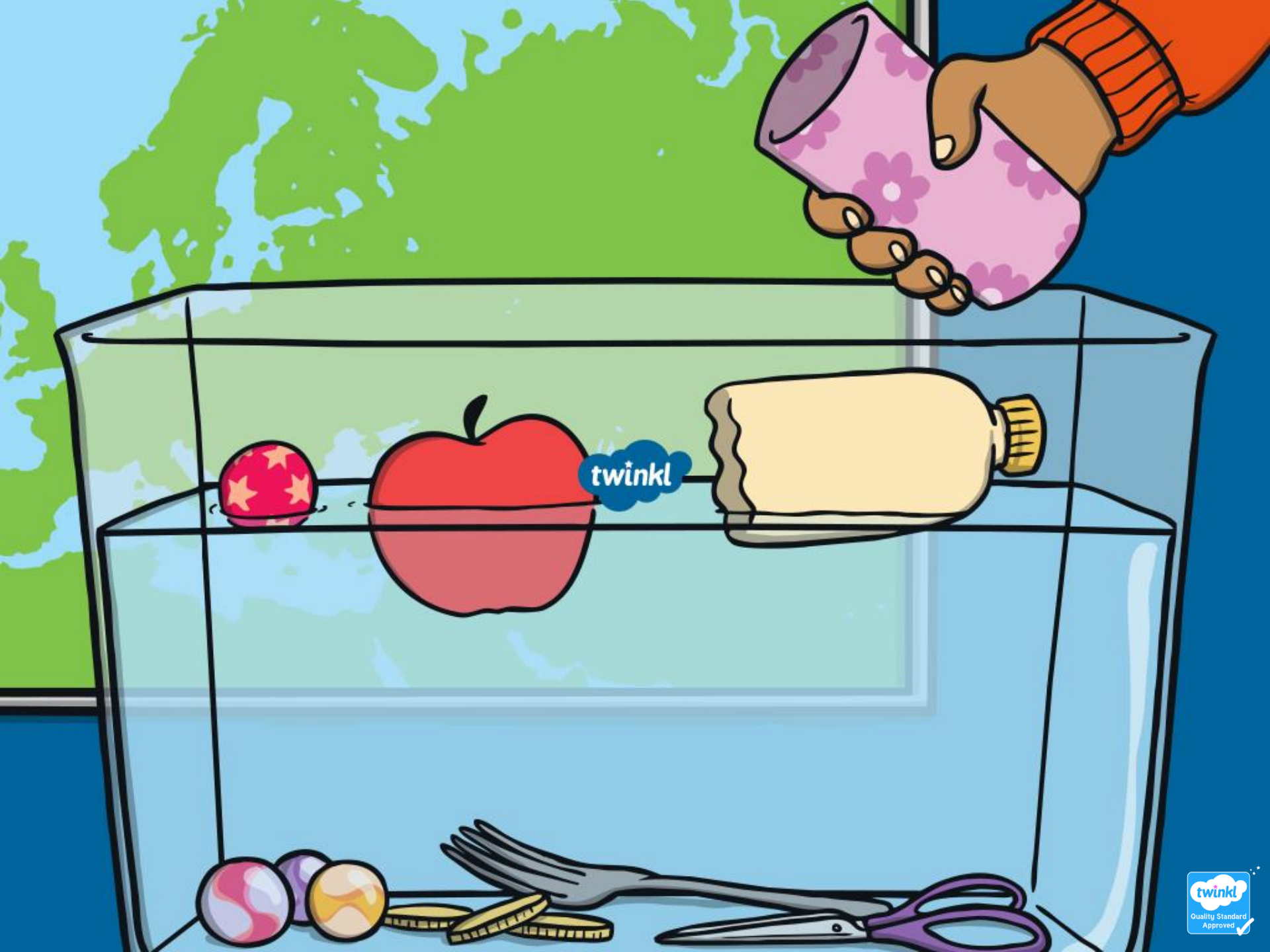
Try placing the pin, point down on to the washing-up liquid surface.



What happens this time?

Why do you think this happens?

How many pins can you get to 'walk on water' in the one bowl?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