Unit 1 Review

Name _____

Vocabulary

Fill in each blank with the term that best completes the following sentences.

1 A(n) _____ is a large group of stars, gas, and dust bound together by gravity.

2 The solar system formed from a(n) _____, which is a rotating cloud of gas and dust that formed into the sun and planets.

3 An increase in the wavelength of light as a galaxy moves away from Earth is called a(n) _____ .

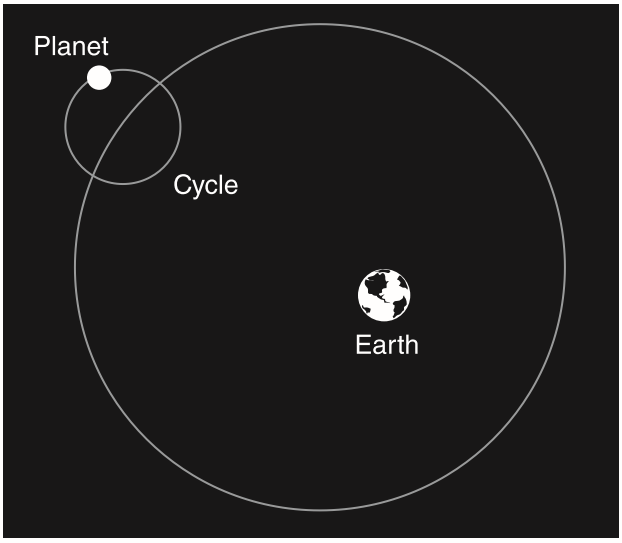
4 Earth, Venus, Mars, and Mercury are considered _____, which are highly dense planets nearest the sun.

5 A(n) _____ is a small, rocky object that orbits the sun; many of these objects are located in a band between the orbits of Mars and Jupiter.

Key Concepts

Read each question below, and circle the best answer.

6 This diagram illustrates a historical model of the solar system.



Which type of model is shown?

A geocentric model

B heliocentric model

C Copernican model

D Aristarchan model

7 Which object is farthest away from Earth?

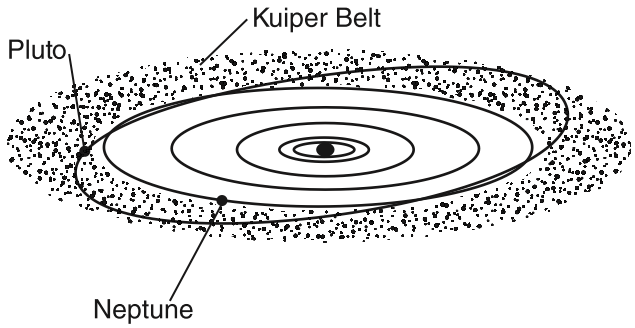
A Barnard's Star, 6 light-years from Earth

B Andromeda galaxy, 2.4 million light-years from Earth

C Triangulum galaxy, 2.6 million light-years from Earth

D Neptune, 4.3 billion kilometers from Earth

8 The Kuiper Belt, pictured below, is generally thought to contain leftover bits from the formation of the solar system.



Which of the following describes Kuiper Belt objects?

A often larger than some planets in the solar system

B extremely hot

C minor planet-sized objects that orbit the sun in a flat belt beyond Neptune's orbit

D 100 AU wide

9 Suppose the comets in the table orbited the sun.

Comet Name	Comet Size (km)	Comet Speed (km/h)
Rasmussen	1	750,000
Zigler	10	2
Schier	5	1.5 million
Brant	3	3,700

Using what you know about comets, which comet is in the closest orbit to the sun?

