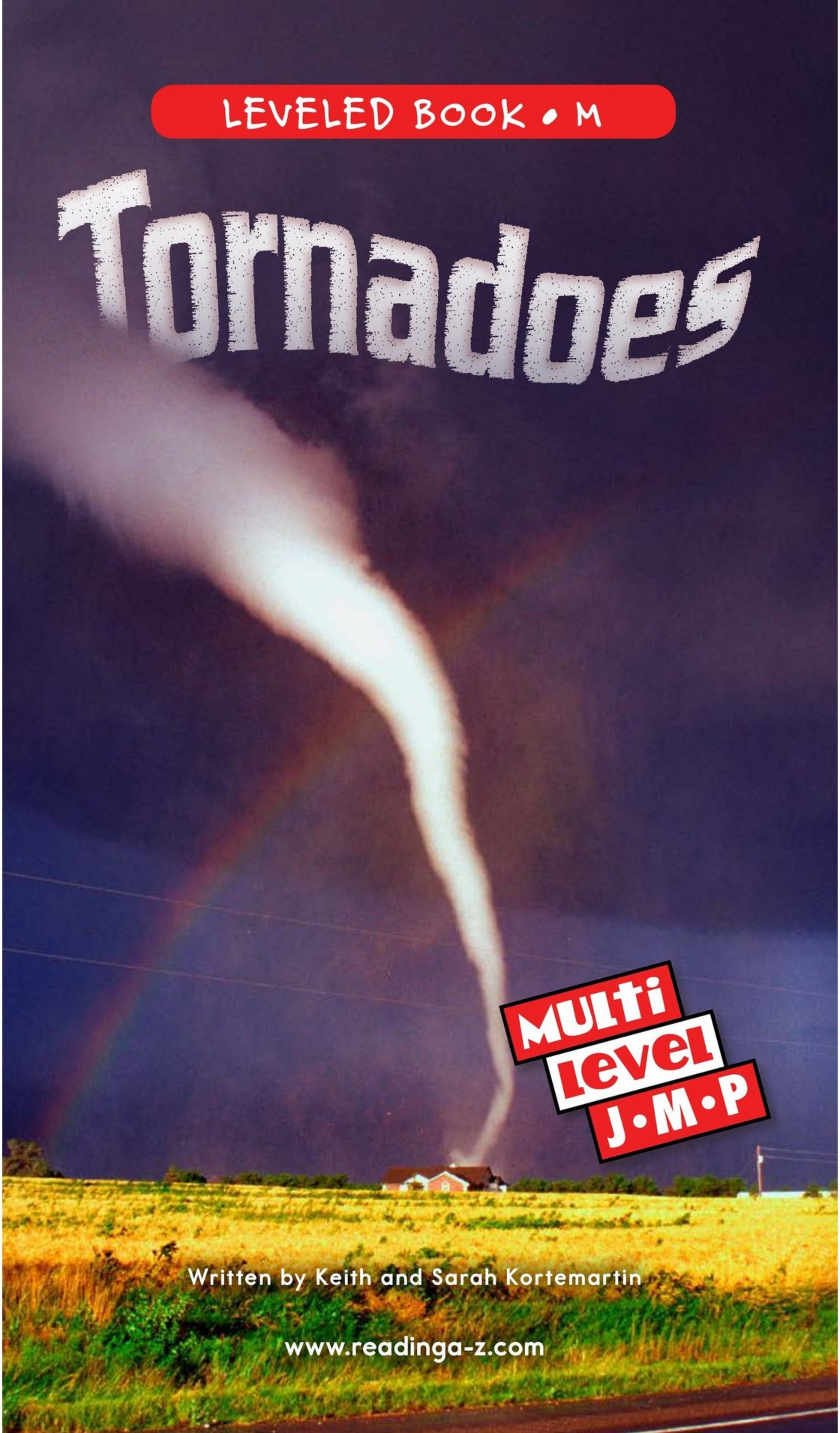
LEVELED BOOK • M

Tornadoes



Multi level J•M•P

Written by Keith and Sarah Kortemartin

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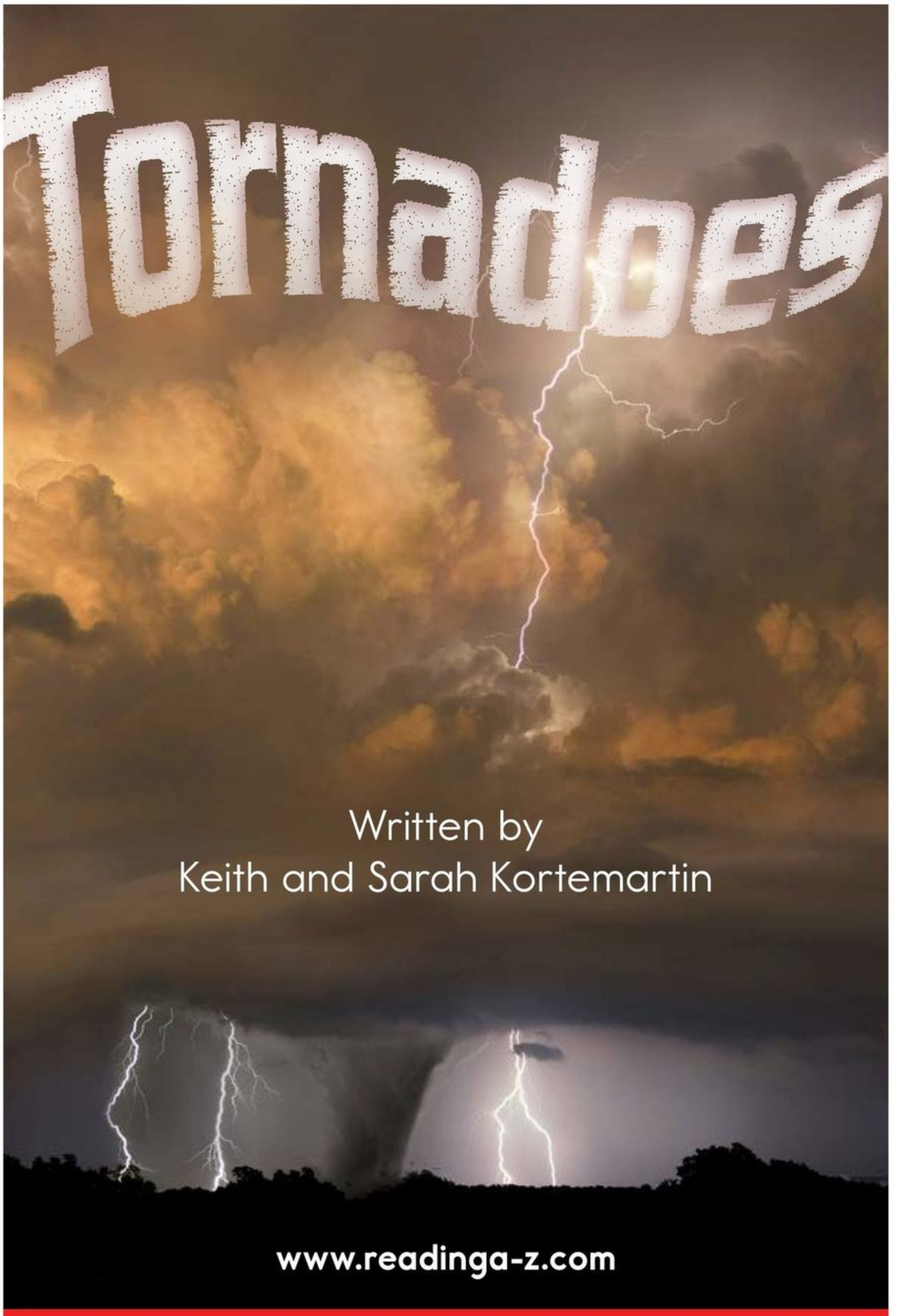

Focus Question

What are tornadoes, and why are they dangerous?

Words to Know

atmosphere
damage
funnel
moist
strike
tornadoes

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Introduction

What can lift roofs from buildings and sweep houses into the air? **Tornadoes** can!

Tornadoes come in many sizes. Some tornadoes measure only a few feet (1 meter) across. Others are more than a mile (1.6 km) wide. Some tornadoes touch down for a short period of time. Others travel for hundreds of miles.

