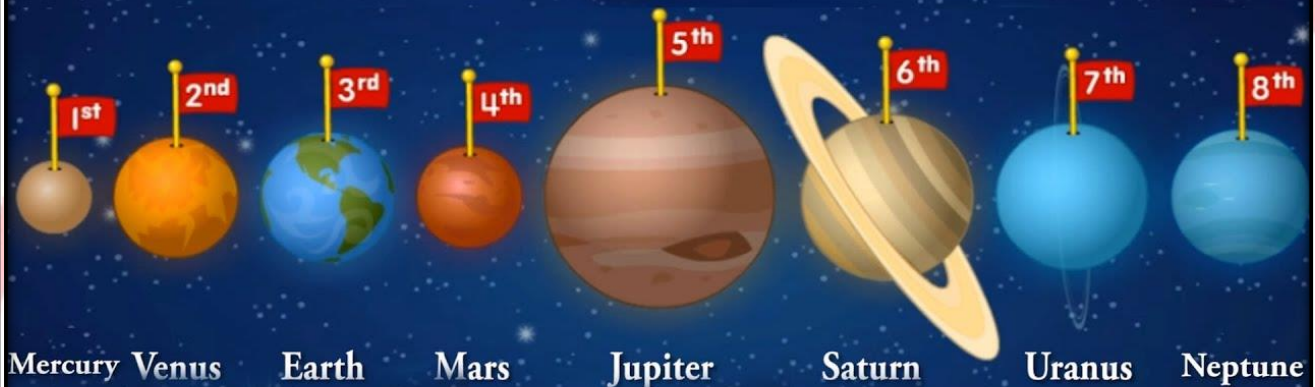




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SOLAR SYSTEM AND NATURAL SATELITE

Exploring Planets



👉 Planets according to their increasing size.

1. Mercury - 4,880 km
2. Mars - 6,794 km
3. Venus - 12,104 km
4. Earth - 12,756 km
5. Neptune - 49,532 km
6. Uranus - 51,118 km
7. Saturn - 1,20,536 km
8. Jupiter - 1,42,984 km

👉 Following are the planets according to their increasing distance from the Sun and revolutionary period

1. Mercury: One year on planet Mercury takes just 87.97 earth days. This means that if you are 15 years old on Earth you would be 62 years old in Mercury years.
2. Venus: It takes 224.7 earth days for Venus to travel once around the sun. If you are 15 years old on Earth, this would make you 24 years old in Venus years.
3. Earth: One year on planet Earth, or one orbit around the sun, takes 365.26 days.
4. Mars: Planet Mars goes around the sun once every 686.98 earth days. Hence, a 15 years old from Earth would actually be almost 8 years old in Mars years.



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5. Jupiter: The planet Jupiter travels around the sun one time every 4,332.82 earth days. This would make a 15 year old from earth be barely over 1 year old in Jupiter years.
6. Saturn: Saturn goes around the sun once every 10,755.7 earth days. If you had lived 15 years on Earth, then you would be a little over half of one year old in Saturn years.
7. Uranus: Uranus completes one revolution around the sun every 30,687.15 earth days. Thus, a 15 year old from earth would be .17 years old in Uranus years.
8. Neptune: It takes Neptune 60,190.03 earth days to go around the sun. A 15 year old from Earth would be .09 years old in Neptune years.
9. Pluto: The dwarf planet Pluto takes 90,553 earth days to go around the sun. If you were 15 years old on Earth you would be .06 years old in Pluto years.

👉 The characteristics of the planets in our solar system are as follows:

1. Mercury: This planet has no atmosphere; hence, it witnesses extreme temperatures during day and night.
2. Venus: It has a very dense atmosphere and has no satellite.
3. Earth: It is the only planet in our solar system that supports life.
4. Mars: It has a reddish appearance; hence, it is also known as the Red Planet.
5. Jupiter: It is the largest planet in our solar system with 39 moons.
6. Saturn: It is a beautiful planet and has a large number of icy rings around the equator.
7. Uranus: It has rings around it and 21 moons.
8. Neptune: It is the farthest planet in our solar system and has physical features similar to those of Uranus.

👉 **Universe :-** The term 'universe' implies to almost everything that exists in the outer space. It is still a mystery as to how it was formed, but the most prevalent theory is that the universe emerged after the Big Bang. It consists of a large number of galaxies, which further comprise planets, meteors, comets, satellites, etc.

👉 **Milky Way :** The universe consists of a large number of galaxies. Our solar system is found in the Milky Way galaxy. It is also known as Akash Ganga, as it appears to be white in colour. It is believed that our galaxy is home to almost 10,000 stars.

