

Name: _____

Period: _____

Due: _____

Weather Properties

Objective 7.E.1.3 _____ the relationship between the movements of _____; _____ and low pressure systems, and _____ boundaries to storms (including thunderstorms, hurricanes, and tornadoes) and other weather conditions that may result.

Air Movement and Weather Patterns

What is an Air Mass?

Air Mass- A huge body of _____ that has similar _____, humidity and air _____. Air masses usually take on the characteristics of where they _____.

4 types of air

_____ originates at latitudes 60° north and south and are usually _____ air _____ originates at latitudes with 25° of the equator and are usually _____ air _____ originates over the oceans usually _____ air _____ originates over large land masses and are usually _____ air

We can combine the different types of air to describe air masses:

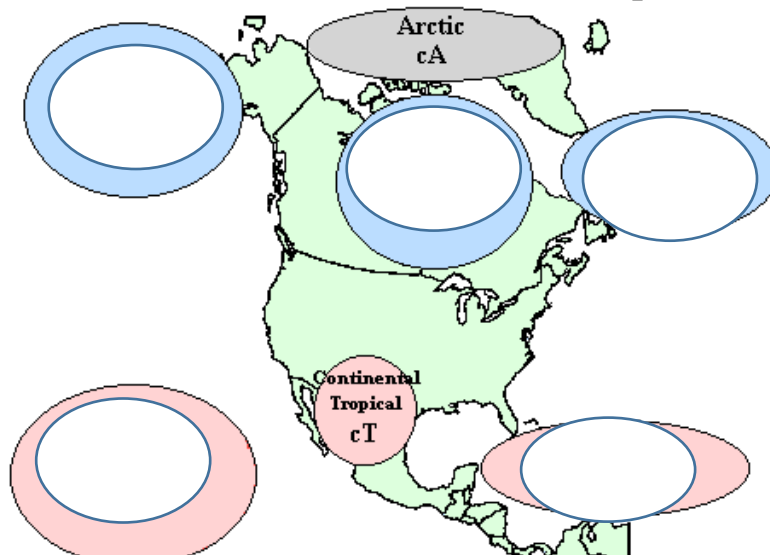
Maritime Polar = _____ and _____

Maritime tropical = _____ and _____

Continental Tropical = _____ and _____

Continental Polar = _____ and _____

North American Air Mass Source Regions



Fronts

A Front- A _____ where two air masses _____.

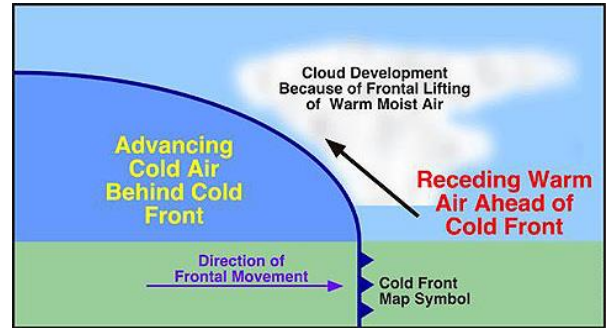
Fronts can be identified by looking at changes in temperature, air pressure, humidity and changes in wind direction.

There are _____ types of fronts

Cold Front

A cold front occurs when _____

_____ comes in and _____ warmer air that exists. They move _____ and cause fast weather changes.

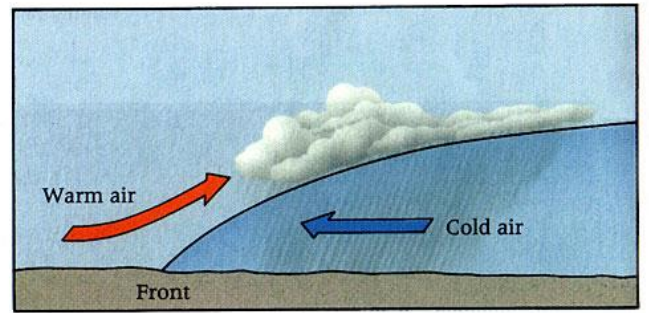


Warm Front

Warm fronts occur when a _____ air mass climbs over a _____.

Warm fronts move slowly. It can be _____ or cloudy for several days.

After it passes the weather is _____ and _____.

