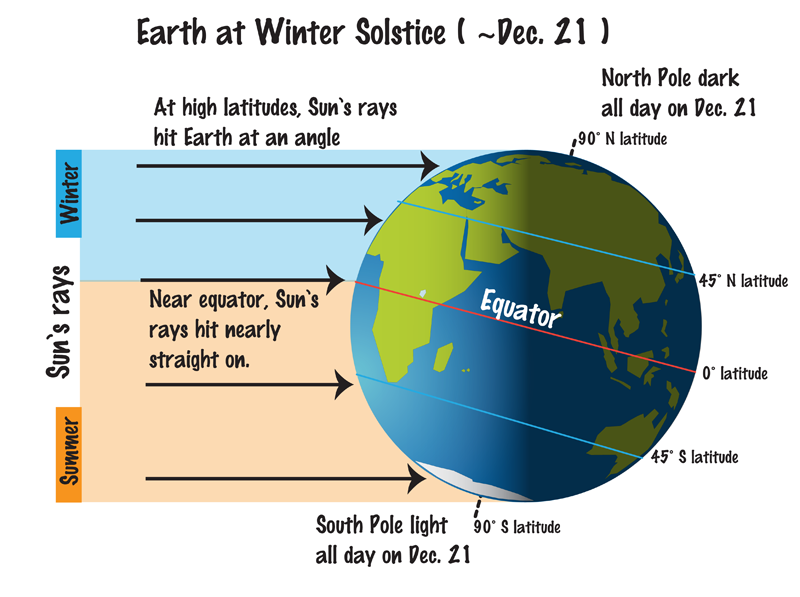
**Chpt 23 & 24: Wind and Weather Patterns Notes:**

1. **Earth’s temperature is higher closer to the equator.**

## The sun’s rays are more direct, concentrated

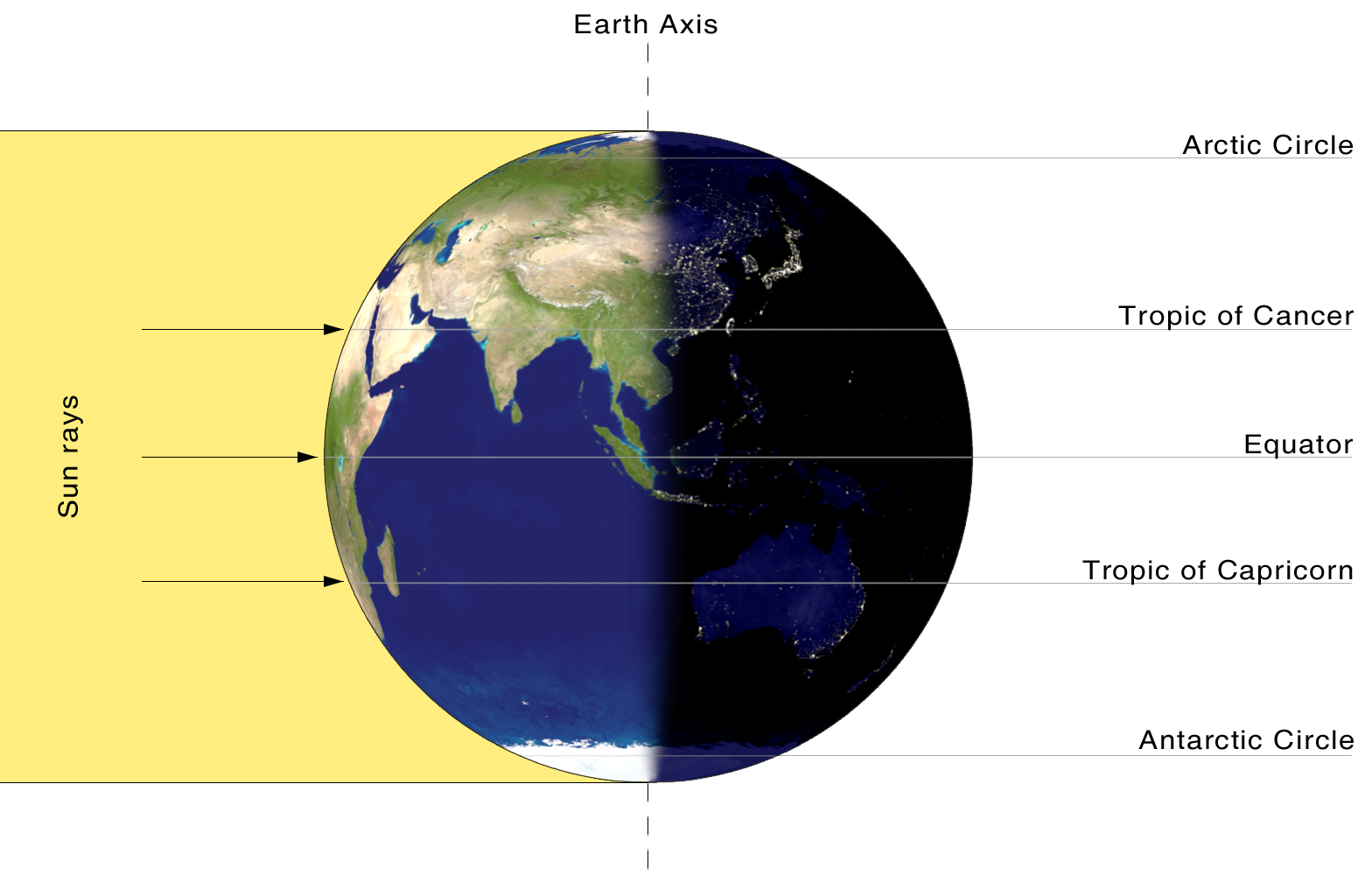
## At the poles, they are spread out over larger area, so less concentration of rays.