A powerful tornado that hit St. Louis, Missouri, in 2011 almost tore the roof off this home and turned over an SUV in the driveway.

A supercell thunderstorm moves across Nebraska in June 2004, leaving a few tornadoes in its path.

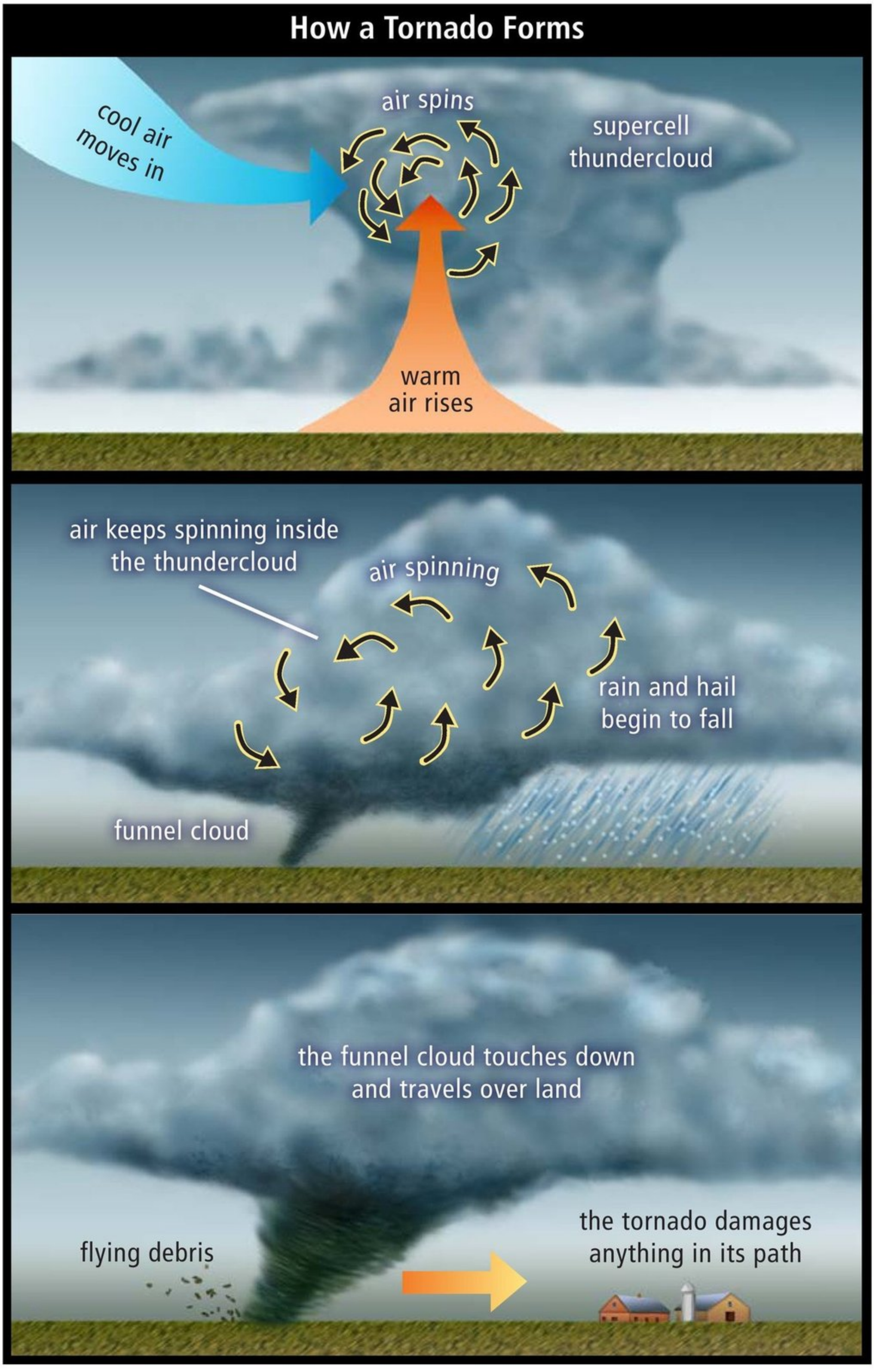
How Tornadoes Form

