

Earth and the Universe

Science · Class 5 · Topic-wise Practice Worksheet

TIME 40 minutes	QUESTIONS 18	TOTAL MARKS 24	MAX. SCORE ___ / 24
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Name: _____ Class/Sec: _____ Date: _____

INSTRUCTIONS

- There are **18 questions** in this worksheet. All questions are compulsory.
- Each question has four options (A), (B), (C) and (D). Exactly **one** option is correct.
- Questions 1–15 carry **1 mark** each. Questions 16–18 (Achievers Section) carry **3 marks** each.
- There is no negative marking. Do not use a calculator.
- Study every diagram and table carefully before answering.

Section A — The Solar System

Q1–Q7 · 1 mark each

- How many planets are there in our solar system?
 (A) Eight (B) Seven
 (C) Nine (D) Ten
- Which planet is nearest to the sun?
 (A) Earth (B) Mercury
 (C) Venus (D) Mars
- Mars is often called the _____ planet.
 (A) Blue (B) Golden
 (C) Green (D) Red
- The natural satellite of the earth is the _____.
 (A) Moon (B) Comet
 (C) Pole star (D) Sun
- The earth completes one rotation about its own axis in about _____.
 (A) 12 hours (B) 24 hours
 (C) 1 hour (D) 365 days
- Day and night are caused by the _____ of the earth.
 (A) Revolution (B) Tilt
 (C) Rotation (D) Size
- A group of stars that appears to form a pattern in the sky is called a _____.
 (A) Galaxy (B) Meteor
 (C) Comet (D) Constellation

8. The diagram shows the eight planets in order of their distance from the sun. Which number marks the planet on which we live?

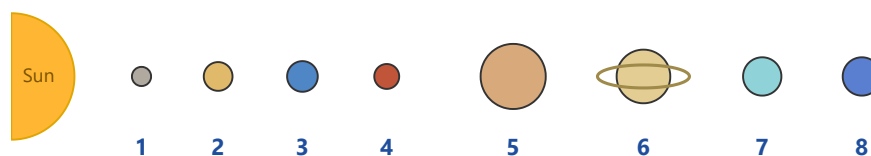


Fig. 8.1 — The planets in order from the sun (sizes and distances not to scale)

- (A) 1
(B) 2
(C) 3
(D) 4
9. **Assertion (A):** From the earth we always see the same side of the moon.
Reason (R): The moon takes the same time to rotate once on its axis as it takes to revolve once around the earth.
Choose the correct option.
- (A) Both A and R are true, and R explains A
(B) Both A and R are true, but R does not explain A
(C) A is true but R is false
(D) A is false but R is true
10. A solar eclipse takes place when _____.
(A) The moon comes between the sun and the earth
(B) The earth comes between the sun and the moon
(C) The sun comes between the earth and the moon
(D) The moon stops rotating
11. The diagram shows four phases of the moon as seen from the earth. Which one is the **full moon**?



Fig. 11.1 — Four phases of the moon

- (A) P
(B) Q
(C) R
(D) S
12. In the table below, which row is **incorrectly** matched?

Row	Body	Description
(A)	Sun	A star
(B)	Jupiter	The largest planet
(C)	Moon	A planet
(D)	Saturn	Has bright rings around it

Table 12.1 — Bodies in the sky

- (A) Row (A)
(B) Row (B)
(C) Row (C)
(D) Row (D)
13. Why are stars not seen in the sky during the day?
(A) The stars stop shining during the day
(B) The bright light of the sun makes their faint light impossible to see
(C) The stars move to the other side of the earth
(D) Clouds always cover them

14. The earth takes about $365\frac{1}{4}$ days to go once around the sun. Because of the extra quarter day, we add one day to February _____.
 (A) Every year (B) Every second year
 (C) Every fourth year (D) Every tenth year
15. An astronaut who weighs 60 kg-wt on the earth would weigh only about 10 kg-wt on the moon. This is because the moon _____.
 (A) Has no gravity at all (B) Has no air
 (C) Is much colder than the earth (D) Has a much weaker pull of gravity than the earth

Achievers Section

Q16–Q18 · 3 marks each

16. Consider the following statements.
 (i) The moon produces its own light.
 (ii) The tilt of the earth's axis, together with its revolution, causes the seasons.
 (iii) The sun is the nearest star to the earth.
 Which of the statements is/are correct?

- (A) (i) and (ii) only (B) (ii) and (iii) only
 (C) (i) and (iii) only (D) All three

17. Match each body in Column I with its correct description in Column II.

Column I	Column II
(P) Comet	(1) A rocky body orbiting mostly between Mars and Jupiter
(Q) Asteroid	(2) A body of ice and dust with a long glowing tail
(R) Meteor	(3) The huge system of billions of stars we belong to
(S) Milky Way	(4) A 'shooting star' that burns up in the atmosphere

Table 17.1

- (A) P-2, Q-1, R-4, S-3 (B) P-1, Q-2, R-3, S-4
 (C) P-2, Q-4, R-1, S-3 (D) P-4, Q-1, R-2, S-3
18. When it is noon in India, it is around midnight on the opposite side of the earth. Which single fact best explains this?
 (A) The sun moves round the earth once a day (B) The earth is roughly spherical and rotates, so only the half facing the sun is lit at any moment
 (C) The earth revolves around the sun once a year (D) The moon blocks the sunlight on one side

Answer Key

1	A	2	B	3	D	4	A	5	B
6	C	7	D	8	C	9	A	10	A
11	D	12	C	13	B	14	C	15	D
16	B	17	A	18	B				

Solutions

1. Answer: (A) Eight

There are eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Pluto was counted as the ninth planet until 2006, when it was reclassified as a dwarf planet.

2. Answer: (B) Mercury

Mercury is the closest planet to the sun and also the smallest. Because it is so near, it completes one revolution in only about 88 earth days.

3. Answer: (D) Red

Mars looks reddish because its surface is covered with soil and rocks rich in iron oxide — the same substance as rust. The earth, by contrast, is called the blue planet because of its oceans.

4. Answer: (A) Moon

A satellite is a body that revolves around a planet. The moon is the earth's only natural satellite. Objects such as INSAT that people put into orbit are called artificial satellites.

5. Answer: (B) 24 hours

One complete spin of the earth on its axis takes about 24 hours, and this is what gives us one day and one night. Do not confuse it with revolution around the sun, which takes about 365¼ days.

6. Answer: (C) Rotation

As the earth spins on its axis, the half facing the sun has day while the half turned away has night. Every place moves in and out of sunlight once in 24 hours. Revolution around the sun, combined with the tilt of the axis, causes the seasons instead.

7. Answer: (D) Constellation

A constellation is a recognisable pattern of stars, such as Ursa Major (the Great Bear) or Orion. A galaxy is a vastly larger collection of billions of stars — our own is the Milky Way.

8. Answer: (C) 3

Counting outwards from the sun the order is Mercury (1), Venus (2), **Earth (3)**, Mars (4), Jupiter (5), Saturn (6), Uranus (7) and Neptune (8). Number 6 is easy to spot in the diagram because of its ring.

9. Answer: (A) Both A and R are true, and R explains A

Both statements are true. Because one rotation of the moon takes exactly as long as one trip around the earth (about 27 days), the same face is always turned towards us. That matching of the two periods is precisely the reason, so R explains A.

10. Answer: (A) The moon comes between the sun and the earth

In a solar eclipse the moon passes directly between the sun and the earth, so the moon's shadow falls on the earth and the sun appears hidden. When the **earth** comes between the sun and the moon it is a lunar eclipse instead.

11. Answer: (D) S

S shows the whole disc lit up, which is the full moon (purnima). P is completely dark — the new moon (amavasya). Q is a thin crescent and R is a half moon. The moon has no light of its own; these shapes are simply how much of its sunlit half we can see from the earth.

12. Answer: (C) Row (C)

The moon is a **satellite**, not a planet — it goes around the earth, whereas planets go around the sun. The sun really is a star, Jupiter really is the largest planet, and Saturn really does have prominent rings.

13. Answer: (B) The bright light of the sun makes their faint light impossible to see

The stars shine all the time. During the day, sunlight scattered by the atmosphere makes the whole sky so bright that the far fainter starlight cannot be picked out — in the same way that a candle is invisible next to a floodlight.

14. Answer: (C) Every fourth year

A calendar year is kept at 365 days, so about a quarter of a day is left over each year. Four such quarters add up to one whole day, so an extra day is added to February every fourth year. Such a year of 366 days is called a leap year.

15. Answer: (D) Has a much weaker pull of gravity than the earth

The moon is far smaller and lighter than the earth, so its gravitational pull is only about one-sixth as strong. Weight is the pull of gravity on a body, so it falls to about one-sixth — $60 \div 6 = 10$. The astronaut's **mass**, however, is unchanged. The moon does have gravity; it is simply weaker.

16. Answer: (B) (ii) and (iii) only

Statement (i) is false — the moon has no light of its own and merely reflects sunlight. Statement (ii) is true; because the axis is tilted, different parts of the earth lean towards the sun at different points in the year, giving summer and winter. Statement (iii) is true; the sun is about 150 million km away, while the next nearest star is thousands of times further. Hence (ii) and (iii).

17. Answer: (A) P-2, Q-1, R-4, S-3

A comet is a ball of ice and dust that grows a glowing tail as it nears the sun (2). Asteroids are rocky bodies, most of which circle the sun in a belt between Mars and Jupiter (1). A meteor is a small piece of rock that burns up on entering the earth's atmosphere, seen as a shooting star (4). The Milky Way is our galaxy (3). Hence P-2, Q-1, R-4, S-3.

18. Answer: (B) The earth is roughly spherical and rotates, so only the half facing the sun is lit at any moment

Because the earth is a ball, sunlight can fall on only one half of it at a time. As it spins on its axis, the lit half moves steadily round the globe, so places roughly halfway around the world always have opposite times of day. Revolution around the sun explains the year and the seasons, not the difference between noon and midnight, and the sun does not actually travel round the earth.