👉 **Light year** Ordinary units of measurement are not used for measuring distance in the universe. Light-year is used as a measure of distance that is equal to the distance covered by light travelling at a speed of 3,00,000 kilometres per second in one year.

👉 **Nebula** A cloud of gas and dust particles of which a star is made is known as a nebula. Nebulas are very large bodies that possess their own light. They appear to be dot-like figures in the night sky, as they are very far from the Earth's surface.

👉 **Inner planets:-** The first four planets of the solar system, i.e. Mercury, Venus, Earth and Mars, are known as inner planets. They are made up of hard rock materials. Hence, they are also termed terrestrial planets.



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👉 **Gas giants** :- Mars, Jupiter, Uranus and Neptune are known as outer planets or gas giants. They are called so because they are made up of gases. They have been categorised so because they share common properties.

👉 **Blue planet** :- The Earth is known as the Blue Planet or the Water Planet. It is called so because when the astronauts first saw the Earth from space, it appeared blue in colour because of the presence of water on it.

👉 **Asteroids** :- Asteroids are small solid objects that orbit the Sun. They are also known as planetoids or minor planets. There are millions of asteroids found between the orbits of Mars and Jupiter.

👉 **Meteors** :- A meteor is a small piece of rock revolving around the Sun in its orbit. When it enters the Earth's atmosphere, it lights up and start burning. Hence, it is also called a shooting star. It forms a crater when it hits the surface. One such crater was found in Arizona, USA.

👉 **Comets** :- Comets are huge masses of snow and rocks that orbit the Sun. They have huge glowing tails. Halley's Comet was last seen in 1986; it appears after a period of every 76 years. There are around 200 crore comets in our solar system.

👉 **Constellations** :- A constellation is a group of stars in a particular pattern. In ancient civilisations, people saw these constellations as figures of objects, animals, beasts, etc. These constellations had a considerable influence on the lives of the people. The positions of the constellations were used to direct the activities of the people like harvesting, planting and slaughtering.

👉 **Saptarishi**:- The constellation that is most visible to our naked eyes is Saptarshi. It is a group of seven stars. It was used in ancient times to find directions. The Pole Star, which represents the north direction, can be easily located with the help of Saptarshi. Hence, in earlier times, it was easy to locate directions without the help of a compass.

👉 **Why do the planets not twinkle like stars at night** : - A star appears like a point even when we see it from a telescope, while a planet looks like a disc. A stars has its own light, so when it enters the Earth's atmosphere, it gets reflected by different obstructions. As a result, it twinkles. But since the planets are near, the light reflected by them comes to us directly. Hence, they do not twinkle.

👉 **Why is the earth called the blue planet** :-The Earth is also known as the Blue Planet or the Watery Planet. When the astronauts first saw the Earth from the outer space, it appeared blue in colour owing to the presence of water bodies. These water bodies cover almost 71 percent of the Earth's surface.



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👉 What is the significance of the sun in the solar system :-

- ✓ The Sun is the major source of heat and light in our solar system. Heat and light support all forms of life on the Earth.
- ✓ The gravitational pull of the Sun is responsible for keeping the planets in their orbits.

👉 How is the earth a unique planet in the solar system: - The Earth is a unique planet because of the following reasons:

- ✓ It is at optimum distance from the Sun; that is it is neither too far nor too close to the Sun. Hence, it supports several forms of life.
- ✓ Extreme temperatures are maintained as a result of the rotation of the Earth.
- ✓ The atmosphere of the Earth protects its surface from harmful ultraviolet rays of the Sun.
- ✓ Oxygen is the essential component of the atmosphere on the Earth, as it helps in supporting life on this planet.

👉 The characteristics of the planets in our solar system are as follows:

- ✓ Mercury: This planet has no atmosphere; hence, it witnesses extreme temperatures during day and night.
- ✓ Venus: It has a very dense atmosphere and has no satellite.
- ✓ Earth: It is the only planet in our solar system that supports life.
- ✓ Mars: It has a reddish appearance; hence, it is also known as the Red Planet.
- ✓ Jupiter: It is the largest planet in our solar system with 39 moons.
- ✓ Saturn: It is a beautiful planet and has a large number of icy rings around the equator.
- ✓ Uranus: It has rings around it and 21 moons.
- ✓ Neptune: It is the farthest planet in our solar system and has physical features similar to those of Uranus.

