**Severe Weather**

1. Flash Floods
   1. Precipitation exceeds infiltration rate and/or river carrying capacity
   2. Where? desert, valleys, coast, flood plains
   3. Most deadly disaster
2. Thunderstorm = Low pressure systems
   1. Conditions for formation:
      1. Source of moisture (ocean, lake, etc.)
      2. Lifting of air mass (cold front pushes warm air up)
      3. Unstable atmosphere (surrounding air is cooler = cloud formation)
   2. Stages:
      1. Cumulus Stage: air rises = updraft = water vapor condenses = cumulonimbus cloud formation = latent heat released = cloud droplet size increases = droplets too heavy = precipitation
      2. Mature Stage: updraft-downdraft convection cell
      3. Dissipation Stage: supply of warm, moist air depleted
   3. Heavy rain, lightning, thunder, strong winds, hail
   4. When occur most often: Summer when air is warm, moist, & unstable
   5. Supercells = large single-cell thunderstorms with strong rotating updrafts; produce tornadoes
3. Hail = ice pellets
   1. Updraft-downdraft cycle; water freezes in upper part of cloud, ice sinks & rises increasing in size; when too heavy – falls
4. Tornado (Fujita scale F-0 to F5 (40 – 200+ mph winds) = Low pressure system
   1. Large temperature variation between ground & atmosphere
   2. Air rises rapidly
   3. Air condenses rapidly
   4. Clouds & Thunderstorm forms
   5. Updrafted air reaches tropopause
   6. Jetstream sucks air from top of thunderstorm
   7. Increase updraft from ground
   8. Wind & turbulence forces air to spin
   9. Vortex (mesocyclone) forms
   10. Funnel touches ground
5. Cyclones over water = Low pressure systems
   1. Atlantic = Hurricane; Tropical storm-- Saffir-Simpson Scale Category 1 – 5 (74 -156+ mph winds)
   2. Pacific = Typhoon
   3. Indian Ocean = cyclone
6. Anticyclone = high pressure systems = calm, sunny weather
7. Blizzard = freezing temps, 35+ mph winds, blowing snow reduces visibility, 3+ hours