

Light and Sound Show

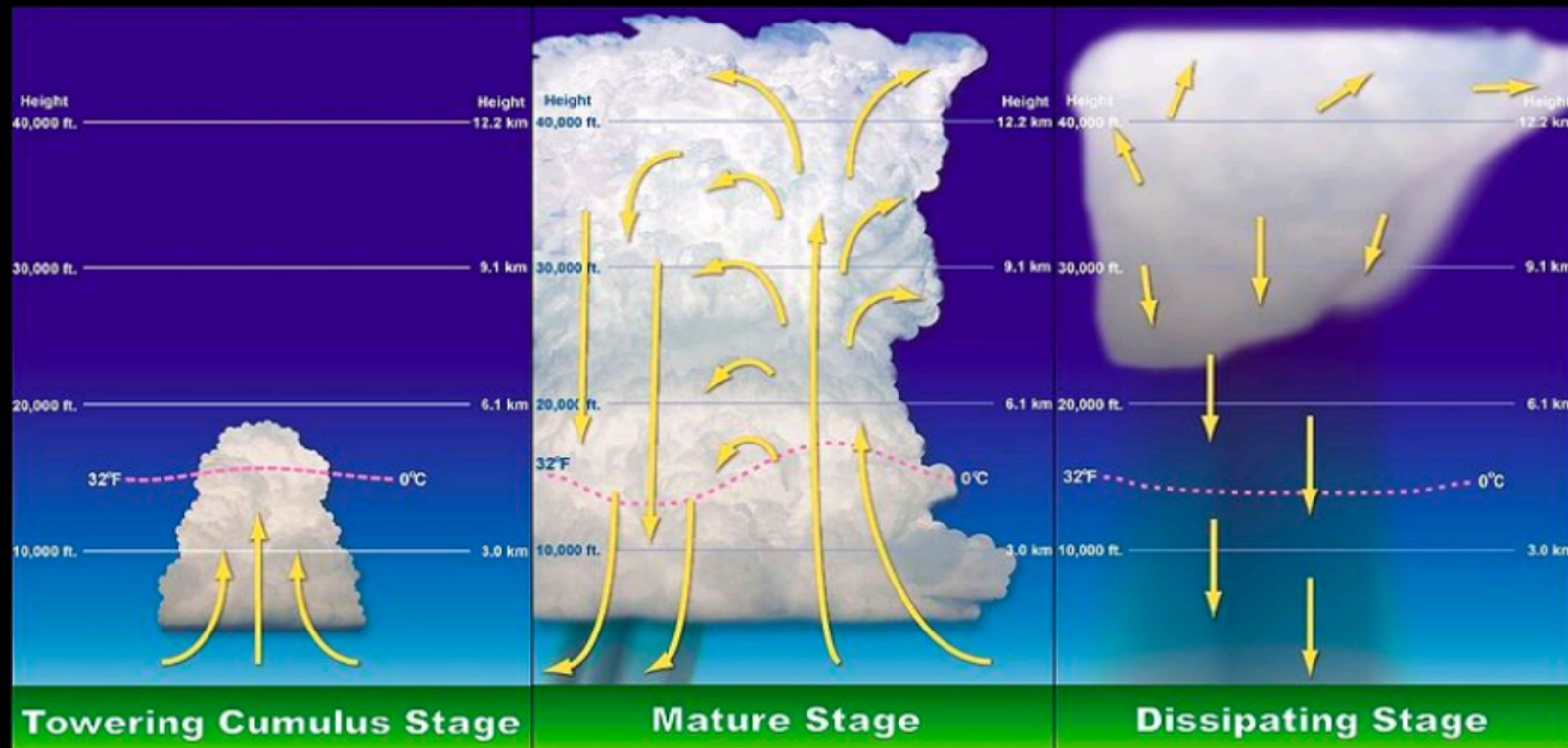


Thunderstorm

- storm with heavy rain, strong winds, lightning and thunder
- about 16 million each year around the world
- occur along **cold fronts** and where the weather is hot and humid



How Thunderstorms Form



Warm, moist air rises from Earth's surface.

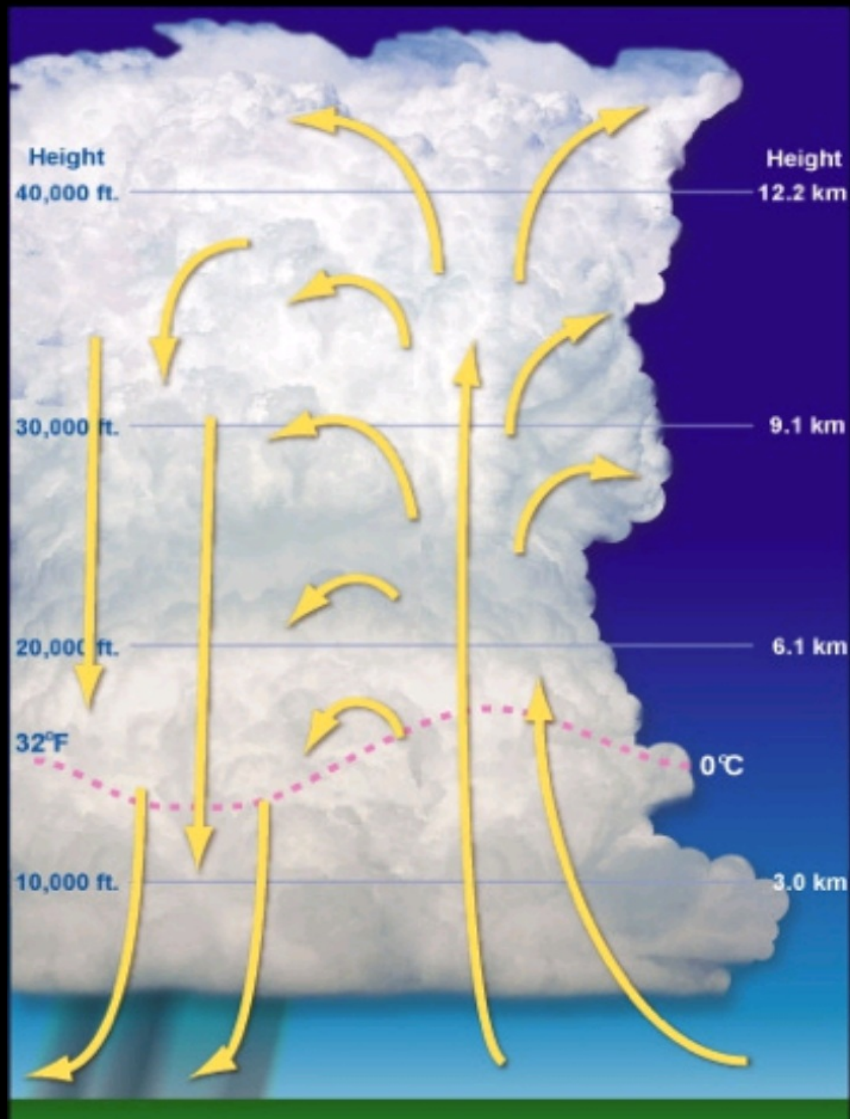
Strong winds above Earth's surface can cause the air to rise faster and higher, creating a Cumulonimbus cloud (thunderhead). These clouds can be 6-10 miles high.

The thunderstorm gets weak and begins to break up as the rain quickly cools the warm air that is trying to rise.

