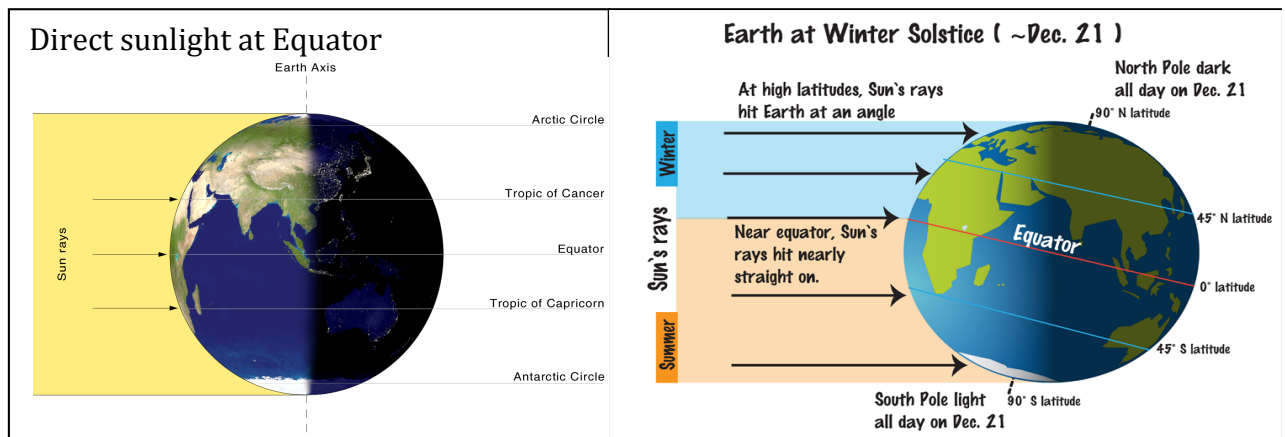
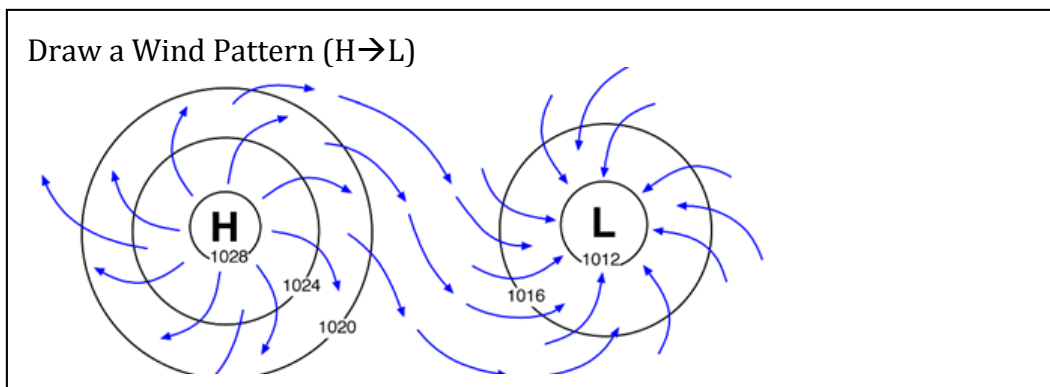


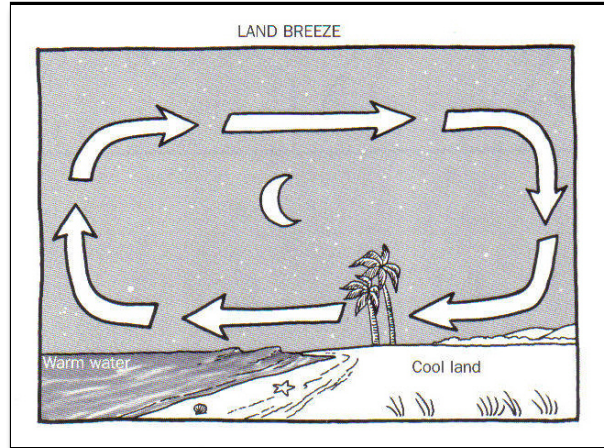
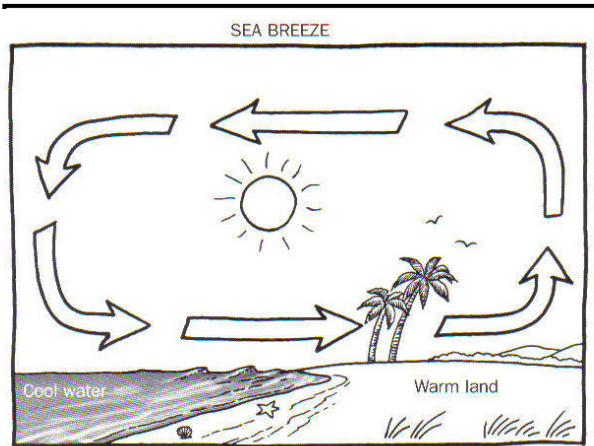
## Chpt 23 & 24: Wind and Weather Patterns Notes:

- I. **Earth's temperature is higher closer to the equator.**
  - A. **The sun's rays are more direct, concentrated**
  - B. **At the poles, they are spread out over larger area, so less concentration of rays.**
  - C. **Earth is tilted ( $23.5^\circ$ ), which cause the seasons, and changes the amount of direct sunlight received.**

