Here's how lightning works.

Lightning is an electric current, and just like the electricity lurking in the outlets in your house, it can be deadly. Have you ever gotten a shock by shuffling across a carpet and then touching something made of metal? Then you've experienced the same process that makes lightning. Within a thundercloud, many small bits of ice bump into each other as they swirl around in the air. All those collisions create an electrical charge, just like the one that built up in you when you crossed the carpet.

After a while, the whole cloud fills up with electrical charges (usually with a negative charge closest to the earth). Since opposites attract each other, that causes a positive charge to build up on the ground beneath the cloud. The ground's electrical charge concentrates around anything that sticks up, such as mountains, lone trees, people, or even blades of grass. The charge streaming up from these points eventually connects with a charge reaching down from the clouds, and--**zap!**--lightning strikes.

The intense heat of the lightning bolt causes the surrounding air to explode outward with a gigantic boom--thunder.

How much lightning is there?

Lightning flashes aren't all the same shape or size, and they don't all carry the same amount of electrical current. And two clouds that are about the same size may create very different amounts of lightning. It depends on how much electrical charge the cloud has, and that depends on a lot of other things, like how fast air is moving in the cloud and how many ice crystals have formed in the cloud. Satellites looking down at the earth have shown that there are more than 3 million lightning flashes each day around the world. That works out to about 40 flashes each second. This includes flashes within or between clouds as well as the ones that strike the ground. It sounds like a lot, but it's less than scientists used to think there were.

In the United States, the state of Florida and the Rocky Mountain region get the most lightning. Worldwide, the countries near the equator get hit the most.

Lightning is dangerous. Stay away from it.

Lightning kills about 100 Americans each year. That's more deaths than result from tornadoes, hurricanes, or any other kind of weather except flash floods. About 400 other people each year are struck by lightning and live through the experience. Those who survive a lightning strike often have serious health problems as a result, such as losing control over some parts of their body or losing their memory. The best way to keep from getting struck by lightning is to go inside before an electrical storm gets too close. To find out how close the storm is, start counting slowly as soon as you see lightning. Light travels extremely fast, so the lightning's flash reaches your eyes instantly, but the sound of thunder travels much slower--one mile in five seconds.

If you hear thunder before you can count to 30, the storm is within six miles of you, and the next lightning strike could be right near you. Get into a house or car and stay there till the storm moves away.

If you're not close to shelter, here are some things to stay away from:

tall trees or poles

completely open areas like fields

bodies of water, like lakes or the ocean

metal fences, sports equipment, bikes, etc.

More lightning facts

A lightning flash is no more than one inch wide.

The temperature of a lightning flash is 15,000 to 60,000 degrees Fahrenheit. That's hotter than the surface of the sun (9,000 degrees Fahrenheit).

A stroke of lightning moves about 62,000 miles per second--one-third the speed of light.

A single lightning flash carries an electric current as high as 300,000 amperes. For comparison, electrical wiring in a house carries 20 or 30 amperes.

What we see as a flash of lightning may actually be three or four different strokes in exactly the same place, one right after another. That's why lightning seems to flicker.

Power failures caused by lightning strikes cost utility companies as much as $1 billion annually.

The Guinness Book of World Records lists Roy Sullivan of Virginia as the human being struck by lightning the most times: seven. This is one record you don't want to beat!