Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_ Due:\_\_\_\_\_\_\_\_\_\_

**Weather Properties**

Air Movement and Weather Patterns

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.

**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 600 north and south and are usually \_\_\_\_\_\_\_\_\_\_\_\_\_ air

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_originates at latitudes with 250 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:

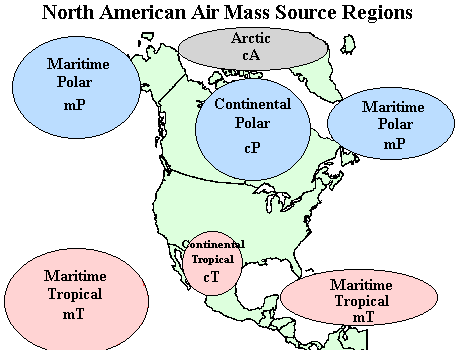
Maritime Polar = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Maritime tropical = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Continental Tropical = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Continental Polar = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

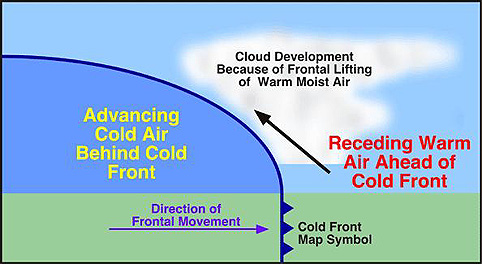
**North American Air mass source regions**



**Fronts**

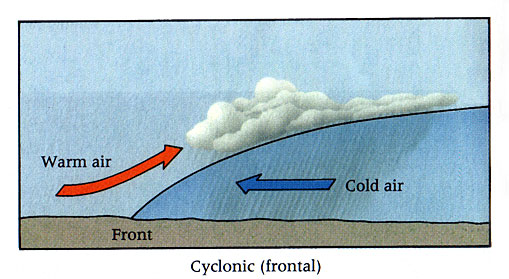
A Front- A\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ where two air masses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

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 \_\_\_\_\_\_ over a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ air mass. Warm fronts move \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It can be rainy or cloudy for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_days.

After it passes the weather is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Stationary Front:**  When \_\_\_\_\_\_\_ air masses exist along a boundary but \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of them is moving. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ forms at the point where they meet.

**Occluded Front:** Formed when \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ air masses, \_\_\_\_\_\_\_\_\_\_ off and \_\_\_\_\_\_\_\_\_\_ up a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ air mass.Forms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and possibly precipitation.

**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.

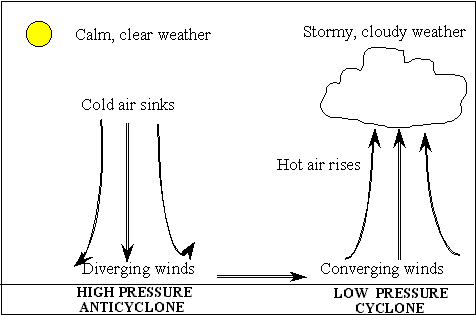
Air is up high

=

Low pressure

|  |  |
| --- | --- |
| **Low Pressure Systems: Cyclones** | **High Pressure systems** **Anticyclone** |
| A swirling center of low pressure air which forms at frontal boundaries and brings \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  cyclone | High pressure centers of \_\_\_\_\_\_\_\_\_\_\_ air that are formed at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ boundaries and is associated with \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_ weather.  anticyclone |

**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.

**Other weather conditions: 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?**

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

Cold🡪

Warm Front🡪

1. How does pressure and air mass movement affect the development of various types of storms?
2. How do high and low pressure systems change the weather in an area?

High Pressure🡪

Low Pressure🡪