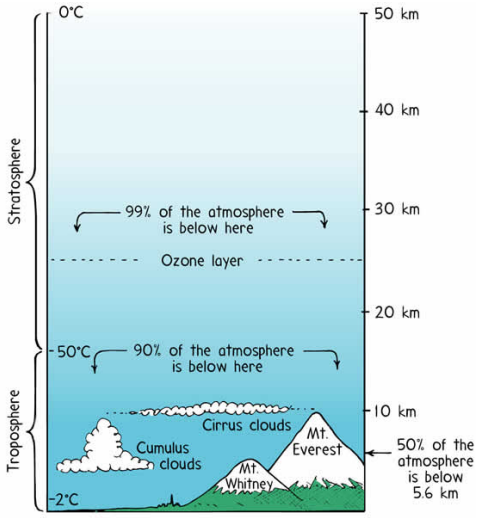
Name _____ **Homeroom** _____

The Atmosphere Outline



Structure of the Atmosphere

- The _____ is divided into _____ layers
  - _____
- The _____ layer is where _____ of the _____occurs
  - _____
  - _____
  - _____

Weather

- The _____-term (a few _____ or _____) condition of the _____ at a given _____
  - _____, sky _____, _____, atmospheric _____, _____, wind _____, and wind _____
- _____ are scientists who study and _____ the weather

Air Temperature

- In the daily _____, temperature is usually _____ in the early _____ and _____ at mid-_____
- In the _____ cycle, _____ are generally _____, while _____ tend to be _____
- Short term _____ such as _____ cover and _____ weather systems affect _____
  - _____ reduce daytime _____ by reflecting _____ back into _____
  - At _____, _____ help hold _____ energy to _____

▪Measured with a _____

–A _____ that contains _____ that expands into a narrow, calibrated neck when it is _____ and moves _____ the neck when the temperature _____

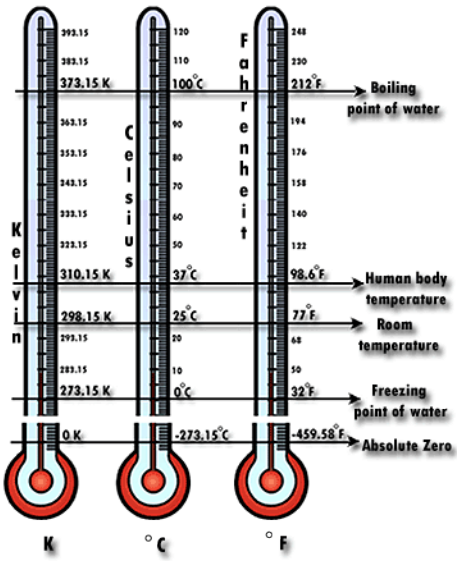
▪When _____ record official air temperature, the _____ is kept in a special weather _____ to _____ the instruments from direct _____

Temperature Scales

▪A temperature of zero on the _____ scale is the temperature of a mixture of equal parts ice, water, and salt

▪The _____ point of _____ is what sets the _____ point on the _____ (centigrade) scale

▪The point at which all particle motion _____ is defined as _____ on the _____ scale



Air Pressure

▪Is caused by the _____ of the _____

▪Above each square inch of Earth's _____ is a column of air the weighs _____ pounds

Measuring Air Pressure

▪A _____ is an instrument used to measure air _____ using the dense liquid metal _____

▪_____ measure air pressure in _____

▪Standard _____ level _____ is _____ millibars

▪On a weather map, _____ connect places that have the same air _____

Air Pressure Factors

▪If air is _____, it contracts and becomes _____

–This causes _____ to _____

▪If air is _____, it _____ and becomes _____ dense

–This causes pressure to _____

▪ _____ air is _____ than _____ air

–This is because _____ molecules are _____ than the gasses they displace in the air

Moisture in the Atmosphere

▪When the _____ is holding as much _____ as it can, the air is _____

–The air's ability to hold water _____ depends upon the _____

–The _____ the air, the _____ moisture the air can hold

▪The _____ is the _____ to which the air must be _____ to become _____

–If the temperature falls _____ the dew point, _____ occurs as water _____ changes to _____ water

Measuring Moisture in the Atmosphere

▪Meteorologists use a sling _____ and a dew-point temperature _____ to determine the _____ point

–The psychrometer consists of _____ thermometers mounted side by side which can be _____ through the air

