

# Forecasting Severe Weather to Communities Helps them Prepare

by Alissa Fleck



Severe weather does not happen in one place all the time, but when it happens, it's important to be prepared for it. Knowing the weather risks of where you live and how to plan for them are key to staying safe in any kind of storm.

While tornadoes can hit any part of the United States at any time of year, there are parts of the country-and certain seasons-in which tornadoes are much more common than others. Tornadoes primarily hit the U.S. in an L-shaped area from Iowa to Colorado to Texas. Oklahoma has the highest impact zone. Most tornadoes take place in this region in the month of May.

It's very helpful for weather scientists, emergency responders and community members to be aware of this so-called "Tornado Alley" in keeping people safe. While it may be difficult to protect buildings and other structures, maintaining public awareness helps humans protect themselves and their families in instances of severe weather. Protecting human lives is the most important thing. The

National Weather Service provides timely warnings, and local TV and radio stations broadcast these warnings so that people in the tornado's path can seek shelter in time. Towns also set off warning sirens that indicate there is potential for a tornado.

People who live in areas with high tornado frequency are also familiar with how to prepare for these events. One way people might prepare for a tornado is to seek protection in a basement or storm shelter where heavy winds are less likely to blow around dangerous objects, which could hurt someone. Often during storms people get hurt by flying debris rather than the storm itself. People who don't have basements or have disabilities preventing them from moving with ease are sometimes encouraged to lie down in a bathtub and cover their heads. These are just some of the ways people stay safe when a tornado is on the way.

Hurricanes, on the other hand, tend to strike coastal regions. You would not see a hurricane hit the Tornado Alley, for instance, because there are no oceans nearby. Florida is one state in the U.S. that gets hit by a large number of hurricanes. Meteorologists can usually predict hurricanes several days in advance. If it's safe to stay at home during a hurricane, people are advised to cover their windows with shutters and stock up on food, water, medication, batteries and other items they might need. As with tornadoes and other severe weather, people should expect to lose power to their homes for potentially several days or more. Even when the hurricane has passed, there can still be dangerous flooding in the streets for which people should also be prepared.

Sometimes government emergency services will decide it's not safe for people in the hurricane's path to stay in their homes, and they will be told to evacuate in advance. When people evacuate their homes, they move to a safer region until the storm passes and they can return home.

# potential                      po        ·        ten        ·        tial

## Advanced Definition

### adjective

1. capable of coming into existence; possible; latent.

*They viewed the neighboring country's build up of weapons as a potential threat.*

### noun

1. possibility or promise.

*Tempers flared, and it was clear that there was potential for violence to break out.*

*Other companies weren't interested, but this one believed the idea had potential.*

2. a certain skill or ability that may become developed.

*The coach could see that this inexperienced athlete had great potential as a ball player.*

3. in an electrical circuit, the difference between the charge at one point and that at another point, which difference results in a flow of current.

## Spanish cognate

*potencial*: The Spanish word *potencial* means potential.

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## These are some examples of how the word or forms of the word are used:

1. Many of the cliff dwellings in Mesa Verde National Park are accessible only by ropeladder, which would have made them very easy to defend against a **potential** attacker.
2. Such **potential** long-term problems have spurred scientists to learn more about concussions and prompted a movement to increase awareness and prevention. In 2009, Niki joined former National Football League (NFL) players in testifying before Congress. They urged the government to develop guidelines to manage concussions and ways to better prevent, diagnose, and treat sports-related concussions in schools.
3. The playwright has asked friends and fellow writers to look over it and everyone seems to agree that this fresh work of art has the **potential** to become a wonderful stage performance some day. However, potential is never a sure thing. Despite the fact that an entire play, perhaps as long as a hundred pages or more, has been written, that is only the very first step in a series of events that must take place before performers hit the stage in front of a paying

audience.

