Types of Air Masses

* Air mass
	+ a huge volume of air that has similar temperature, humidity, and air pressure.
	+ May spread out over millions of square km and be up to 10 km high.
* Classified according to temperature and humidity.
	+ **Temperature**
		- **Warm or cold; Depends on the temperature of the region over which it developed.**
		- **Tropical (T) air mass**
			* **Warm air mass**
			* **Forms in the tropics**
			* **Low air pressure**
		- **Polar (P) air mass**
			* **Cold air mass**
			* **Forms north of 50° north and 50° south latitude.**
			* **High air pressure**
	+ **Humidity**
		- Humid or dry; Depends on whether it forms over water or land.
		- Maritime (m) air mass
			* Humid air mass forms over oceans
			* Water evaporates to make air humid
		- Continental (c) air mass
			* Dry air mass forms over land in middle of continents
* Four major types of air masses influence the weather in North America.

 Air Mass Movement

* + The prevailing westerlies generally push air masses from west to east in the U.S.
	+ As air masses move across the land and oceans, they bump into each other.
		- Air masses of different temperatures and densities do not mix.
		- The area where the air masses meet and do not mix becomes a **front.**
	+ When air masses meet at a **front**, the collision often causes storms and changeable weather.

Fronts

* + There are four major types of fronts:
		- **Cold**
		- **Warm**
		- **Stationary**
		- **Occluded**
* Cold Front Characteristics
	+ Forms when cold air moves underneath warm air, forcing the warm air to rise.
	+ Moves quickly carrying cool, dry air.
* Warm Front Characteristics
	+ Forms when warm air moves over cold air.
	+ Moves slowly carrying warm, humid air.
* Occluded Front Characteristics
	+ Forms when a warm air mass is caught between two cooler air masses.
	+ The warm air mass is cut off, or occluded from the ground.
	+ May cause clouds and precipitation.
* Stationary Front Characteristics
	+ Forms when cold and warm air masses meet but neither one has enough force to move the other.
	+ May bring days of clouds and precipitation.

Cyclones and Anticyclones

**Cyclones**

* An area low air pressure swirling CCW in the northern hemisphere.
* Often referred to as a “low”.
* Associated with decreasing air pressure bringing storms and precipitation.

**Anticyclones**

* An area of high air pressure swirling CW in the northern hemisphere.
* Often referred to as a “high”.
* Associated with increasing air pressure bringing clear, dry weather.