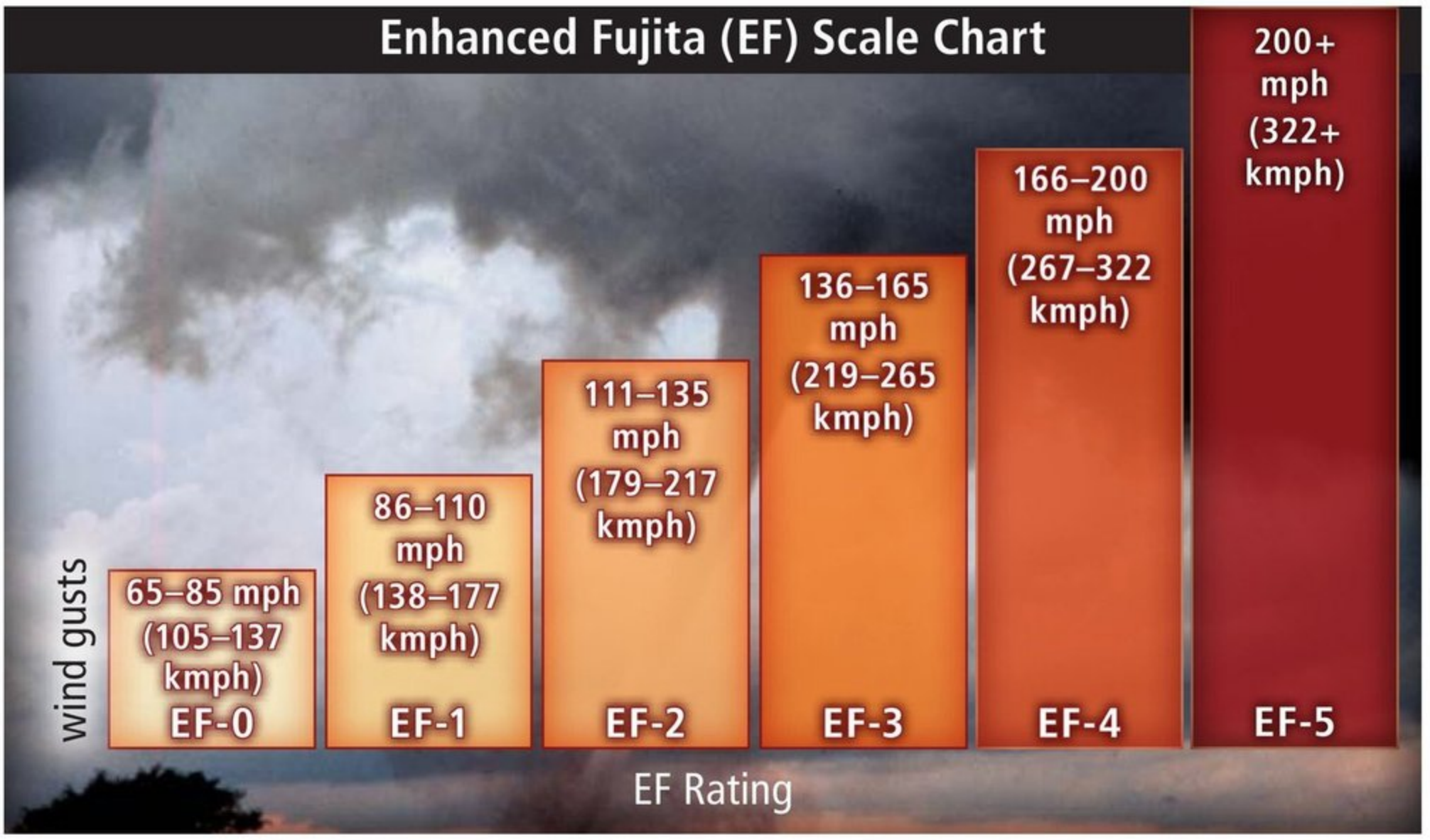
Why do tornadoes happen? Scientists aren't sure. They know that strong tornadoes come from huge thunderstorms called *supercells*. These storms form when warm, **moist** air rises in the **atmosphere** and mixes with cold, dry air.

