

My Favorite Constellation

Name _____ Period ____ Date _____

Constellations contain both galaxies and stars at different distances. Stars are classified by temperature (or color), absolute magnitude of light, and size. Galaxies are classified by their shape and size.

Part 1

1. Select a constellation from your star finder with at least 4 'stars'.
2. Draw a stick figure diagram of the constellation on black paper that takes up the whole paper. Place large dots where stars and galaxies go in the constellation. You may draw a picture of what you imagine the constellation to look like.
3. Poke holes in the dots. Brighter stars in the night sky should have bigger holes. Check your star finder.

Part 2

Write or type on light colored paper a constellation introduction and information captions for the four brightest stars and galaxies in the constellation. Use the websites at the bottom of the page or other good resources (no astrology) to find information. Cut out and attach introduction and captions to the black paper so the stick figure of the constellation is not covered up.

A. Constellation Introduction should include:

- Name(s) of the constellation.
- Number of stars and galaxies in your constellation.
- What days and months of the year it can be seen at night in Oregon. Use your Star Finder.
- A paragraph about the history or mythology surrounding the constellation.

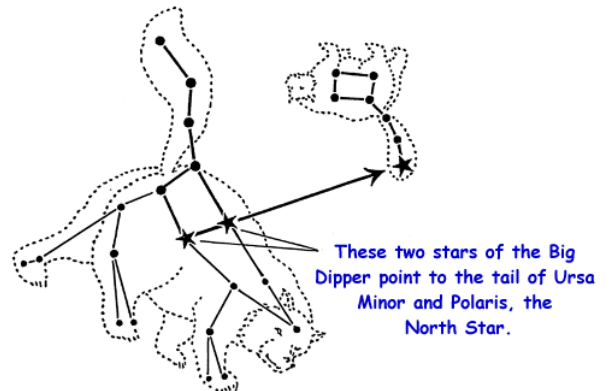
B. Four Star and Galaxy Captions

If a **star**, include the following information in the caption:

- **Name(s)** of the star.
- **Type** (blue star, red giant, etc.), **diameter** compared to the sun, and **distance** in light years.
- The **temperature** of the star. **Color** an area the color that goes with that temperature.
- **Brightness** compared to the sun (luminosity).
- Anything unique about the star.

If a **galaxy**, include the following information in the caption:

- **Name(s)** of galaxy.
- Describe or draw the **shape**. (eg. elliptical, spiral)
- **Distance** from earth in light years
- Unique information such as the main types of stars found in the galaxy.



Some Good Resources

- Google Earth Pro – Above the image screen, select the planet shaped icon and select **sky**.
- [The Constellations and their Stars - www.astro.wisc.edu](http://www.astro.wisc.edu)
- [Constellation Guide - stardate.org](http://stardate.org) - 18 common constellations
- [Constellations - windows2universe.org](http://windows2universe.org)
- [The Constellations - stars.astro.illinois.edu](http://stars.astro.illinois.edu)

The **H-R Diagram** (Old ES 578-579, Elevate Science pg. 504) can be used to find missing size, temperature and absolute magnitude information.

<i>Constellation</i>	Student
Sagittarius	
Scorpio	
Libra	
Virgo	
Leo	
Cancer	
Gemini	
Taurus	
Aries	
Pisces	
Aquarius	
Capricorn	
Andromeda	
Aquila	
Auriga	
Bootes	
Canis Major	
Cassiopeia	
Cepheus	
Cetus	
Columba	
Coma Berenices	
Corona Borealis	
Corvus	
Cygnus	
Delphinus	
Draco	
Eridanus	
Hercules	
Hydra	
Lepus	
Lyra	
Ophiucus	
Orion	
Pegasus	
Perseus	
Serpens	
Sagitta	
Ursa Major	
Ursa Minor	

