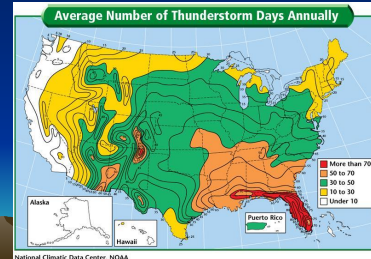


Severe Storms

Unit 8 - Chapter 20.3

Formation of T-Storms

– ~2000 worldwide; Lasts ~30 mins; ~15 miles in diameter



Formation of T-Storms



- Conditions:
 - 1. Abundant moisture in lower atmosphere
 - 2. Lifting of air to condense moisture and release latent heat
 - 3. Unstable clouds

Classification of T-Storms

Air-Mass T-Storms



- Rising air due to unequal heating on Earth's surface within one air mass

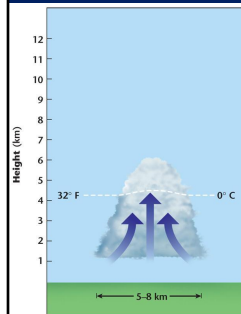
Frontal T-Storms

- Advancing cold front (air) replaces warm air



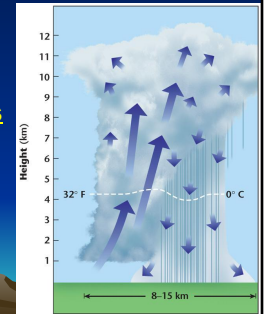
Stages of Development

1. Cumulus Stage



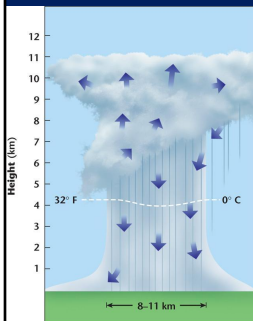
- Air rises vertically
- Cloud droplets coalesce (combine)
- Fall as precip

2. Mature Stage



- Precip sinks cool air
- Creates downdrafts
- Updrafts & downdrafts form convection cell

3. Dissipation Stage



- Supply of warm, moist air runs out

Classification of Lightning

LIGHTNING

- Continuous supply of surface moisture
- Lifts and condenses warm air



LIGHTNING

- Electrical **discharge** caused by **friction** within **cumulonimbus** clouds



LIGHTNING

- Heats air **~54 000°F**
- **Thunder** - Superheated air rapidly **expands** and **contracts**



Classification of Tornadoes

TORNADOES

- **Violent**, whirling **column** of air contacting ground
- Formed when wind **speed** and **direction** change suddenly with **height**



Classification of Tornadoes

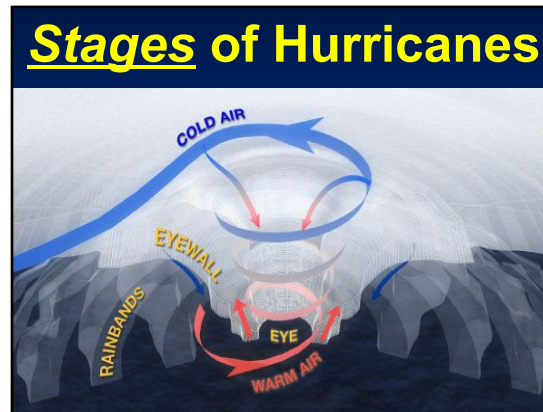
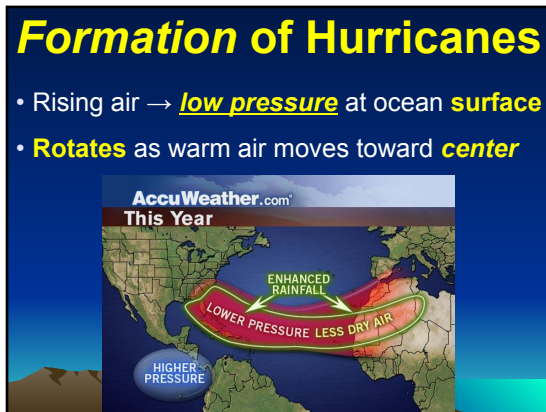
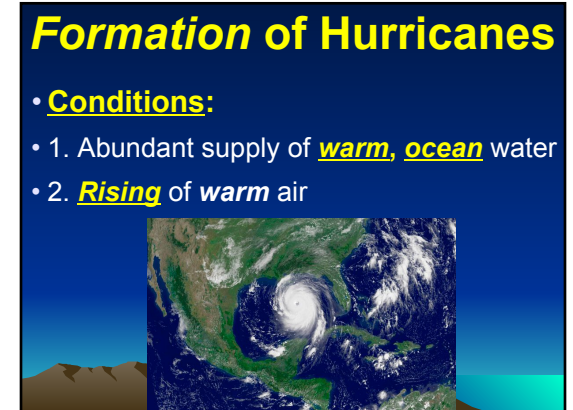
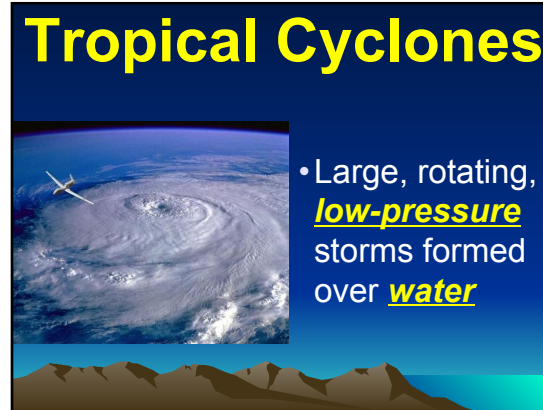
- **Fujita Scale** – Classified according to **wind speed, duration, and destruction**

Ranges from **F0 – F5**
F0 = Up to 75 mph
F5 = >310 mph



Cyclones (Hurricanes)

Unit 8 - Chapter 20.3 & 21.1



2. Tropical Storm

- Formal **name** given; **40-75 mph**



3. Cyclone (Hurricane)



- Air pressure **drops**
- **>75 mph** winds
- **Eye wall** contains **fastest** winds

Classifying Hurricanes

- **Saffir-Simpson Scale: Cat. 1-5**
 - Wind **speed**
 - Air **pressure** in center
 - **Potential** for property damage

Hurricane Hazards

- **Storm Surge** – **Wind** driven water washing over **coastal** land