4. "If we're right, we think we're looking at [an] environment in the solar system [besides Earth] where we have liquid water and the **potential** for living organisms," Porco told reporters.
5. Once a hypothesis, or **potential** solution to a problem, is in place, it needs to be tested. More than one hypothesis can be tested, and results should be carefully recorded.
6. The higher the crane operator lifts the wrecking ball, the more **potential** energy is stored inside that ball. The higher the ball is raised, that is, the more damage it will do to the ground when it is dropped.
7. Colón was given a stem cell transplant. Stem cells are immature cells in the body that can develop into many types of adult cells. The **potential** for stem cell therapy is big. It could change the way AIDS, cancer, diabetes, and many other diseases are treated.
8. Stark says, "It's an upandcoming neighborhood. And it's right beneath our apartment. The landlords are great. I can just see a lot of things happening in this neck of the woods. A lot of **potential**; I'm glad to be here, kind of at the beginning of that."
9. A good way to examine kinetic energy is by looking at a roller coaster. The cars of a roller coaster reach their highest kinetic energy when they are at the bottom of a hill. But when they start rising again their kinetic energy becomes **potential** energy instead, which is the energy an object has in relation to its position in space.
10. "Prior to 9/11, I feel that many were not aware of the **potential** damage that could be inflicted on our country," says Ashley Gilligan, now 27, who was a senior in high school when her father, Ronald, died in the World Trade Center. "I feel that there is a greater sense of unity across our nation. We, the people of the United States, exemplify 'united we stand, together we fall.'"



2. Although it's difficult to **predict** when or where an earthquake or a volcanic eruption will strike, these events can occur in patterns.
3. Experts **predict** that India will continue to grow, and by 2040 the country will boast the world's third-largest economy, after the United States and China. The United States wants to develop a better business relationship with India.
4. Earthquakes cannot be **predicted**. They can happen at any time, no matter what anyone is doing. While scientists are able to figure out where earthquakes are most likely to happen, there is no way an earthquake can be foreseen.
5. Since 1970, more than 232,000 square miles of the Amazon rain forest have been destroyed. That is nearly the size of Texas! The destruction has endangered many animal species. Experts **predict** that the continued deforestation, or clearing of trees, at this rate would endanger the entire region by 2050.
6. Scientists take into account specific examples of how materials or organisms are known to behave and apply that information to make **predictions** about how situations involving similar materials or organisms will play out. Inductive reasoning is regarded as probable, meaning that it is not foolproof. It is only more likely.
7. Legislators in New Jersey passed one of the toughest school nutrition laws in the country. Next year, no schools in that state will be able to sell foods or drinks, such as candy and soft drinks, that list sugar as the main ingredient. Experts **predict** that more states will soon follow New Jersey's lead.
8. In college, she got hooked on astronomy and signed up to work in a lab, studying how planets form. That led to a graduate degree at the California Institute of Technology, where she began researching collisions in space. "Coming out of high school, I would never have **predicted** that I'd work on planets colliding with one another," she says.
9. While scientists understand how climate change works, some of its effects are still difficult to **predict**. Some scientists expect increase in so-called "extreme weather" events, such as hurricanes and floods. Others foresee a rise in levels of sea water. While exactly what changes will happen are unclear, Broecker has warned that people should be prepared for some large disturbances.
10. Florida is surrounded by water, with the Gulf of Mexico to the west and the Atlantic Ocean to the east. This amount of water means it can be very humid throughout the year. During the hot summer season, this mix of heat and humidity creates many thunderstorms. This pattern of storms and the lightning they often bring is **predictable**. It is so common that Florida has been called the Lightning Capital of the World, and the people of Florida know when to go inside!





1. They had been practicing more than usual in order to **prepare** for their big graduation performance.
2. Teens also get an important lesson in skateboard safety. Students wear helmets and begin each class with a stretching exercise to **prepare** their muscles for use. Additionally, they learn to remain in control of their boards and how best to fall in order to avoid injury.
3. In China, however, scholars had long before discovered something far more useful: thin sheets **prepared** from compressed, dried out wood pulp-also known as paper.
4. You should also be **prepared** to stop a friend who's been drinking from driving. Wallace says the old advice about taking away a friend's keys works. "They might get mad at first, but we're talking about life and death," he says
5. NASA recently announced plans to build a permanent base on the moon. Astronauts could be living and working there by 2020, according to the U.S space agency. The goal is to **prepare** astronauts for a trip to Mars in the future.
6. While exactly what changes will happen are unclear, Broecker has warned that people should be **prepared** for some large disturbances. In an interview with the Guardian, a British newspaper, in 2008, he compared the Earth's climate to a wild animal. Sometimes, when provoked, the animal will react violently and unpredictably.
7. Curiosity, a rover the size of a station wagon, contains advanced instruments that will help it probe, sample, record, and analyze its way through Martian terrain. Collecting evidence on the biological, geological, chemical, and radiological profile of the red planet will **prepare** NASA for the next space flight to Mars. Another rover mission, building on the work of Curiosity, is planned to launch in 2020.
8. We **prepare** our Sabbath meals in a small scullery, or porch, in which a small brick oven is built to keep the food hot for the Sabbath. A few pieces of wood are put in, and, when well lighted, the oven is half-filled with charcoal-dust-this again is covered by pieces of tin or lime, and, on top of all, the saucepans are put containing food for the Sabbath meals: also bottles or jars of water are thus kept hot for tea or coffee.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. What is one type of severe weather discussed in this passage?

- A. earthquakes
- B. tornadoes
- C. tidal waves
- D. heat waves

2. What does this passage compare and contrast with tornadoes?

- A. This passage compares and contrasts basements with tornadoes.
- B. This passage compares and contrasts emergency services with tornadoes.
- C. This passage compares and contrasts Oklahoma with tornadoes.
- D. This passage compares and contrasts hurricanes with tornadoes.

3. Read this sentence: "While it may be difficult to protect buildings and other structures, maintaining public awareness helps humans protect themselves and their families in instances of severe weather."

What evidence from the passage supports this statement?

- A. "While tornadoes can hit any part of the United States at any time of year, there are parts of the country-and certain seasons-in which tornadoes are much more common than others."
- B. "The National Weather Service provides timely warnings, and local TV and radio stations broadcast these warnings so that people in the tornado's path can seek shelter in time."
- C. "You would not see a hurricane hit the Tornado Alley, for instance, because there are no oceans nearby."
- D. "Severe weather does not happen in one place all the time, but when it happens, it's important to be prepared for it."

4. Which state would a tornado be most likely to strike in May?

- A. Oklahoma
- B. New York
- C. California
- D. Florida

5. What is this passage mostly about?

- A. the National Weather Service
- B. flooding caused by hurricanes
- C. preparing for tornadoes and hurricanes
- D. Colorado, Iowa, Texas, Oklahoma, and Florida

6. Read the following sentences: "As with tornadoes and other **severe** weather, people should expect to lose power to their homes for potentially several days or more."

What does the word **severe** mean in the sentence above?

- A. simple
- B. winter
- C. very bad
- D. very calm

7. Choose the answer that best completes the sentence below.

People should prepare for severe weather, \_\_\_\_\_ tornadoes and hurricanes.

- A. such as
- B. however
- C. meanwhile
- D. third

8. According to the passage, what is one way that people prepare for a tornado?

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**9.** According to the passage, what is one way that people prepare for a hurricane?

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**10.** What are some similarities between preparing for a tornado and preparing for a hurricane? Support your answer with evidence from the passage.

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Answers may vary, as long as they come from the passage. For example, students may respond that some people prepare for a tornado by seeking protection in a basement or storm shelter.

9. According to the passage, what is one way that people prepare for a hurricane?

Answers may vary, as long as they come from the passage. For example, students may respond that some people prepare for a hurricane by covering their windows with shutters.

**10.** What are some similarities between preparing for a tornado and preparing for a hurricane? Support your answer with evidence from the passage.

Answers may vary, as long as they are supported by evidence from the passage. For example, students may point out that people should plan for tornadoes and hurricanes on the assumption that they will lose power for several days. Also, when preparing for both tornadoes and hurricanes, people should take steps to protect themselves from strong winds. In the case of tornadoes, they can do so by seeking protection in a basement or storm shelter. In the case of hurricanes, they can do so by covering their windows with shutters.