

10

Our Sky

Chapter Notes:**The Sky Around Us**

- When we look up, we see the sky. The sky looks **different at different times of the day.**
 - **Morning** – Sky looks orange or pink
 - **Afternoon** – Sky looks bright blue
 - **Night** – Sky is dark with stars and the Moon
- The **Sun** is the **brightest** object in the sky. It gives us **light** and **heat**.

Movement of the Sun

- The Sun **appears to rise in the East**
- It moves up in the sky
- At noon, it is **overhead**
- Then it moves down and **sets in the West**
- Because of this movement, we have **day** and **night**.

Sunrise and Sunset Changes

- **During Sunrise:**
 - Sky looks **orange and bright**
 - Birds start chirping
 - People wake up and begin their day
- **During Sunset:**
 - Sky becomes **red or yellow**
 - Birds return to nests
 - People finish their work and rest

**Shadows**

- A **shadow** is formed when an object blocks light.
- Shadow changes during the day:
 - **Morning** – Long shadow
 - **Noon** – Short shadow
 - **Evening** – Long shadow (opposite direction)
- Why? - Because the **position of the Sun changes**.
- If object is close to light → shadow is **big**
- If light direction changes → shadow direction changes

Sundial (Time from Shadow)

- In olden times, people used shadows to tell time.
 - A device called a sundial was used
 - Example: Samrat Yantra at Jantar Mantar

Night Sky

- At night, we see:
 - Twinkling stars
 - The Moon
- Stars form different **patterns** in the sky.

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The Moon and Its Shapes

- The Moon changes its shape every night.
 - **Full Moon (Poornima)** – Full circle
 - **New Moon (Amavasya)** – Not visible
 - Other shapes – Half, crescent, etc.
- These changes helped people make **calendars**.

Festivals and the Moon

- Many festivals depend on the Moon:
 - Diwali – No Moon (Amavasya)
 - Raksha Bandhan – Full Moon
 - Guru Poornima – Full Moon
 - Eid – First sight of Moon

India and the Moon

- India sent **Chandrayaan Mission**
- On **23 August 2023**, Vikram Lander landed on the Moon
- It collected information about the Moon

New Terms

Term	Meaning
• Sky	- The space above us where we see the Sun, Moon and stars
• Sunrise	- The time when the Sun rises in the morning
• Sunset	- The time when the Sun goes down in the evening
• Shadow	- A dark shape formed when an object blocks light
• Source of Light	- Anything that gives light, like the Sun or a torch
• Sundial	- A device used to tell time using the Sun's shadow
• Night Sky	- The sky seen at night with stars and the Moon
• Star	- A shining object in the sky that gives its own light
• Moon	- A natural object seen in the night sky
• Full Moon (Poornima)	- When the Moon appears as a full circle
• New Moon (Amavasya)	- When the Moon is not visible in the sky
• Crescent Moon	- A thin curved shape of the Moon
• Pattern (of stars)	- Shapes formed by stars in the sky
• East	- The direction where the Sun rises
• West	- The direction where the Sun sets

Draw (page 152)

Q. Draw a picture of the sky as it appears in the morning, afternoon and at night, in the spaces given below.

Morning Sky	Afternoon Sky	Night Sky

Answer:



Morning sky



Afternoon sky



Night sky

Write (Page 153)

Q. Write down what you observe in the sky during the morning, afternoon and at night, in the table given below. A few boxes are filled for you. You may expand your table by adding new points.

Morning Sky	Afternoon Sky	Night Sky
Orange colour of the sky		
	Sunlight is strong	Moon and stars
Orange Sun		

Answer:

Morning Sky	Afternoon Sky	Night Sky
• Orange colour of the sky	- Sunlight is strong	- Moon and stars
• Orange Sun	- Bright blue sky	- Dark sky
• Cool and fresh air	- Very hot weather	- Cool and calm
• Birds start flying and chirping	- Few birds seen	- Stars twinkle
• Soft sunlight	- Sun is overhead	- Moon changes shape

- Share your observations with your classmates and compare them.
- Have you observed any change in the activities, and the behaviour of animals and plants at different times of a day? Discuss these changes with your friends and make a list.

