

Make a **Family Emergency Plan**

by Kathy Furgang

What can people do to
protect themselves from the
dangers of severe storms?

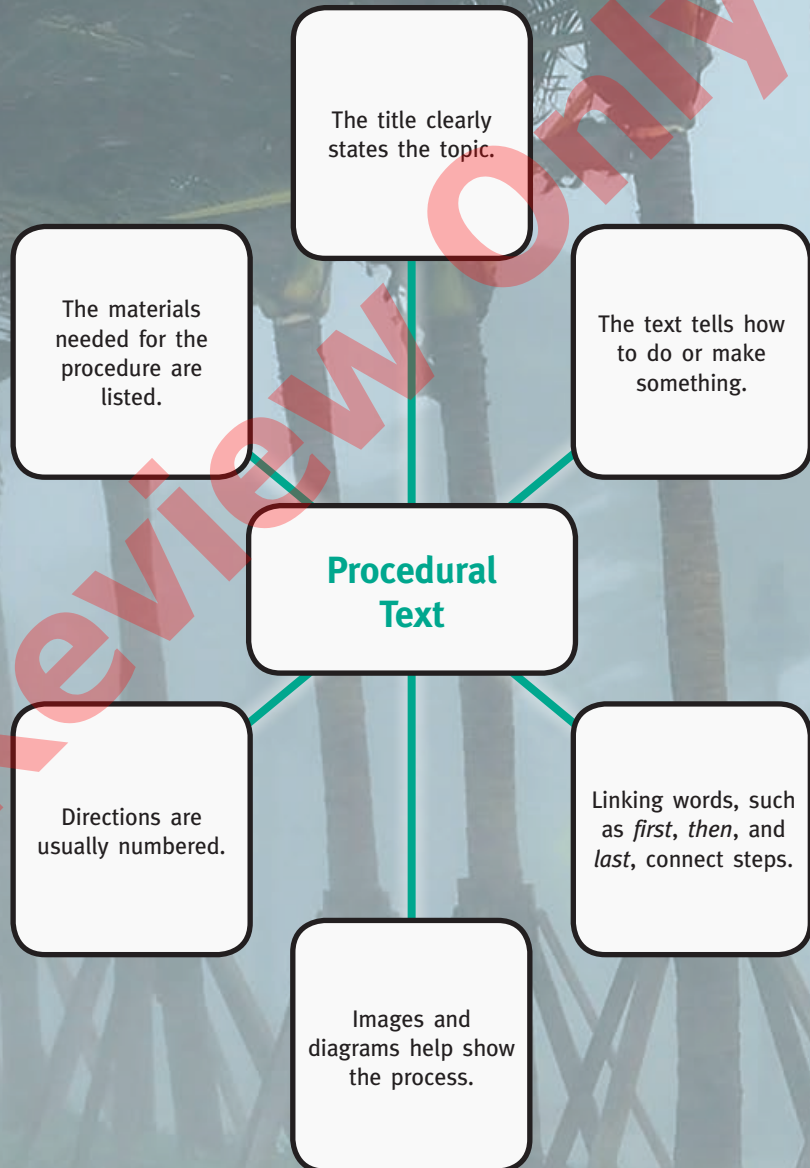


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Warning, Warning

The weather can change day to day, hour to hour, even minute to minute. That is because **weather** describes the condition of the atmosphere at any given moment in time. This is different from **climate**, which describes the average weather patterns over long periods of time.

Depending on the climate, some places may experience more extreme weather during certain seasons. For example, in Canada and the northern United States, blizzards may occur during the winter season.

In the midwestern states, spring is known as tornado season. And in the southeastern United States, late summer and early fall are considered hurricane season.

Blizzards, tornadoes, and hurricanes are examples of severe weather storms. These types of catastrophic storms can cause costly damage and life-threatening harm to communities.

Five of the Costliest Hurricanes in U.S. History



Hurricane	Year	Cost to Repair the Damage (in billions)
Katrina	2005	\$108
Sandy	2012	\$75
Ike	2008	\$37.5
Wilma	2005	\$29.4
Andrew	1992	\$26.5
Rita	2005	\$12

Source: Time Magazine



◀ People can get hazardous weather warnings from television reports, cell phone updates, radio broadcasts, and more.

The best defense against these storms is to be alert, listen to local news reports and weather warnings, and plan ahead.

Knowing about a storm in advance helps people prepare. Having a plan in place for what to do in these weather conditions also can save time, money, and lives.

In this book, you will learn about various types of severe storms. You'll become familiar with the dangers inherent in hazardous weather and ways people can prepare. You'll also have a chance to develop your own emergency plan in order to have resources to stay safe during storms.



***BREAKING NEWS . . .
WE INTERRUPT THIS
BROADCAST WITH A
SEVERE WEATHER WARNING.***

The Dangers of Storms

Severe storms are dangerous to people and can also cause a lot of damage to homes and businesses. Here are a few of the hazards severe storms can cause.

Loss of Electricity

Severe storms can knock down power lines. As a result, homes, businesses, and even hospitals can be left without electricity. Without electricity, medical equipment in hospitals cannot run, which puts patients' lives at risk. Without electricity, refrigerators stop running, which means people do not have access to fresh food. Another major concern is the power lines themselves.

If a person mistakenly comes in contact with a downed power line, the person could be electrocuted.

Loss of Heat

In the United States, most homes are heated by heating oil, electricity, or gas. But storms can damage buildings, electrical lines, and pipes. This can result in a loss of heat. During cold weather, losing heat can be dangerous. Cold temperatures can pose serious health risks. Being exposed to extreme cold can cause frostbite and hypothermia.

▼ In 2017, Hurricane Maria hit Puerto Rico, leaving about half of the island without electricity.





▲ According to the National Weather Service, the greatest number of weather-related deaths in 2016 were caused by flooding.

▼ After Hurricane Sandy, rescue groups and government agencies delivered tens of thousands of bottles of water to people.



Flooding

Some severe storms can cause flooding. A flood occurs when a large amount of water, such as from a river or creek, flows out and onto typically dry areas. For example, a severe storm with heavy rains can cause water levels in a river to rise and flow onto roads and streets. Flood waters can soak and crack the walls of homes, causing the homes to be unstable. Flood waters can even sweep away cars.

Lack of Fresh Water

Severe storms can create conditions where people do not have access to clean, fresh water. Storms can break water pipes, cutting off water supplies. If storms cause **sewage** to flow into water supplies, the water can also become **contaminated**. Drinking contaminated water can make people sick and can even cause death.

Types of Storms

Severe weather can happen around the world. These are different types of storms that can cause severe weather.

Tropical Storms

Tropical storms form over warm ocean water. Warm air rises off the warm water, picks up speed, and begins to rotate. The rotating winds then become stronger and more dangerous. Once a tropical storm reaches a wind speed of 119 kilometers (74 miles) per hour or higher, it is classified as either a hurricane or a typhoon, depending on where the tropical storm first formed.

When tropical storms begin over the Atlantic Ocean or the northeastern part of the Pacific Ocean, they are called hurricanes. When they begin over the northwestern part of the Pacific Ocean, they are called typhoons. Elsewhere in the world, they are referred to simply as tropical storms or as tropical cyclones.

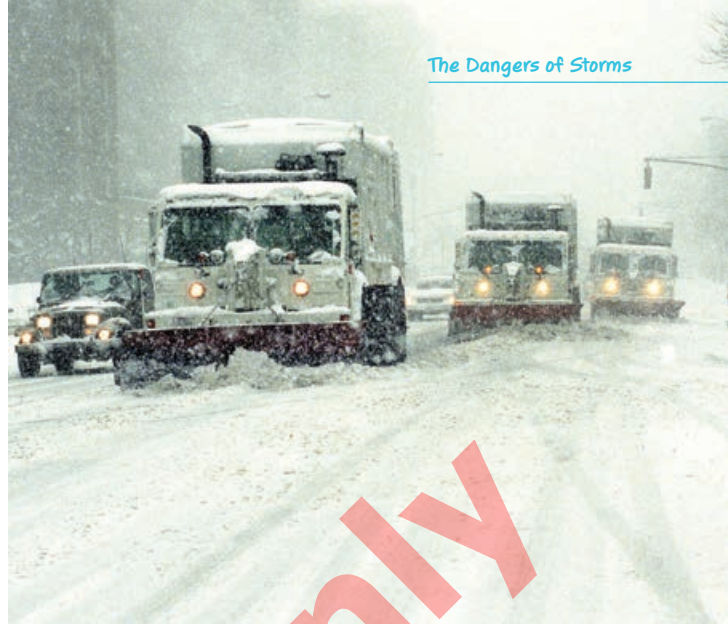
The winds of tropical storms can move as fast as 251 kilometers (156 miles) per hour. When they reach land, these winds can do massive damage, even breaking trees. Huge ocean waves, called **storm surges**, sweep on shore. On average, tropical storms bring storm surges up to 6 meters (20 feet) above normal water level onto land, causing flooding, but some tropical storm surges have been even higher.

Tropical Storms Around the World



Blizzards

Blizzards are winter storms with heavy snowfalls and high winds. This combination causes low visibility and hazardous driving conditions. A severe blizzard can have winds as fast as hurricane winds. Heavy snowfall can also weigh down trees, causing the trees to fall. Fallen trees can sometimes land on rooftops, causing damage to homes, or across electrical lines, causing a loss of electricity to an entire area.



▲ In 1993, a blizzard called the Storm of the Century caused at least 2.5 million people to lose electricity in the United States.

▼ People who live along coastlines are particularly vulnerable to tropical storms, which can reach land with strong winds and high waves.



Typhoon



Tropical storm



Tornadoes

Tornadoes are one of the most violent types of severe storms. Wind speeds can reach more than 511 kilometers (318 miles) per hour. On average, tornadoes are 90–150 meters (300–500 feet) wide, but the largest tornado ever recorded was 4 kilometers (2.6 miles) wide. A tornado can damage most structures in its path.

When warm air masses rise and cool air masses sink, rotating columns of air can form. These winds can create a funnel-shaped cloud—a tornado—which can reach down to the ground. When it does, the tornado can suck up dust and debris. Some powerful tornadoes can even suck up objects such as trees or cars. Its winds can then throw these objects at hundreds of kilometers per hour, causing exceedingly dangerous conditions.

▼ **Strong tornado winds can turn over cars and rip roofs off homes.**



LET'S TRY IT

Where Severe Weather Happens Most

Use the map and your knowledge of storms to answer the questions about different kinds of severe weather in the United States.

1

Which type of severe storm is most likely to happen in Kansas?

2

Why are hurricanes common along shorelines?

3

What two types of severe storms are most likely to happen in Mississippi?

