Lesson-14: The Earth's Satellite

12 Periods (40 minutes each)

Learn Better (Main Coursebook), Stay Ahead (Workbook), Book of Holistic Teaching, Book of Project Ideas, CRM signs, Poster

Animation, Animated Activities, Concept Map, Diagram, Dictionary, eBook, I Explain, Quiz, Slideshow, Video, Test Generator

Confirming better: Technology helps me in studies.

Curricular Goals and Objectives (NCF)

To enable the students:

- to understand the role of the Moon as the satellite of the Earth and its impact on the Earth, including the phases and tides.
- to learn about the features of the Moon, space exploration and the Apollo 11 mission.
- to explore eclipses, including lunar and solar eclipses and safety measures for observation.
- to recognise the importance of artificial satellites in communication, weather forecasting and science.
- to engage in hands-on activities to reinforce understanding of the Moon's phases and tidal patterns.

Methodology

Period 1

SHOULD DO 05 MIN.

Teacher: Good morning, students. How are you all today?

Teacher: Great. Before we dive into our lesson, let us take a moment to relax and focus our minds with a short meditation. Ready?

Teacher: Sit comfortably in your chair, with your back straight and feet flat on the ground. Close your eyes gently and take a deep breath through your nose. Hold it for a moment, then slowly breathe out through your mouth.

Let us do these three more times. Breathe in and breathe out. As you breathe, imagine your mind becoming clear and ready to learn.

Open your eyes and smile at your friends. Let us start our lesson with positive energy.

Confirming better

Teacher: Before we start the class, let us all say something positive together: 'Technology helps me in studies.' Repeat after me: 'Technology helps me in studies.'

Teacher: Alright. Today, we are going to begin a new chapter, 'Force, Work and Energy.' We use a KWL chart to help us organize our thoughts and learning. I have made a KWL format on the blackboard. Please take out your notebooks and draw the same format.

K	W	L

Teacher: Let us start by filling out the 'K' and 'W' columns. Take a few minutes to think and write. If you have any questions, feel free to ask.

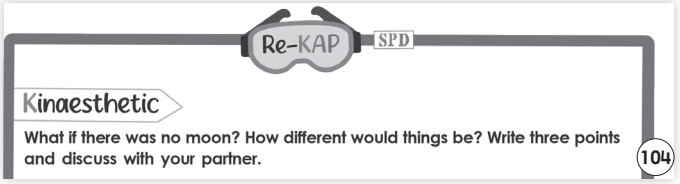
MUST DO 05 MIN.

Teacher: Before we start the chapter, we will do a quick Re-KAP, which involves revisiting our previous knowledge through creative activities using Kinaesthetic, Auditory and Pictorial methods to make our learning interactive and engaging.

Kinaesthetic

MUST DO 10 MIN.

Teacher: Let us begin with an activity to get our minds thinking. I want you to imagine a world without the Moon. Think about it. What would life on Earth be like?



(Let the students think.)

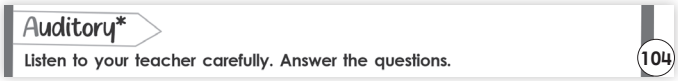
Teacher: Please take a moment to discuss with your partner and write down three points. You can think about the effects on tides, night-time brightness or anything else that comes to mind.

(Let the students write and discuss.)

Auditory

MUST DO
10 MIN.

Teacher: Let us now move on to our 'Auditory' activity. Listen to me carefully. I will ask you a few questions. I want you to pay attention to every detail before answering. Are you ready?



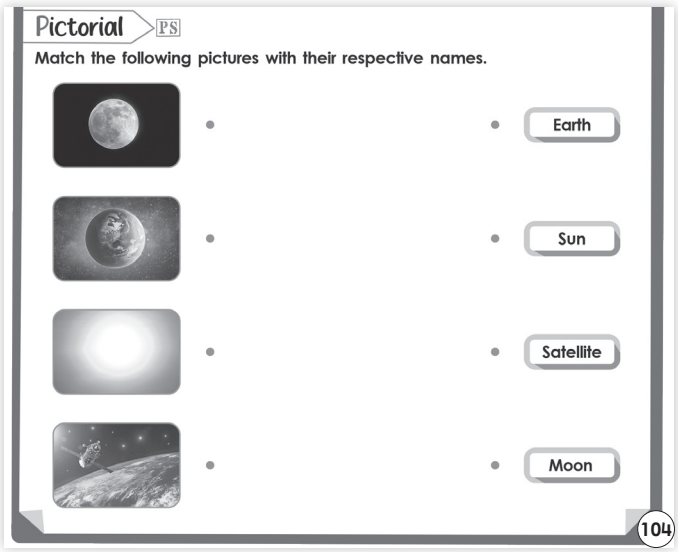
Teacher: Meteorites crashed into the Moon long ago, creating craters and covering its surface with dark grey dust. India launched its first satellite, Aryabhata, in 1975, following Russia's first human-made satellite, Sputnik 1, in 1957. Satellites like APPLE and INSAT-1B have since helped explore space.

Name two Indian satellites mentioned in the text that have helped explore space.

Pictorial

MUST DO
10 MIN.

Teacher: Let us look at the 'Pictorial' section. Here are some pictures. Look at the pictures carefully. One is of the Earth, one is of the Sun, one is of the satellite and one is of the Moon.



Teacher: Now, match each picture with its name.

(Let the students observe the pictures and match it with their names.)

(Discuss the correct answer with the class.)

Teacher: Great work, everyone. You matched them all correctly. The Earth, the Sun, the Moon and a Satellite are all important parts of our solar system.

Differentiated Activities

110 km/hr

What are the effects of the Moon on the Earth?

80 km/hr

What is the difference between the Earth and the Moon?

40 km/hr

Can you name the object that orbits around the Earth?

Home Task

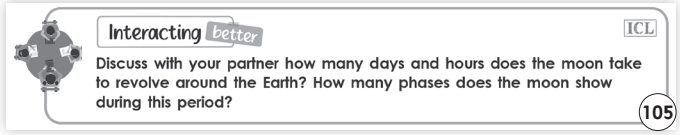
Draw a picture of the Earth, Moon and Sun in their correct positions in space. Label each of them and show how the Earth orbits the Sun and how the Moon orbits the Earth.

Period 2

Interacting better

MUST DO
10 MIN.

Teacher: Good morning, students. How are you all today?



Teacher: Great. Let us do an interesting activity. Discuss with your partner how many days and hours the moon takes to revolve around the Earth.

Teacher: Also, discuss how many phases the moon shows during this period. You may use your book or the earlier activity to help you. I will listen while you discuss.

(Let the students discuss the topic. Walk around and guide the students if required. Discuss the correct answer.)

(Use CRM signs to settle the class.)

Teacher: Well done, everyone. I can see thoughtful discussions and great teamwork. Let us now move to the next part of our lesson.

Teacher: Everyone, please open your books and look at the picture story given on page 105 of your Main Coursebook. Observe what each character is saying and doing.

MUST DO
30 MIN.

(Give time to the students to read the story.)

Teacher: Now that you have read the story, let us begin our discussion.

Teacher: Let us begin with the first picture. Ryan's mother says that the Moon is about 384,400 kilometres away from the Earth. Why do you think Ryan was surprised by this?

Teacher: That is right. It is a very large distance. Now look at the next picture. Ryan's mother says the Moon is a natural satellite of the Earth. What does that mean?

Teacher: Good thinking. A natural satellite is something that moves around a planet. The Moon moves around the Earth, so we call it a natural satellite.

Teacher: Let us move on to the next part. Ryan asks how astronauts landed on the Moon. What did his mother say in reply?

Teacher: Yes, she said it happened with the help of technology. The spacecraft was called Apollo. Apollo took astronauts to the Moon.

Teacher: Look at the last part. Ryan wants to know why the Moon is called a satellite. What reason did his mother give?

Teacher: Correct. The Moon moves around the Earth in an orbit and that is why it is a satellite. She also says it is time for dinner, so the conversation ends.

Teacher: Now tell me, how many days and hours does the Moon take to complete one revolution around the Earth?

Teacher: Well done. It takes 27 days and 7 hours. And during this time, how many phases of the Moon can we see?

Teacher: Excellent. There are eight phases of the Moon. You have all understood the picture story very well. I am proud of your careful reading.

You may show the **Dictionary** and **eBook** on the digital platform.

Differentiated Activities

110 km/hr

What is the name of the spacecraft that landed astronauts on the Moon?

80 km/hr

Why is the Moon called a satellite?

40 km/hr

What moves around the Earth?

Home Task

Make a list of three things you would pack if you were going on a trip to the Moon. Write one reason for each item you choose.

