Chapter 13 Section 2
Severe weather

| Topics | Notes, Diagrams, Drawings |
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| Severe weather <br> Thunderstorms | Weather events that cause major damage, injuries, and death <br> - Thunderstorms <br> - Tornadoes <br> - Hurricanes <br> - Blizzards <br> have warm temperatures, moisture, and rising air which may be supplied by a low (L) pressure system <br> - When these ( $\uparrow$ )conditions occur a cumulus (or cumulonimbus) cloud can grow into a $10-\mathrm{km}$ tall thundercloud in as little at 30 minutes <br> - Are also known as electrical storms because of their lightning |
| Thunderstorm life cycle Lightning | Cumulus stage <br> - Cumulus cloud forms and air rises (updraft) <br> Mature stage <br> - Downdrafts begin to appear, air currents move toward the ground <br> - Heavy winds, rain, and lightning dominate the area <br> Dissipating stage <br> - Updrafts stop, winds die down, lightning ceases, and precipitation weakens <br> - Strong updrafts and downdrafts within a storm cause tiny ice crystals to ride and sink, crashing into each other creating positively \& negatively charged particles in a cloud <br> - Difference in charges of particles within the cloud and ground causes electricity and this is seen as a bolt of lightning |


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| Tornado <br> Tornado alley <br> Hurricane <br> Winter storm: blizzard <br> Severe weather safety | violent, whirling column of air in contact with the ground <br> - Thunderstorm updrafts begin to rotate and the wind coming into the storm starts to swirl and forms a funnel. The air in the funnel spins faster and faster and creates a very low pressure area which draws more air into it <br> - Diameter of several hundred meters (largest tornado exceeded 1,500 meters in diameter) <br> - Speeds can reach more than $400 \mathrm{~km} / \mathrm{hr}$ <br> - More tornadoes occur in the United States than anywhere else on Earth <br> - Central United States, from Nebraska to Texas <br> - Cold air blowing southward from Canada collides with warm, moist air moving northward from Gulf of Mexico <br> intense tropical storm with winds exceeding $119 \mathrm{~km} / \mathrm{hr}$ <br> - Form in late summer over warm, tropical ocean water <br> - Eye: center of hurricane, clear skies \& light wind <br> - Once a hurricane moves over land or colder water, it loses its energy and dissipates <br> - Asia: typhoon <br> Australia: cyclone <br> - Typical hurricane: <br> - 480 km across <br> - More than 150,000 larger3 than a tornado <br> violent winter storm characterized by freezing temperatures, strong winds, and blowing snow <br> - Swirling snow reduces visibility and freezing temperatures can cause frostbite and hypothermia <br> U.S. National Weather Service issues watches and warnings for different types of severe weather <br> During thunderstorms, stay inside and stay away from metal objects and electrical cord. If you are outside, stay away from water, high places, and isolated trees <br> U.S. National Weather Service also issues a daily UV Index Forecast which include precautions on sunny days (covering up, using sunscreen, wearing a hat and sunglasses). Surfaces such as snow, water, and beach sand can double the effects of the Sun's UV radiation |

