

# Explore Tornadoes!

## phenomenal science

A **tornado** is an amazing, awesome act of nature that can leave citizens dumbfounded. It's a huge, swirling, beast of a storm that can appear to have a mind of its own.

**Tornadoes** start with a massive thundercloud. The cloud sucks huge amounts of air up its center. In the largest clouds, called **super cells**, there is enough energy in that upswelling of air to spawn a **tornado**. As warm, wet air collides with cool, dry air, the storm will spin faster and faster. It finally twists down to the ground, creating a **tornado**.

If you've ever seen a whirlpool form in a drain, you have seen how a **tornado** works. A drain's whirlpool, also known as a **vortex**, forms because of the down draft that the drain creates in the body of water. The downward flow of water into the drain begins to rotate, and as the rotation speeds up the **vortex** forms.

**Tornadoes** move and devour the ground, following a path controlled by the thundercloud it came from. Sometimes the **tornado** will appear to hop. The hops occur when the **vortex** is disturbed. The **tornado's vortex** will hop, form, and collapse along the thundercloud's path.

Scientists measure **tornado** strength on the **Fujita Scale**, also known as the **F-Scale**. Wind speeds are estimated by the damage accumulated from a **tornado**. Once those wind speeds are established, a **tornado** can be placed on the **F-Scale**. The weakest **tornadoes** are rated **F-0** with wind speeds of up to 72MPH. **F-2 tornadoes** can tear roofs from houses and destroy mobile homes. **F-4 tornadoes** are able to toss cars up in the sky with winds of up to 260mph. **F-5 tornadoes** bring total devastation at over 300 mph, no faster winds have ever been recorded by scientists. An **F-5 tornado** can pick up a cow and launch it as a projectile.

Despite modern radar technology, experts cannot predict exactly when and where a **tornado** will touch down. It's important to pay attention to emergency broadcasts if you live in a **tornado zone**. Should a **tornado** happen where you live, the safest place to be is an underground storm shelter with a very strong door such as a basement or emergency shelter.

## Historical Tornadoes

1840

### Great Natchez Tornado

The 2nd deadliest tornado in US history, this storm killed 317 people and injured 109.

1925

### Tri-State Tornado

This giant storm left the longest recorded track in the world at 219 miles in length.

1974

### Super Outbreak

Over 148 tornadoes hit 13 states, with nearly 30 of the tornadoes ranked on the Fujita Scale as F5.

2011

### Joplin Tornado

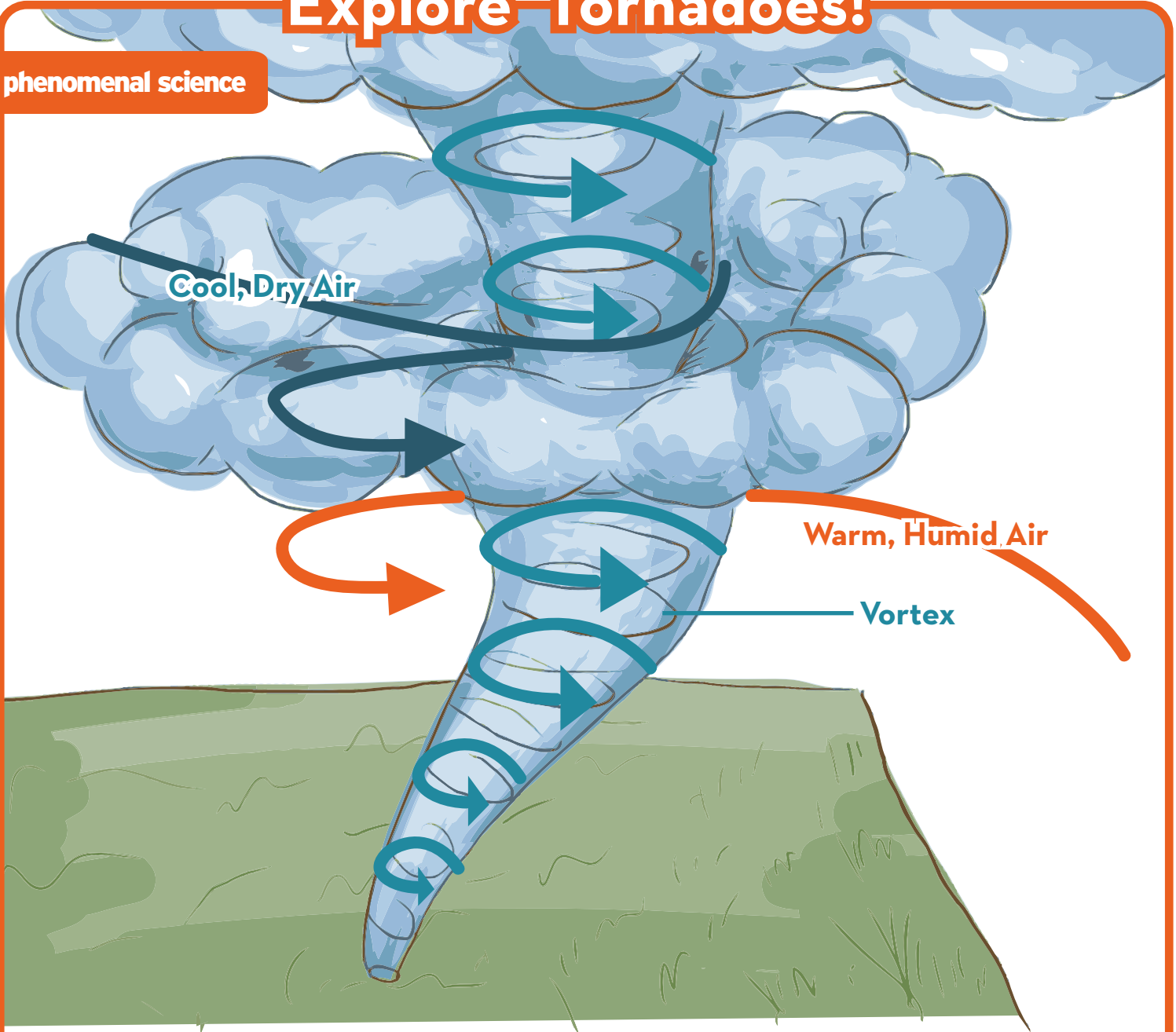
One of the costliest single tornadoes in US history, the cost to rebuild after the Joplin disaster reached \$3 billion.

## Safety Tips

- 1 Seek shelter immediately during a tornado.
- 2 Keep away from windows.
- 3 Keep away from electric sockets and wires.
- 4 Keep an emergency radio.
- 5 Move to a basement or under a sturdy table.
- 6 Research ways to secure and prepare your home.
- 7 Lay face down on the ground and cover yourself.

# Explore Tornadoes!

phenomenal science



**After reading the article on tornadoes, please answer the following questions:**

What makes a tornado spin? \_\_\_\_\_

What is the Fujita Scale? \_\_\_\_\_

Describe how a tornado moves. \_\_\_\_\_