

# Magic Water Experiment

In this magic experiment we are going to make arrows change direction!

## What you need:

- Paper
- Textas
- Clear cup or jug (glass works best, but I used a plastic jug here)
- Water

## What to do:

1. Draw some arrows on paper all facing the same direction.
2. Fill your cup or jug with water.
3. Lean the paper with the arrows up against something. I used the wall near my stove.
4. Place the cup/jug in front of the arrows. Look at the arrows through the water in the cup/jug as you move it away from the paper.
5. What happens to the arrows? Have they changed direction? Have they changed size? If you look at the pictures on this page, I drew all arrows facing right. In the first picture the top arrow is still facing right and you can see the bottom arrow is facing left and is longer. This is because I took the photo with the camera angled so the top arrow can be seen above water.
6. What has happened in the third photo? All four arrows are seen through the water and all are facing left. It's magic!
7. The arrows change direction when you look at them through water in the cup/jug as you move them further away from each other. Light bends as it passes through materials. Think of the cup/jug like a magnifying glass. The light passes through the curved edge, through the water, through the other side of the cup/jug, through the air and then hits the paper, making the arrow look like it is reversed. This is called refraction.
8. When finished empty the water into the garden.