Period 3

SHOULD DO
05 MIN.

Teacher: Good morning, students. How are you all today?

Teacher: Great. Let us begin today's lesson with a quick game. I will ask some questions and you have to answer them. Ready?

Teacher: What is the name of the object that orbits Earth? (Moon)

Teacher: What do we call the large, bright object in the sky that gives us light during the day? (Sun)

Teacher: What is the reason we have day and night on Earth? (Earth's rotation)

Teacher: What does a satellite do? (Orbits Earth)

Teacher: What are the effects of the Moon on Earth? (Tides, gravitational pull)

Teacher: Excellent. Let us now move on to today's lesson. Keep up the great work.

(The teacher will read the last two paragraphs of page 105 and the first two paragraphs of 106 aloud and provide explanations to ensure that the students understand the content.)

We see the Sun in the morning and the Moon at night. The Moon is the only natural satellite of the Earth. Let us learn about the Moon and some other satellites.

WHY DOES THE MOON SHINE?

The Moon is the Earth's closest neighbour in space. It is the natural satellite of Earth. A satellite is an object that revolves around a planet. 105

Although the Moon is the brightest heavenly body you see in the night sky, it does not have any light of its own. The Moon shines because it reflects the light of the Sun that falls on it.

The size of the Moon and the Sun appear similar because the Moon is closer to the Earth in comparison to the Sun. The Moon is 3,84,400 km away from the Earth and 15,00,00,000 km away from the Sun. 106

MUST DO
15 MIN.

Teacher: Let us begin by thinking about the sky. What do we see in the sky during the day and night?

Teacher: Yes, we see the Sun in the morning and the Moon at night. Can anyone share what the Moon is called in space?

Teacher: Wonderful. The Moon is the Earth's natural satellite. The Moon is the only natural satellite of the Earth. That means it moves around the Earth. It is the closest neighbour of the Earth in space.

Teacher: Now, here is something interesting. The Moon looks bright in the night sky, but does it have its own light?

Teacher: Very good thinking. No, the Moon does not have light of its own. It shines because it reflects the sunlight that falls on it.

Teacher: Next, let us talk about size. When we look at the Moon and the Sun from the Earth, they appear to be the same size. Why might that be?

Teacher: Great answer. It is because the Moon is much closer to the Earth than the Sun. That is why they appear similar in size even though the Sun is much bigger.

Teacher: The Moon is about 3,84,400 kilometres away from the Earth. The Sun is about 15,00,00,000 kilometres away. That is a big difference.

Teacher: You all are doing a great work. Keep thinking and asking questions. Now, let us continue to the next part of our book.

THE SURFACE OF THE MOON

The surface of the Moon is rough due to big, round and hollow structures called craters. Craters were formed on the Moon when huge pieces of rocks (called meteorites) fell onto its surface. Some rocks from the Moon, brought to the Earth by different astronauts, tell us that the surface of the Moon is covered with dark grey dust. From those rocks, scientists also ascertained that the Moon is about 4.46 billion years old, the same age as the Earth.

craters on the surface of the Moon

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Teacher: Now tell me, does the Moon have a smooth surface or a rough one?

MUST DO 20 MIN.

Teacher: Yes, it has a rough surface. The Moon is full of big, round, hollow structures. These are called craters. What caused these craters?

Teacher: Well done. Craters were formed when huge pieces of rocks called meteorites fell onto the surface of the Moon.

Teacher: Now, look at the picture given on page 106. Can you see the big round holes on the surface?

Teacher: Excellent observation. Those are the craters. The surface also looks grey and dusty. This is the dark grey dust that covers the Moon.

Teacher: Some astronauts brought rocks back from the Moon to Earth. Scientists studied those rocks and learned about the Moon's surface. From those rocks, scientists found out something interesting about the Moon's age. Can anyone guess how old the Moon is?

Teacher: Yes, the Moon is about 4.46 billion years old. That is the same age as the Earth.

Teacher: Wonderful learning today. You are observing and answering with such interest. Let us remember how much we can learn just by observing things closely.

You may show the **I Explain** given on the digital platform.

Differentiated Activities

110 km/hr

Why does the Moon appear similar in size to the Sun when viewed from Earth?

80 km/hr

What is the surface of the Moon covered with?

40 km/hr

What is the Moon to the Earth?

Home Task

Write three differences between the Moon and the Earth based on their surface and light.

Period 4

SHOULD DO 05 MIN.

Teacher: Good morning, students. How are you all today?

Teacher: Great. Let us begin today's lesson with a quick game. I will ask some questions and you have to answer them. Ready?

Teacher: What is the Earth's natural satellite? (The Moon)

Teacher: What shines on the Moon to make it reflect? (The Sun)

Teacher: What is a crater? (Round hollow structure)

Teacher: What causes craters on the Moon? (Meteorites)

Teacher: How old is the Moon? (4.46 billion years)

Teacher: Well done. Let us now begin today's class.

(The teacher will read the last three paragraphs of page 106 and the first two paragraphs of 107 aloud and provide explanations to ensure that the students understand the content.)

PHASES OF THE MOON

Phase is a term used for different shapes of the Moon that are visible from the Earth. The different phases of the Moon are – full moon, waxing gibbous, first quarter, waxing crescent, new moon, waning crescent, third quarter and waning gibbous. 106

Teacher: We have all seen the Moon in different shapes in the sky, have we not? Sometimes it is round, sometimes it looks like a slice. Have you ever wondered why it changes shape?

MUST DO 10 MIN.

Teacher: Yes. It changes shape because of how sunlight falls on it as it revolves around the Earth. The different shapes of the Moon that we see from the Earth are called phases. Can you think of any phase you have heard of or seen?

Teacher: That is right. One example is the full moon. It is when we can see the whole face of the Moon shining brightly. Let us now go through all the phases together.

Teacher: The phases of the Moon are full moon, waxing gibbous, first quarter, waxing crescent, new moon, waning crescent, third quarter and waning gibbous.

Teacher: Well done. Waxing means the Moon is growing. Waning means it is shrinking. Each phase shows how much of the Moon's surface is lit up by the Sun and visible from Earth.

Teacher: The Moon takes about 27 days and 8 hours to complete one full orbit around the Earth. This is called the sidereal month. It is the time the Moon takes to move around the Earth relative to the distant stars.

Teacher: But, the Moon's motion is not the only thing that affects this. Can anyone guess what else might affect the Moon's movement?

Teacher: Yes, exactly. While the Moon is orbiting the Earth, the Earth is also moving around the Sun. So, after the Moon completes one orbit relative to the stars, it needs to travel a little further to catch up with the Earth's new position.

Teacher: How many more days do you think it takes for the Moon to do this?

Teacher: Very close. It actually takes an extra 2.2 days. So, the Moon takes about 29.5 days to return to the same phase, like from one full moon to the next. This is called the synodic month. The Moon needs this extra time to align with the Earth and the Sun again.

Teacher: So, the sidereal month is about 27.3 days and the synodic month is about 29.5 days. Does everyone understand the difference now?

Teacher: Excellent. Now, let us move ahead and explore life on the Moon.

You may show the **Animation** on the digital platform.

LIFE ON THE MOON

There is no air and water on the Moon. So, no life exists there. The Moon's gravity is one-sixth of the gravity of the Earth. For this reason, we can easily lift an object on the Moon that is heavy to lift on the Earth.

Unlike Earth, the Moon lacks atmosphere, so there is no protection from the strong rays of the Sun. The side of the Moon that faces the Sun is too hot while the side of the Moon

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away from the Sun is too cold to support life. The Moon also lacks air, therefore, no sound can be heard on the Moon.

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Teacher: Now, let us talk about life on the Moon. What do you think is missing on the Moon that is essential for life?

MUST DO
10 MIN.

Teacher: You are right. There is no air or water on the Moon. Because of this, no living being can survive there.

Teacher: Another interesting fact is about gravity. Do you know the Moon's gravity is much less than Earth's?

Teacher: Well done. The Moon's gravity is one-sixth of Earth's gravity. This means we can lift things more easily on the Moon than on Earth.

Teacher: But there is a big challenge. The Moon does not have an atmosphere. So what do you think happens because of this?

Teacher: Good thinking. Without an atmosphere, the Moon has no protection from the Sun's rays. The side facing the Sun gets extremely hot, while the other side becomes very cold.

Teacher: Let us go a bit further. Since there is no air, what happens to sound?

Teacher: Excellent. No sound can be heard on the Moon because there is no air to carry the sound waves. That is why astronauts use radios to talk to each other.

Teacher: You are all learning wonderfully. Keep exploring and asking questions like scientists.

