

Vortex Tornado Tube

KI4012



Plastic Bottle Connector for Vortex and Fluid Flow Experiments

Product Overview

The Vortex Tornado Tube connects two compatible plastic soft drink bottles to create a simple demonstration of vortex formation and fluid flow.

By filling one bottle with water, connecting the bottles and rotating the assembly, students can create a visible swirling vortex as the water transfers from the upper bottle to the lower bottle.

The product provides a simple, low-cost way to introduce and investigate a range of physical science concepts.

Typical Applications

- Demonstrating vortex formation
- Investigating fluid movement
- Exploring rotational motion
- Demonstrating gravity and water flow
- Investigating air displacement
- Comparing water transfer rates
- Investigating liquid viscosity
- Developing observation and measurement skills
- Conducting fair-test investigations

Watch it in action:



<https://www.wiltronics.com.au/videos-archive/vortex-tornado-tube-in-action/>



Basic Operation

1. Partly fill a compatible plastic bottle with water.
2. Securely screw the Vortex Tornado Tube onto the bottle.
3. Attach a second empty bottle to the opposite end of the connector.
4. Turn the connected bottles so that the water-filled bottle is uppermost.
5. Rotate the bottles in a circular motion to begin the water spinning.
6. Observe the vortex as water flows into the lower bottle.

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Classroom Investigation Ideas

Students can investigate:

- Does creating a vortex make the water transfer faster?
- How does rotation speed affect the vortex?
- Does the amount of water in the bottle affect vortex formation?
- How does bottle shape affect water flow?
- How do liquids with different viscosities behave?
- What happens if the bottles are not rotated before being inverted?

Science Concepts

Vortex: A rotating mass of fluid around a central axis.

Fluid Flow: The movement of a liquid or gas from one location to another.

Gravity: The force that causes the water to move toward the lower bottle.

Air Displacement: Air from the lower bottle must move upward as water enters it.

Viscosity: A measure of a fluid's resistance to flow.

Specifications

Product Type: Vortex / tornado bottle connector

Application: Science and STEM education

Material: Moulded plastic

Use: Connects two compatible plastic drink bottles

Bottles Supplied: No

Typical Medium: Water

Reusable: Yes



Important Note

Bottle neck and thread designs can vary between manufacturers. Use bottles that securely engage with the connector and check the assembly for leaks before conducting experiments.

Safety

Use only safe, non-hazardous liquids for classroom investigations. Ensure bottle connections are secure before turning or rotating the apparatus. Conduct experiments over a suitable wet area or tray where necessary.