Aim: Describe climate and the factors that affect it.

**Climate**: General weather characteristics over a long period of time at a particular location.

**Great Neck**: Cool Winter / Warm Summer + Humid Temperate

1. **Tropical** = Warm + Humid all year long near the Equator
   - Warm, Rising Air = Low Pressure Region

2. **Polar** = Cold + Dry near the poles – 90°N/S
   - Cool, Sinkling Air = High Pressure

3. **Desert (Arid)** = Dry + Varying Temp’s (Cool or Warm)

4. **Temperate** = Humid + Warm to Cold Temp’s

**Factors Affecting Climate**: Latitude, Wind Belts, Nearness to bodies of water, Ocean Currents, Mountain Ranges, Elevation/Altitude,
1. Latitude: As distance from equator increases, temperature decreases.
   
   Equator (0°) = Hot Temp ↑ more sun
   Poles (90°) = Cold Temp ↑ less sun
   
   ![Diagram showing temperature change with latitude]

2. Elevation/Altitude: Higher altitudes have cooler climates.
   Air rises, expands, cools
   
   ![Diagram showing temperature change with elevation]

3. Mountain Lifting Orographic Effect: Air is forced up the
   - windward side = rises, cools to dewpt. = wet.
   - leeward side = sinks, warms = dry + hot
   
   ![Diagram showing windward and leeward sides with mountain lifting]
4) Oceans/Large Bodies of Water: Specific heat of water (high sp. heat) causes areas near them to have cooler summers and warmer winters (smaller temp. range). Inland areas have hotter summers and colder winters (big temp. range).

![Diagram showing temperature range vs. distance to body of water]

G.N. > coastal = Small Temp. Range  
Bismarck = Inland = Big Temp. Range

5) Ocean Currents: Streams of water that circulate through the ocean basin, distributing heat throughout the globe. ESRT = p.4

Gulf Stream = Warm = East Coast of North America, Warmer Climate  
California Current = Cold = West Coast of North America, Cooler Climate  
Peru Current = Cold from South Pole, West Coast of South America  

Currents affect climate. Ex. East Coast of US is warmer, West Coast of US is cooler.
6) Planetary Winds + Moisture Belts: Prevailing winds and Rising/Sinking Air Currents. ESRT p.14

Humid 0° equator = Converging Winds, Low Pressure, Rising Air = WET
Deserts 30°N/30°S = Diverging Winds, High Pressure, Sinking Air = DRY

7) Seasonal Monsoons = (Seasonal land + sea breezes)

Summer monsoons = Sea breezes = Rainy Season.
Wind blows from sea to land. Sea is cooler, high pressure
Wind blows from high pressure / cool sea to land.