

Directed Reading A**Section: The Life Cycle of Stars**
THE BEGINNING AND END OF STARS

1. Which of the following statements is NOT true about stars?
- A star begins its life as a ball of gas and dust.
 - As stars get older, they lose some of their material.
 - Stars last forever.
 - New stars form from the material of old stars.
2. During a star's life cycle, hydrogen changes to helium in a process called _____.
3. When a star dies, either gradually or in a big explosion, much of its material returns to _____.

DIFFERENT TYPES OF STARS

4. All of the following characteristics are used to classify stars EXCEPT
- age.
 - name.
 - brightness.
 - temperature.
5. Which one of the following is NOT true about stars?
- A star goes through many changes during its life cycle.
 - A star can become a different type of star as it gets older.
 - A star can be classified as more than one type of star during its life cycle.
 - A star does not change during its life cycle.

Match the correct description with the correct term. Write the letter in the space provided.

- | | |
|---|-----------------------|
| 6. small, hot star in final stage of its life cycle | a. red giant star |
| 7. star in second and longest stage of its life cycle | b. white dwarf star |
| 8. large, cool star in third stage of its life cycle | c. main-sequence star |

Directed Reading A continued

9. Explain how energy is generated in the core of a star during the second stage of its life cycle.

10. Explain what happens during the third stage of a star's life cycle as the star uses up all of its hydrogen.

11. Explain the final stage of a star's life cycle by describing what happens once a star has lost all of its hydrogen.

A TOOL FOR STUDYING STARS

12. The H-R diagram shows the relationship of a star's temperature to its
- brightness.
 - size.
 - color.
 - age.

13. On what part of the H-R diagram would you find the majority of the main-sequence stars?
- top half
 - bottom half
 - middle
 - far corners

14. According to the H-R diagram, the star Canopus has a temperature of about _____ and an absolute magnitude of _____.