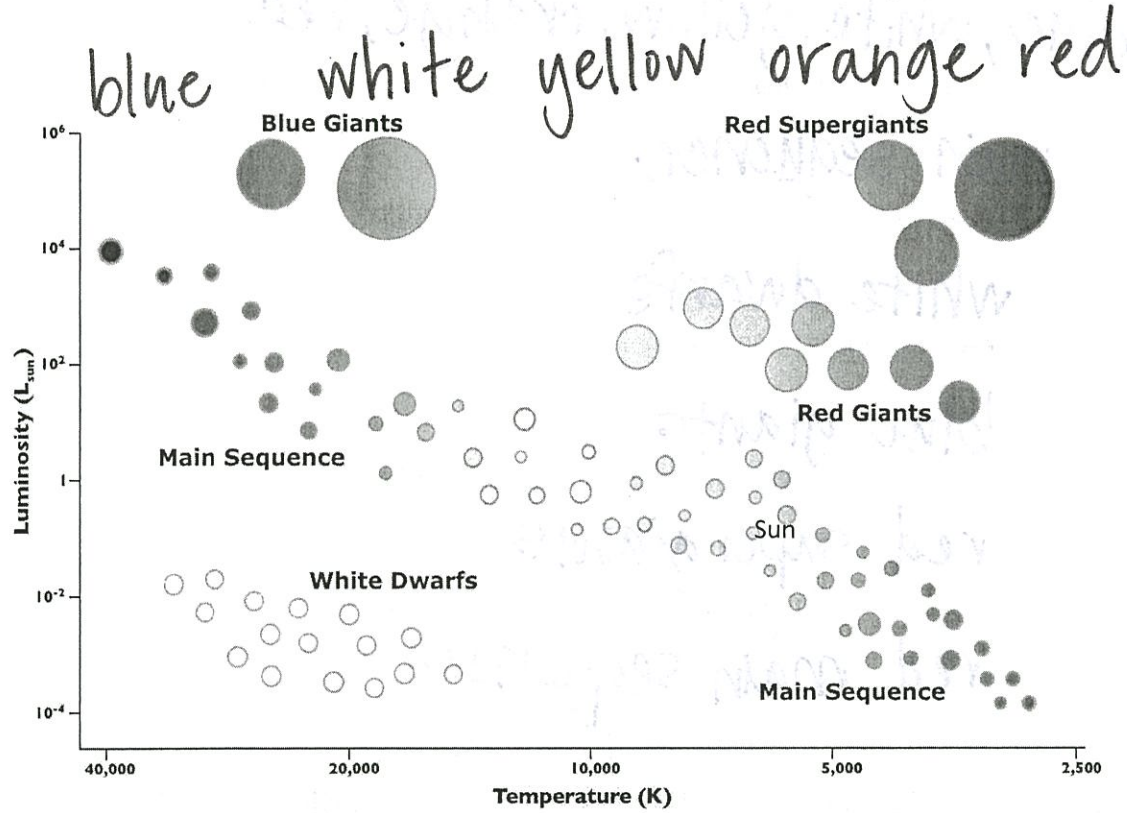


key!

Name: _____ Date: _____ Period: _____

HR Diagram Worksheet

Background: The Hertzsprung-Russell diagram is actually a graph that illustrates the relationship that exists between the average surface temperature of stars and their absolute magnitude, which is how bright they would appear to be if they were all the same distance away. Rather than speak of the brightness of stars, the term "luminosity" is often used. Luminosity is a measure of how much energy leaves a star in a certain period of time.



Answer the questions using the above HR Diagram

1. What factor affects the color of a star?

temperature

2. What factor affects the luminosity of a star?

size

3. What is the approximate surface temperature of the sun?

6500 K

4. Is the surface temperature of white dwarf stars higher or lower than red super giants?

higher

Name: _____ Date: _____ Period: _____

5. What is the color of the stars with the highest surface temperature?

blue

6. What is the color of the stars with the lowest surface temperature?

red

7. List the color of the stars from hottest to coldest:

blue, white, yellow, orange, red

8. Most of the stars on the HR Diagram are classified as which type of star?

main sequence

9. What type of star has a high temperature but a low luminosity?

white dwarfs

10. What type of star has a high temperature and a high luminosity?

blue giants

11. What type of star has a low temperature but a high luminosity?

red supergiants

12. What type of star has a low temperature and a low luminosity?

red main sequence

13. Plot the stars A - E. Once plotted determine their color and type.

Letter	Temperature	Luminosity	Color	Type of Star
A	6,000 k	10^{-1}	yellow white	main sequence
B	20,000 k	10^6	blue	giants
C	20,000 k	10^{-2}	white	dwarfs
D	2,500k	10^6	red	super giants
E	4000 k	10^2	red	giants