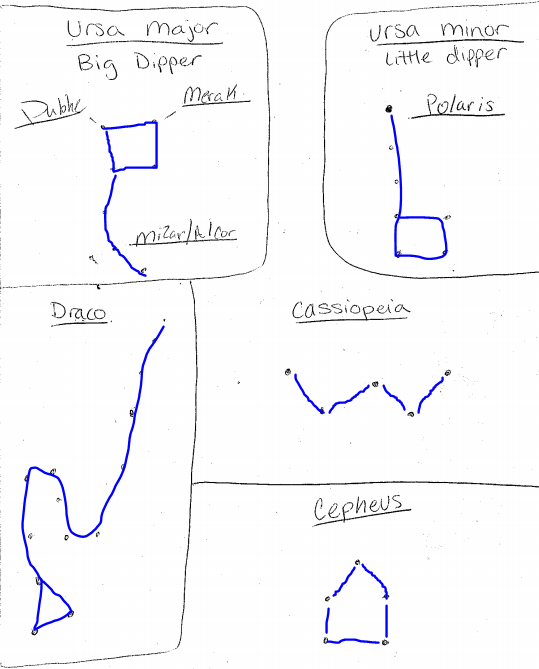
Unit 2 Study Guide: Constellations –

* 3 basic ways of locating something on Earth:
  + Geographic – City, State, Country
  + Local Coordinate System- 15 miles to the East
  + Global Coordinate System – Longitude and Latitude
* 3 basic ways of locating something in the Sky:
  + Geographic – Star or Constellation
  + Local Coordinate System – Altitude and Azimuth
  + Global Coordinate System – Right ascension and declination
* Horizon- where the land meets the sky
* Longitude – Angular distance north of the Equator
* Longitude- Angular distance East of Greenwich England (Prime Meridian)
* Celestial Sphere- imaginary sphere centered on Earth to which stars are affixed.
* Azimuth – angular distance from North – measured to the East
* Altitude- angular distance from the horizon
* Zenith – overhead point on celestial sphere
* 88 constellations in the sky
* We can see 45 constellations in GA
* An asterism is a layman’s term for constellation – “big dipper” is the asterism for ursa major.
* Spring - Vernal equinox – 0 hours, 0 degrees – March 21, 22  
  Summer – Summer solstice – 6 hours, 23.5ᵒ -- June 21, 22  
  Fall – Autumnal Equinox – 12 hours, 0ᵒ -- September 21,22  
  Winter – Winter Solstice – 18 hours, -23.5ᵒ -- December 21,22
* Right ascension- angular distance east of the vernal equinox (similar to longitude) measured in hours and minutes
* Declination- The angular distance north of the celestial equator (similar to latitude) measured in degrees
* Ecliptic—the path the sun takes in the sky. The earth is at a tilt – 23.5o
* 24 hour day— solar day—time it takes for the earth to complete one rotation of 361ᵒ
* 23 hours 56 mins – sidereal day – one rotation of the earth measured by position of the stars other than our sun. 360ᵒ the earth is rotating and revolving.   
  takes 4 minutes for objects in the sky to move 1ᵒ
* True or false…. If I go outside tonight at midnight and see Betelgeuse right above my head, I have to go outside tomorrow night at 12:04 and Betelgeuse is right above my head again.  
  FALSE---- Betelgeuse would be out at 11:56pm
* Organizing Stars:
  + Bayer System
  + 1. constellation (using the Latin possessive of the name)
  + 2. Greek letter (Alpha, Beta, Gamma, Delta, Epsilon, . . .)
  + Labeled in an approximate order of decreasing brightness for stars in the constellation.
    - Example Orion Constellation
    - Betelgeuse is also called Alpha-Orionis
    - Rigel is called Beta Orionis
* Rotation vs revolution:
  + Rotation- earth spinning on its axis (24 hours) rotates counter-clockwise
    - Daily motion of the sky is due to the earth’s rotation.
  + Revolution –
    - Tilt and revolution cause seasons

Circumpolar Constellations:



Winter Constellations:

