

Skills Worksheet

Directed Reading 30.3 (ODD)

Section: Star Groups

- _____ 1. How many stars make up the universe?
- a. hundreds
 - b. thousands
 - c. millions
 - d. trillions

CONSTELLATIONS

- _____ 2. Although the stars that make up a pattern appear to be close together,
- a. they are not all the same distance from Earth.
 - b. they are not all stars.
 - c. they are all the same distance from Earth.
 - d. they are not all visible from Earth.
- _____ 3. If you look at the same region of the sky for several nights, the positions of the stars
- a. appear to change in relation to one another.
 - b. appear to change in relation to the sun.
 - c. do not appear to change in relation to one another.
 - d. appear to change in relation to the universe.
- _____ 4. Why do the stars appear to be fixed in their patterns?
- a. because Earth revolves around the stars
 - b. because they are not actually moving
 - c. because of the small distance from which the stars are viewed
 - d. because of the tremendous distance from which the stars are viewed
- _____ 5. What are the patterns of stars and the region of space around them called?
- a. star charts
 - b. double stars
 - c. constellations
 - d. galaxies
6. Why are constellations useful?

Directed Reading *continued*

MULTIPLE-STAR SYSTEMS

- _____ 7. What are binary stars?
- a. pairs of stars that revolve around each other and are held together by gravity
 - b. triple-star systems that revolve around each other and are held together by gravity
 - c. pairs of stars that do not revolve around each other but are held together by gravity
 - d. pairs of stars that revolve around each other and are held together by magnetism
- _____ 8. What is a barycenter?
- a. the center of pressure in a star
 - b. the center of mass in systems of stars
 - c. the place where a star is hottest
 - d. the place toward which stars travel
- _____ 9. Where is the barycenter located when binary stars have similar masses?
- a. in one of the stars
 - b. outside both stars
 - c. in the center of each star
 - d. somewhere between the stars
10. How many sunlike stars do astronomers estimate are part of multiple-star systems?

STAR CLUSTERS

11. What are clusters?

12. Name and describe two kinds of clusters.

Directed Reading *continued***GALAXIES**

- _____ 13. What is a galaxy?
- a large-scale group of planets, stars, and moons bound together by gravity
 - a large-scale group of stars, gas, and dust bound together by gravity
 - a large-scale group of stars, rocks, and dirt bound together by gravity
 - a large-scale group of gas, elements, and atoms bound together by gravity
- _____ 14. What is the diameter of the Milky Way?
- about 100,000 years
 - about 200 billion miles
 - about 200 billion light-years
 - about 100,000 light-years
- _____ 15. What are Cepheid variables?
- small stars that fade in a regular pattern
 - giant stars that brighten and fade in an irregular pattern
 - giant stars that brighten and fade in a regular pattern
 - dwarf stars that brighten and fade in a regular pattern
- _____ 16. The longer a Cepheid's cycle,
- the dimmer the star's visual absolute magnitude.
 - the brighter the star's visual absolute magnitude.
 - the dimmer the star's telescopic magnitude.
 - the brighter the star's apparent non-visual magnitude.

In the space provided, write the letter of the definition that best matches the type of galaxy.

- | | |
|--------------------------------|------------------------------------------------------------------------------------------------------|
| _____ 17. elliptical galaxy | a. varies in shape from almost spherical to a stretched-out football; has an extremely bright center |
| _____ 18. barred spiral galaxy | b. has a nucleus of bright stars and flattened arms that spiral around the nucleus |
| _____ 19. irregular galaxy | c. has no particular shape, may have a low total mass, and is fairly rich in dust and gas |
| _____ 20. spiral galaxy | d. has a straight bar of stars that runs through the center |

Directed Reading *continued*

THE MILKY WAY

- _____ 21. What does the Milky Way look like in the night sky?
- a. a cloudlike band that stretches across the sky
 - b. a cloudy mass in the center of the sky
 - c. a cloudlike elliptical mass
 - d. a cloudy mass with spiral arms
22. How is the sun related to the Milky Way?

23. How long does it take the sun to orbit the Milky Way?

24. What are the closest neighbors to the Milky Way?

25. How far from Earth are the Milky Way's closest neighbors?

QUASARS

- _____ 26. When were quasars first discovered?
- a. 1663
 - b. 1963
 - c. 1863
 - d. 1763

- _____ 27. What does a quasar look like when viewed through an optical telescope?
- a. It appears as a point of light, almost like a small, faint star.
 - b. It appears as a mass of light, almost like a large, faint star.
 - c. It appears as a point of light, almost like a small, bright star.
 - d. It appears as a mass of light, almost like a large, bright star.

- _____ 28. The word *quasar* is a shortened term for
- a. quasi-singular radioactive source.
 - b. quasi-stellar radio star.
 - c. quarter-stellar radio star.
 - d. quasi-stellar radio source.

Directed Reading *continued*

29. What do some quasars project?

30. Where are quasars located?

31. What could explain the large amount of energy emitted from a quasar?