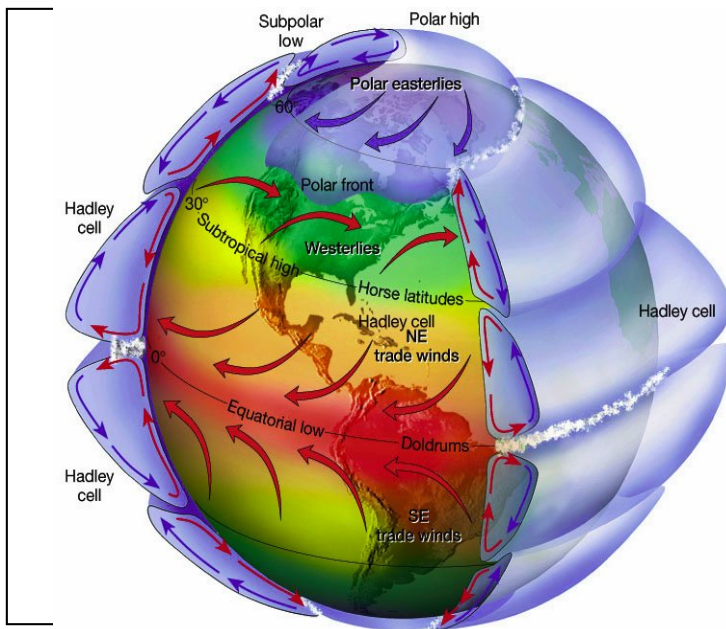


- II. **Wind: the flowing of air from high pressure to low pressure.**
  - A. **Pressure Gradient: Difference in air pressure that causes wind.**
  - B. **Winds in the Northern Hemisphere curve clockwise**
  - C. **Winds in the Southern Hemisphere curve counterclockwise**
  - D. **Winds curve due to the Coriolis Effect, which is due to Earth's rotation.**
  - E. **Jet Stream: A belt of high-speed wind in the upper troposphere, caused by differences in air pressure.**





### III. Global wind patterns form circulation cells.



Polar Easterlies

Westerlies

Northern Trade Winds

Southeast Trade Winds

Westerlies

Polar Easterlies

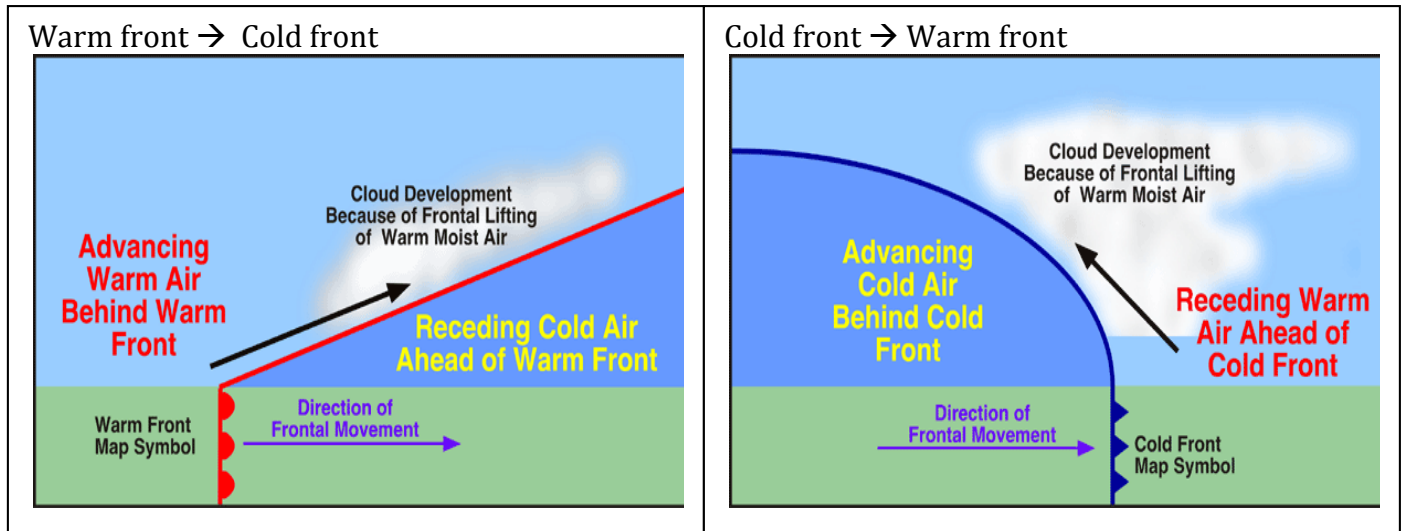
IV. **Air Mass:** a large body of air with uniform temperature and moisture content.

V. **Front:** the boundary between air masses of different densities.

A. **Cold front:** a mass of cold air

B. **Warm front:** a mass of warm air

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



## VI. Weather is what is currently happening outside

- A. Difference in heating on the Earth creates weather
- B. Tornadoes, Hurricanes, Monsoons, and Desserts

## VII. The Earth's features effect climate

- A. Climate: the general weather conditions over many years
- B. Topography: the surface features of earth.
  - 1. Hills, mountains, valleys, wide stretches of flat surfaces
- C. Tall mountains force air up, to cool and form clouds
- D. Other side of mountain there is no rain (rain shadow)
- E. Flat areas don't stop wind, form thunderstorms/tornadoes
- F. Oceans (La Nina/El Nino)

## VIII. Ocean currents

- A. Surface currents created by wind blowing on surface
- B. Deep currents caused by difference in density
  - 1. Salinity
  - 2. Temperature



## **IX. Global climate changes over time.**

### **A. Factors that effect climate:**

- 1. Position of continents (change with plate tectonics)**
- 2. Slight change in Earth's tilt**
- 3. Increased carbon dioxide (CO<sub>2</sub>)**
- 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.