***Air Masses Guided Notes***

Weather changes as air masses move.

* \_\_\_\_\_\_\_\_\_\_\_\_- large volume of air where temperature and humidity are the \_\_\_\_\_\_\_\_\_ at different altitudes.
  + Air masses can cover thousands of square miles
* Air masses form when air sits over a region of Earth for many days.
  + The sitting air takes on the characteristics of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This means:
    - When the Earth’s surface gets cold, the air does too.
    - When the Earth’s surface is wet, the air becomes moist.

Characteristics of air masses:

* Air masses are categorized by the characteristics of the region where it formed.
* The two categories are made of two words.
  + The first word describes the \_\_\_\_\_\_\_\_\_\_\_\_\_ of the air mass.
  + The second word describes the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Two word category names:

1. First word tells whether mass was formed over dry land or water (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ air mass- forms over land and loses its moisture to the land below it, becoming dry.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ air mass- forms over water and become moist as it gains water vapor from the water below it.

1. Second word tells whether an air mass is formed close to the equator (\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

* \_\_\_\_\_\_\_\_\_\_\_\_ air mass- forms near the equator and becomes warm by gaining energy from the warm land and water below it.
* \_\_\_\_\_\_\_\_\_\_\_\_ air mass- forms far from the equator and becomes cool as it loses energy to the cold land and water below it.

Movement of an air mass:

* Air masses travel away from the regions they were formed.
* They move with the global wind patterns.
* As air masses move, they take with them their characteristics.
* As they travel over a surface with different characteristics, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes the air mass.
* This change can take days or weeks. If the air mass is moving fast enough, it can travel with its characteristics a great distance.

Weather changes where air masses meet:

* A \_\_\_\_\_\_\_\_\_\_\_\_ is a boundary between air masses.
* The weather near a front can differ from the weather inside the air mass.
* As one air mass pushes another, some of the air at the boundary will be pushed \_\_\_\_\_\_\_\_\_\_\_\_\_\_. This creates clouds and can lead to cloudy and stormy weather as a front passes.
* After the front passes you experience the characteristics (temperature and humidity) of the air mass.

Cold Fronts:

* When a mass of \_\_\_\_\_\_\_\_\_\_\_, dense air \_\_\_\_\_\_\_\_\_\_\_ moves, pushing warm air upwards.
* Tall cumulonimbus clouds are often produced. Brief/heavy storms leave behind cooler and clear weather.

Warm Fronts:

* When a warm air mass \_\_\_\_\_\_\_\_\_\_\_moves up and \_\_\_\_\_\_\_\_\_\_\_\_ a mass of dense, cold air.
* Moisture in the warm air condenses producing cloud-covered skies: first, high cirrus clouds, then high stratus clouds, and last, lower stratus clouds. Often bringing hours of steady rain or snow, leaving warmer air behind.

Stationary Fronts:

* When air masses first meet or when a front \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The air in each air mass can still move along the side or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* This can produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ skies.
* When the stationary front starts to move, it can become a warm or cold front depending upon which air mass advances or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Pressure Systems:

* H stands for a high pressure area. It is the highest pressure area in a region.
* L stands for a low pressure area. It is the lowest pressure area in a region.
* Pressure differences can cause air to move in ways that make a high or low pressure area the center of a whole system of weather.

High Pressure Systems:

* A small area of high pressure can develop into a larger system.
* A high pressure system forms when air moves around a high-pressure center.
* Air sinks slowly to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_altitudes. As the air nears the ground, it spreads outwards, toward areas of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pressure.
* Most high-pressure systems are \_\_\_\_\_\_\_ and change \_\_\_\_\_\_\_\_\_\_\_\_. When it stays in the same location for a long time, an air mass may form.
* High-pressure systems bring \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ weather.
* Air moves **down, out, and around!**

Low Pressure Systems:

* A small area of low pressure can develop into a larger system.
* A low-pressure system forms around a low pressure center.
* Air moves \_\_\_\_\_\_\_\_\_\_\_\_\_\_ around and \_\_\_\_\_\_\_\_\_\_\_\_\_, toward the lowest pressure center. Then, up to \_\_\_\_\_\_\_\_\_\_\_\_\_ altitudes.
* Often formed along the boundary of warm and cold air masses.
  + Part of the boundary between the masses moves south, forms a \_\_\_\_\_\_\_\_\_\_\_\_ front.
  + Part of the boundary moves north and forms a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ front.
  + A center of low-pressure forms where the ends of the two fronts meet.
* Can cause very \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ weather.
* Air moves **up, inward, and around**.