## Earth is tilted (23.5°), which cause the seasons, and changes the amount of direct sunlight received.

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Direct sunlight NORTH of Equator

Direct sunlight at Equator

****

1. **Wind: the flowing of air from high pressure to low pressure.**

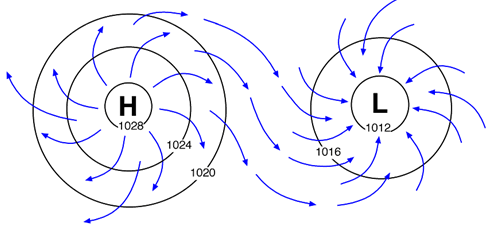
## Pressure Gradient: Difference in air pressure that causes win d.

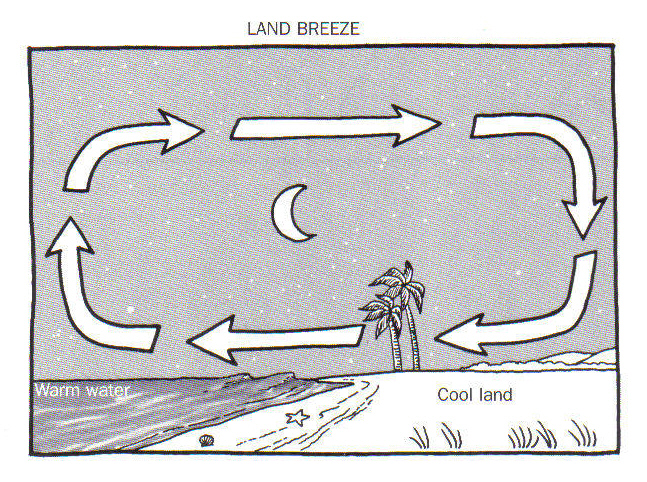
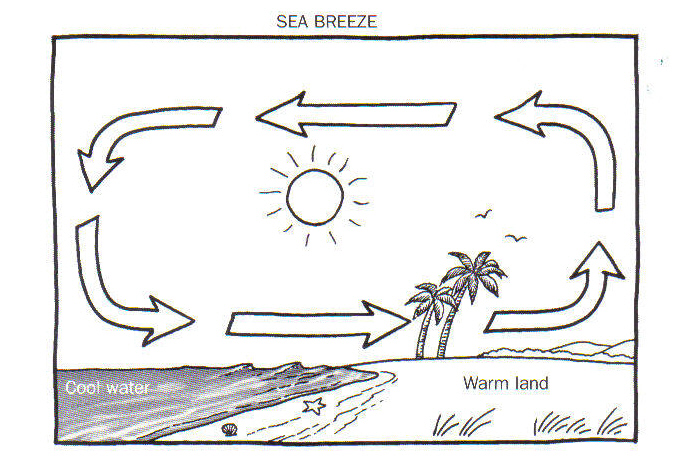
## Winds in the Northern Hemisphere curve clockwise

