STORMS - are violent disturbances in the atmosphere.

What type of storm you get and how bad it might be is generally determined by geography. For example northern, interior states are at risk of blizzards during the winter.

A blizzard is characterized by strong winds and lots of snow over many hours.

You can see that areas that are located east of water get more snow due to increased water in the air.

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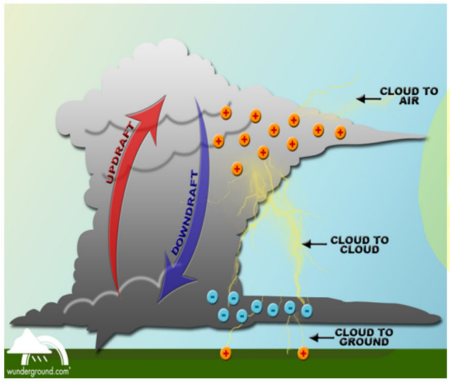
Conditions for a thunderstorm

Updrafts - strong, quick movements of heated air



Both combine to create very tall clouds with unstable conditions.

Downdrafts - quick burst of supercooled air sinking back down

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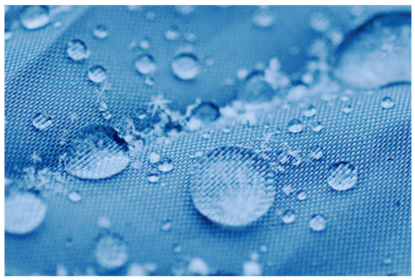

As precipitation passes through the tall clouds, drops can combine and get much bigger (Creates large, heavy rain)

Strong winds often associated with these storms are created because of the very low pressure created near the storm. ("Winds blow from high to low") The hot air rises so quickly that the wind from surrounding areas RUSHES in to fill the void.

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How lightning forms in a thunderstorm

The updrafts and downdrafts force the air particles to rub against each other.

What happens electrically when particles are rubbed together?

IT CREATES DIFFERING ELECTRICAL CHARGES. THOSE OPPOSITE CHARGES LOOK TO NEUTRALIZE, AND WHEN THEY DO IT CREATES A "SPARK" (Lightning)

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Incredible photo captured powerful lightning storms over Chile's Calbuco volcanic eruption

Image credits: **Francisco Negroni**

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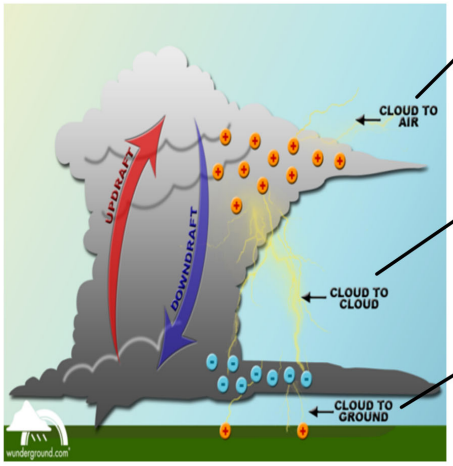
Types of lightning



Here you will see a bolt of lightning from the cloud to somewhere in the sky.

Many times this type seems to light up the cloud from the inside.

These are the most danger-ous for humans since these can hurt or kill us as we go about our lives.

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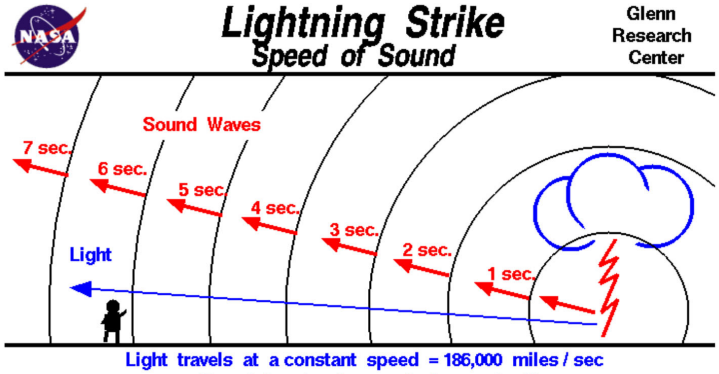
Thunder



Light travels at a constant speed = 186,000 miles / sec

Sound travels at a constant speed = V

V = 760 mph (sea level) V = 1100 feet / sec

You see the flash before you hear the thunder.

To approximate distance to a lightning strike:
Count the seconds between the flash and the sound.
Divide the seconds by 5 to get distance in miles.

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THUNDER

As you can imagine, lightning is HOT.

As it heats the air around it the air EXPANDS quickly and then contracts as it cools.

This produces SOUND WAVES that are heard as thunder

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