Teacher: Let us now learn about one of the most important events in space history. Who remembers the name of the first spacecraft to land on the Moon?

MUST DO
10 MIN.

LANDING ON THE MOON

Apollo 11, an American spacecraft, landed successfully on the Moon on 21 July 1969. Neil Armstrong and Edwin Aldrin stepped on the Moon's surface. The third astronaut, Michael Collins, remained in the spacecraft and maintained contact with the Earth.

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Teacher: Well done. It was Apollo 11. It was an American spacecraft that landed on the Moon on July 21 1969.

Teacher: Can anyone name the astronauts who have stepped on the Moon?

Teacher: Excellent. Neil Armstrong and Edwin Aldrin were the two astronauts who stepped on the Moon's surface.

Teacher: There was one more astronaut in Apollo 11. What do you think he was doing?

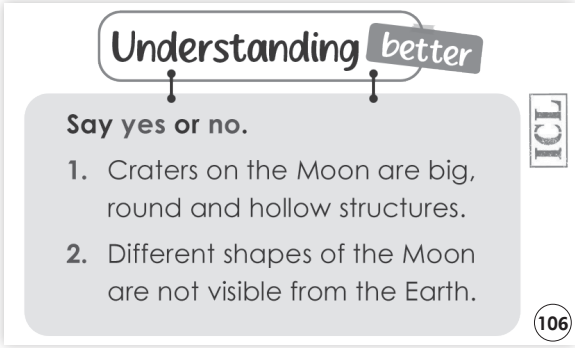
Teacher: Yes, Michael Collins stayed in the spacecraft. He maintained contact with Earth while the other two walked on the Moon.

Teacher: That was a great moment in history. You are all doing very well in understanding this. Keep it up.

Understanding better

Teacher: Let us quickly test our understanding. I will read each sentence and you will tell me whether it is a 'yes' or a 'no'. Ready?

MUST DO
05 MIN.



Teacher: Craters on the Moon are big, round and hollow structures. Say 'yes' or 'no'.

Teacher: Good. That is correct. They were formed by meteorites crashing onto the Moon's surface.

Teacher: Different shapes of the Moon are not visible from the Earth. Say 'yes' or 'no'.

Teacher: Well done. That is not correct. We can see the Moon in many shapes. These are called phases of the Moon.

Teacher: You all answered confidently. Very good work.

Differentiated Activities

110 km/hr

Name any four phases of the Moon in the correct order.

80 km/hr

What is the name of the spacecraft that landed on the Moon in 1969?

40 km/hr

Is there air or water on the Moon?

Home Task

Make a mini fact card about the Moon. Write three short facts about its surface, gravity and why life is not possible there.

Period 5

SHOULD DO

05 MIN.

Teacher: Good morning, students. How are you all today?

Teacher: Great. Let us begin today's lesson with a quick game. I will ask some questions and you have to answer them. Ready?

Teacher: What is the term used for the changing shapes of the Moon? (Phases)

Teacher: Which phase of the Moon is fully round and bright? (Full Moon)

Teacher: Who was the first person to walk on the Moon? (Neil Armstrong)

Teacher: What is the name of the mission that landed humans on the Moon? (Apollo 11)

Teacher: Can sound be heard on the Moon? (No)

Teacher: Very good. Let us begin our new class now.

(The teacher will read the third and fourth paragraphs and table 14.1 on page 107 aloud and provide explanations to ensure that the students understand the content.)

ECLIPSES OF THE MOON AND THE SUN

The Earth and the Moon are opaque. So, when sunlight falls on the Earth and the Moon, their shadows are formed.

When the Sun, the Moon and the Earth are in a straight line then shadows are formed such that the Sun or the Moon cannot be seen. This is called an eclipse. When the Earth or the Moon moves out of the line, we can see the Sun and the Moon again.

We should not look at a solar eclipse with naked eyes as it can harm our eyes. 107

MUST DO

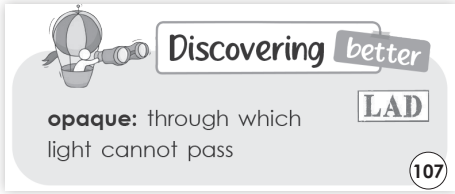
10 MIN.

Teacher: What happens when sunlight falls on the Earth and the Moon?

Teacher: When sunlight falls on the Earth and the Moon, their shadows are formed because both are opaque. Opaque objects do not let light pass through them.

Discovering better

(Explain the word opaque mentioned in the 'Discovering better' section.)



Teacher: What is meant by an eclipse?

Teacher: An eclipse occurs when the Sun, the Moon and the Earth are in a straight line. Shadows are formed in such a way that either the Sun or the Moon becomes invisible from the Earth.

Teacher: What happens when the Earth or the Moon moves out of this straight line?

Teacher: When that happens, we can see the Sun or the Moon again and the eclipse ends.

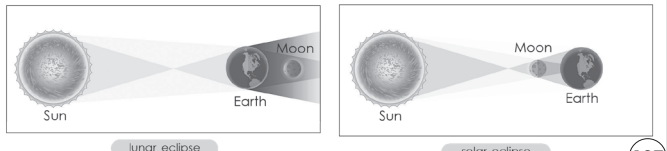
Teacher: Is it safe to look at a solar eclipse with our naked eyes?

Teacher: No, we should not look at a solar eclipse directly with our eyes as it can damage them.

Teacher: You have all answered very well. Let us keep this learning in mind and continue observing the sky safely.

Table 14.1: Differences between a lunar eclipse and a solar eclipse.

lunar eclipse	solar eclipse
In a lunar eclipse, the Earth casts a shadow on the Moon, as the Earth comes in between the Sun and the Moon.	In a solar eclipse, the Moon casts a shadow on the Earth as the Moon comes between the Sun and the Earth.
In a partial lunar eclipse, the Moon is only partly hidden by the dark shadow of the Earth.	In a partial solar eclipse, the Sun is only partly hidden by the dark shadow of the Moon.
In a total lunar eclipse, the Moon is completely in the dark shadow of the Earth.	In a total solar eclipse, the Sun is completely in the dark shadow of the Moon.
A lunar eclipse occurs at night.	A solar eclipse occurs during the day.



MUST DO

15 MIN.

Teacher: What happens during a lunar eclipse?

Teacher: In a lunar eclipse, the Earth comes between the Sun and the Moon. The Earth blocks the sunlight and casts its shadow on the Moon.

Teacher: Can the Moon be completely or partly hidden during a lunar eclipse?

Teacher: Yes. In a partial lunar eclipse, only part of the Moon is hidden. In a total lunar eclipse, the Moon is fully hidden in the Earth's shadow.

Teacher: When does a lunar eclipse occur?

Teacher: Yes. A lunar eclipse occurs at night.

Teacher: Now, what happens during a solar eclipse?

Teacher: In a solar eclipse, the Moon comes between the Sun and the Earth. The Moon blocks the sunlight and casts its shadow on the Earth.

Teacher: Is the Sun always fully covered during a solar eclipse?

Teacher: No. In a partial solar eclipse, the Sun is only partly hidden. In a total solar eclipse, the Sun is fully hidden in the shadow of the Moon.

Teacher: When does a solar eclipse occur?

Teacher: A solar eclipse occurs during the day.

Teacher: Now, let us look at the two diagrams below the table given on page 107 of the Main Coursebook. Look at the first image. What do you see?

Teacher: This diagram shows a lunar eclipse. You can see the Sun, Earth and Moon in a straight line. The Earth is in the middle, casting a shadow on the Moon.

Teacher: Now, look at the second image. What is different?

Teacher: This is a solar eclipse. Here, the Moon is between the Sun and the Earth. The Moon is casting a shadow on the Earth.

Teacher: Well done, everyone. These diagrams help us clearly understand how solar and lunar eclipses happen.

Poster

MUST DO

10 MIN.

Teacher: Let us take a moment to look at the poster on the wall.

(Please display and discuss the posters prominently in the classroom to reinforce the learning about phases of the Lunar Eclipse. Encourage students to observe the posters and discuss the different phases of the Lunar Eclipse.)

Teacher: Great observation, everyone.

You may show the **Diagram** and **Video** given on the digital platform.

Differentiated Activities

110 km/hr

What is the position of the Sun, Earth and Moon during a lunar eclipse?

80 km/hr

Which eclipse occurs at night – solar or lunar?

40 km/hr

What blocks the Moon during a lunar eclipse?

Home Task

Draw a diagram showing the solar eclipse and the lunar eclipse. Label it neatly.

Period 6

SHOULD DO

05 MIN.

Teacher: Good morning, students. How are you all today?

