



# A TORNADO IN A BOTTLE



## Equipment

- 2 2-litre clear plastic bottles
- Water
- Food colouring
- 1 teaspoon of glitter (optional)
- Water
- Packing tape or duct tape

## Background Information

We have all seen films with tornados in them. Can you remember what a tornado looks like? Most tornados look like a funnel of cloud and dust travelling at high speed along the ground. Inside the tornado wind may be swirling at 300km/hr. It can be strong enough to lift cars, uproot trees or flatten houses. Most tornados last for no longer than an hour. Tornados are not common in Ireland.

## What to do

1. Fill one of the plastic bottles about  $\frac{3}{4}$  full of water.
2. Add a couple of drops of food colouring.
3. Add about a teaspoon of glitter to the coloured water. The glitter represents the dust in the tornado.
4. With the packing tape and help from a friend tape the top of the empty bottle to the top of the bottle with the water.
5. Make sure the tape is secure around the bottle tops, as we don't want any water leaking out.
6. Turn the bottles around making sure the bottle with the water in it is on top.
7. Watch as the water flows from the top bottle into the bottom bottle.



## What do you notice?

The water flows slowly from the top bottle into the bottom bottle. Also air bubbles travel up through the water in the top bottle, making a noise.

Hold the bottles where they are connected and quickly swirl them in a circular motion for a few seconds.

Stop and look inside the bottles.

## What's happening?

There's a mini tornado in the top bottle as the water flows quickly and quietly into the bottom bottle.



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## Why?

The circular motion of swirling the bottles caused the water to flow in a spiral down into the bottom bottle. Air from the bottom bottle can move more easily to the top bottle. We call our activity a tornado in a bottle because it looks like a tornado, except a tornado happens in air not in water.

## Interesting fact

Tornados rotate in an anticlockwise direction in the Northern Hemisphere, and a clockwise direction in the Southern Hemisphere.

## Older children

Older children could

1. Time how long it takes for the water to flow from the top bottle into the bottom bottle without rotating the bottles.
2. Then time how long it takes the water to flow from the top to the bottom bottle after rotating the bottles.