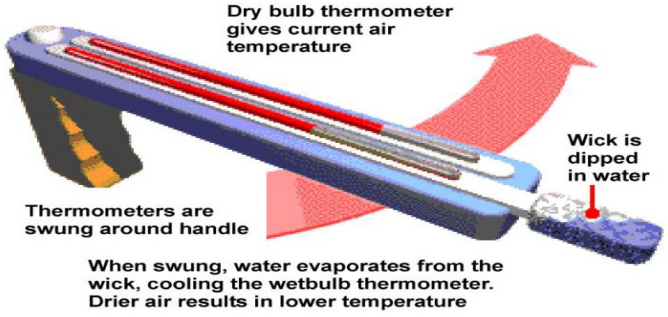
–One thermometer _____ the air _____

–The _____ of the other thermometer is _____ by a _____ cloth

–As the thermometers are _____ through the _____, evaporated _____ causes the wet-bulb _____ to register a _____ temperature

–When you _____ the wet-bulb temperature from the dry-bulb temperature, you can use the dew-point _____ to determine the dew point

Psychrometer



Relative Humidity

- Compares how much _____ the air is _____ holding with how much moisture it could hold if the air were _____
  - It is _____ as a _____ of saturation
- Air is _____ if it is holding _____ the moisture it can hold at its present _____
- Determined with a _____ and a relative _____ table

The Wind

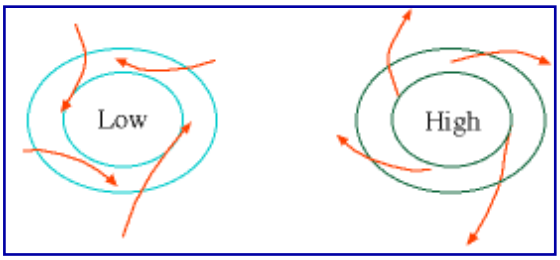
- Wind is _____ flow by _____ within the _____
- Winds are the result of _____ heating of the Earth's _____
  - This uneven _____ causes differences in air _____ to develop
- Winds _____ blow from areas of _____ pressure to areas of _____ pressure
  - Winds blow _____ where the _____ in air pressure is _____, where the _____ are close together

Measuring the Wind

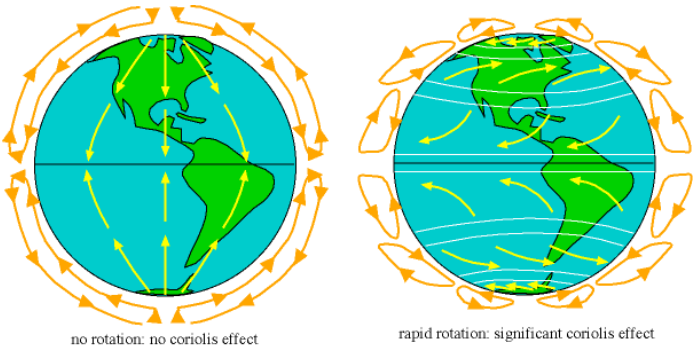
- To _____ the wind, you need to determine both the wind _____ and the wind _____
- Wind speed is measured with an _____
  - The _____ catch the _____, causing it to _____
- Wind _____ is indicated by a wind _____, which points _____ the wind

The Coriolis Effect

- The Earth's _____ causes winds to _____
  - to the _____ in the **Northern Hemisphere**
  - to the _____ in the **Southern Hemisphere**



- Winds move in a _____ outward spiral around _____-pressure systems
- Winds move in a _____ inward spiral around _____-pressure systems

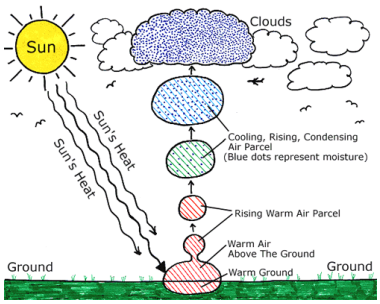


On a planet with little or no rotation, the global air circulation pattern is very simple. On a planet with rapid rotation, the coriolis effect creates large-scale eddies with belts of wind and belts of calm.

Zones of Convergence and Divergence

- _____ warm, _____ air at the center of the low causes _____ and air masses to _____ into the _____-pressure system
- The rising air _____, which causes _____ formation and _____
- The _____ air turns a high-pressure system into a single mass of cool, dry air that spreads across the surface of Earth

Cloud Formation



- _____ form when _____ air is _____ below its dew point
- Tiny particles called _____ **nuclei** in the air allow a cloud to form

Precipitation

- _____ and _____ are the most common forms of precipitation
- _____ is small raindrops that fall slowly
- _____ is a partially frozen mixture of _____ and _____ that occurs when the temperature is just above _____

- _____ is in the form of _____ balls, which usually occurs in violent

_____

  - _____ begin as _____ that start to melt and gather more

    _____ as they fall