Teacher: Great. Let us begin today's lesson with a quick game. I will ask some questions and you have to answer them. Ready?

Teacher: What do we call the shadow formed when one object blocks light from another? (Eclipse)

Teacher: During which eclipse does the Earth cast a shadow on the Moon? (Lunar eclipse)

Teacher: During which eclipse does the Moon cast a shadow on the Earth? (Solar eclipse)

Teacher: Which eclipse happens during the day? (Solar eclipse)

Teacher: Why should we not look at a solar eclipse with our naked eyes? (It can harm our eyes)

Teacher: Well done. Let us now begin today's class.

(The teacher will read the first to fourth paragraphs aloud and provide explanations to ensure that the students understand the content.)

THE MOON AND THE TIDES

The Moon is closer to the Earth in comparison to the Sun. It pulls the water of the seas and oceans because of its gravitational force. As a result, the water on the side of the Earth facing the Moon, is attracted upwards. This attraction causes high tides*. In the areas between the two high tides, the water forms low tides. The intensity of the tides varies with the phases of the Moon. The highest tides occur at the time of the New Moon and Full Moon.

earth's tides

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MUST DO

20 MIN.

Teacher: We have learnt how the Moon affects the Earth in many ways. Now, let us discuss the Moon and the tides. Have you seen the sea waves rise higher sometimes and lower at other times? Do you know what causes that?

Teacher: Yes. The Moon pulls the water of the seas and oceans because of its gravitational force. The Moon is closer to the Earth than the Sun, so its pull is stronger. The water on the side of the Earth that faces the Moon is pulled upwards. This causes a high tide.

Teacher: Now, what happens to the water in the areas between these high tides?

Teacher: The water level becomes lower in those areas. These are called low tides.

Teacher: So, the water rises in some places and falls in others, all because of the Moon's pull. This pulling action happens every day and keeps repeating. But do all tides look the same?

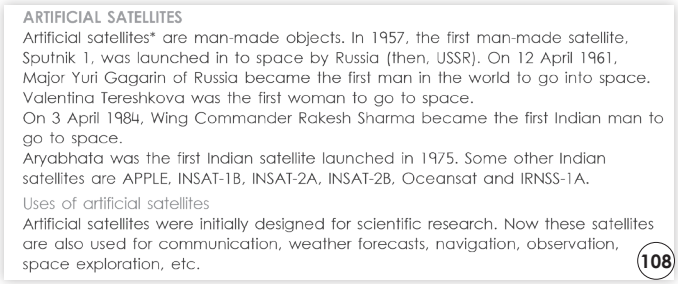
Teacher: No, the strength or intensity of the tides changes. It varies with the phases of the Moon. Some tides are higher than others.

Teacher: The highest tides occur during the New Moon and the Full Moon. These are called spring tides. The Moon and the Earth are aligned in such a way that the pull is the strongest.

Teacher: Now, look at the picture. What do you see around the Earth?

Teacher: That is right. The Moon is shown on the side and the water near the Moon is pulled up. You can clearly see two high tides and two low tides around the Earth. This shows how the Moon affects the water on Earth.

Teacher: Very good observation. The Moon's gravity is powerful enough to move huge amounts of water. You all did a great work understanding this. Let us now continue with the next part in the following period.



ARTIFICIAL SATELLITES

Artificial satellites* are man-made objects. In 1957, the first man-made satellite, Sputnik 1, was launched in to space by Russia (then, USSR). On 12 April 1961, Major Yuri Gagarin of Russia became the first man in the world to go into space. Valentina Tereshkova was the first woman to go to space.

On 3 April 1984, Wing Commander Rakesh Sharma became the first Indian man to go to space.

Aryabhata was the first Indian satellite launched in 1975. Some other Indian satellites are APPLE, INSAT-1B, INSAT-2A, INSAT-2B, Oceansat and IRNSS-1A.

Uses of artificial satellites

Artificial satellites were initially designed for scientific research. Now these satellites are also used for communication, weather forecasts, navigation, observation, space exploration, etc.

108

Teacher: Let us discuss something really exciting that helps us know about the weather, gives us internet and even helps us watch television. Can anyone guess what it is?

MUST DO

15 MIN.

Teacher: Yes, it is called artificial satellites. These are man-made objects. Do you know when the first artificial satellite was launched?

Teacher: Yes. The first man-made satellite was called Sputnik 1. It was launched in 1957 by Russia, which was then called the USSR.

Teacher: Let us now talk about the first person to go into space. Who was the first person to go into space?

Teacher: Yes. The first person to go into space was Major Yuri Gagarin from Russia. He travelled to space on 12 April 1961.

Teacher: Now think—who was the first woman to go to space?

Teacher: Yes. It was Valentina Tereshkova, also from Russia. She made history.

Teacher: And who was the first Indian to go to space?

Teacher: Correct. Wing Commander Rakesh Sharma was the first Indian man to travel to space. He went on 3 April 1984.

Teacher: Now, let us talk about satellites launched by India. Do you know the name of the first satellite launched by India?

Teacher: Yes. Aryabhata was the first Indian satellite. It was launched in the year 1975.

Teacher: There are many other Indian satellites as well. Some of them are APPLE, INSAT-1B, INSAT-2A, INSAT-2B, Oceansat and IRNSS-1A.

Teacher: Well done. Now, let us move to how these satellites help us.

Teacher: At first, satellites were used only for scientific research. But now, can you think of some uses of satellites in our daily life?

Teacher: Satellites help us in many ways. They help in communication, like making phone calls and sending messages. They are also used to give us weather reports and forecasts.

Teacher: Apart from that, satellites help us in navigation, observing Earth from space and exploring other parts of space, too.

Teacher: That was a wonderful discussion. You all understood the concept of artificial satellites and their uses very well. Let us now prepare for our next task.

You may show the **Slideshow** given on the digital platform.

Differentiated Activities

110 km/hr

How does the gravitational pull of the Moon influence the rise and fall of sea levels on Earth, leading to high tides?

80 km/hr

Name any two Indian artificial satellites launched after Aryabhata.

40 km/hr

What is the name of the man-made object that orbits the Earth?

Home Task

Draw a picture showing one use of an artificial satellite and one way the Moon affects the water on Earth. Label both clearly.

Period 7

SHOULD DO

05 MIN.

Teacher: Good morning, students. How are you all today?

Teacher: Great. Let us begin today's lesson with a quick game. I will ask some questions and you have to answer them. Ready?

Teacher: What is the Moon's role in causing tides on Earth? (It pulls water due to gravity)

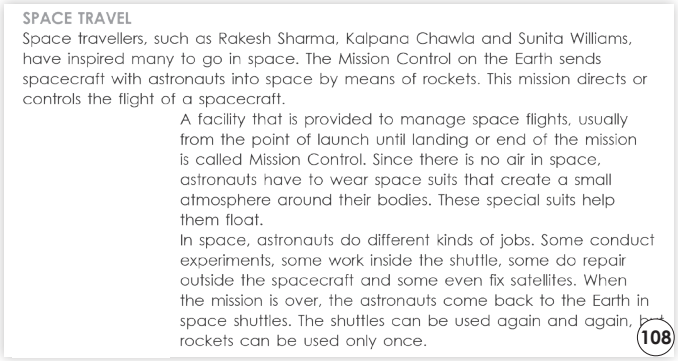
Teacher: Which side of the Earth faces a high tide? (Side facing the Moon)

Teacher: What is the name of the first Indian satellite? (Aryabhata)

Teacher: Which country launched the first man-made satellite? (Russia)

Teacher: Give one use of artificial satellites. (Communication / Weather forecast / Navigation)

Teacher: Excellent work, everyone. Let us move on to today's class.



SPACE TRAVEL

Space travellers, such as Rakesh Sharma, Kalpana Chawla and Sunita Williams, have inspired many to go in space. The Mission Control on the Earth sends spacecraft with astronauts into space by means of rockets. This mission directs or controls the flight of a spacecraft.

A facility that is provided to manage space flights, usually from the point of launch until landing or end of the mission is called Mission Control. Since there is no air in space, astronauts have to wear space suits that create a small atmosphere around their bodies. These special suits help them float.

In space, astronauts do different kinds of jobs. Some conduct experiments, some work inside the shuttle, some do repair outside the spacecraft and some even fix satellites. When the mission is over, the astronauts come back to the Earth in space shuttles. The shuttles can be used again and again, but rockets can be used only once.

108

Teacher: Today, we are going to talk about space travel. Raise your hand if you have heard the names Rakesh Sharma, Kalpana Chawla or Sunita Williams.