Scientists think that in some supercells, the mixture of air at different temperatures causes the air to spin. The spinning air forms a cloud in a **funnel** shape. When the funnel touches the ground, it becomes a tornado.

Some scientists think that tornadoes happen in order to balance the temperature and moisture in the air.

This funnel cloud eventually became a strong tornado that hit Kansas in 2004 with hail as large as softballs.


How a Tornado Forms
cool air moves in
air spins
supercell thundercloud
warm air rises
air keeps spinning inside the thundercloud
air spinning
rain and hail begin to fall
funnel cloud
the funnel cloud touches down and travels over land
flying debris
the tornado damages anything in its path



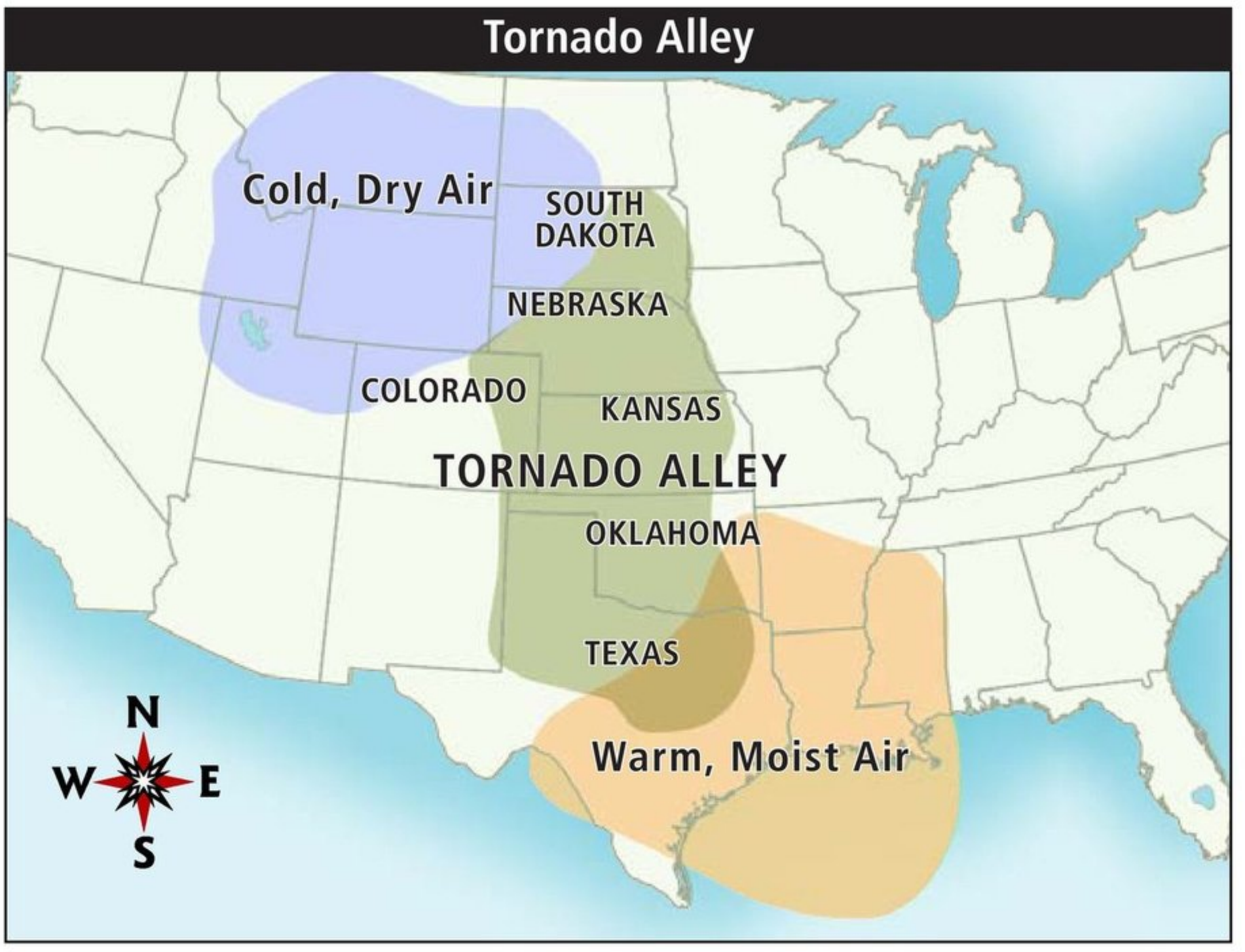
The EF Scale was created by scientist T. Theodore Fujita to measure the strength of tornadoes.