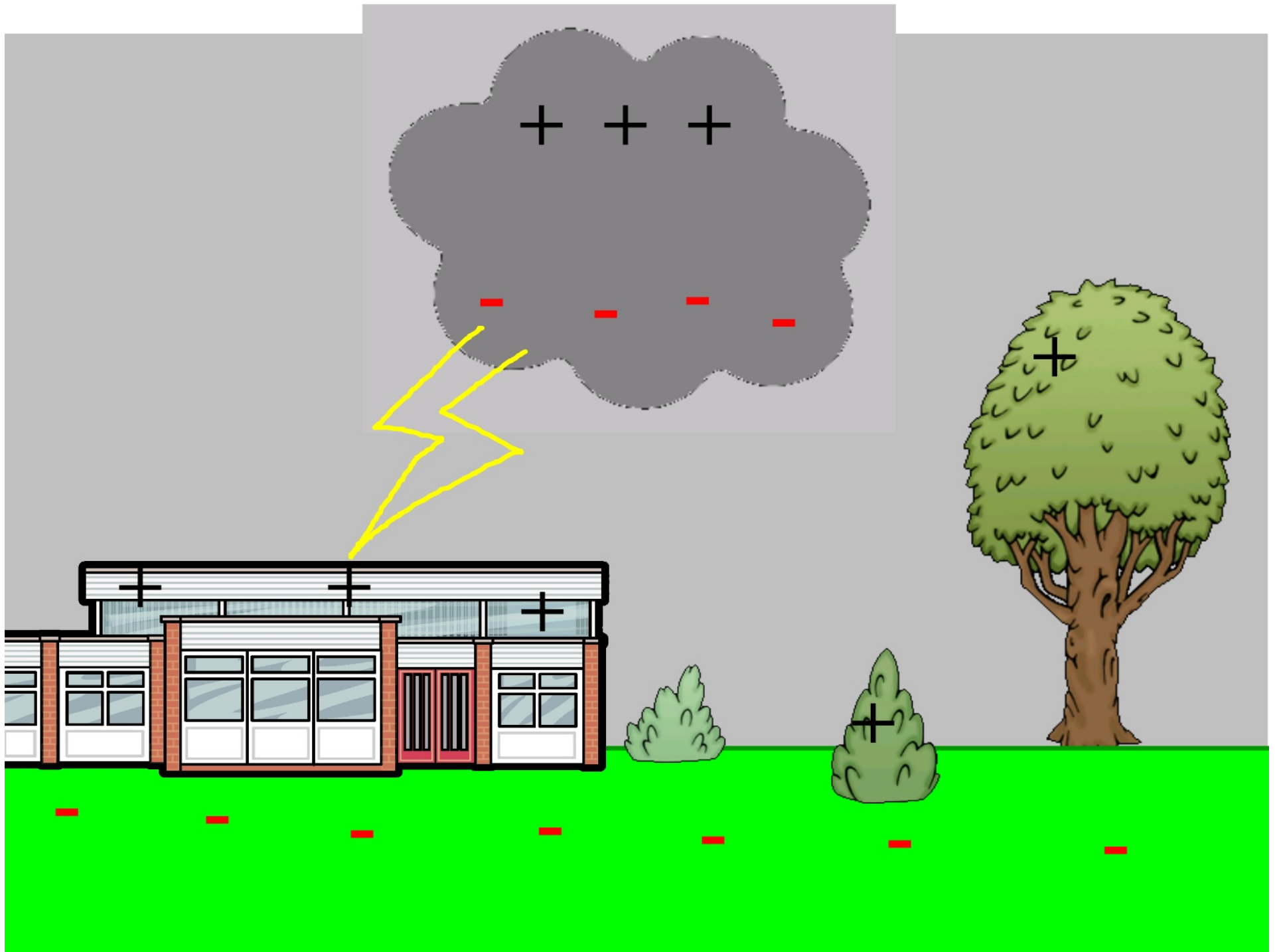
HAILSTORMS



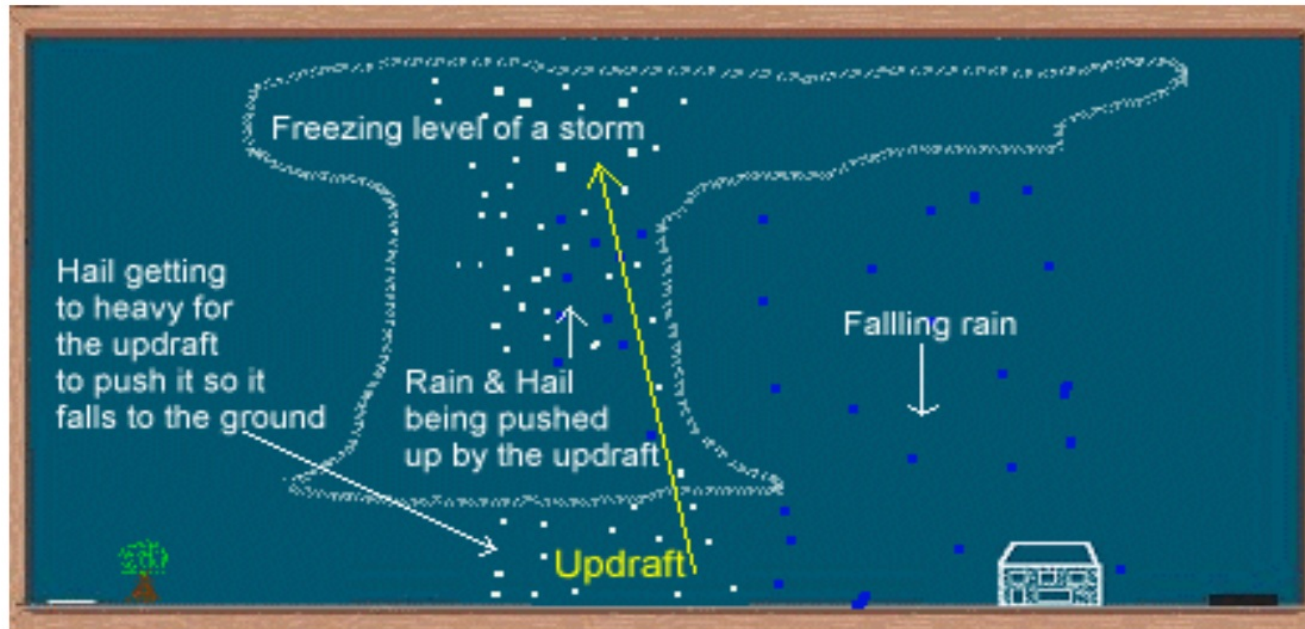
Lightning and Thunder



As rain and ice particles move up and down inside the cloud, a build-up of **static electricity** is created.