MUST DO

25 MIN.

Teacher: These space travellers have inspired many people across the world. Do you know what makes their journeys so special?

Teacher: Yes. They all travelled into space in rockets launched from Earth. But who do you think manages the entire journey from take-off to return?

Teacher: Yes, it is something called Mission Control. It is a special facility that directs and controls the entire space mission from Earth. It makes sure everything works smoothly.

Teacher: Now, space is very different from Earth. Do you think there is air in space?

Teacher: That is correct. There is no air in space. So what do astronauts wear to survive there?

Teacher: Very good. They wear space suits. These suits create a small atmosphere around their bodies. Can anyone tell me why this is important?

Teacher: Right. It helps them float and breathe in space.

Teacher: Let us now talk about what astronauts do once they reach space. What do you think their works are?

Teacher: Yes, some astronauts do experiments. Others work inside the shuttle. Some even go outside to fix broken parts or repair satellites. These are all very important tasks.

Teacher: After the mission ends, do they stay in space forever?

Teacher: No, they come back to Earth in something called a space shuttle. Can someone tell me what is special about a space shuttle?

Teacher: That is correct. Space shuttles can be used again and again. But rockets are used only once and cannot be reused.

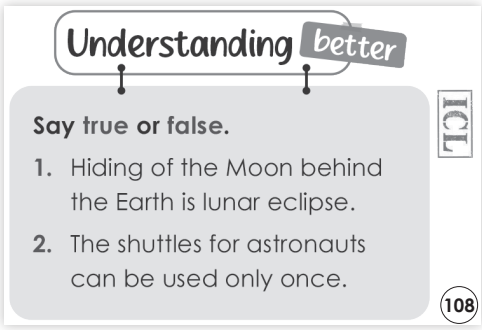
Teacher: Excellent. I am glad you are all understanding this so well. Keep thinking and asking questions. We are all space explorers today.

Understanding better

MUST DO

10 MIN.

Teacher: Let us check our understanding of what we have learnt. I will read two statements and you will tell me if it is true or false.



Understanding better

Say true or false.

1. Hiding of the Moon behind the Earth is lunar eclipse.
2. The shuttles for astronauts can be used only once.

ICL

108

Teacher: Statement one: The Hiding of the Moon behind the Earth is a lunar eclipse. What do you say?

Teacher: Yes, that is true. A lunar eclipse happens when the Earth comes between the Sun and the Moon and casts a shadow on the Moon.

Teacher: Now, statement two: The shuttles for astronauts can be used only once. What do you think?

Teacher: That is false. Space shuttles can be used again and again, while rockets can only be used once.

Teacher: Well done, everyone. You answered with great attention. Keep up the good work.

You may show the **Concept Map** on the digital platform.

Differentiated Activities

110 km/hr

Name two astronauts who have gone to space from India.

80 km/hr

What is the name of the place that manages space missions from Earth?

40 km/hr

What do astronauts wear in space?

Home Task

Draw and label a space shuttle and a rocket. Colour them neatly and write one difference between them.

Period 8

SHOULD DO

05 MIN.

Teacher: Good morning, students. How are you all today?

Teacher: Let us begin today's class with a quick game. I will ask some questions and you will answer them. Ready?

Teacher: What do astronauts wear to stay safe in space? (Space suit)

Teacher: What helps astronauts return to Earth after their mission? (Space shuttle)

Teacher: What is the name of the control room on Earth for space missions? (Mission Control)

Teacher: Who was the first Indian to go to space? (Rakesh Sharma)

Teacher: Can rockets be used more than once? (No)

Teacher: Excellent answers. Let us now start today's class.

Teacher: Please read the conversation between Ryan and his father carefully given in the 'Connecting better' activity on page 109 of the Main Coursebook.

MUST DO
10 MIN.

(Let the students read.)

Teacher: Now tell me, what is the field of study that Ryan is asking about?

Teacher: Good. It is aerospace engineering. This field focuses on designing and developing spacecraft and other equipment used in space.

Teacher: Can anyone name a famous person from India related to this field?

Teacher: Yes, APJ Abdul Kalam. He was a well-known aerospace engineer, rocket engineer and technologist. He made important contributions to space and missile programmes in India.

Teacher: It is about how science and technology shape our society. Aerospace engineering is not just about machines; it is also about the people who make space travel possible and how they inspire the world.

Teacher: Very well done. Let us continue learning with the same excitement.

Teacher: Now let us look at the 'Healing better' section. Please read the passage quietly.

MUST DO
05 MIN.

(Let the students read the 'Healing better' section.)

Teacher: Are there any yoga poses related to space?

Teacher: Yes, there are poses such as the rocket pose, star pose and moon pose. These are part of what is called 'space yoga'.

Teacher: Why do you think these poses are given such names?

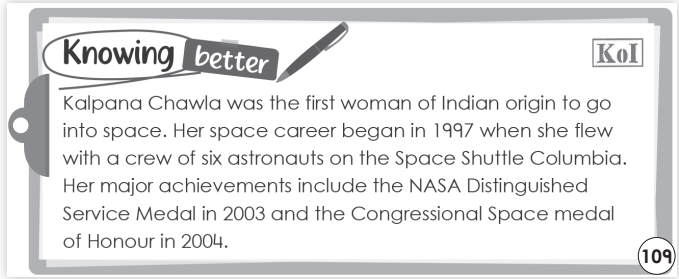
Teacher: These names are inspired by space elements, helping us connect our physical health to what we are learning about space. What helps to keep our minds calm and strong?

Teacher: Meditation helps to keep our mind calm and strong. Yoga keeps our body healthy and meditation helps keep our mind calm and strong.

Teacher: Well done. You are making great connections across subjects. Let us continue.

Teacher: Everyone, please look at the 'Knowing better' section. Please read the passage quietly.

MUST DO
10 MIN.



(Let the students read the 'Knowing better' section.)

Teacher: Very good reading. Now, let me ask you a question. Who was the first woman of Indian origin to go into space?

Teacher: Yes, it was Kalpana Chawla. Do you remember when her space career began?

Teacher: Correct. It began in 1997 when she flew on the Space Shuttle Columbia with a crew of six astronauts.

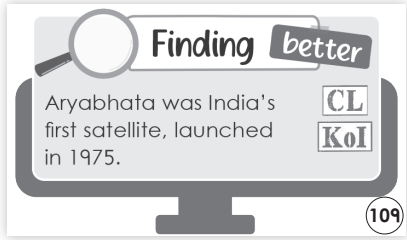
Teacher: Can anyone tell me about her major achievements?

Teacher: Well done. She received the NASA Distinguished Service Medal in 2003 and the Congressional Space Medal of Honour in 2004.

Teacher: Excellent. Kalpana Chawla continues to inspire us with her achievements and courage. Let us now move on to the next part of the lesson.

Teacher: Let us now move to the 'Finding better' section. Please read the passage quietly.

MUST DO
05 MIN.



Teacher: Good reading. Now, who can tell me the name of India's first satellite?

Teacher: Yes, it is Aryabhata. Can you also tell me when it was launched?

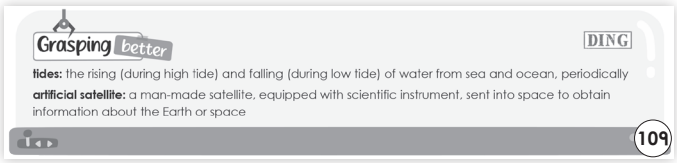
Teacher: Correct. Aryabhata was launched in 1975. Well done, everyone.

Teacher: This was an important step in India's space journey.

Teacher: Let us revise some of the important terms mentioned in the 'Grasping better' activity.

MUST DO

05 MIN.



Teacher: Can someone now explain what tides are?

Teacher: Good. Tides are the rising and falling of sea and ocean water. High tide means the water level goes up and low tide means it comes down. This happens regularly.

Teacher: Now, tell me, what is an artificial satellite?

Teacher: Excellent. It is a man-made object sent into space with instruments to collect information about Earth or space.

You may show the **Animated Activities** and **Quiz** given on the digital platform.

Differentiated Activities

110 km/hr

What is the field of study that deals with spacecraft development?

80 km/hr

Name the Indian woman who went to space in 1997.

40 km/hr

What was the name of India's first satellite?

Home Task

Draw a picture of Kalpana Chawla with a space shuttle and write one fact you learnt about her.

Period 9

SHOULD DO

05 MIN.

Teacher: Good morning, students. How are you all today?

Teacher: Let us begin today's class with a quick game. I will ask some questions and you will answer them. Ready?

