

# My Star Chart by \_\_\_\_\_



1. Assemble the star chart with tape. Chart 3 will need to be trimmed and lined up before taping. Only tape on the back for now.
2. Trace all of the constellations in a variety of colors and underline or highlight its name.
3. Find these stars and label their **star type** using the abbreviation. The chart tells you which constellation you find them in.

<u>Star Name</u>	<u>Star Type</u> with abbreviation	<u>Constellation</u>
Vega	White Star      WS	Lyra - the harp
Deneb	White Supergiant      WSG	Cygnus - the swan
Capella	Yellow Giant      YG	Auriga - the charioteer
Algol*	White Star      WS	Perseus - son of Zeus
Castor***	White Star      WS	Gemini - the twins
Pollux	Orange Giant      OG	Gemini - the twins
Regulus***	Blue White Star      BWS	Leo - the lion
Betelgeuse	Red Supergiant      RSG	Orion - the hunter
Bellatrix	Blue Giant      BG	Orion - the hunter
Rigel	Blue Supergiant      BSG	Orion - the hunter
Sirius*	White Star      WS	Canis Major - the great bear
Canopus	Cream Supergiant      CSG	Carina
Achernar	Blue White Star      BWS	Eridanus - the river
Aldebaran*	Red Giant      RG	Taurus - the bull
Altair**	White Star      WS	Aquila - the eagle
Antares*	Red Supergiant      RSG	Scorpius - the scorpion
Arcturus	Red Supergiant      RSG	Bootes - the herdsman

\*Binary Stars      - two stars that orbit each other. The larger is called the primary star and the smaller is the companion star.

\*\*Double Star      - two stars that appear as one with the unaided eye because they are close to one another from our view on earth. They actually may be quite far apart. They do not orbit one another as binary stars do.

\*\*\*Triple Stars      - similar to a double star but with three stars instead of two.

4. Label the stars from the chart above as Binary (B), Double Star (DS), or Triple Star (TS). Use the abbreviation.



5. Plot these deep space objects using "Starry Night"\* or the Right Ascension and Declination data. Be sure to include the appropriate symbol, catalogue number, and common name (write small).

**Symbols:**

- Galaxy - a group of 100 billion or more stars
- ☆ Star Cluster - several to hundreds of stars relatively close together within a galaxy
- ◇ Nebula - a cloud of gas and dust where new stars are formed or old stars have exploded.

Catalogue #	Common Name	RA <sup>h</sup> (right ascension)	DEC <sup>o</sup> (declination)	Distance from Earth (in Light Years)
M1	Crab Nebula	5h 34m	+22	6,000
M6	Butterfly Cluster	17h 40m	-32	2,000
M7	Ptolemy's Cluster	17h 54m	-34	800
M8	Lagoon Nebula	18h 4m	-24	5,200
M11	Wild Duck Cluster	18h 51m	-6	6,000
M13	Hercules Cluster	16h 42m	+36	25,000
M16	Eagle Nebula	18h 19m	-14	7,000
M17	Omega Nebula	18h 21m	-16	6,000
M20	Trifed Nebula	18h 3m	-23	5,000
M27	Dumbbell Nebula	20h 0m	+23	1,250
M33	Triangulum Galaxy	1h 34m	+31	2,300,000
M40	Double Star WNC4	12h 22m	+58	300
M42	Orion Nebula	5h 35m	-5	1,500
M44	Beehive Cluster	8h 40m	-20	577
M45	Pleiades Cluster	3h 47m	+24	380
M51	Whirlpool Galaxy	13h 30m	+47	37,000,000
M57	Ring Nebula	18h 54m	+33	unknown
M63	Sunflower Galaxy	13h 16m	+42	37,000,000
M64	Black Eye Galaxy	12h 57m	+22	20,000,000
M76	Little Dumbbell Nebula	1h 42m	+51	1,700 - 15,000
M81	Bode's Galaxy	9h 56m	+69	12,000,000
M82	Cigar Galaxy	9h 56m	+70	12,000,000
M83	Southern Pinwheel Galaxy	13h 37m	-30	15,000,000
M91	Galaxy in Comma Berenices	12h 35m	+15	60,000,000
M97	Owl Nebula	11h 15m	+55	2,600
M101	Pinwheel Galaxy	14h 3m	+54	27,000,000
M104	Sombrero Galaxy	12h 40m	-11	50,000,000
M110	Elliptical Galaxy in Andromeda	0h 40m	+42	2,900,000
NGC2261	Hubble Variable Nebula	6h 39	+9	3,000
NGC1566	Seyfert Galaxy	4h 20m	-56	50,000,000
NGC2020	Tarantula Nebula	5h 38m	-69	160,000
NGC2023	Horsehead Nebula	5h 31m	-3	1,500
NGC2244	Rosette Nebula	6h 41m	+10	4,500
NGC4755	Jewel Box Open Cluster	12h 54m	-60	7,800