👉 Phases of the moon :- The Moon is the only satellite of the Earth. It does not have light of its own, but it reflects the sunlight. The shape of the Moon changes every night. The various phases of the Moon can be understood as under:

- ✓ The visible portion of the Moon increases when it moves from the phase of new moon to the phase of full moon. This is known as wax.
- ✓ The visible portion of the Moon decreases when it moves from the phase of full moon to the phase of new moon. It is known as wane. Waxing and waning constitute a phase of the moon.
- ✓ The half portion of the Moon always appears dark. Since the view from the Earth keeps on changing, we see the bright part of it.



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👉 **Why do the sun and the moon appear to be of the same size from the earth :-** The Sun is 109 times larger than the Earth and its distance is around 15 crore kilometres from the Earth. It is a very large heavenly body compared to the Moon. The diameter of the Moon is 3,480 kilometres. It is 3,84,400 kilometres away from the Earth and therefore is much closer to the Earth than the Sun. The Sun and the Moon appear to be of the same size from the Earth because although the Sun is larger than the Moon, it is farther from the Earth.

👉 **Why can the moon not support any form of life:-** The Moon does not support any form of life because it does not have an atmosphere of its own. Life-providing gases, including oxygen, are absent on the Moon. Also, there is absence of moisture and water on the Moon to support life.

👉 **Why do we always see the same face of the moon :** - The half side of the Moon appears dark, as we always see the bright part of the Moon. The reason is that both the Earth and the Moon rotate on their own axes. They have the same rotational period; therefore, we get to see only half side of the Moon.

Question 01. How does the moon shine

- a. Have their own natural light
- b. Reflects the Venus light
- c. Reflects the earth light
- d. **Reflects the sunlight**

Question 02 - Which is the brightest planet in the universe?

- a. Mercury
- b. **Venus**
- c. Earth
- d. Saturn

Question 03 - Which is the closest planet to the Sun

- a. **Mercury**
- b. Venus
- c. Earth
- d. Saturn

Question 04 -The solar system is a part of the _____ galaxy.

- a. Big Bang
- b. Nebula
- c. Saptarishi
- d. **Milky Way**

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Question 05 - Which one of the following does not belong to the family of the solar system?'

- a. Planet
- b. Galaxy
- c. Asteroid
- d. Satellite

Question 06 -average distance of the sun from the earth is about

- a. 15 crore km.
- b. 1.5 crore km.
- c. 150 crore km.
- d. 1,500 crore km.

Question 07 -Which one of the following planets is not an inner planet?

- a. Mercury
- b. Saturn
- c. Mars
- d. Venus

Question 08 -Which planet is known as the earth's twin?

- a. Mars
- b. Neptune
- c. Venus
- d. Jupiter

Question 09 -Which planet has the largest number of known satellites?

- a. Earth
- b. Saturn
- c. Uranus
- d. Jupiter

Question 10 -Which one of the following is known as minor planet?

- a. Meteor
- b. Asteroid
- c. Comet
- d. Satellite

Question 11- The Halley's comet can be seen after every

- a. 16 years
- b. 56 years
- c. 76 years
- d. 26 years

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- 8000 °C
- 6000 °C
- 4000 °C
- 2000 °C

- a. 8 minutes and 20 seconds
- b. 7 minutes and 20 seconds
- c. 10 minutes and 20 seconds
- d. 9 minutes and 20 seconds

- a. Mars and Jupiter
- b. Jupiter and Earth
- c. Uranus and Neptune
- d. 26 years

- Big Bang
- Nebula
- Saptarishi
- Milky Way

- a. Earth
- b. Saturn
- c. Uranus

- a. Earth
- b. Mars**
- c. Uranus
- d. Jupiter



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Question 18- Which planet in the solar system is associated with Messenger of the Greek god of the sky?

- a. Earth
- b. Saturn
- c. **Uranus**
- d. Jupiter

Question 19 - A huge system of stars is called _____

- (a) Moon
- (b) Earth
- (c) **Galaxy**
- (d) Planet

Question 20- Which is the nearest star to the earth

- (a) Mercury
- (b) Moon
- (c) Venus
- (d) **Sun**

Question 21- All the planets move around the sun in an _____

- (a) Rectangular path
- (b) Straight path
- (c) **Elliptical path**
- (d) Circular path

Question 22- What is the orbital period of the Moon?

