

Make a Tornado

You will need:

1. Piece of 10x12-inch wood
2. Glue gun
3. Two 9x10-inch vinyl sheets which are 0.010 inches thick
4. Hand-held fan
5. Small dish or cup
6. Clear plastic plant saucer with a 7-inch diameter. Cut a 2-inch hole in the middle.
7. Half-cup of water
8. Dry ice



What to do:

1. Glue the cup in the center of the piece of wood.
2. Glue one of the vinyl sheets onto one side of the cup. Then glue the rest of the sheet in a half-circle around, but not touching, the cup.
3. Glue the second sheet around the opposite side of the cup. Glue the rest of the sheet in a half circle. The two sheets must overlap, but not touch.
4. Pour about half-a-cup of water into the cup.
5. Using gloves, place a few small pieces of dry ice in to the cup.
6. Quickly place the plant saucer upside-down on the top of the two pieces of vinyl.
7. Turn on the fan and place it in the hole in the saucer to draw up the air.
8. Watch the tornado spin!

What do you see?

You will see a vortex of wind. In other words, a tornado.

What is a tornado?

A tornado is a vortex born out of a large thunderstorm (supercell).

Why do you see a tornado?

The whirling fan creates a spinning updraft of air. This pulls air in at the bottom of the container and out at the top of the plant saucer. Because dry ice is made of frozen carbon dioxide, it is very cold. As it warms, it turns from a solid into a gas. It cools the air above it, causing a little cloud of water vapor to condense from the air. The little cloud enters the updraft allowing us to see the spinning vortex.

How is a tornado connected to weather?

In reality no fan exists at the top of an actual thunderhead phenomenon is not completely understood by scientists. Some ideas include two wind currents at two different altitudes blowing at different speeds creating wind shear. If this column of air gets caught in a supercell updraft, the updraft tightens the spin and speeds up and creates a funnel cloud. The funnel cloud then becomes a tornado when the rain and hail cause the funnel to touch down on the ground.