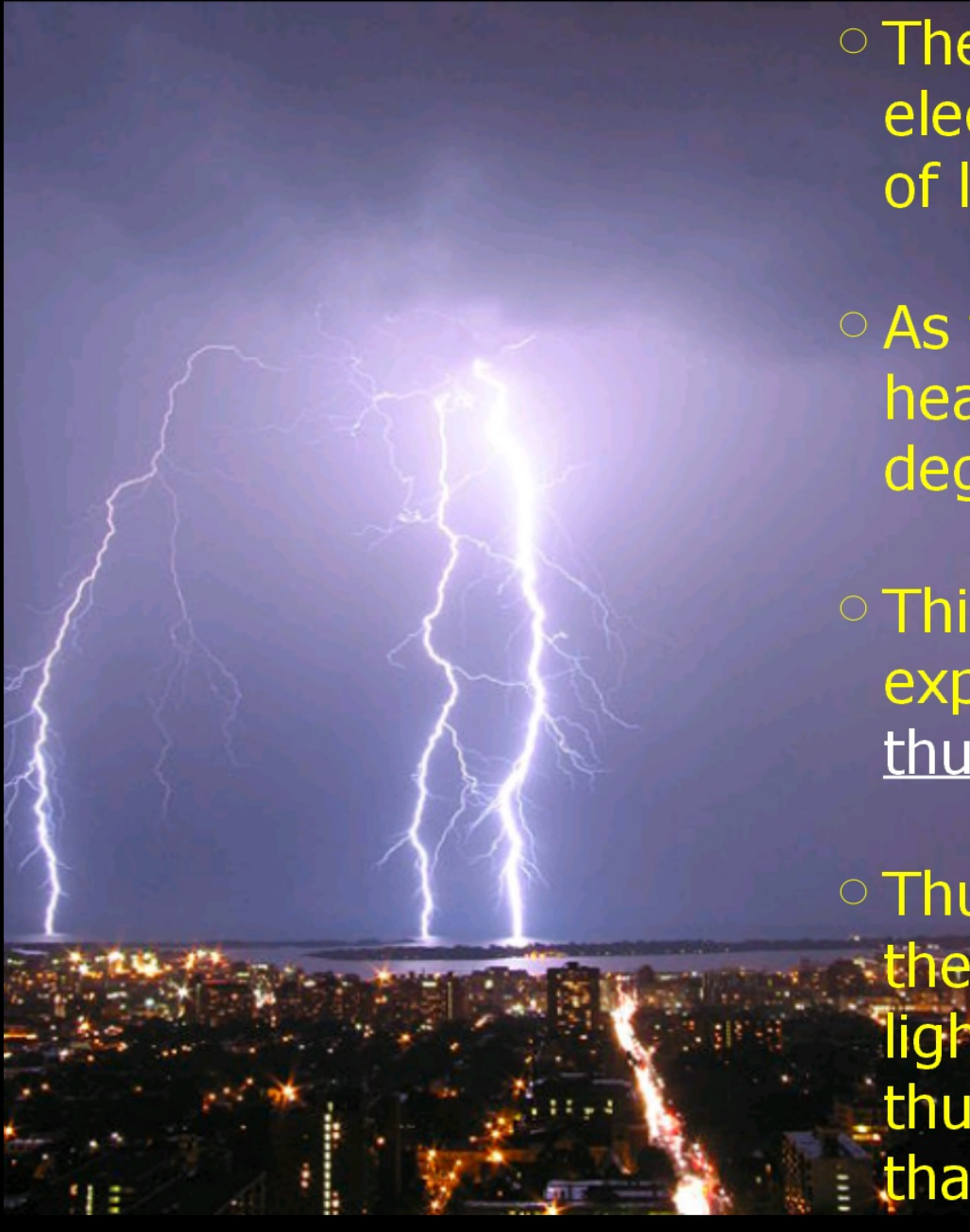




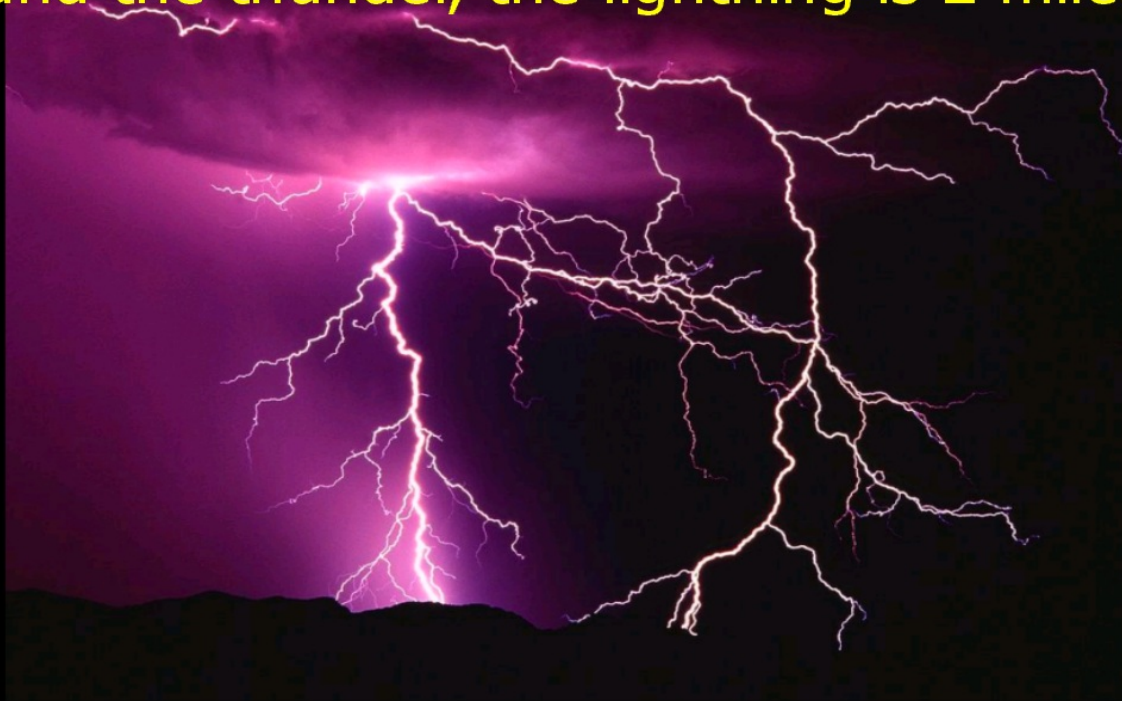
Hail: Swirling winds carry water and ice up and down through the cloud. The droplets get bigger until they are too heavy, and fall as hail





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- The energy from the static electricity is released as a flash of lightning.
 - As the lightning bolt moves, it heats the air to 54,000 degrees Fahrenheit.
 - This high heat causes the air to expand quickly, creating thunder.
 - Thunder and lightning occur at the same time, but we see lightning before we hear thunder because light is faster than sound.

You can use thunder to tell how far away a storm is. Next time you see a storm, count the number of seconds between when you see the lightning and hear the thunder. Take the number of seconds and divide by 5, and that will tell you how far away the storm is in miles. For example: If you counted 10 seconds between the lightning and the thunder, the lightning is 2 miles away!



