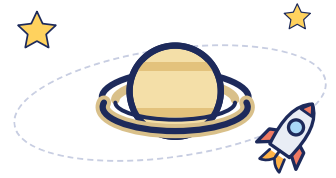


Space Quiz



Orbit Navigators

Grades 6–8 (middle school) · ages 11–14

SCORE

____ / 25

Name _____ Class _____ Date _____

25 questions · 25 points · about 30 minutes



Multiple choice

Fill in the circle next to the best answer.

10 POINTS

- ① A solar eclipse can only happen during which Moon phase?

☐ (A) New Moon
 ☐ (B) Full Moon
 ☐ (C) First quarter
 ☐ (D) Waning crescent
- ② During a lunar eclipse, which object is in the middle?

☐ (A) The Sun
 ☐ (B) Earth
 ☐ (C) The Moon
 ☐ (D) Mars
- ③ What is the main cause of Earth's ocean tides?

☐ (A) Earth's spin alone
 ☐ (B) Winds over the oceans
 ☐ (C) The Moon's gravity
 ☐ (D) Earth's magnetic field
- ④ Earth is farthest from the Sun in July. Why is it summer in the Northern Hemisphere?

☐ (A) Earth's speed increases
 ☐ (B) The Sun's output rises
 ☐ (C) Earth is closer to the Moon
 ☐ (D) That half of Earth tilts toward the Sun
- ⑤ Our solar system began as a collapsing cloud of what?

☐ (A) Gas and dust
 ☐ (B) Liquid water
 ☐ (C) Solid rock
 ☐ (D) Burning metal
- ⑥ About how long does sunlight take to reach Earth?

☐ (A) 8 seconds
 ☐ (B) 8 minutes
 ☐ (C) 8 hours
 ☐ (D) 8 days
- ⑦ Which statement describes the Milky Way?

☐ (A) A cloud of dust inside our solar system
 ☐ (B) A ball-shaped galaxy with no arms
 ☐ (C) A spiral galaxy that contains our Sun
 ☐ (D) A group of planets orbiting one star
- ⑧ For most of its life, a star shines by turning what into what?

☐ (A) Helium into hydrogen
 ☐ (B) Iron into carbon
 ☐ (C) Water into steam
 ☐ (D) Hydrogen into helium

- 9 A space rock that survives the atmosphere and hits the ground is called a what?
- (A) Meteorite (B) Meteor (C) Comet (D) Asteroid
- 10 The tail of a comet always points in which direction?
- (A) Toward the Sun (B) Away from the Sun (C) Along its path (D) Toward Earth



True or false

Circle TRUE or FALSE.

5 POINTS

- 11 Our Sun sits at the center of the Milky Way galaxy. True False
- 12 A light-year is a unit of distance, not time. True False
- 13 The Moon does not rotate, which is why we always see the same side. True False
- 14 A lunar eclipse happens at the full Moon phase. True False
- 15 Venus takes longer to spin once on its axis than to orbit the Sun. True False



Fill in the blank

Choose a word from the word bank to complete each sentence. Each word is used once, and three words are not used. 5 POINTS

WORD BANK

elliptical

Jovian

orbit

red

spiral

supernova

terrestrial

white

- 16 Mercury, Venus, Earth, and Mars have solid, rocky surfaces, so they are called _____ planets.
- 17 A star much more massive than the Sun can end its life in a huge explosion called a _____.
- 18 After its red giant stage, the Sun will shrink into a _____ dwarf.
- 19 The path a planet follows around the Sun is called its _____.
- 20 The Milky Way is a _____ galaxy with curved arms.



Matching vocabulary

Draw a line from each word to what it means.

3 POINTS

21 Comet



A A rocky, airless body, mostly found between Mars and Jupiter

22 Asteroid



B A huge system of stars, gas, and dust held together by gravity

23 Galaxy



C A snowball of frozen gases, rock, and dust that grows a tail near the Sun



Short answer

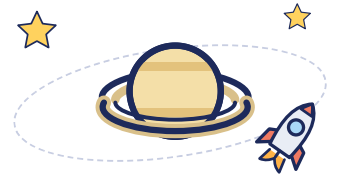
Answer in one or two complete sentences.

2 POINTS

24 The Moon orbits Earth every month. Why isn't there a lunar eclipse every month?

25 Describe one difference between terrestrial planets and gas giants.

Answer Key



Orbit Navigators Grades 6–8 (middle school) · ages 11–14

QUICK CHECK

1 A	2 B	3 C	4 D	5 A	6 B
7 C	8 D	9 A	10 B	11 F	12 T
13 F	14 T	15 T	16 terrestrial	17 supernova	18 white
19 orbit	20 spiral	21 C	22 A	23 B	24 see below
25 see below					

Part A · Multiple choice

10 POINTS

- A solar eclipse can only happen during which Moon phase?