Answer: Yes, animals and plants change their activities at different times of the day depending on light and temperature.

Changes in Activities of Animals and Plants

Time of Day	Animals 🐦	Plants 🌱
• Morning	- Birds chirp and fly in the sky; Animals wake up and search for food	- Flowers bloom; Leaves look fresh
• Afternoon	- Many animals rest in shade; Less movement due to heat	- Plants may droop due to heat; Leaves face the Sun
• Evening/Night	- Birds return to nests; Some animals like owls become active	- Some flowers close; Plants look calm and still

Discuss (Page 154)

Q. Have you observed the changes during sunrise and sunset?

Answer: Yes, we observe many changes in the sky, animals, and our daily activities during sunrise and sunset.

When the Sun rises:

Q 1. How does the sky look?

Answer: The sky looks orange, pink, and bright.

Q 2. What do the birds and animals do?

Answer: Birds start chirping and flying. Animals wake up and begin searching for food.

Q 3. What changes do we find at home?

Answer: People wake up, start their daily work, and get ready for school or office.

When the Sun sets:

Q 1. How does the sky look?

Answer: The sky looks red, orange, and slowly becomes dark.

Q 2. What do the birds and animals do?

Answer: Birds return to their nests. Many animals go to rest, while some animals become active at night.

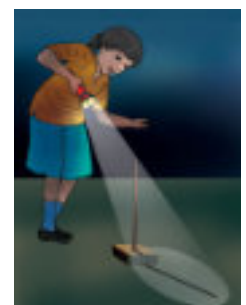
Q 3. What changes do we find at home?

Answer: People finish their work, switch on lights, have dinner, and prepare to sleep.

Find out (Page 156)

Let us try something interesting.

1. Take a torch and a stick. Close the doors and windows to make the room dark.
2. Hold the stick in one place and turn on the torch. Shine the torchlight on the stick.
3. Observe the changes in the shadow of the stick, in the following situations:
 - (a) Move the stick back and forth.
 - (b) Change the direction of the torch.



Answer:

(a) When we move the stick back and forth:

- If the stick is near the torch, the shadow becomes bigger.
- If the stick is far from the torch, the shadow becomes smaller.

(b) When we change the direction of the torch:

The direction of the shadow also changes.

👉 **Conclusion:** The shadow changes in size and direction depending on the position of the object and the light.

Think and Answer

Q 1. If we change the distance of the source of light from the stick (an object), how will the shadow change?

Answer:

- If the object is close to the source of light, the shadow becomes bigger.
- If the object is far from the source of light, the shadow becomes smaller.

Q 2. If we change the direction of the torch (source of light), how will the shadow change?

Answer: If the direction of the torch changes, the direction of the shadow also changes.

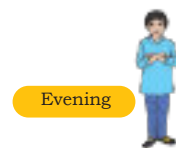
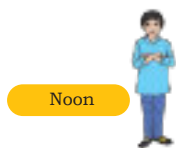
👉 **Conclusion:** The size and direction of a shadow depend on the distance and direction of the light source.

Draw (Page 157)

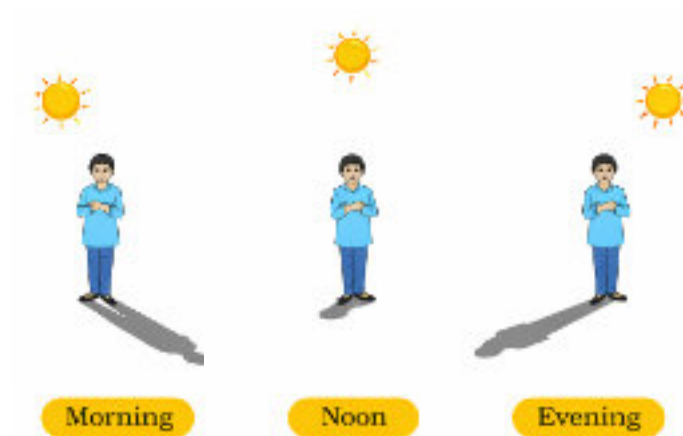
Q. Draw the position of the Sun and corresponding shadows in the images given below.