Teacher: What is the name of the satellite launched by India in 1975? (Aryabhata)

Teacher: What is aerospace engineering? (Study of spacecraft design)

Teacher: Name one space yoga pose. (Star pose)

Teacher: Who was the first Indian woman to go to space? (Kalpana Chawla)

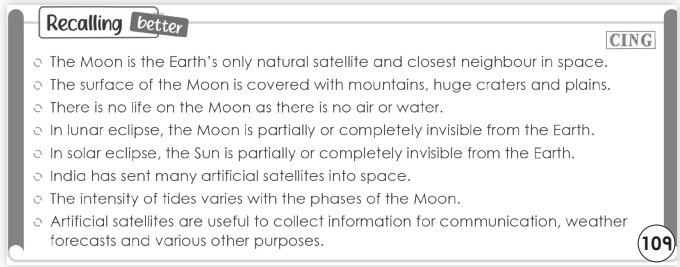
Teacher: What is a man-made object sent to space called? (Artificial satellite)

Teacher: Wonderful responses. Let us now begin our class.

Teacher: Let us see how much you can recall from what we have learnt. Are you ready?

MUST DO

15 MIN.



Teacher: What is the Moon in relation to the Earth?

Teacher: Well done. The Moon is the Earth's only natural satellite and its closest neighbour in space. That means it moves around the Earth just like satellites do.

Teacher: What is the surface of the Moon like?

Teacher: Excellent. The surface of the Moon is covered with mountains, huge craters and plains. These craters were formed by meteorites hitting the Moon.

Teacher: Why do you think no life exists on the Moon?

Teacher: That is correct. There is no air or water on the Moon, so it cannot support any form of life.

Teacher: What happens during a lunar eclipse?

Teacher: Good thinking. During a lunar eclipse, the Moon becomes partially or completely invisible from the Earth because it moves into the Earth's shadow.

Teacher: What about a solar eclipse? What happens then?

Teacher: Great answer. In a solar eclipse, the Sun appears partially or completely hidden because the Moon comes in front of it.

Teacher: Has India launched any artificial satellites?

Teacher: Very nice. Yes, India has launched many artificial satellites. They help us with many things like communication and weather forecasting.

Teacher: Do you remember what affects the tides on Earth?

Teacher: You are right. The phases of the Moon change the intensity of tides, causing high and low tides at different times.

Teacher: Why are artificial satellites useful to us?

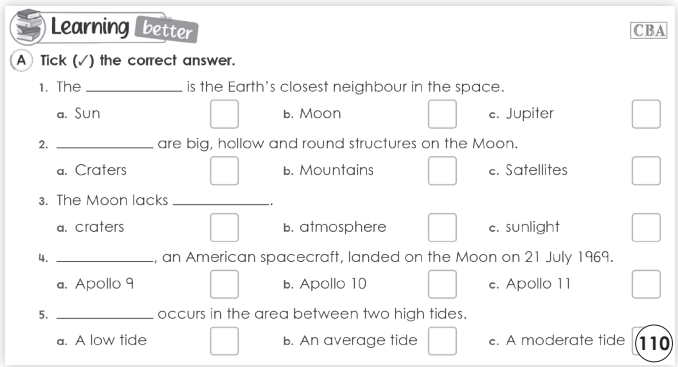
Teacher: Spot on. Artificial satellites collect information for communication, weather reports and many other important uses.

Teacher: Well done, everyone. You remembered so much and explained it beautifully. Keep up the great effort as we move on.

Learning better

MUST DO 10 MIN.

Teacher: Everyone, please open page 110 of your Main Course Book. In Exercise 'A' of 'Learning better' you have to tick the correct answer. Are you ready to get started?



Learning better CBA

A Tick (✓) the correct answer.

1. The _____ is the Earth's closest neighbour in the space.
   a. Sun ☐ b. Moon ☐ c. Jupiter ☐
2. _____ are big, hollow and round structures on the Moon.
   a. Craters ☐ b. Mountains ☐ c. Satellites ☐
3. The Moon lacks _____.
   a. craters ☐ b. atmosphere ☐ c. sunlight ☐
4. _____, an American spacecraft, landed on the Moon on 21 July 1969.
   a. Apollo 9 ☐ b. Apollo 10 ☐ c. Apollo 11 ☐
5. _____ occurs in the area between two high tides.
   a. A low tide ☐ b. An average tide ☐ c. A moderate tide ☐

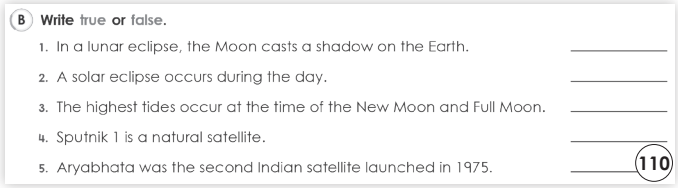
110

Teacher: Great. Let us begin with the first question. The _____ is the Earth's closest neighbour in the space.

Teacher: The correct answer is the Moon. Well done. (Similarly, complete all five questions. And discuss the correct answers.)

MUST DO 10 MIN.

Teacher: In Exercise 'B' of 'Learning better', you have to write true or false. Are you ready to get started?



B Write true or false.

1. In a lunar eclipse, the Moon casts a shadow on the Earth. _____
2. A solar eclipse occurs during the day. _____
3. The highest tides occur at the time of the New Moon and Full Moon. _____
4. Sputnik 1 is a natural satellite. _____
5. Aryabhata was the second Indian satellite launched in 1975. _____

110

Teacher: Great. Let us begin with the first question. In a lunar eclipse, the Moon casts a shadow on the Earth.

Teacher: That is false. In a lunar eclipse, it is the Earth that comes in between the Sun and the Moon. The Earth casts its shadow on the Moon, not the other way around.

(Similarly, complete all five questions. And discuss the correct answers.)

Differentiated Activities

110 km/hr

Name two Indian scientists who contributed to space research.

80 km/hr

Which satellite was launched by India in 1975?

40 km/hr

What is the name of India's first satellite?

Home Task

Draw and label one thing you have learnt about in space that is made by humans and one that is natural.

Period 10

SHOULD DO 05 MIN.

Teacher: Good morning, students. Let us begin today's lesson with a quick round of questions. Listen carefully and answer.

Teacher: What is the name of the medal that Kalpana Chawla received in 2003? (NASA Distinguished Service Medal)

Teacher: What are the names of two yoga poses that relate to space? (Rocket pose, Moon pose)

Teacher: Who was India's first woman in space? (Kalpana Chawla)

Teacher: What helps us stay calm and focused? (Meditation)

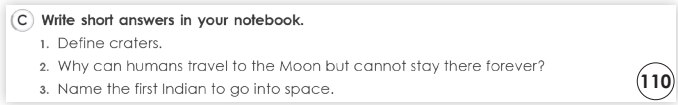
Teacher: What does aerospace engineering deal with? (Designing spacecraft)

Teacher: Wonderful answers. Let us now begin with today's class.

Learning better

MUST DO 15 MIN.

Teacher: Everyone, please open page 110 of your Main Coursebook. Let us explore some short-answer questions. In Exercise 'C' of the 'Learning better' section, you have to write a short answer. Are you ready to get started?



C Write short answers in your notebook.

1. Define craters.
2. Why can humans travel to the Moon but cannot stay there forever?
3. Name the first Indian to go into space.

110

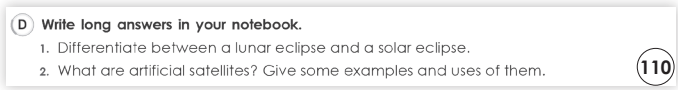
Teacher: Great. Let us begin with the first question. Define craters.

(Students have to write the answers for the given questions in about 40 to 50 words in their notebook. Wait for the students to write the answers.)

(Similarly, complete all three questions and discuss the correct answer with the class.)

MUST DO 20 MIN.

Teacher: Let us explore some long-answer questions. In Exercise 'D' of the 'Learning better', you have to write a long answer. Let us begin with the first question. Differentiate between a lunar eclipse and a solar eclipse.



D Write long answers in your notebook.

1. Differentiate between a lunar eclipse and a solar eclipse.
2. What are artificial satellites? Give some examples and uses of them.

110

(Students have to write the answers for the given questions in about 100 to 150 words in their notebook. Wait for the students to write the answers.)

(Similarly, complete the second question and discuss the correct answer with the class.)

(Instruct the students to bring their Little Book in the next class.)

Differentiated Activities

110 km/hr

How do artificial satellites help us learn about space?

80 km/hr

Name one way astronauts prepare their bodies for space travel.

40 km/hr

What do astronauts wear to stay safe in space?

Home Task

Complete the 'Creating better' activity given on page 110 of the Main Coursebook.

