

## **Tornado WebQuest: Nature's Most Powerful Storms**

### **Introduction**

Every year, tornadoes impact communities across the United States and around the world. These violent rotating columns of air can form quickly, destroy buildings, uproot trees, and dramatically change lives in just minutes. Meteorologists study tornadoes to better understand how they form, how to predict them, and how people can stay safe.

In this WebQuest, you will become a severe weather researcher. You will investigate how tornadoes form, where they occur most often, how scientists measure tornado strength, and how communities prepare for severe weather events.

### **Part 1 - Understanding Tornadoes**

-National Weather Service /National Oceanic Atmospheric Administration – Tornado Basics  
<https://www.nssl.noaa.gov/education/svrwx101/tornadoes/>

-National Geographic – Tornadoes  
<https://kids.nationalgeographic.com/nature/article/tornadoes>

### **Questions**

1. What is a tornado?
2. What weather conditions are necessary for tornado formation?
3. What is a supercell thunderstorm?
4. Why is warm, moist air important in tornado formation?
5. Why does wind shear contribute to tornado development?
6. In what part of the United States do tornadoes occur most often?
7. Why is this region called “Tornado Alley”?
8. What time of year experiences the highest tornado activity?

### **Part 2 - Measuring Tornadoes**

How Tornadoes Are Rated

<https://www.noaa.gov/jetstream/thunderstorms/thunderstorm-hazards-tornadoes>

### **Questions**

1. What does the Enhanced Fujita (EF) Scale measure?
2. What is the difference between an EF0 tornado and an EF5 tornado?
3. Why do scientists estimate wind speeds instead of directly measuring them?

4. Describe the damage associated with EF1, EF3, and EF5 tornadoes.
5. Why is tornado damage assessment important?

### **Part 3 - Tornado Safety Tips**

<https://www.redcross.org/get-help/how-to-prepare-for-emergencies/types-of-emergencies/tornado.html>

#### **Questions**

1. What should people do during a tornado warning?
2. Why are windows dangerous during tornadoes?
3. What is the safest location in a house during a tornado?
4. Why are mobile homes especially dangerous during tornadoes?
5. What emergency supplies should families keep ready?
6. Explain the difference between a tornado watch and a tornado warning.

### **Part 4 - Real Tornado Case Study**

Choose ONE historic tornado event to investigate:

- Tri-State Tornado (1925)
- Joplin Tornado (2011)
- Moore, Oklahoma Tornado (2013)
- Tuscaloosa–Birmingham Tornado (2011)
- Greensburg, Kansas Tornado (2007)

#### **Case Study Questions**

1. When and where did the tornado occur?
2. What EF rating did it receive?
3. How much damage did it cause?
4. How many people were injured or killed?
5. What weather conditions contributed to the tornado?
6. How did emergency responders react?
7. What lessons were learned from this event?