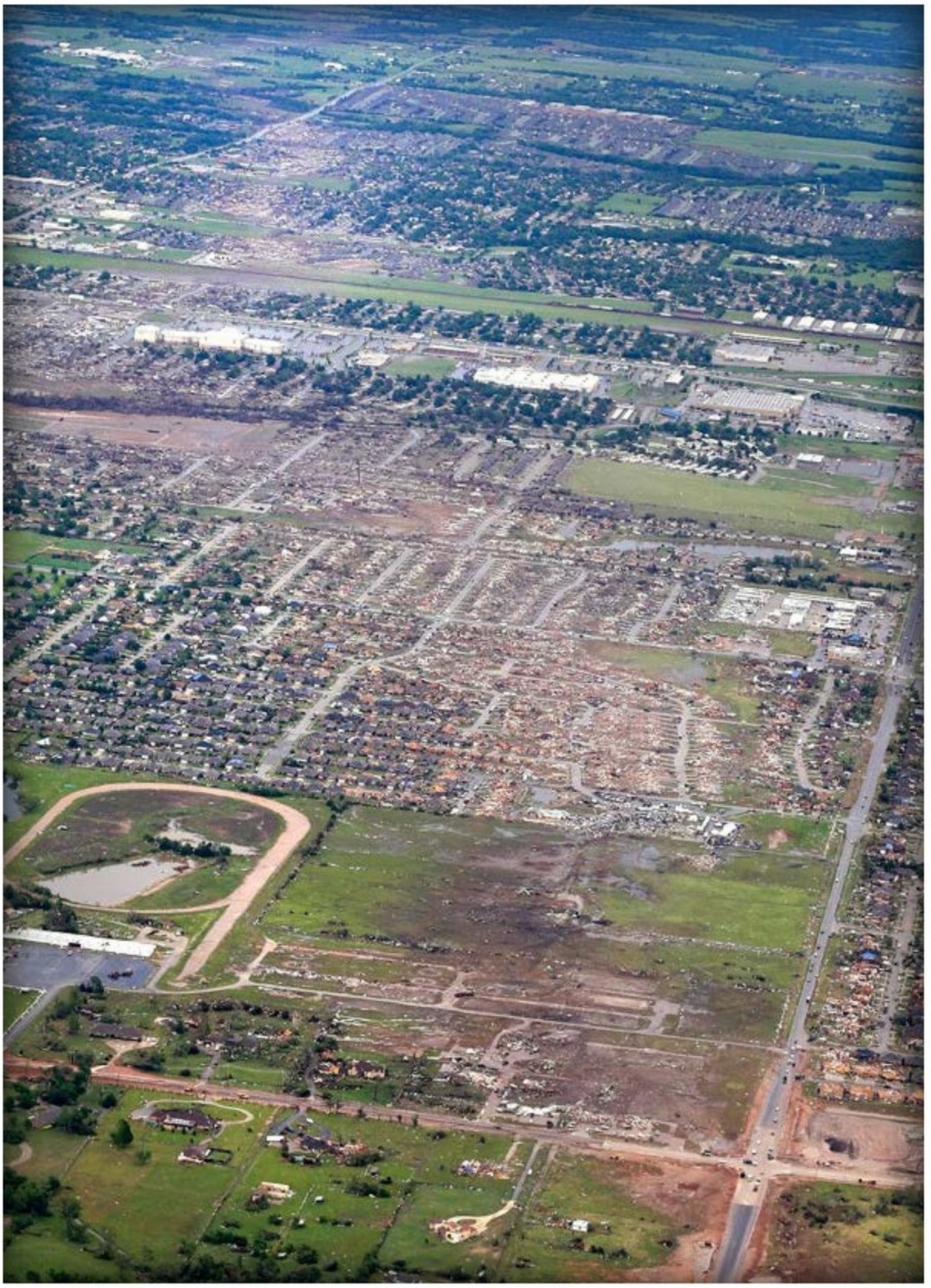
Measuring Tornadoes

Scientists are still studying the causes of tornadoes, but they have a system to estimate their strength. They use a special scale called the Enhanced Fujita (EF) Scale. It uses wind speed to rate a tornado's strength. Scientists look at the **damage** caused by a tornado to estimate wind speed. EF-5 tornadoes, the most powerful tornadoes, have winds greater than 200 miles per hour (322 kmph).