Period 11

SHOULD DO — 05 MIN.

Teacher: Good morning, students. How are you all today?

Teacher: Great. Let us begin today's lesson with a quick round of questions. You just have to answer them in one or two words. Ready?

Teacher: What gives astronauts oxygen to breathe in space? (Space suit)

Teacher: What protects astronauts from space radiation? (Space suit)

Teacher: What makes launching a rocket so powerful? (Fuel energy)

Teacher: Who carries out space programmes in India? (ISRO)

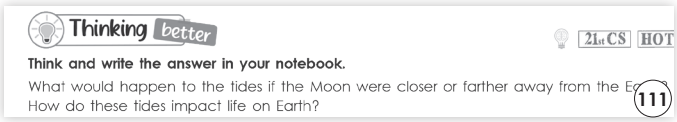
Teacher: What is one important quality astronauts must have? (Discipline)

Teacher: Well done. You are all thinking deeply and answering wonderfully. Let us begin with today's class.

Thinking better

MUST DO — 10 MIN.

Teacher: Let us begin today's class with some thoughtful questions.



Teacher: What would happen to the tides if the Moon were closer or farther away from the Earth? Think about how it might change the way water behaves in oceans.

Teacher: Also, how do tides impact life on Earth? Think of people living near the sea or the animals that depend on water.

Teacher: Take a few minutes to think and write your answers in your notebook.

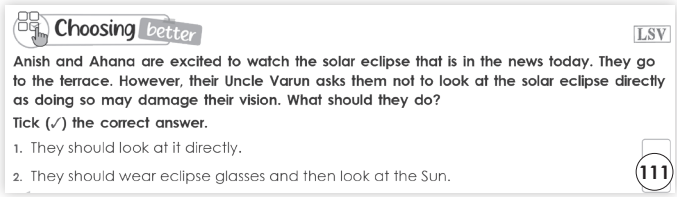
(Pause to let students think and write. Discuss the correct answer with the class.)

Teacher: I can see you are all thinking very carefully. These are great observations. Great thinking.

Choosing better

MUST DO — 05 MIN.

Teacher: Now let us imagine a situation. Anish and Ahana are very excited to watch the solar eclipse that is in the news today. They rush to the terrace.



Teacher: Their Uncle Varun warns them not to look directly at the solar eclipse. What do you think they should do?

Teacher: Should they look at it directly or should they wear eclipse glasses first and then look at the Sun? Tick the correct answer.

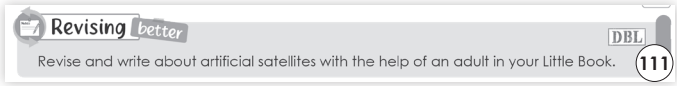
(Pause while students respond.)

Teacher: Well done. You are right. It is always safe to wear eclipse glasses. Direct viewing can harm our eyes. Great thinking.

Revising better

MUST DO — 05 MIN.

Teacher: Let us now revise what we have learned about artificial satellites.



Teacher: Revise and write a few important points about artificial satellites in your Little Book.

Teacher: You can include when they were launched, their uses and why they are important.

(Pause while students write.)

Teacher: Good work. You remembered a lot. Satellites help us in many ways—from predicting the weather to exploring space.

Pledging better

MUST DO — 05 MIN.

Teacher: To end today's lesson, let us make a small pledge. I will say a sentence and you will repeat it after me.

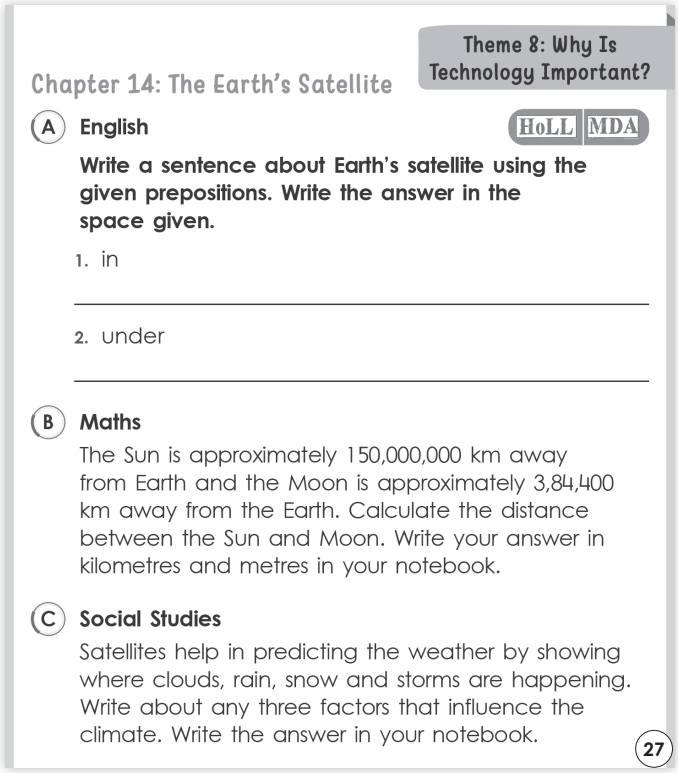
Teacher: Now, repeat after me: In my own little way, I pledge to share what I learn about satellites with my friends and family to inspire them to find more about technology.

Teacher: Well done, everyone. That is a strong and positive pledge. You are supporting SDG 9—Industry, Innovation and Infrastructure.

Book of Holistic Teaching

COULD DO
10 MIN.

Refer to the Book of Holistic Teaching, page number 27 under the title 'The Earth's Satellite.' Complete the activities mentioned in this section and ensure that the students complete them. These activities are designed to enhance their holistic understanding and engagement with the topic. Provide any necessary support and materials to help the students successfully finish the activities.



Theme 8: Why Is Technology Important?

Chapter 14: The Earth's Satellite

(A) **English** HoLL MDA

Write a sentence about Earth's satellite using the given prepositions. Write the answer in the space given.

1. in

2. under

(B) **Maths**

The Sun is approximately 150,000,000 km away from Earth and the Moon is approximately 3,84,400 km away from the Earth. Calculate the distance between the Sun and Moon. Write your answer in kilometres and metres in your notebook.

(C) **Social Studies**

Satellites help in predicting the weather by showing where clouds, rain, snow and storms are happening. Write about any three factors that influence the climate. Write the answer in your notebook.

27

(Instruct students to bring their workbooks to their next class.)

Differentiated Activities

110 km/hr

What would happen to tides if the Moon moved farther from the Earth?

80 km/hr

Why is it unsafe to watch a solar eclipse without eclipse glasses?

40 km/hr

What should you wear while looking at a solar eclipse?

Home Task

The Project Idea, given in the book of Project Ideas, page 19 under the title 'The Earth's Satellite.' This project should be assigned to the students as a home task. Ensure that the students understand the project requirements and provide any necessary guidance or materials they might need.

Period 12

SHOULD DO
05 MIN.

Teacher: Good morning, students. Let us begin today's class with a short quiz based on what we did in the previous class.

Teacher: What could happen if the Moon was closer to the Earth? (Stronger tides)

Teacher: What should you wear before watching a solar eclipse? (Eclipse glasses)

Teacher: Name one use of an artificial satellite. (Weather forecast)

Teacher: What are the big, hollow round marks on the surface of the Moon called?
(Craters)

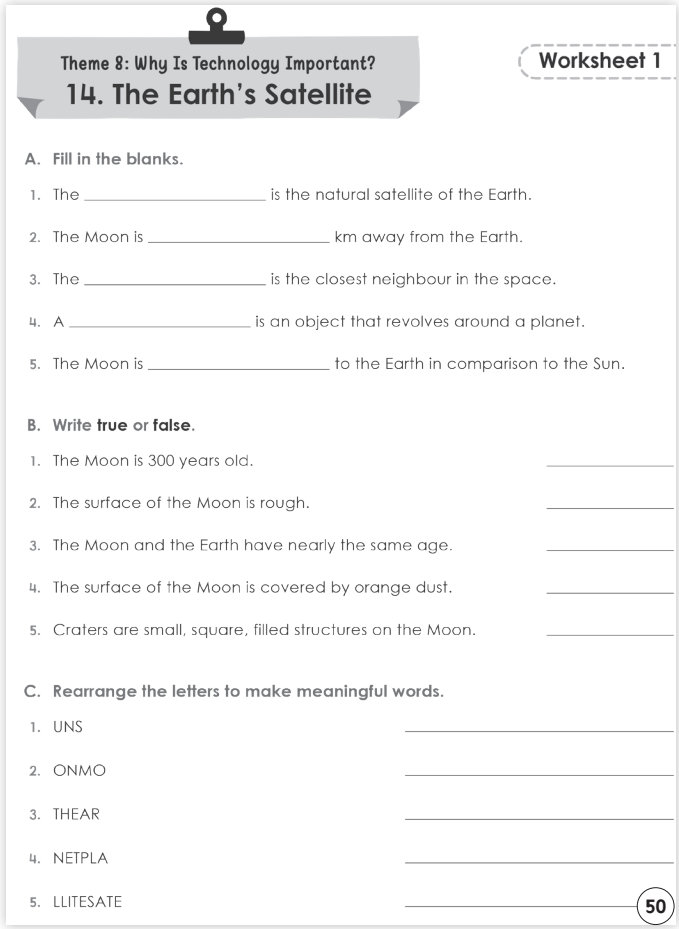
Teacher: Which SDG talks about innovation and technology? (SDG 9)

Teacher: Excellent answers. Let us now move on to today's lesson.

