

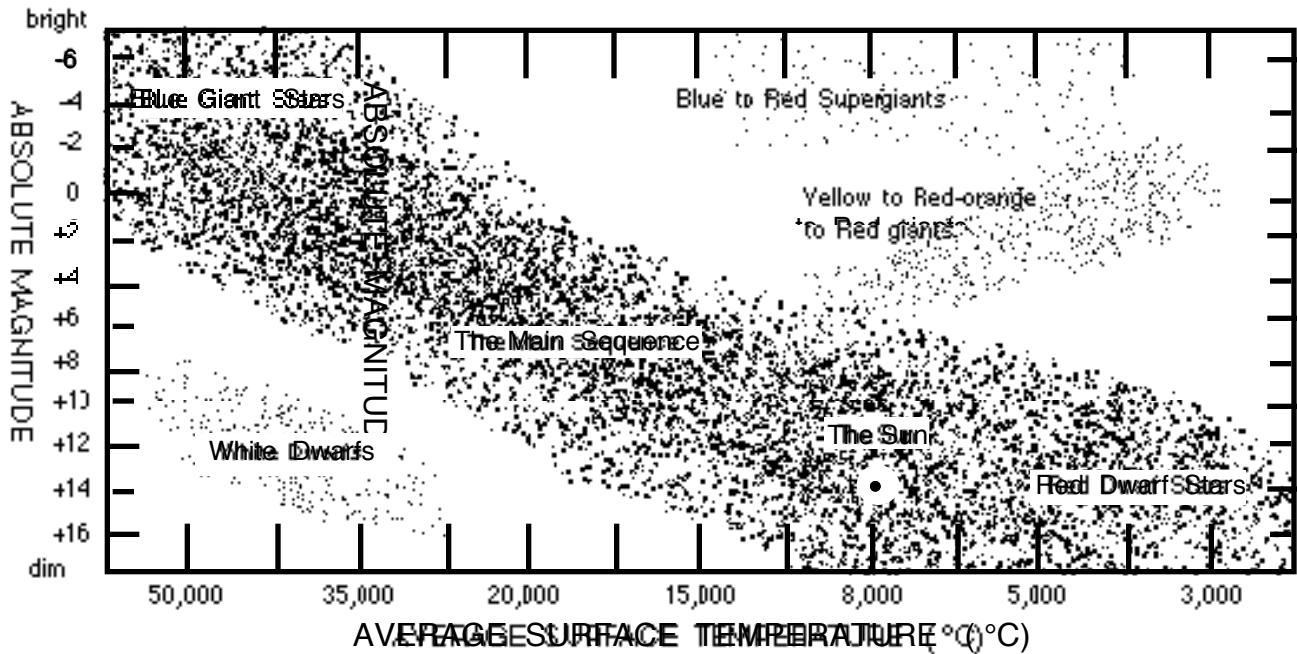


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## The Hertzsprung-Russell Diagram

The H-R diagram is actually a graph that illustrates the relationship between the average surface temperature of stars and their absolute magnitude (how bright they would appear if they were all the same distance away from the viewer). The **brightness** of stars is affected not only by temperature but also by size. The brightest stars would be those that are large and hot. Those that are the least bright, or **luminous**, would be small and cool. The **color** of a star is determined by its surface temperature.



Using the Hertzsprung-Russell diagram above, answer the following questions.

1. What is the approximate surface temperature of our sun?
2. Which stars are the brightest? Why?
3. What is the absolute magnitude of the sun?
4. What is the color of the stars which have the lowest surface temperature?
5. Most of the stars shown in the diagram are classified as which type of star?
6. Which type of star is our sun?
7. What is the relationship between temperature and brightness for stars in the main sequence?
8. What group of stars are very hot but not very luminous?
9. What characteristics of a star are compared in the HR diagram?
10. How can red giants be classified as very bright when they are not very hot?