FLASH FLOODS



THE FIERCEST STORMS ON EARTH



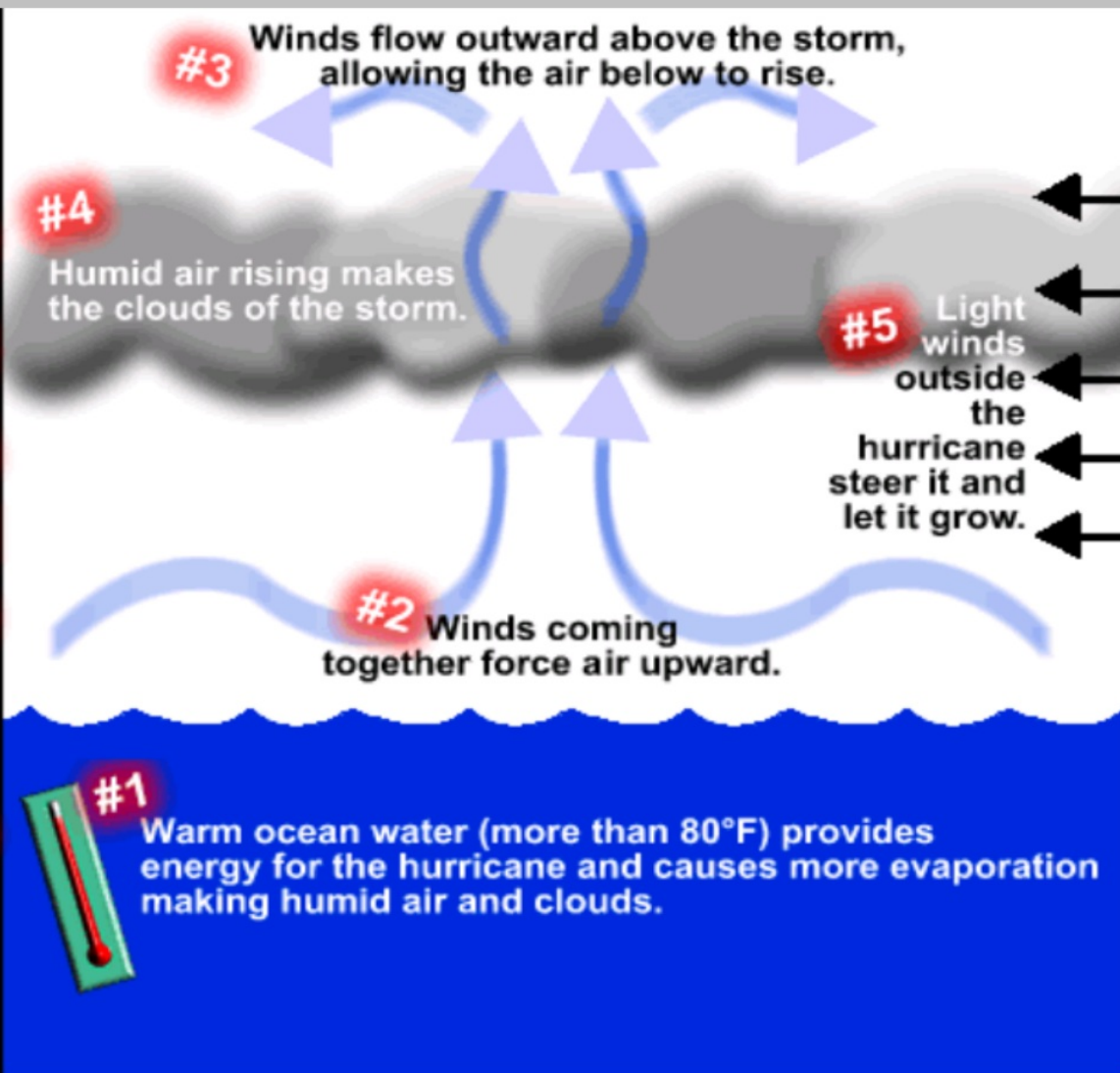
HURRICANES (AKA CYCLONES & TYPHOONS)

- Large, violent storms that form over warm ocean water
- Must have winds at least 70 MPH)
- Classified by strength (Levels 1-5)