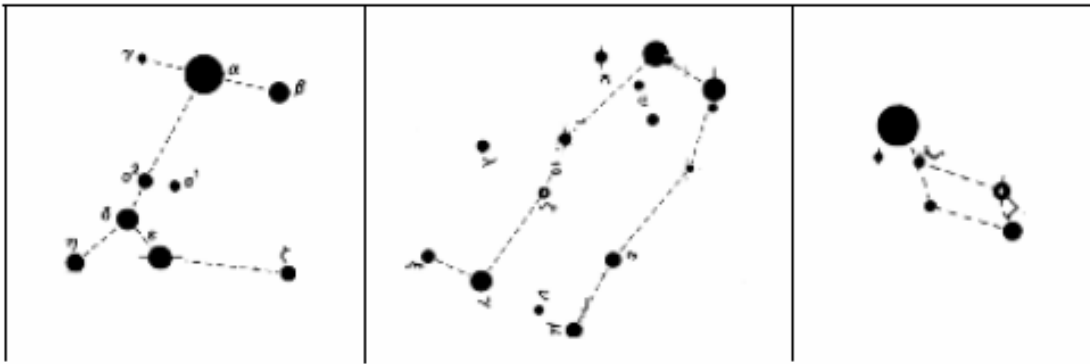
\*Note: "Starry Night" is a software program. Right ascension and declination is a grid system for locating objects in the celestial sky (similar to longitude and latitude).



# Star Chart Tour

Use your star chart and "Starry Night"

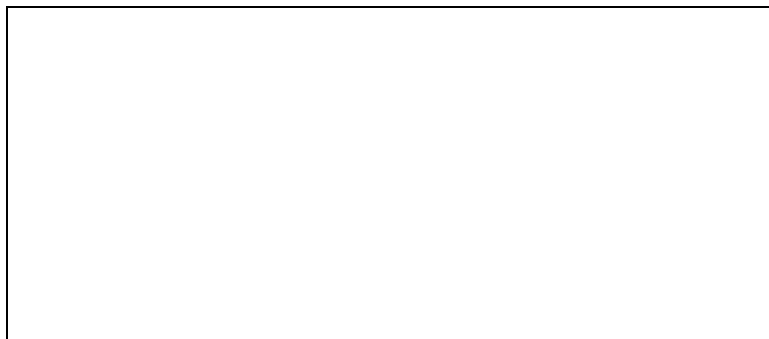
1. What is the name of the young astronomer completing this tour? \_\_\_\_\_
2. In which period of the school day does the above young astronomer have science? \_\_\_\_\_
3. Name these constellations: Label the stars Sirius, Castor, Pollux, and Vega



a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_

4. Which of these stars appears brightest from Earth? a) Betelgeuse b) Sirius c) Rigel d) Aldebaran  
(Hint: The size of the star on your chart indicates its brightness.)
5. Which object that you plotted on your star chart is the farthest from Earth? \_\_\_\_\_
6. In general, which objects are farthest from Earth (of those you plotted)? a) Galaxies b) Star Clusters c) Nebulae
7. What is the common name for these objects:  
M42 \_\_\_\_\_ M104 \_\_\_\_\_ NGC2023 \_\_\_\_\_
8. Name the type of star for each of these:  
Betelgeuse \_\_\_\_\_ Vega \_\_\_\_\_ Capella \_\_\_\_\_
9. Which of these stars is actually two stars that orbit each other? A) Deneb b) Canopus c) Pollux d) Sirius
10. Which object is located at RA 5h 35m Dec +22°? \_\_\_\_\_
11. What do the stars Alkaid, Mizar, Alioth, Megrez, Phecda, Merak, and Dubhe make up? \_\_\_\_\_

Draw it and label the stars:





12. Draw the constellation Orion. Label the stars, star types, and the Orion Nebula (M42):

13. In which constellation do we find these stars?

Betelgeuse \_\_\_\_\_ Arcturus \_\_\_\_\_ Antares \_\_\_\_\_

14. In which constellation would you find these deep space objects?

Lagoon Nebula \_\_\_\_\_ Whirlpool Galaxy \_\_\_\_\_ Crab Nebula \_\_\_\_\_

15. Which galaxy is closer to earth; Sunflower galaxy (M63) or Sombrero galaxy (M104)? \_\_\_\_\_

16. To which constellation does Polaris (the North Star) belong? \_\_\_\_\_

17. List the common name for each of these constellations:

Canis Major \_\_\_\_\_ Aquila \_\_\_\_\_ Bootes \_\_\_\_\_

Ursa Minor \_\_\_\_\_ Draco \_\_\_\_\_ Pegasus \_\_\_\_\_

Taurus \_\_\_\_\_ Cancer \_\_\_\_\_ Gemini \_\_\_\_\_

18. Find the Moon and label its current location on your star chart.

19. Find each planet and label its current location on your star chart: Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto.

20. What are the names of four of Jupiter's moons (use Starry Night).

\_\_\_\_\_

21. Obtain a sky catalogue from your teacher and plot at least 10 objects that are not already on your star chart. List the ones you plotted:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_

6. \_\_\_\_\_ 7. \_\_\_\_\_ 8. \_\_\_\_\_ 9. \_\_\_\_\_ 10. \_\_\_\_\_