ReadWorks®

ARTICLE-A-DAY™

Storms

7 Articles

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What Is Lightning?

By Rachelle Kreisman

Rain is falling. Suddenly, you see a flash. Zap! Lightning hits a tree. Next you hear a loud sound. What is happening?

Lightning is electricity. It forms in clouds during a storm. Lightning can go from cloud to cloud. It can also strike the ground. When that happens, lightning takes the shortest path. It hits tall objects. It may hit buildings or trees. It may also hit people.

Lightning is really hot. When it travels, it heats up the air. The very hot air makes a loud noise. That is the thunder you hear. People see lightning before they hear thunder. Why? Light travels more quickly than sound.

Thunderstorm Safety

By Rachelle Kreisman

If you hear thunder, go to a safe place. Thunder means that lightning is nearby. Lightning is dangerous. It can hurt people.

What is a safe place? Go inside a building, a house, or a car. If you are indoors, stay away from windows. Do not take a bath or a shower. Do not use a corded telephone.

What if you cannot get indoors? Do not go near water or metal. Crouch down low under a group of trees. Never stand near the tallest tree. Lightning usually strikes the tallest things on the ground.

What Is a Tornado?

By Susan LaBella

A tornado is a big windstorm. Tornado winds spin very fast. They often make a long cloud that looks a little like an ice cream cone. It is called a funnel cloud.

Tornado winds can harm things on the ground. They can break trees. They can harm buildings. They can destroy cars and boats.

If a tornado is coming, people should go to a basement or another safe place. They should stay there until the storm passes.

What Do Storm Chasers Do?

By Susan LaBella

Tornadoes and hurricanes are big storms. They bring strong winds that can hurt people. The winds can damage trees, cars, and buildings.

Storm chasers are people who watch these storms closely. They drive to where a storm is taking place. They take pictures. They use computers to follow the storm. They gather weather information.

Storm chasers are carefully trained to do their work. They help us learn more about these kinds of storms. Their work also helps more people stay safe.

A Time of Dust Storms

By Linda Ruggieri

A long time ago, wind and dust caused big problems in the United States. Giant clouds of dust harmed people, animals, and crops in the central part of the country. The area became known as the Dust Bowl.

The problem started when farmers planted more crops than they could sell. The next year, those farmers decided to leave some land empty. The farmers let their cattle graze there, and the cattle ate the grass. Soon, nothing grew on that land.

Then came a drought (DROWT). A drought is a long period without rain. Land became very dry. Grass and crops barely grew. Very little was left to hold the soil in place.

At the same time, strong winds started blowing. The winds blew layers of soil into the air. Dust covered everything.

People had to protect themselves from the dust. Children wore masks and goggles when they walked to school. They used the masks so they would not breathe in dust and get sick. People hung wet sheets over their windows to prevent dust from blowing into their homes.

Finally, the rains returned. Farmers could plant crops again. The farmers learned to plant in different places to protect the soil. They also planted grasses to keep the soil in place.

SummerReads: Thunderstorms – "Thunder and Lightning" and "Rain"

By Alice Lee Folkins

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Thunder and Lightning

Taken by C. Clark. Released into the public domain by NOAA

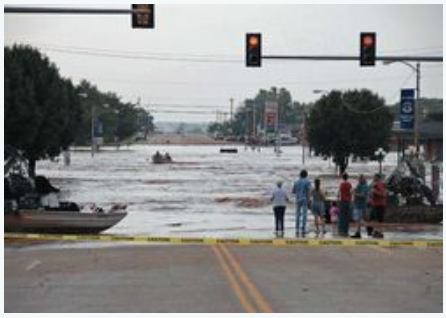
Multiple cloud-to-ground lightning strikes captured in a time-lapse image near Norman, Oklahoma, March 1978.

Summer thunderstorms can be exciting to watch from inside a building. First, you see dark clouds gathering. Suddenly, you see a bolt of lightning. Then you hear the thunder. Kabooom! Finally, you see a lot of rain coming down. It's a good idea to wait inside rather than to go out during the storm. The storm will probably be over in about an hour but it's much safer inside than out.

The bright bolt of lightning you saw is really electricity. It is the same electricity that we use to power our lights and TVs. There is a lot of energy in a lightning bolt, enough to power a light bulb for about 100 days. The Earth receives several hundred millions of lightning bolts each year. This many lightning bolts add up to a vast amount of energy.

