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Get to Know: Solar System

Have you ever looked at the sky and imagined visiting the sun, moon, or other planets? Our planet is one of many interesting objects in our solar system. How much do you know about the solar system? Set off on a webquest to explore the solar system and find out!

First, go **to www.worldbookonline.com**

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Find It!

Find the answers to the questions below by using the "Search" tool to search key words. Since this activity is about the solar system, you can start by searching the key words "Solar System."

Write the answers on the lines provided or below the question.

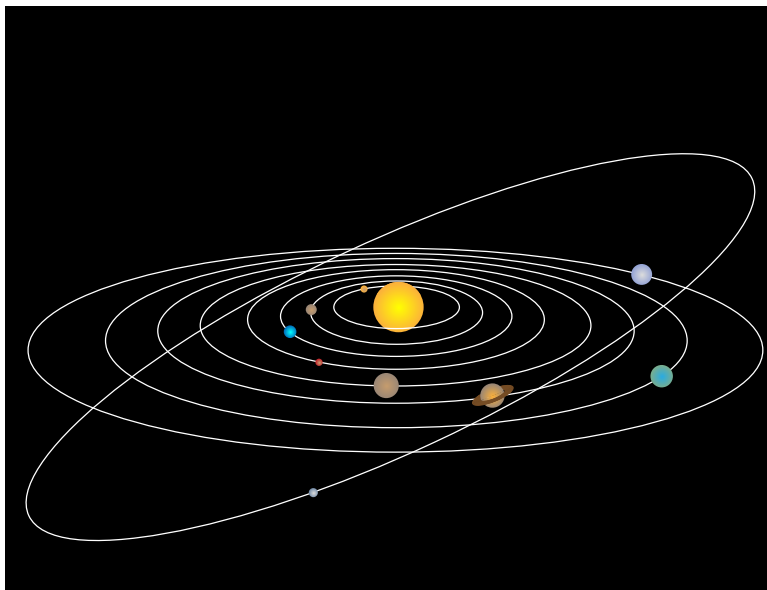
1. Our own solar system includes the sun, Earth, other planets, and other smaller objects that orbit

_____.

2. Look at the "Objects in the solar system" image. List the planets in order from closest to the sun to farthest from the sun.

Closest: _____

Farthest: _____



3. Look at the “Sun size compared to Earth” image. The sun’s radius is about _____ times the radius of Earth.
4. The Main Belt of asteroids is between the orbits of _____ and _____.
5. Jupiter’s four largest moons are known as the _____ satellites. (Named after the astronomer who discovered them.)
6. The sun contains _____ percent of the solar system’s mass.
7. Comets are mainly composed of _____ and _____.

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True or False

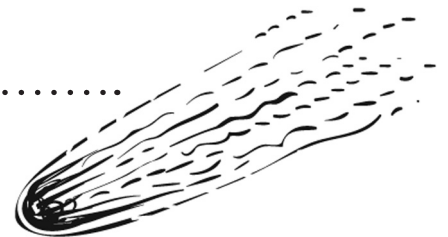
Write “True” if the statement about the solar system is correct. If the statement is not correct, write “False” and correct the statement in the space below.

- _____ 8. The sun is the largest object in our solar system.
- _____ 9. The planets orbit the sun in perfect circles.
- _____ 10. All of the planets in our solar system are made of iron or rock.
- _____ 11. Asteroids, comets, and meteoroids are part of the solar system.
- _____ 12. All of the planets in our solar system have moons that orbit them.

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Find It!

13. Which moon of Jupiter is the largest satellite in the solar system?
(It is even bigger than the planet Mercury!)
14. Which four planets have rings that surround them?
15. What is a meteorite?

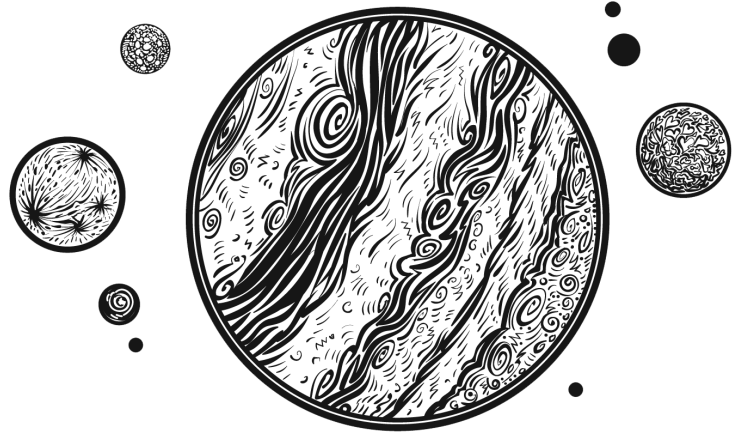


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Satellites of the Solar System

Some of the planets and dwarf planets have satellites that orbit them. Go to the “Satellite” article and click on the “Major satellites of the solar system.” Label the planet or dwarf planet that these satellites move around.

