

Tornado in a Jar

You will need:

- Jar with a lid
- Water
- Vinegar
- Dish soap

1. Fill the jar with water – leaving about 2cm at the top to help the water swirl.
2. Add a few drops of dish soap. You don't need much!
3. Add 1 teaspoon of vinegar.
4. Close the jar and swirl to create your tornado.

Add small beads to the jar to demonstrate the force of the 'tornado'. These will be drawn into the swirling water!



THE SCIENCE

When you swirl the water in the jar, you generate something called a *centripetal force* which is a pressure that pushes the water towards the centre of the bottle. The dish soap and vinegar help you to see the vortex because they generate bubbles that also gather towards the centre. In a real tornado, a collision of air currents forms a rotation. As the air rotates, the centripetal force pushes the air into a vortex similar to what you saw in your jar.