People usually hear thunder soon after they see a bolt of lightning. You can use this fact to find out how far you are from the storm. As soon as you see a bolt of lightning, start counting the seconds. When you hear the thunder, stop counting. Every five seconds from the time you see the lightning bolt until you hear thunder equals about one mile. If you counted 10 seconds, then the thunderstorm is about 2 miles away. If you see lightning but don't hear thunder, it means that the thunderstorm is more than 12 miles away. That's too far to hear the thunder.

Rain



Taken by Marvin Nauman. Released into the public domain by FEMA.

People wait to be rescued from flooding caused by rain from a tropical storm in Kingfisher, Oklahoma, August 2007.

You already know that the water in lakes and rivers comes from precipitation. Precipitation is any form of water that falls from the sky such as rain and snow. A heavy rainfall can drop as much as two inches of rain per hour. How much water is that? Imagine if someone built walls around a football field and gathered all of the rainwater. If two inches of rain fell in an hour, you would have more than 70,000 gallons of water. That's enough water for you to fill a bathtub every single day for four years!

That may seem like a lot of water. But people need water for many other reasons than staying clean. We need water to drink and cook. Crops and animals need water too. All of this water comes from precipitation like rain.

Of course, too much rain can cause problems. Floods happen when rain doesn't have enough time to flow into nearby rivers and lakes. One way to think about this is to observe what happens when you let water out of the bathtub. It takes time for all the water to leave the tub because the drain is too small for all the water to leave at once.

Even when there is flooding, rain is not lost. Rain that falls in one state can be stored in the lakes and rivers of another state. Your next glass of water may come from rain that fell hundreds of miles from your home.

SummerReads: Thunderstorms – "Thunderstorms" and "Hot Air, Cold Air"

By Alice Lee Folkins

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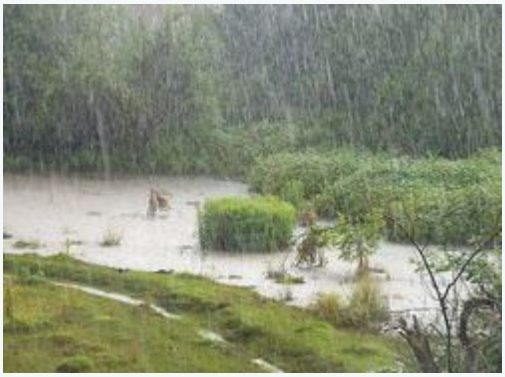
Thunderstorms



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Rain falls on a field in Germany during a storm in 2006.

For many people around the world, summer brings thunderstorms. Warm wet air and strong winds help to create thunderstorms. But thunderstorms don't happen in every part of the United States. The states along the Pacific Ocean don't get as many thunderstorms as the states along the Gulf of Mexico. Some areas of Florida have thunderstorms once a day for most of the summer!

The best place to be during a thunderstorm is inside a building. Lightning from a thunderstorm can be very dangerous. Just before a thunderstorm, the air may feel like there is electricity in it. When people start feeling electricity in the air, they know a thunderstorm is on the way. People start heading inside buildings so they can be safe during a thunderstorm.

So how are thunderstorms created? You can read about it here without getting wet!

Hot Air, Cold Air

A rolling thunderstorm cloud arrives over Enschede, The Netherlands, July 2004

Part of what makes summers so hot is also what causes thunderstorms. As heat from the sun beats down on Earth, the heat evaporates some of the water in lakes and oceans. The evaporated water stays in the air. This evaporated water makes the air feel heavy and humid. Humid air is what makes you feel hot and sticky during the summer.

Warm humid air usually does not stay in one place. The wind can move it higher in the sky where it will cool off. When warm humid air cools, it forms clouds. As more water is moved from lakes and oceans to the air, the clouds get bigger and bigger.

In summer, the air near the ground is hotter than it is during other seasons of the year. When this hot air mixes with cool air from another area, there will be changes in the weather. Greater differences between the temperatures of the hot and cold air will cause greater changes in the weather. Imagine putting an ice cube in a warm drink. As soon as the ice hits the warm drink, it will crack and pop. But, if you put the ice cube in a cool drink, it will not crack or pop as much. When warmer and cooler clouds get close to one another, there may be some popping and cracking as the weather changes. There may be more clouds or storms. A thunderstorm may be on its way.