

Diagramming the Stars

Complete this worksheet after you finish reading the section "The Life Cycle of Stars."

An H-R diagram shows the relationship between a star's surface temperature and its absolute magnitude. Follow the instructions below to create your own H-R diagram on the next page. You may want to use colored pencils or crayons for this activity. Remember that a star's brightness increases as you move toward the top of the H-R diagram.

1. Our sun is an average star. It should be located at about the center of the diagram. Draw and label the sun on the diagram.
2. Draw and label a red dwarf star on the diagram. Red dwarf stars are dim and have a low temperature.
3. Draw and label a white dwarf star on your diagram. White dwarf stars are dim and have a high temperature.
4. Draw and label a blue star on the diagram. Blue stars are very hot and bright.
5. Draw and label a red giant on the diagram. Red giants are cool and bright.
6. Most stars can be plotted along the main sequence of an H-R diagram. These stars range from very bright, very hot stars to dim, cool stars. Indicate and label on your diagram where the main sequence should go.
7. Which of the stars that you have plotted are included in the main sequence?

8. Imagine that you have discovered a new star in the night sky. Your measurements show that it has a surface temperature of 10,000°C and an absolute magnitude of +10. Based on your diagram, what type of star do you think it is?