- _____ 16. Charon
- _____ 17. Deimos
- _____ 18. Europa
- _____ 19. Io
- _____ 20. Oberon
- _____ 21. Titan
- _____ 22. Triton



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Find It!

- 23. Mercury moves around the sun faster than any other planet. How fast does Mercury travel every second? (Hint: For this question see the “Mercury” article.)
- 24. How hot can the temperatures in the sun’s core reach? (Hint: For this question see the “Sun” article.)
- 25. Which dwarf planets are in our solar system? (Hint: For this question see the “Dwarf planet” article.)
- 26. What is significant about Olympus Mons? How tall is it? (Hint: For this question see the “Mars” article.)
- 27. How many main rings does Saturn have? (Hint: For this question see the “Saturn” article.)
- 28. How long does it take Neptune to orbit the sun? (Hint: For this question see the “Neptune” article.)

29. When was Halley's Comet first seen by Chinese astronomers? (Hint: For this question see the "Halley's Comet" article.)

30. Our solar system is part of which galaxy? (Hint: For this question see the "Galaxy" article.)

31. About how many stars besides the sun are in the Milky Way? (Hint: For this question see the "Milky Way" article.)

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Planets of the Solar System

Go to the "Planet" article and, using either the "Solar system planets" section or the "The planets at a glance" table, determine which planet is being described.



_____ 32. First planet discovered with a telescope.

_____ 33. Planet that has more mass than all of the other planets combined.

_____ 34. Planet known as the red planet.

_____ 35. Planet that has a surface temperature of about 870 °F (465 °C).

_____ 36. Planet first observed in 1846.

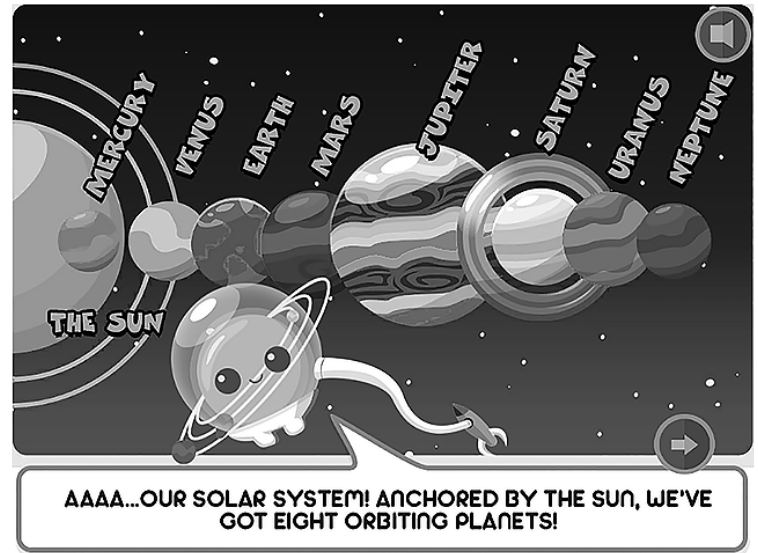


Play It!

Go to the “Solar System” article and click on the “Around and Around Solar System Game.” After playing the game, answer these questions.

37. What keeps objects in our solar system orbiting around the sun?

38. What is responsible for forming the tides of the oceans?



39. Which force holds a planet's moons in orbit around a planet?

40. What are the inner planets mostly made of?

41. What are the outer planets mostly made of?

42. What contains over 99% of our solar system's known mass?

Read more about the solar system by visiting World Book's eBook collection:

Earth and Earth's Moon. Chicago: World Book, 2013. Explore the Solar System. *World eBook Web*. 12 Dec. 2018.
<<http://www.worldbookonline.com/wb/ebooks/mall/instit/catalog/urn:ISBN:978-0-7166-1893-5/detail.do>>.