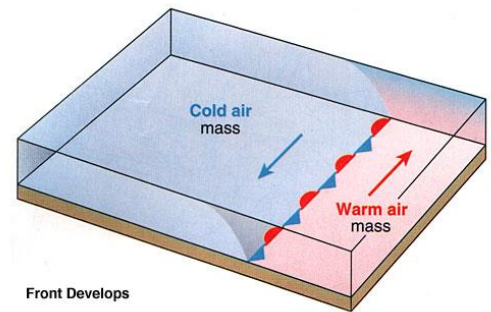


Cyclonic (frontal)

Stationary Front:

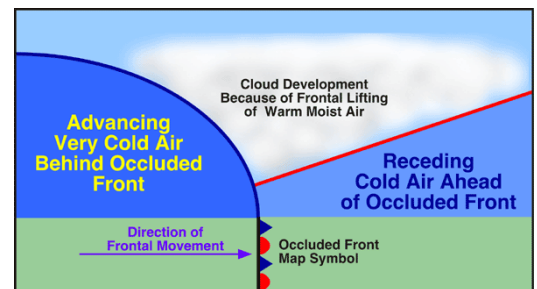
When _____ air masses exist along a boundary but _____ of them is _____.

_____ forms at the point where they _____.



Occluded Front:

Formed when _____ air masses, _____ and _____ up a _____ air mass. Forms _____ and possibly _____.



Objective 7.E.1.3 CONTINUED: Explain the relationship between the movements of air masses; high and low pressure systems, and frontal boundaries to storms (including thunderstorms, hurricanes, and tornadoes) and other weather conditions that may result.

Pressure Systems

The amount of air _____ is how much the air in the atmosphere is pushing down on the surface of the _____.

If the pressure is _____ that means that the air is _____ and pushing down on the earth's surface.

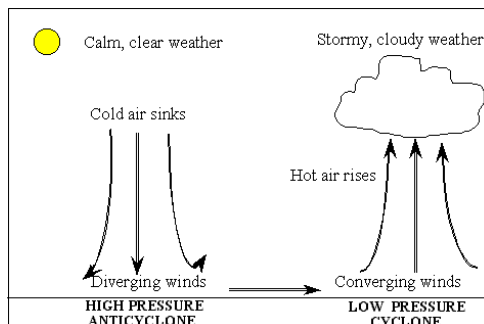
Air is low
=
Lots of pressure = high pressure

If the pressure is _____ it means the air is _____ in the atmosphere and therefore not putting as much pressure on the surface.

Air is up high
=
Low pressure

| | |
|---|---|
| <p><u>Low Pressure Systems: Cyclones</u></p> <p>A swirling center of low pressure air which forms at frontal boundaries and brings _____, _____ and _____.</p> | <p><u>High Pressure systems Anticyclone</u></p> <p>High pressure centers of _____ air that are formed at _____ boundaries and is associated with _____, _____ weather.</p> |
| | |

High Vs Low Pressure



Severe Weather

Tornados

Develop in thick CUMULONIMBUS _____.

Form when a _____ air mass meets a dry cold air mass – **warm air is forced upwards** along a **cold front** to produce several thunderstorms which can turn into tornadoes. Most damaging type of storm because they are _____.



Tornado _____ – central US from Texas to Nebraska/Iowa – nearly 800 tornadoes form in this area every year.

Hurricanes

Characteristics: Winds over 119 km/hr, 600 km across, Form in the Atlantic, Pacific, or Indian Ocean, Strength of hurricane comes from the _____, moist air. Hurricanes form around _____ pressure systems over warm _____ water. As the area grows in size and in strength it forms a tropical storm followed by a _____ if it continues to grow.



Thunderstorms

Thunderstorms form in large CUMULONIMBUS _____, when _____ air is forced rapidly upwards along a cold front.

Characteristics: Heavy Rain/possibly hail, Strong upward and downward winds (updrafts and downdrafts), Lightning and Thunder.

Floods

Occurs when the volume of water increases in a _____ period of time causing a body of water to overflow its channel. Flash flood- happens in a “flash”. Advance warning, dams and levees are all _____ measures and forms of flood control.

Droughts

_____ period of time with little rainfall. Typically caused by _____ weather systems that remain in place for long periods of time. Water conservation is necessary

Questions?

What happens to the weather when a cold or warm front passes through an area?

How does pressure and air mass movement affect the development of various types of storms?

How do high and low pressure systems change the weather in an area?