- (a) 25 days
- (b) 27.32 days
- (c) 28 days
- (d) 29 days

Question 23- The Stars are not visible during the day because

- (a) Of their self illumination
- (b) Stars are far away from the earth
- (c) Sun light is very bright
- (d) Their size is large



- Air colour is blue
- Land colour is blue
- Building having blue colour
- Two-third surface is covered by water

- Saturn
- Jupiter
- Neptune
- Uranus

(a) Methane
(b) Magnesium
(c) Hydrogen
(d) Water

(a) Five
(b) Eight
(c) Six
(d) Nine

- (a) Mars
- (b) Saturn
- (c) Venus
- (d) Mercury

- a. Venus and Mars
- b. Mars and Neptune
- c. Mercury and Mars
- d. Mercury and Venus

- a. Mercury
- b. Earth
- c. Venus
- d. Mars



(a) Earth
(b) Galaxy
(c) Moon
(d) Planet

(a) West to east
(b) East to west
(c) North to south
(d) South to west

- (a) Venus
- (b) Mercury
- (c) Earth
- (d) Jupiter**

- (a) Mars and Venus
- (b) Mars and Mercury
- (c) Mars and Saturn
- (d) Mars and Jupiter**

- a. Earth
- b. Mars
- c. Mercury
- d. Saturn

- a. Uranus
- b. Jupiter
- c. Mercury
- d. Neptune

- a. Mercury
- b. Venus**
- c. Jupiter
- d. Earth



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Question 38 - . _____ is the largest planet of our solar system.

- a. Saturn
- b. Uranus
- c. Mars
- d. **Jupiter**

Question 39 - . Which is the smallest planet of our solar system?

- a. **Mercury**
- b. Uranus
- c. Saturn
- d. Mars

Question 40 - Which of these is the coldest planet of our solar system?

- a. Uranus
- b. **Neptune**
- c. Saturn
- d. Jupiter

Question 41 - The planet(s) with rings around is/are:

- a. Saturn
- b. Jupiter
- c. Uranus
- d. **All of the mentioned**

Question 42 - _____ is called the “Red Planet” of our solar system.

- a. Mercury
- b. Venus
- c. Earth
- d. **Mars**

Question 43 - Arrange the following planets in ascending order of their distance from the sun. I. Jupiter II. Venus III. Mercury IV. Mars V. Earth

- a. I, V, IV, II, III
- b. **III, II, V, IV, I**
- c. III, II, IV, V, I
- d. I, IV, V, II, III

Question 44 - _____ is the third planet from the sun.

- a. Mars
- b. Earth
- c. Jupiter
- d. Saturn



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Question 45 - A celestial body in space that orbits around a larger body is called a

- a. Star
- b. Constellation
- c. **Natural Satellite**
- d. Asteroid

Question 46 - The moon is the Earth's _____.

- a. **Natural satellite**
- b. Star
- c. Planet
- d. None of the above

Question 47- Phobos and Deimos are the natural satellites of which planet?

- a. **Mars**
- b. Mercury
- c. Neptune
- d. Uranus

Question 48 - Titan is one of the moons of _____.

- a. Jupiter
- b. **Saturn**
- c. Venus
- d. Earth

Question 49 - How many moons does Uranus have?

- a. 12
- b. 14
- c. **27**
- d. 30

Question 50 - Neptune has _____ moons.

- a. 12
- b. **14**
- c. 27
- d. 31

Question 51 - Ganymede, the biggest moon in our solar system, belongs to which planet?

- a. Saturn
- b. Uranus
- c. Neptune
- d. **Jupiter**



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Question 52 - Which planet is called the evening/morning star?

- a. Jupiter
- b. **Venus**
- c. Mars
- d. Saturn

Question 53 - Moon appears big because

- a. It is very big than the earth
- b. It is bigger than the sun
- c. It is near to the earth
- d. It is far away from the earth

Question 54 - Which star is the head of the solar system

- a. Earth
- b. Moon
- c. **Sun**
- d. Big bear

Question 55 - Which of the following is a natural satellite?

- a. IRSA
- b. EDUSAT
- c. **Moon**
- d. INSAT-I

Question 56 - The Planets don't have _____ of their own.

- a. **Heat and Water**
- b. Oxygen and Water
- c. Water and light
- d. Heat and light

Question 57 - A group of _____ forming various patterns is called constellation

- (a) **Stars**
- (b) Earth
- (c) Planet
- (d) Moon

Question 58 - Which of the following planets has a reddish appearance?

- (a) **Mars**
- (b) Venus
- (c) Saturn
- (d) Mercury



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Question 59 - The polar star indicates to which direction?

- (a) North
- (b) East
- (c) South
- (d) West

Question 60 - How many days does it take the earth to revolve around the sun?

- (a) 120
- (b) 365 (1/4)
- (c) 20
- (d) 541



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