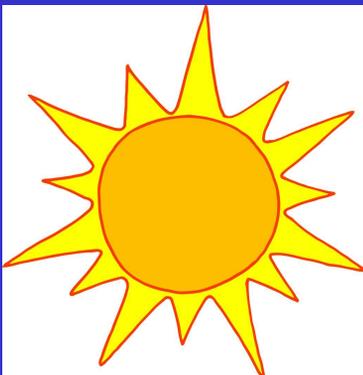


Air Masses & Fronts

Air and the Sun

*Weather starts with the sun because it provides the energy needed to make the weather.

*The Sun's energy is not the same everywhere, which causes the equator to have more energy than the poles.



*Because of this **uneven heating**, this is what causes air to move and make weather.

Air Masses

AIR MASS: A huge body of air that has similar temperature, humidity, and air pressure at any given height; can spread over 1,000 miles.

Two Properties of air masses are:

1. **Moisture content**
2. **Temperature**

An air mass has some of the same general properties as the land or water that it forms over.

Air masses with moisture form over water and dry air masses form over land. Air masses that form at the poles are cold and the ones that form in the tropics (or near the equator) are warm.

Air Mass Codes

We use a 2 letter code to describe air masses.

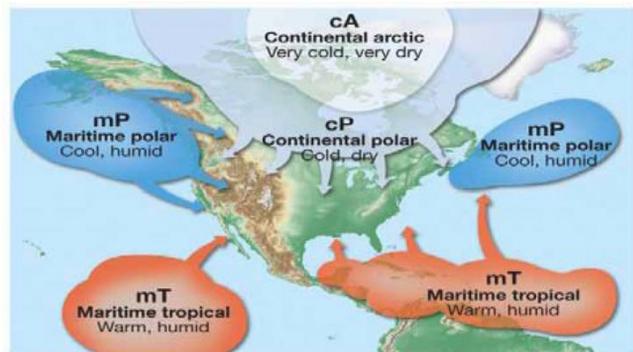
2-Letter Code...

Latitude – (2nd Letter)

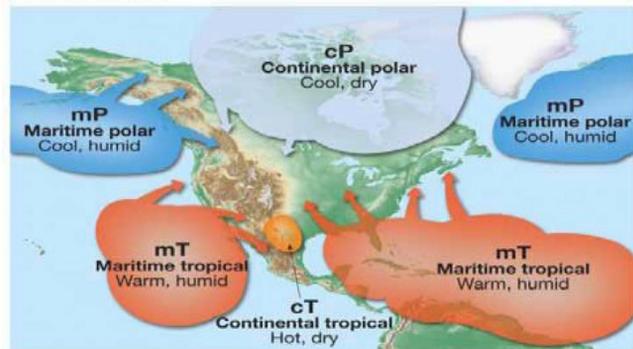
- **T** – Tropical
- **P** – Polar
- **A** – Arctic

Surface – (1st Letter)

- **m** – Maritime
- **c** – Continental



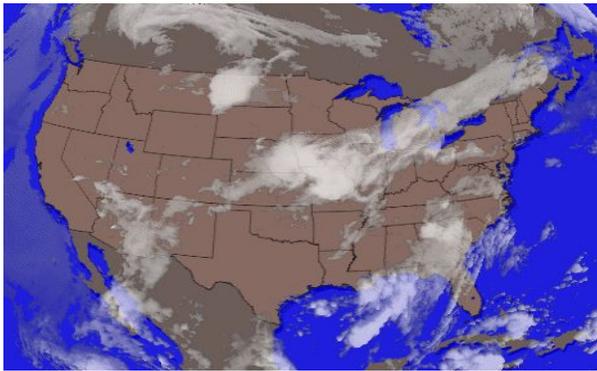
(a) Winter pattern



(b) Summer pattern

Air Masses Meet

When 2 air masses meet, they do not mix. What happens is that they form a border that is known as a front. Most of the weather that we think of happens along fronts.



Cold Fronts

- ❖ A cold front forms when a cold air mass catches up to a warm air mass.
- ❖ Colder air forces the warm air higher into the atmosphere.
- ❖ The warm air that is pushed up cools and forms clouds. This causes rain to develop; thunderstorms also occur along a cold front.

Warm Fronts

A warm front occurs when a warm air mass catches up to a cold air mass. (Just the opposite of a cold front.)

Warm air slides over the cold, dense air. This also causes clouds to form, but many miles ahead of the front.

As the front approaches and passes it can cause steady rain or snow to fall.

After all of this happens, the sky becomes clear (without clouds) and this is also when the temperature starts to rise.

Stationary Front

A front that stops moving is called a stationary front. This type of front can stay in the same place for days.

When this front stays in the same place for a long time there is constant snow or rainfall and this leads to several inches of snow or it could even cause a flood.

OUT:

- 1. What is an air mass?**
- 2. What forms when air masses meet?**
- 3. Name three types of fronts?**