Air Masses and Fronts

You are so full of hot air!!!

Air Masses

- **Air Mass**: Large body of air
- Properties are nearly uniform throughout
- Moisture content and temperature are determined by where formed
- Usually cover many square miles
- Forms when air sits over a large region for days

Maritime Tropical

- Forms over the ocean near the equator
- Warm, moist air
- Brings hot, humid air in the summer
- Brings snow in the winter

Maritime Polar

- Forms over Pacific Ocean in both summer and winter
- Forms over North Atlantic in summer
- Cold, moist air
- Brings cooler temps and fog in summer
- Brings heavy snow and cold temps in winter

Continental Tropical

- Forms over Mexico and SW U.S.
- Brings hot, dry air
- Produces droughts

Continental Polar

- Forms over land in Northern Canada
- Cold, dry air
- Brings extremely cold temperatures to U.S.

What can you tell from their name?

Mari = Marine = Ocean

Continental = Land

Polar = North

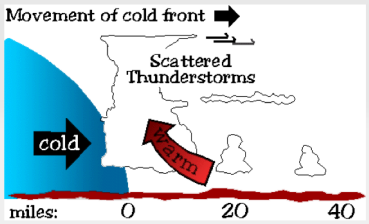
Tropical = Equator

Front

- **Front:** A boundary between two air masses of different density, moisture or temperature

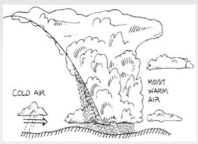
Cold Front

- Occurs when colder air advances and replaces warm air



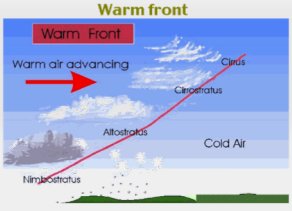
Weather at a Cold Front

- As cold air advances, it pushes up the warm humid air and produces turbulence
- Produces thunderstorms and tornadoes
- After the front passes, the weather becomes cooler and dry
- **Cloud type:** Cumulonimbus



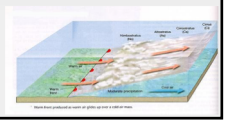
Warm Front

- Occurs when warmer air advances and moves up over heavier, colder air



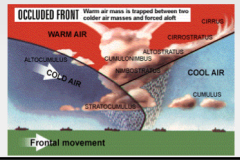
Weather at a Warm Front

- As warm air advances, it rises over the cold, dense air
- Produces steady rain or snow
- After the front passes, the weather becomes warmer and humid
- **Cloud type:** Nimbostratus



Occluded Front

- Occurs when a cold air mass moves toward cool air with warm air between the two
- The colder air forces the warm air upward, closing off the warm air from the surface

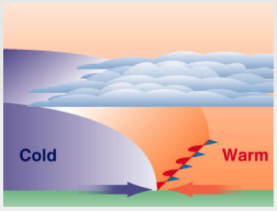


Weather at a Occluded Front

- Cold front overtakes a warm front and forces the air to rise
- Produces steady rain or snow, sometimes thunderstorms
- After the front passes, the weather becomes colder
- **Cloud type:** Nimbostratus and cumulonimbus

Stationary Front

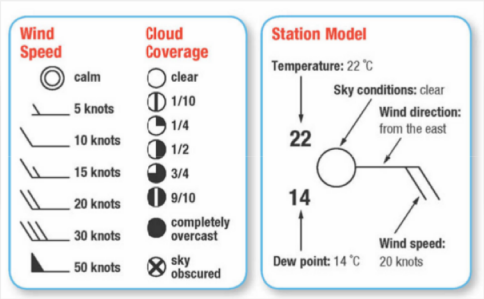
- Occurs when a boundary between air masses stops advancing
- Can remain in the same place for days



Weather at a Stationary Front

- Neither cold air nor warm air advances
- Produces light winds and steady rain or snow
- **Cloud type:** Nimbostratus

Interpreting Weather Maps (Pages 214-217)



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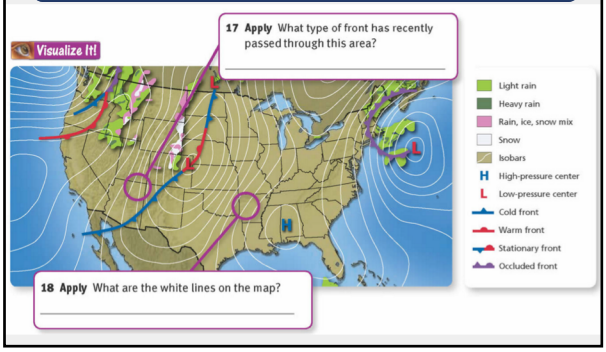

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