Where Tornadoes Form

Tornadoes may be hard to measure, but scientists have a good idea where they will **strike**. It's possible for a tornado to happen anywhere in the world. However, most tornadoes occur in the central part of the United States, also known as Tornado Alley. More than one thousand tornadoes develop there each year.





A massive tornado in Moore, Oklahoma in 2013 left behind a clear path of its destruction.

In Tornado Alley, the mixing of air from the north and south creates perfect conditions for a tornado.

Famous Tornadoes

- A tornado in 1925 traveled more than 300 miles (483 km) through Missouri, Illinois, and Indiana. It killed 695 people, the highest number of people killed by a tornado in U.S. history.
- In 1992, a tornado in Mississippi carried a baby up into the air and left the child hanging from the branch of a tree. The baby was hurt but lived.
- Two huge storm systems in April 1974 and April 2011 each produced hundreds of tornadoes.
- In May 2011, an EF-5 tornado struck Missouri. This tornado crushed cars and trucks and destroyed more than seven thousand homes.

A tornado that hit Kansas in 2003 was so powerful that it caused a child's bicycle to wrap around a tree.

- In March 2012, a giant tornado swept through Henryville, Indiana. It was enormous—150 yards (138 m) wide—and traveled a far distance—52 miles (84 km).

The tornado that struck Henryville, Indiana, in March 2012 caused thirty-nine deaths in five states.

Tornado Safety

Because tornadoes are so dangerous, weather scientists do their best to warn people before a tornado arrives. However, there is no way to be sure that a tornado will strike. The National Weather Service (NWS) tries to help people stay safe during tornadoes. If they declare a tornado *watch,* it is possible that a tornado might develop.

The NWS releases a tornado *warning* when scientists have actually spotted a coming tornado. At this point, it is important to get to a safe place.

Some towns and cities install sirens that sound to warn people once a tornado has been spotted.

This underground shelter was built to provide protection from tornadoes, such as the one that destroyed the house next to the shelter.

The safest place to be is indoors, in a basement if possible. The next safest places are closets or bathrooms. Try to stay away from windows because a tornado can blast through the glass.

Get down low to the ground. If possible, go under a heavy table or desk and cover your head. You can even go into a bathtub.

This sign alerts people that a shelter is nearby where they can find safety in the event of a tornado.

Students practice for a tornado strike by going into a hallway and covering their heads.