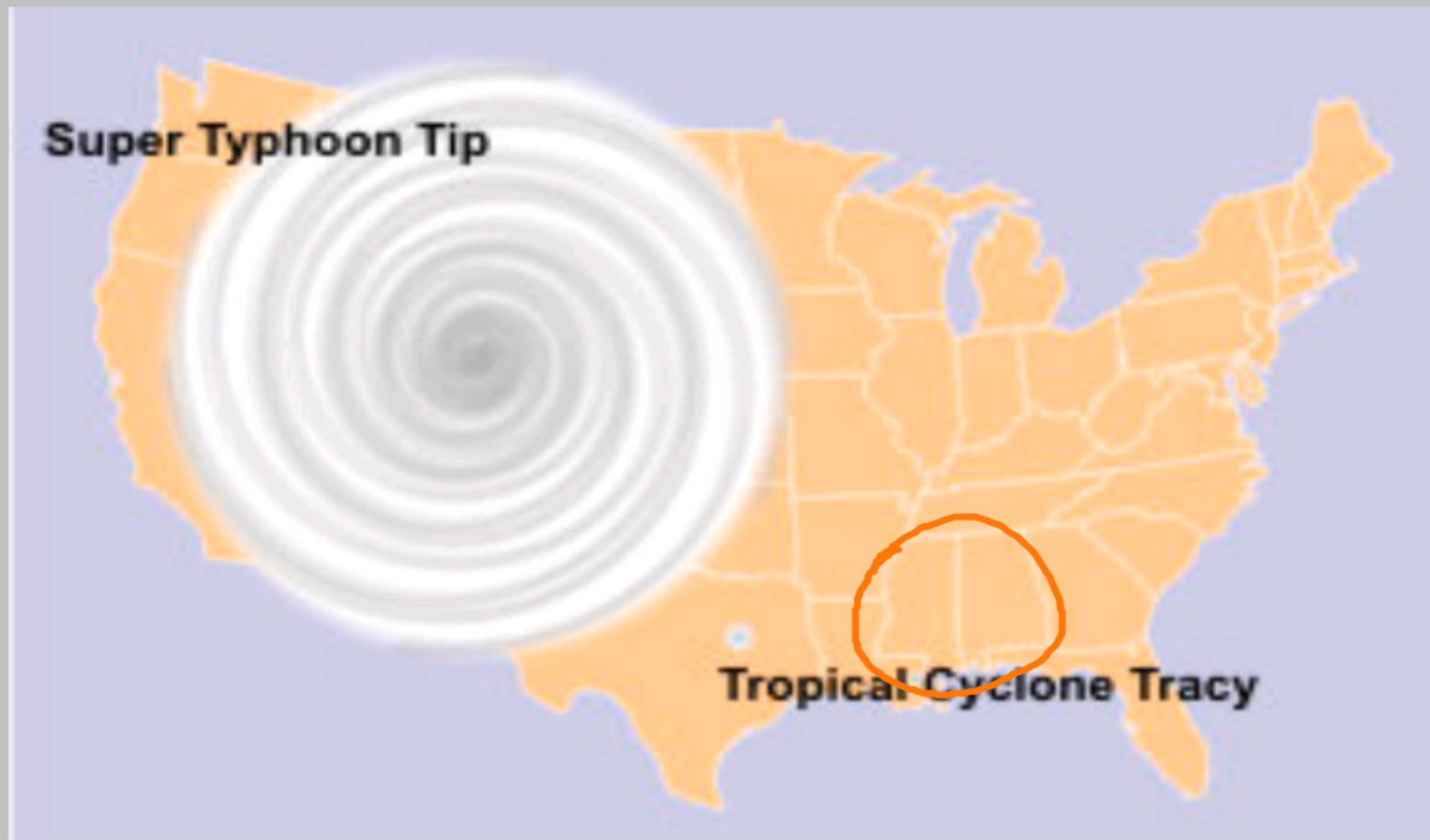
- Start as small thunderstorms over the ocean. These storms join together and grow into one giant storm. As it grows, wind increases
- The "Eye" is the calmest part

**WHAT
DOES
A
HURRICANE
NEED?**



Hurricanes are the largest storms on earth...

- they can easily cover an area as wide as **360 miles**
- largest recorded: **Typhoon Tip** in the Pacific, 1979.
 - 190 mph winds, 1,350 miles wide



GALVESTON, 1900



KATRINA, 2005



"NEW ENGLAND", 1938



TORNADO!





The birth of a tornado.

- First, the rotating cloud base lowers.
- This lowering becomes a funnel, which continues descending while winds build near the surface, kicking up dust and other debris.
- Finally, the visible funnel extends to the ground, and the tornado begins causing major damage.

Thunderstorms

Hurricanes

Tornadoes