Jupiter and the Asteroids. Chicago: World Book, 2013. Explore the Solar System. *World eBook Web*. 12 Dec. 2018.
<<http://www.worldbookonline.com/wb/ebooks/mall/instit/catalog/urn:ISBN:978-0-7166-1890-4/detail.do>>.

Land-Sailing Venus Rover. Chicago: World Book, 2013. Out of This World. *World eBook Web*. 12 Dec. 2018.
<<http://www.worldbookonline.com/wb/ebooks/mall/instit/catalog/urn:ISBN:978-0-7166-6169-6/detail.do>>.

Mars. Chicago: World Book, 2013. Explore the Solar System. *World eBook Web*. 12 Dec. 2018.
<<http://www.worldbookonline.com/wb/ebooks/mall/instit/catalog/urn:ISBN:978-0-7166-1889-8/detail.do>>.

Mercury and Venus. Chicago: World Book, 2013. Explore the Solar System. *World eBook Web*. 12 Dec. 2018.
<<http://www.worldbookonline.com/wb/ebooks/mall/instit/catalog/urn:ISBN:978-0-7166-1887-4/detail.do>>.

Neptune, Comets, and Dwarf Planets. Chicago: World Book, 2013. Explore the Solar System. *World eBook Web*. 12 Dec. 2018.
<<http://www.worldbookonline.com/wb/ebooks/mall/instit/catalog/urn:ISBN:978-0-7166-1891-1/detail.do>>.

Saturn and Uranus. Chicago: World Book, 2013. Explore the Solar System. *World eBook Web*. 12 Dec. 2018.
<<http://www.worldbookonline.com/wb/ebooks/mall/instit/catalog/urn:ISBN:978-0-7166-1888-1/detail.do>>.

Solar System. Chicago: World Book, 2018. True or False. *World eBook Web*. 12 Dec. 2018.
<<http://www.worldbookonline.com/wb/ebooks/mall/instit/catalog/urn:ISBN:978-0-7166-3743-1/detail.do>>.

The Sun and Other Stars. Chicago: World Book, 2013. Explore the Solar System. *World eBook Web*. 12 Dec. 2018.
<<http://www.worldbookonline.com/wb/ebooks/mall/instit/catalog/urn:ISBN:978-0-7166-1892-8/detail.do>>.

Teacher Page

Answers:

1. Our own solar system includes the sun, Earth, other planets, and other smaller objects that orbit the sun.
2. Closest: Mercury
Venus
Earth
Mars
Jupiter
Saturn
Uranus
Farthest: Neptune
3. The sun's radius is about 109 times the radius of Earth.
4. The Main Belt of asteroids is between the orbits of Mars and Jupiter.
5. Jupiter's four largest moons are known as the Galilean satellites.
6. The sun contains 99.8% percent of the solar system's mass.
7. Comets are mainly composed of ice and rock.
8. True.
9. False. The planets orbit the sun in oval-shaped paths called ellipses.
10. False. Jupiter, Saturn, Uranus, and Neptune are gas giants.
11. True.
12. False. Mercury and Venus do not have any moons that orbit them.
13. Ganymede is the largest satellite in the solar system.
14. Saturn, Jupiter, Uranus, and Neptune have rings that surround them.
15. A meteorite is a meteoroid that reaches the ground.
16. Pluto
17. Mars
18. Jupiter
19. Jupiter
20. Uranus
21. Saturn
22. Neptune

23. Mercury travels about 30 miles (48 kilometers) per second.
24. Temperatures in the sun's core reach over 15 million K (kelvin).
25. The dwarf planets in our solar system are Ceres, Eris, Haumea, Makemake, and Pluto.
26. Olympus Mons is the tallest volcano in the solar system. It rises about 16 miles (25 kilometers) above the surrounding plains.
27. Saturn has 7 main rings.
28. Neptune orbits the sun once every 165 years.
29. Chinese astronomers first recorded seeing Halley's Comet around 240 B.C.
30. Our solar system is part of the Milky Way.
31. The Milky Way includes hundreds of billions of stars besides the sun.
32. Uranus
33. Jupiter
34. Mars
35. Venus (Note: Venus is the hottest planet, even hotter than Mercury!)
36. Neptune
37. The sun's giant mass keeps objects in the solar system orbiting around it.
38. The moon's gravitational pull is responsible for forming the tides of the oceans.
39. Gravity holds a planet's moons in orbit around a planet.
40. The inner planets are mostly made of rock and metal.
41. The outer planets are mostly made of hydrogen, helium, and other gases.
42. The sun contains over 99% of our solar system's known mass.