## Winds in t he Southern Hemisphere curve counterclockwise

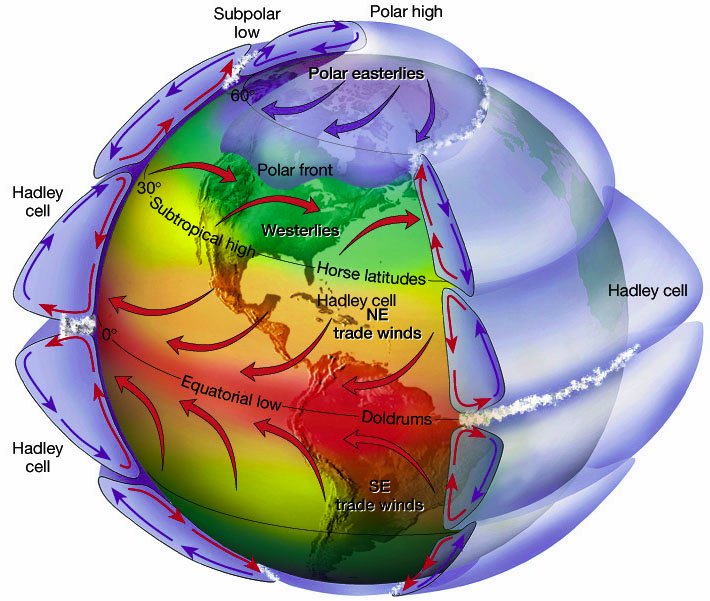
## Winds curve due to the Coriolis Effect, which is due to Earth’s rotation.

## Jet Stream: A belt of high-speed wind in the upper troposphere, caused by differences in air pressure.

Draw a Wind Pattern (H🡪L) 

****

1. **Global wind patterns form circulation cells.**

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**Polar Easterlies**

**Westerlies**

**Northern Trade Winds**

**Southeast Trade Winds**

**Westerlies**

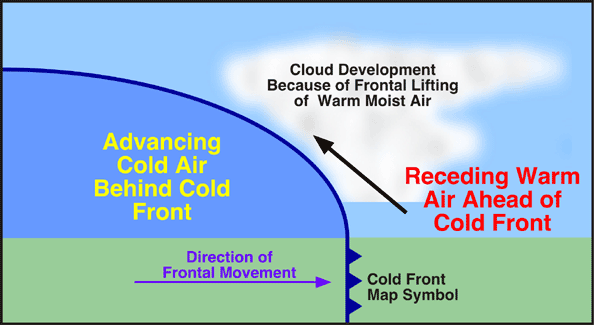
### Polar Easterlies

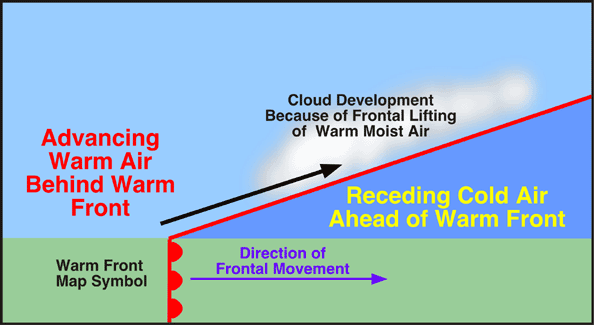
1. **Air Mass: a large body of air with uniform temperature and moisture content.**
2. **Front: the boundary between air masses of different densities.**

## Cold front: a mass of cold air

## Warm front: a mass of warm air

## Stationary Front: when 2 air masses meet but neither are displaced.

Cold front 🡪 Warm front 

Warm front 🡪 Cold front 

##### Weather is what is currently happening outside

## Difference in heating on the Earth creates weather

## Tornados, Hurricanes, Monsoons, and Desserts

##### The Earth’s features effect climate

## Climate: the general weather conditions over many years

## Topography: the surface features of earth.

* + 1. **Hills, mountains, valleys, wide stretches of flat surfaces**

## Tall mountains force air up, to cool and form clouds

## Other side of mountain there is no rain (rain shadow)

## Flat areas don’t stop wind, form thunderstorms/tornadoes

## Oceans (La Nina/El Nino)

##### Ocean currents

## Surface currents created by wind blowing on surface

## Deep currents caused by difference in density

* + - 1. **Salinity**
      2. **Temperature**

1. **Global climate changes over time.**

## Factors that effect climate:

* + 1. **Position of continents (change with plate tectonics)**
    2. **Slight change in Earth’s tilt**
    3. **Increased carbon dioxide (CO2)**
    4. **Volcanic eruptions, ash and gases reflects sunlight**
    5. **Large rocks from space impact earth and cause a lot of dust that reflects sunlight, cools earth**
    6. **Earth’s climate will continue to change**
       1. **Ige Ages (thousands of years)**
       2. **Global Warming**

**State Standards:**

**(B) H2E2**: Explain how Earth’s ***atm***, geosphere, and ***hydrosphere***, ***change over time*** and at varying rates. Explain techniques used to elucidate the history of events on Earth.

**(B) H1E2**: Describe the ***structure, function, and composition*** of Earth’s atmosphere, geosphere, and hydrosphere

**(B) H2E1**: Identify and predict the ***effect of energy sources***, physical forces, and transfer processes that occur in the Earth system.