A Rasmussen

B Zigler

C Schier

D Brant

Name _____

10 Which of the following is a list of the gas giant planets?

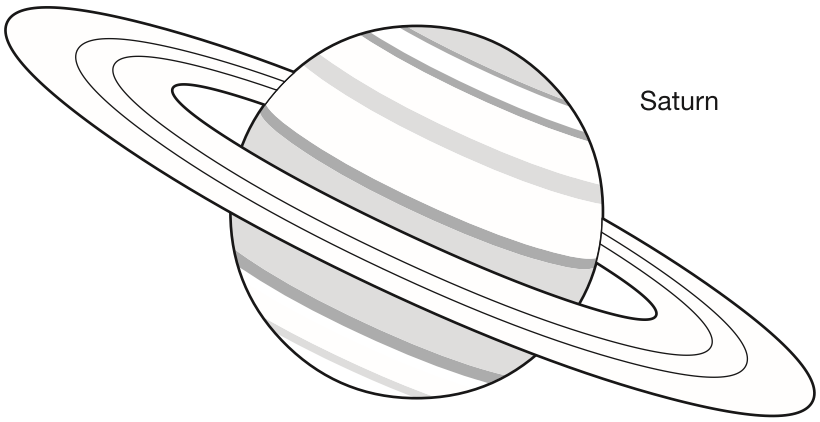
A Jupiter, Saturn, Uranus, and Neptune

B Earth, Mars, and Venus

C Pluto, Saturn, and Jupiter

D Earth, Jupiter, Neptune, and Saturn

11 Below is an illustration of the planet Saturn. Saturn is one of the four gas giant planets.



Which of the four statements below is not true about Saturn?

A It travels around the Sun once every 29.5 years.

B It is the only planet with a ring system.

C It is composed mostly of hydrogen and helium gas.

D It has a large number of moons.

12 Earth, Mercury, and Venus are all classified as terrestrial planets. When compared to Earth, which of the following is true of Mercury and Venus?

A Mercury and Venus have a higher surface gravity than Earth.

B Mercury and Venus have a longer period of revolution than Earth.

C Mercury and Venus have slower periods of rotation (longer days) than Earth.

D Mercury and Venus are farther away from the sun than Earth.

13 Which of the following lists accurately relates which terrestrial planets have moons and how many moons they have?

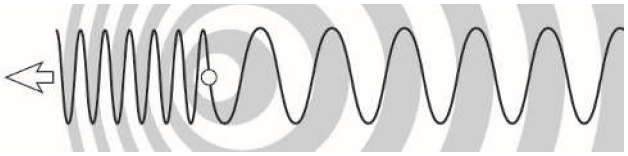
A Mercury and Venus (no moons), Earth (one moon), and Mars (two moons)

B Mercury, Venus, and Earth (one moon each), and Mars (two moons)

C Mercury and Venus (no moons), Earth (two moons), and Mars (two moons)

D Mercury and Venus (no moons), Earth (one moon), and Mars (three moons)

14 The dot in the diagram is a source of light waves. It is moving from right to left across the diagram.



How does the diagram relate to the expanding universe? (Hint: Step 1. Compare the characteristics of the waves in front of the source with those behind the source. Step 2. Think about evidence scientists used to conclude that the universe is expanding. Step 3. Relate the diagram to the evidence.)

A It shows that light produced during the big bang is still in motion.

B It shows that objects move faster depending on the type of light they produce.

C It shows that a source produces light of different wavelengths in different locations.

D It shows that wavelengths are increased behind an object that is moving away from an observer.

15 Where do stars form?

A in nebulae

B on asteroids

C in a planet's core

D in sun spots on the surface of the sun

16 Which describes an effect of centripetal force?

A objects break apart in space

B objects burn at very high temperatures

C objects move in a circular path

D objects move in an elliptical path

Name _____

17 What does Kepler's first law of planetary motion state?

A the orbit of a planet around the sun is an ellipse with the sun at one focus

B the orbit of a planet is dependent on heat

C the difference between centripetal force and elliptical force

D the orbital period is infinite

Critical Thinking

Answer the following questions in the space provided.

18 Explain the difference between a meteoroid, a meteor, and a meteorite. Which one would you most likely see on the surface of Earth?

19 Name three characteristics of gas giants that make them different from terrestrial planets.

20 Scientists' understanding of the universe changed over time as new evidence was discovered. How did the work of the following scientists affect the understanding of the universe?

Nicolaus Copernicus

Isaac Newton

Albert Einstein

Edwin Hubble

Connect ESSENTIAL QUESTIONS

Lessons 3, 4, 5, and 6

Answer the following question in the space provided.

21 Discuss gravitational force in our universe and how it works. Why is it critical to our universe? Name at least three instances of gravitational forces at work in our solar system.