A · New Moon

Solar eclipses happen only at new Moon, when the Moon is between Earth and the Sun.
- During a lunar eclipse, which object is in the middle?

B · Earth

In a lunar eclipse Earth is between the Sun and Moon, and Earth's shadow falls on the Moon.
- What is the main cause of Earth's ocean tides?

C · The Moon's gravity

The Moon's gravity drives Earth's tides. The Sun's gravity also has a smaller effect.
- Earth is farthest from the Sun in July. Why is it summer in the Northern Hemisphere?

D · That half of Earth tilts toward the Sun

Axial tilt, not distance, causes seasons. The Northern Hemisphere tilts toward the Sun in July.
- Our solar system began as a collapsing cloud of what?

A · Gas and dust

About 4.6 billion years ago a cloud of gas and dust collapsed under gravity, forming the Sun and planets.
- About how long does sunlight take to reach Earth?

B · 8 minutes

Sunlight takes about 8 minutes 20 seconds to travel the 150 million km (93 million miles) to Earth.
- Which statement describes the Milky Way?

C · A spiral galaxy that contains our Sun

The Milky Way is a spiral galaxy, and our solar system lies along one of its spiral arms.
- For most of its life, a star shines by turning what into what?

D · Hydrogen into helium

Main sequence stars fuse hydrogen into helium in their cores. This is the longest phase of a star's life.
- A space rock that survives the atmosphere and hits the ground is called a what?

A · Meteorite

A meteoroid that survives its trip through the atmosphere and hits the ground is a meteorite.
- The tail of a comet always points in which direction?

B · Away from the Sun

A comet's dust and gas tail stretches away from the Sun.

Part B • True or false

5 POINTS

- 11 Our Sun sits at the center of the Milky Way galaxy.

False

Earth lies along a spiral arm about halfway from the galaxy's center, and the Solar System orbits that center.

- 12 A light-year is a unit of distance, not time.

True

A light-year is the distance light travels in one Earth year.

- 13 The Moon does not rotate, which is why we always see the same side.

False

The Moon rotates, but its rotation matches its orbit (tidal locking), so one side always faces Earth.

- 14 A lunar eclipse happens at the full Moon phase.

True

Lunar eclipses occur at full Moon, when Earth is between the Moon and the Sun.

- 15 Venus takes longer to spin once on its axis than to orbit the Sun.

True

Venus rotates once in 243 Earth days but orbits the Sun in 225 Earth days.

Part C • Fill in the blank

5 POINTS

- 16 Mercury, Venus, Earth, and Mars have solid, rocky surfaces, so they are called terrestrial planets.

terrestrial

The four inner planets are known as terrestrial planets because they have solid surfaces.

- 17 A star much more massive than the Sun can end its life in a huge explosion called a supernova.

supernova

Massive stars collapse when their fuel runs out and blow apart in a supernova, sometimes leaving a neutron star or black hole.

- 18 After its red giant stage, the Sun will shrink into a white dwarf.

white

NASA says the Sun will last about 5 billion more years before it becomes a white dwarf.

- 19 The path a planet follows around the Sun is called its orbit.

orbit

Gravity keeps the planets in orbit around the Sun.

- 20 The Milky Way is a spiral galaxy with curved arms.

spiral

The Milky Way is a spiral galaxy with a disk of stars spanning more than 100,000 light-years.

Part D • Matching vocabulary

3 POINTS

- 21 Comet

C • A snowball of frozen gases, rock, and dust that grows a tail near the Sun

Comets are cosmic snowballs of frozen gases, rock, and dust that orbit the Sun.

- 22 Asteroid

A • A rocky, airless body, mostly found between Mars and Jupiter

Asteroids are rocky, airless remnants of the solar system's formation, mostly between Mars and Jupiter.

- 23 Galaxy

B • A huge system of stars, gas, and dust held together by gravity

Galaxies consist of stars, planets, and clouds of gas and dust bound together by gravity.

- 24 The Moon orbits Earth every month. Why isn't there a lunar eclipse every month?

The Moon's orbit is tilted compared to Earth's orbit around the Sun, so the Moon usually passes above or below Earth's shadow.

The tilt of the Moon's orbit means eclipses happen only occasionally instead of every month.

- 25 Describe one difference between terrestrial planets and gas giants.

Terrestrial planets are smaller with solid, rocky surfaces and are closer to the Sun. Gas giants are much larger, have no hard surface, and are farther out.

Inner planets have solid surfaces. The giant outer planets have swirling gases above a core.