Name _____ Date _____ Class _____

Stars, Galaxies, and the Universe ▪ *Guided Reading and Study*

Star Systems and Galaxies

This section explains what a star system is and describes the three types of galaxies.

Use Target Reading Skills

The first column in the chart lists key terms in this section. As you read the section, write a definition of the key term in your own words in the second column. Underline the most important feature or function in each definition. An example is done for you.

Key Term	Definition
Binary star	Star system with <u>two stars</u>.
Eclipsing binary	
Open cluster	
Globular cluster	
Galaxy	
Spiral galaxy	
Elliptical galaxy	
Irregular galaxy	
Quasar	
Universe	
Scientific notation	

Star Systems and Galaxies *(continued)*

Star Systems and Clusters

1. What are star systems?

   _____

   _____

2. Star systems with two stars are called double stars or _____.

3. How do astronomers tell whether there is an unseen second star in a system?

   a. They observe the effects of its gravity.
   b. They measure the parallax of the second star.
   c. They send a probe to the second star.
   d. They observe its supernova.

4. A star system in which one star periodically blocks the light from another star is a(n) _____.

5. How did astronomers first discover a planet revolving around another star?

   _____

   _____

6. Why have most new planets discovered around other stars been very large?

   _____

   _____

7. A grouping of stars that contains no more than a few thousand stars is called a(n) _____.

8. A grouping of stars that contains more than a million stars is called a(n) _____.

Galaxies

9. How many galaxies are there in the universe? _____

Match the type of galaxy with its shape.

	Type of Galaxy	**Description of Shape**
____	10. Spiral galaxy	a. Bulge in middle and arms that spiral outward
____	11. Elliptical galaxy	b. Does not have a regular shape
____	12. Irregular galaxy	c. Looks like round or flattened ball

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13. Circle the letter of each sentence that is true about galaxies.
    a. Elliptical galaxies contain only new stars.
    b. Irregular galaxies have many bright, young stars.
    c. In spiral galaxies, most new stars form in the spiral arms.
    d. Quasars have huge bar-shaped regions of stars that pass through their center.

14. A young galaxy with a giant black hole at the center is a(n) _____.

The Milky Way

15. The galaxy in which our solar system is located is called the _____.

16. What type of galaxy is the Milky Way?
    _____
    _____
    _____
    _____

The Scale of the Universe

17. Why do astronomers often use scientific notation?
    _____
    _____

18. Suppose a star is about 38,000,000,000,000 kilometers away from Earth. How do you write this number in scientific notation?
    _____
    _____

19. What is the Local Group?
    _____
    _____

20. How large is the observable universe? _____