Worksheet 1

MUST DO
10 MIN.

Teacher: Let us do some activities from the workbook. Everybody, please open page 50 of your workbook and answer the questions given in worksheet - 1.



Theme 8: Why Is Technology Important?

Worksheet 1

14. The Earth's Satellite

A. **Fill in the blanks.**

1. The _____ is the natural satellite of the Earth.
2. The Moon is _____ km away from the Earth.
3. The _____ is the closest neighbour in the space.
4. A _____ is an object that revolves around a planet.
5. The Moon is _____ to the Earth in comparison to the Sun.

B. **Write true or false.**

1. The Moon is 300 years old. _____
2. The surface of the Moon is rough. _____
3. The Moon and the Earth have nearly the same age. _____
4. The surface of the Moon is covered by orange dust. _____
5. Craters are small, square, filled structures on the Moon. _____

C. **Rearrange the letters to make meaningful words.**

1. UNS _____
2. ONMO _____
3. THEAR _____
4. NETPLA _____
5. LLITESATE _____

50

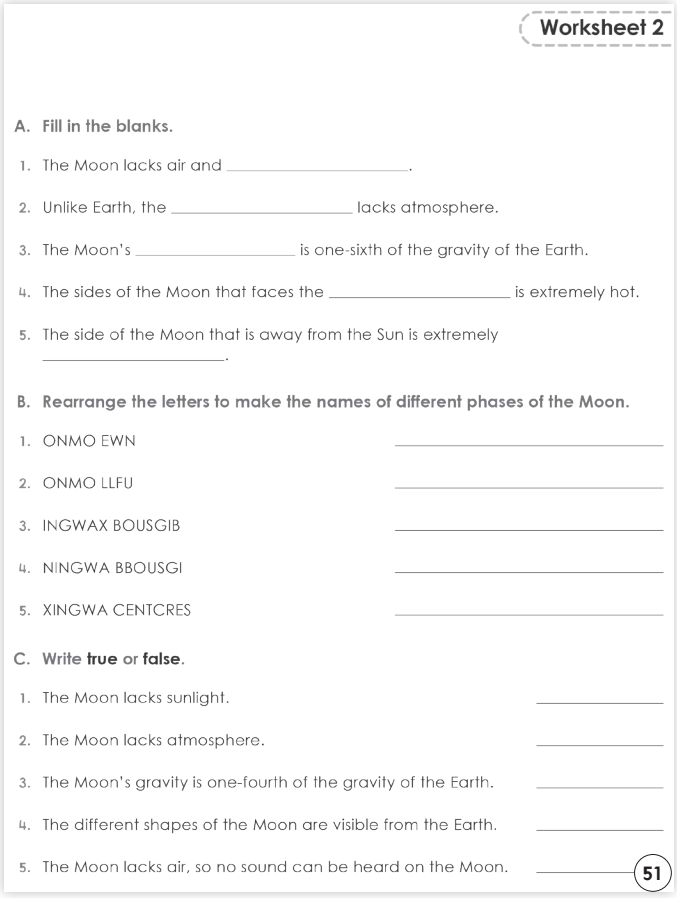
(Let the students answer the questions on their own. Then discuss the answer by writing the correct answer on the blackboard.)

Worksheet – 2

Teacher: Let us do some activities from the worksheet - 2. Everybody, please open page 45 of your workbook and answer the questions given in worksheet – 2.

MUST DO

10 MIN.



Worksheet 2

A. **Fill in the blanks.**

1. The Moon lacks air and _____.
2. Unlike Earth, the _____ lacks atmosphere.
3. The Moon's _____ is one-sixth of the gravity of the Earth.
4. The sides of the Moon that faces the _____ is extremely hot.
5. The side of the Moon that is away from the Sun is extremely _____.

B. **Rearrange the letters to make the names of different phases of the Moon.**

1. ONMO EWN _____
2. ONMO LLFU _____
3. INGWAX BOUSGIB _____
4. NINGWA BBOUSGI _____
5. XINGWA CENTCRES _____

C. **Write true or false.**

1. The Moon lacks sunlight. _____
2. The Moon lacks atmosphere. _____
3. The Moon's gravity is one-fourth of the gravity of the Earth. _____
4. The different shapes of the Moon are visible from the Earth. _____
5. The Moon lacks air, so no sound can be heard on the Moon. _____

51

(Let the students answer the questions on their own. Then discuss the answer by writing the correct answer on the blackboard.)

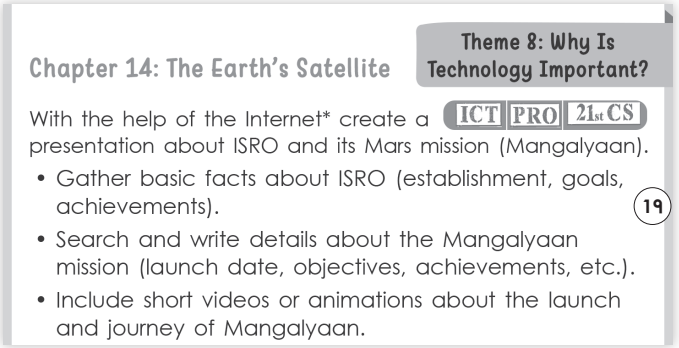
You may generate additional practice worksheets using the **Test Generator** given on the digital platform.

Book of Project Ideas

Discuss the project assigned as the home task in the eleventh period, focusing on helping students understand the objectives and addressing any challenges they face.

COULD DO

10 MIN.



Chapter 14: The Earth's Satellite

Theme 8: Why Is Technology Important?

With the help of the Internet* create a ICT PRO 21st CS presentation about ISRO and its Mars mission (Mangalyaan).

- Gather basic facts about ISRO (establishment, goals, achievements).
- Search and write details about the Mangalyaan mission (launch date, objectives, achievements, etc.).
- Include short videos or animations about the launch and journey of Mangalyaan.

19

Teacher: Now, let us complete the 'KWL' activity.

SHOULD DO

05 MIN.

Teacher: Take out your notebook and fill in the 'L' column. Write what you have learned in this chapter.

(Wait for students to fill in the chart.)

Teacher: Let us all give a huge round of applause to everyone for their hard work and creativity. Great work, everyone. See you in the next class. Have a wonderful day ahead.

Differentiated Activities

110 km/hr

What happens to tides during a full moon or new moon?

80 km/hr

Name one safety measure to follow while watching a solar eclipse.

40 km/hr

What do we call man-made objects that orbit the Earth?

Home Task

Complete 'Activity 6' (Paper mache moon) given on page 112 of the Main Coursebook.

Learning Outcomes

The students will:

Domain	Learning Outcome
Physical Development	• improve fine motor skills and physical coordination by designing models of the Moon using materials like biscuits or paper mache, demonstrating accuracy in shape and detail.
Socio-Emotional and Ethical Development	• develop teamwork and ethical responsibility by participating in group-based activities on space exploration, showing cooperation, material sharing and appreciation of peer contributions.
Cognitive Development	• demonstrate understanding of key space concepts by identifying three features of the Moon, comparing two types of eclipses and explaining two real-life uses of artificial satellites.
Language and Literacy Development	• build language and literacy skills by reading texts on space and composing short and long written responses using accurate subject vocabulary and structured explanations.
Aesthetic and Cultural Development	• develop an appreciation for the cultural and scientific significance of the Moon and space exploration, fostering creativity and innovation through visual representations of lunar phases and surface features.
Positive Learning Habits	• develop the ability to manage time effectively and apply task-specific instructions independently while engaging in space-related activities, fostering responsibility, curiosity and sustained focus.

Starry Knights

Did you enjoy the class or was it exhausting for you? Share few tips you tried to keep yourself motivated.

Give yourself a STAR.