Spectral Classes

Star Type	Color	Approximate Surface Temperature	Average Mass (Sun = 1)	Average Radius (Sun = 1)	Average Luminosity (Sun = 1)	Examples
O	Blue	over 25,000 K	60	15	1,400,000	10 Lacertra
B	Blue	11,000 - 25,000 K	18	7	20,000	Rigel, Spica
A	Blue	7,500 - 11,000 K	3.2	2.5	80	Sirius, Vega
F	Blue to White	6,000 - 7,500 K	1.7	1.3	6	Canopus, Procyon
G	White to Yellow	5,000 - 6,000 K	1.1	1.1	1.2	Sun, Capella
K	Orange to Red	3,500 - 5,000 K	0.8	0.9	0.4	Arcturus, Aldebaran
M	Red	under 3,500 K	0.3	0.4	0.04 (very faint)	Betelgeuse, Antares

Yerkes Luminosity Classes

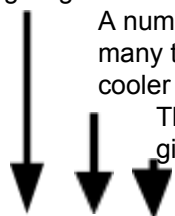
Type	Star
Ia	Very luminous supergiants
Ib	Less luminous supergiants
II	Luminous giants
III	Giants
IV	Subgiants
V	Main sequence stars
VI	Subdwarf
VII	White Dwarf

Deciphering Spectral Classes

First letter is the basic Spectral Class giving star color and temperature.

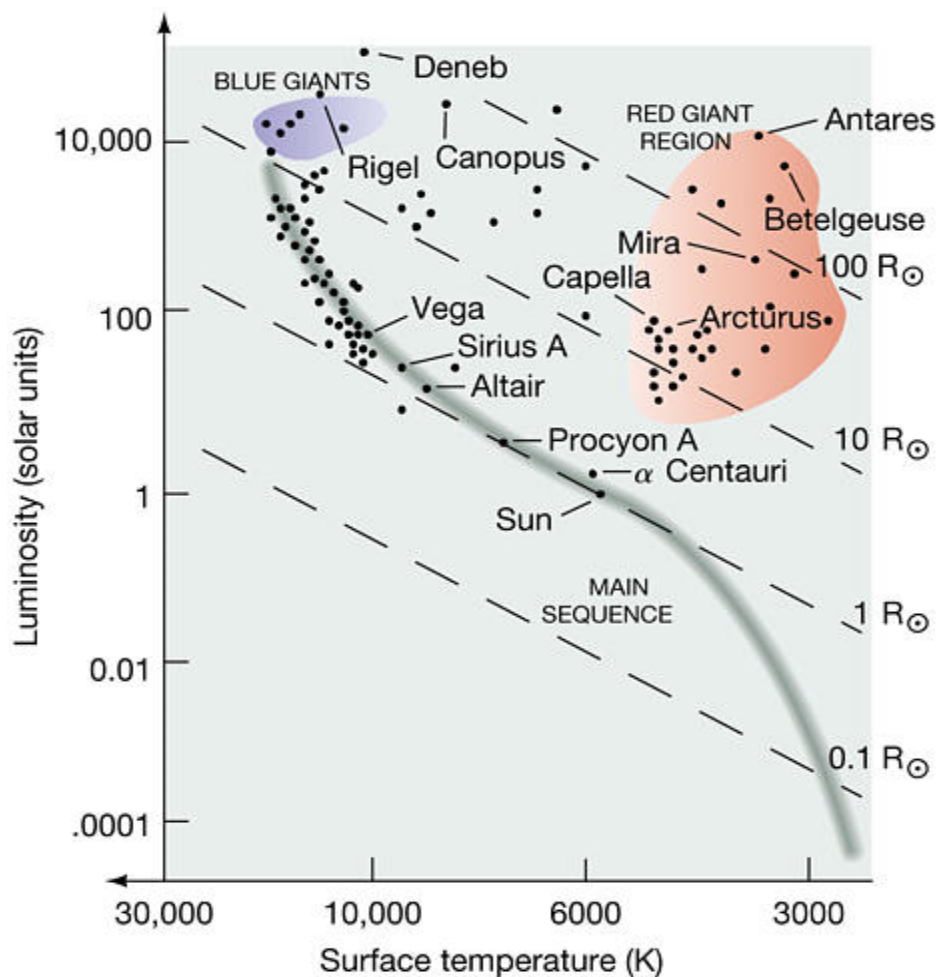
A number follows which is how many tenths it is closer to the next cooler spectral class.

The Yerke's Luminosity Class gives basic size and type.



G 2 V Sun's Spectral Class

Interpretation: Yellow star (G), two-tenths of the way to orange (K) in the main-sequence (V)



Spectral classification

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