

Severe Weather

- Watch vs. _____
 - Watch = The conditions are right for severe weather
 - Stay tuned to reports
 - Warning = severe weather has been _____; take cover.

- Thunderstorms
 - Fast facts
 - Typically about 15 miles in _____
 - Last 30 min
 - _____ occur at any moment around the world
 - 16 million per year
 - Severe
 - Hail at $\frac{3}{4}$ of inch
 - _____ mph winds or higher
 - _____
 - How they form
 - _____ clouds
 - Caused by a cold front
 - Also on hot, humid _____
 - Three ingredients
 - _____ - fuel
 - Triggering mechanism
 - What starts the storm - lifts moisture
 - _____ so clouds form and updrafts develop
 - Instability
 - Allows updrafts to accelerate up and down at high rates
 - Wind _____
 - Changing of wind speed and/or direction with height.
 - Lightening and _____
 - Areas of positive and negative electrical charges build up in the storm clouds
 - Lightening = energy discharge as the charges jump b/w parts of a cloud, nearby clouds, or clouds and the _____
 - Can heat to as much as _____ degrees Celsius (hotter than surface of sun)
 - Thunder
 - What causes it?
 - The rapid heating of the air which expands suddenly and _____ (thunder)
 - Light travels faster than sound.

- Tornadoes

- A rapidly whirling, funnel-shaped cloud that reaches down from storm cloud to touch Earth's surface
- Form along _____
- Wind shear caused by an updraft creates the _____
- Not all reach _____
 - May touch for 15 min or less and be only a few _____ meters across
- Strength
 - Wind speeds can reach _____ km/hr
 - Updraft in center is most powerful
- How they form
 - Low, heavy _____ clouds
 - Spring and early summer
 - In the afternoon or early evening
 - Buildup of heat in lower atmosphere
 - Warm, Moist air mass from Gulf of Mexico (Maritime _____) meets with cold, dry mass from Canada (continental polar)
 - Cold air moves under the warm forcing warm up fast
- Where are they located?
 - Can occur anywhere, usually in _____ and summer
 - Most in world occur in _____
 - About _____ a year
 - Tornado _____
 - Texas, Oklahoma, Kansas, _____, Iowa.
 - Also parts of Missouri, New Mexico, and South Dakota
- _____ Scale
 - Measure the intensity of a tornado by examining damage caused after it has passed over a man-made structure.
 - Size not necessarily indication of _____
 - Very subjective, varies
 - Wind speeds are _____, never scientifically verified
- Deadliest
 - _____ Dead, Missouri, Illinois, and Indiana
 - March 18, 1925
 - Out of top 25 most recent is:
 - May 25, 1955 in Kansas 80 dead
 - Why so long ago? Are tornadoes getting weaker?

- Hurricanes

- A tropical storm that has winds of _____ kilometers per hour or higher.
- Typical about _____ km across
- In western pacific, they are called _____
 - Bring much needed rainfall to South Asia and Southeast Asia

- How do they form
 - _____ Ocean (Hurricane Season)
 - June through _____
 - Begins over warm water as a low-pressure area, or tropical disturbances.
 - Becomes tropical storm and then maybe a hurricane
 - Not all disturbance, and storms become hurricanes
 - _____ storm = 39-74 mph
 - _____ = 74 mph or higher
 - Gets energy from warm, humid air at surface
 - Rises, forms clouds, more air is drawn into the system.
 - Wind spirals inward toward _____ pressure
 - High winds near center with heavy rains
 - Lowest pressure and _____ temps are at center
 - Lower the pressure the faster the winds
 - May be as strong as _____ km/ht
- The Eye
 - Center of the hurricane
 - When eye arrives, the weather changes suddenly
 - _____ and sky may appear clear
 - After, storms resume, winds blow in _____ direction
- How they move
 - Usually a week or more
 - Atlantic ocean = easterly _____ winds
 - After across land, loses energy, b/c no warm moist air.
- Hurricane Damage
 - Brings high waves and severe flooding and wind damage
 - Most _____ features
 - Storm surge
 - Low pressure and high winds raise the level of water up to _____ meters
 - A dome of water that sweeps across the coast
- Naming Hurricanes
 - Each yr, alphabetical list for hurricanes and tropical storms
 - One name for each letter except Q, U, X, Y, Z
- Saffir-Simpson Scale
 - 1-5 rating based on _____
 - estimate of potential property damage and flooding expected
 - Wind speed is _____ factor
- Deadliest Hurricanes
 - 1998, Hurricane Mitch, Central America, 11,000 (5)
 - 1900, Texas, 8000+ Dead (4)
 - Most recent in U.S. 1972, Agnes, 122 deaths (1)