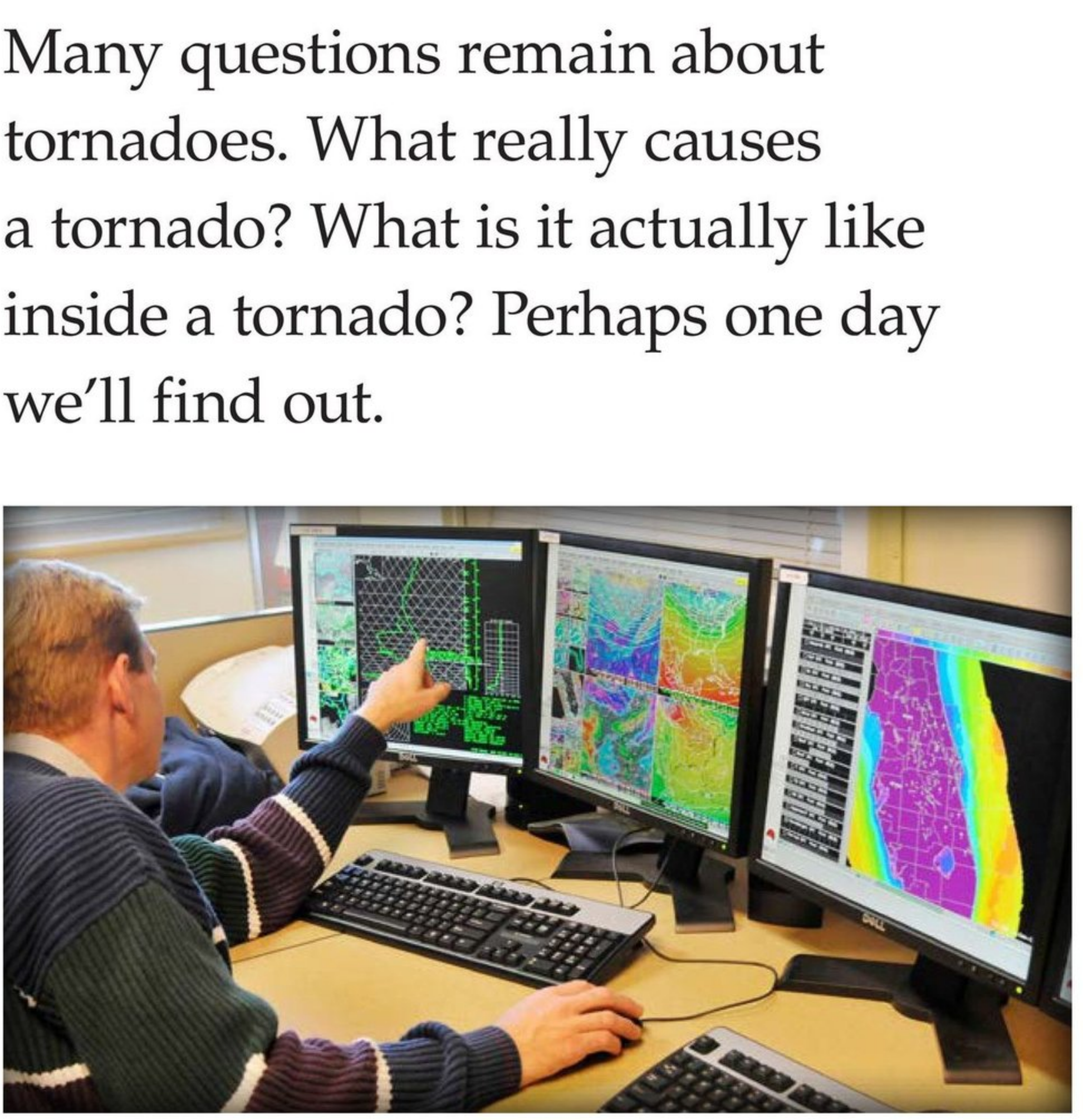
The spinning cloud of a tornado causes things to fly around. Because this can be very dangerous, it's always important to protect your head. If you can find a mattress or blankets, cover yourself with them.

If you are in a tall building, find the stairs. Do not stay inside a mobile home in a tornado. If you're in a car and can't escape the tornado, park the car. Leave your seatbelt on and lean forward. If you're stuck outdoors, lie down flat on the ground, far away from trees.

Conclusion

Tornadoes are amazing—and scary—examples of the power of nature. Weather scientists are working to invent better ways to tell when a tornado is coming.

Many questions remain about tornadoes. What really causes a tornado? What is it actually like inside a tornado? Perhaps one day we'll find out.



A weather scientist studies weather maps to try to spot when a tornado will strike next.

Glossary

atmosphere *(n.)* a layer of gases surrounding a planet, star, or moon (p. 5)

damage *(n.)* harm done to someone or something (p. 8)

funnel *(n.)* a cone-shaped tube that is wider at the top and is often used to pour liquid or powder into a small opening (p. 5)

moist *(adj.)* slightly wet; damp (p. 5)

strike *(v.)* to happen suddenly or appear (p. 9)

tornadoes *(n.)* fast-spinning, funnel-shaped clouds that touch Earth's surface (p. 4)

Tornadoes

A Reading A–Z Level M Leveled Book
Word Count: 564

Connections

Writing

Write a newspaper article for children about tornadoes. Include facts from the book in your article.

Social Studies and Art

Make a poster explaining how to stay safe during a tornado. Share your poster with your class.