WHAT CAUSES A THUNDERSTORM?

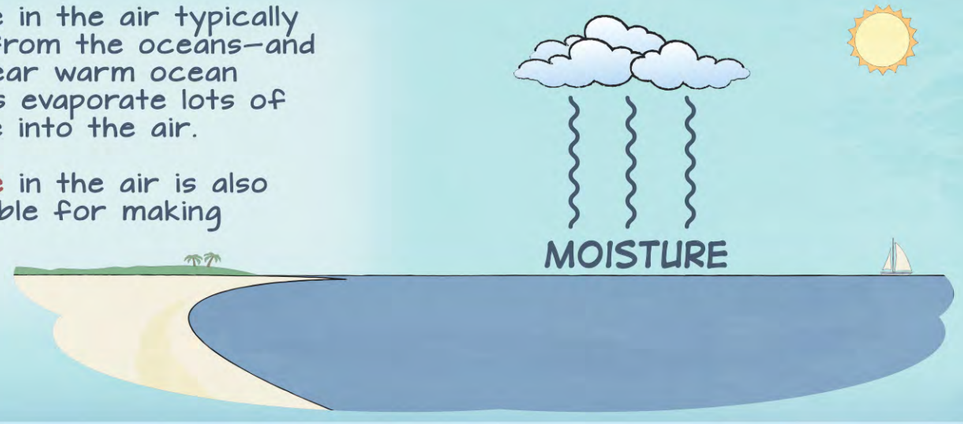
You've probably seen a big thunderstorm cloud roll into town. The thunder, lightning, heavy rain and gusty winds are hard to miss!

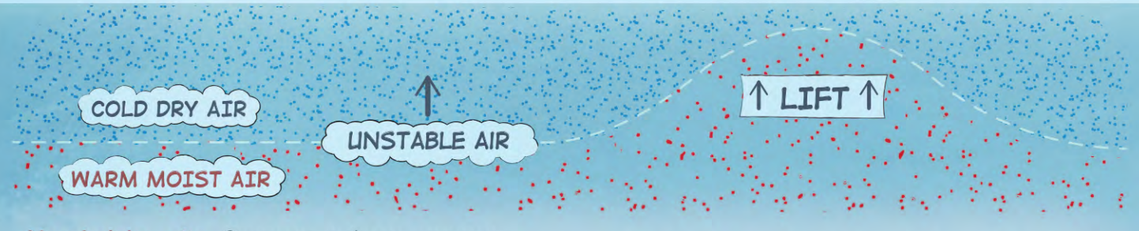
But where did that thunderstorm come from?

All thunderstorms follow the same recipe.

Moisture in the air typically comes from the oceans—and areas near warm ocean currents evaporate lots of moisture into the air.

Moisture in the air is also responsible for making clouds.



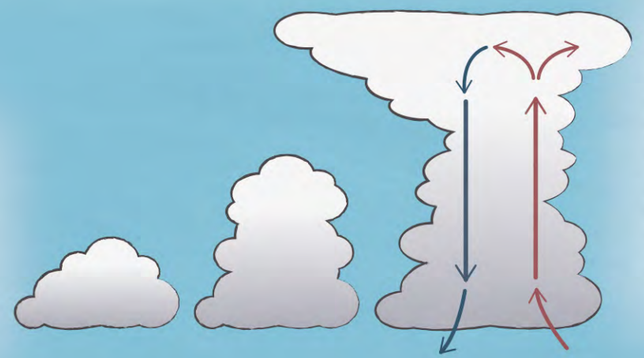


Unstable air forms when warm, moist air is near the ground and cold, dry air is up above.

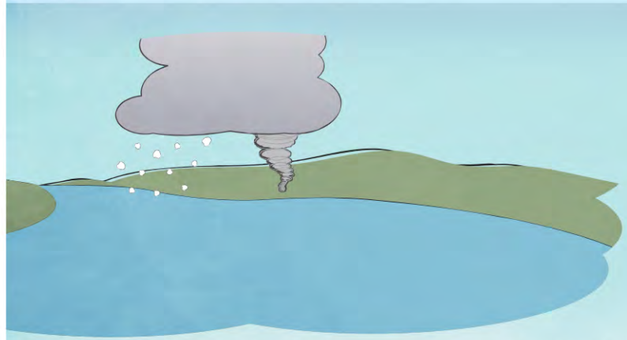
To create a thunderstorm, the unstable air needs to have a nudge upward.

This **lift** usually comes from differences in air density. Warmer, less dense air rises upward, creating lift.

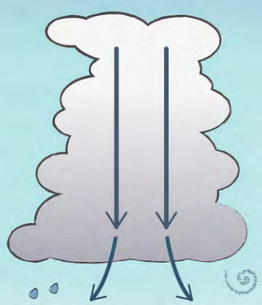
As the air lifts higher, it causes a storm cloud to grow taller and taller. Thunderstorm clouds can rise up to 10 miles into the air!



In a big thunderstorm cloud, upward winds and downward winds—called updrafts and downdrafts—happen at the same time.



This is the most dangerous stage of the storm, when tornadoes, hail, winds and flooding can occur.



Updrafts fuel the storm with warm, moist air. The storm weakens when it runs out of updrafts, and rain and wind become less intense.

By the end, all that's left is a blue sky and an anvil-shaped cloud top.

A storm will probably come again, but you don't need to worry! Forecasters use weather satellites, like those in **NOAA's GOES-R series**, to monitor clouds as they grow into thunderstorms. GOES satellites watch out for lightning, too.

These satellites are constantly watching for severe weather—and the information they gather can help people stay safe during storms.

Watch the video at: **scijinks.gov/thunderstorm-video**

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