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Answer:



Night Sky (Page 159)

After sunset, the sky dazzles with thousands of twinkling stars. We observe various patterns of stars in the night sky. Draw any pattern you have observed, in the box below:

Shadow puppetry has been practiced in India for a long time. Share the drawing with your friends and discuss the common patterns of stars.

Answer:



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Draw (Page 160)

Q. Observe the Moon in the sky and draw the shapes of the Moon you have observed on different nights.

Answer:



- **New Moon** – The Moon is not visible; it looks completely dark.
- **Waxing Crescent** – A thin, curved shape like the letter 'C' appears on the right side.
- **First Quarter** – A half-moon shape with the right half lit, like a semicircle.
- **Waxing Gibbous** – More than half of the Moon is lit, but not a full circle yet.
- **Full Moon** – A complete circle shining brightly in the sky.
- **Waning Gibbous** – Still mostly round, but now the left side is shrinking.
- **Last Quarter** – A half-moon shape with the left half lit, like a semicircle.
- **Waning Crescent** – A thin, curved shape like a backward 'C' appears on the left side

Discuss (Page 160)

Discuss with your friends:

Q 1. Is there a pattern to the way the shape of the Moon changes?

Answer: Yes, the Moon changes its shape in a regular pattern every month. It slowly changes from a small shape to a full circle and then becomes small again.

Q 2. Are there days when the Moon is not visible in the sky?

Answer: Yes, there are some days when the Moon is not visible. This day is called Amavasya (New Moon).

Write (Page 162)

Q. Do you celebrate any festivals in your family or community related to the Sun or the Moon? What do you call them in your language?

Answer: Yes, we celebrate festivals related to the Sun and the Moon in our family/community.

- **Festivals related to the Sun:** Makar Sankranti (also called Uttarayan in Gujarati), Pongal and Chhath Puja
- **Festivals related to the Moon:** Karva Chauth, Eid, Diwali, Raksha Bandhan and Sharad Purnima

These festivals are known by these names in our language.

Let us reflect

1. Give two differences between:

- (a) Day and night
- (b) Sky in the morning and in the evening
- (c) Our activities during the day and at night
- (d) Activities of animals during the day and at night.

Answer:

Difference	First	Second
(a) Day and Night	- Day – Sun is visible and it is bright	- Night – Moon and stars are visible and it is dark
"	- Day – We do most of our work	- Night – We rest and sleep
(b) Morning Sky and Evening Sky	- Morning – Sky looks light orange or pink	- Evening – Sky looks reddish or dark orange
"	- Morning – Sun rises	- Evening – Sun sets
(c) Our Activities	- Day – We study, play, and work	- Night – We relax and sleep
"	- Day – Schools and offices are open	- Night – Most places are closed
(d) Activities of Animals	- Day – Many animals are active (like cows, dogs)	- Night – Some animals are active (like owls, bats)
"	- Day – Birds fly and search for food	- Night – Birds rest in their nests

2. Enquire about something

A teacher said that the Sun appears to move from East to West during the day. Meera is curious about this statement and has some questions for her teacher. List at least two questions that she can ask.

Answer: Meera can ask the following questions:

- Why does the Sun appear to move from East to West in the sky?
- Does the Sun really move, or is it the Earth that moves?
- Why does the Sun rise in the East and set in the West every day?
- Does the position of the Sun change in different seasons?

3. Figure it out

Suppose you stand at the same spot during the morning and the afternoon. In the morning, your shadow points in one direction, while in the afternoon it points in another. Why? Would the length of your shadow be the same at both times?

Answer: The shadow points in different directions because the position of the Sun changes during the day. In the morning, the Sun is in the East, so the shadow falls towards the West. In the afternoon, the Sun is in the

West, so the shadow falls towards the East.

No, the length of the shadow will not be the same. In the morning, the shadow is long, while in the afternoon it becomes shorter (and then longer again towards evening).

4. Get creative with words

(a) Write your own poem inspired by the beauty of the sky.

(b) Complete the riddle below and answer it –

Only one colour, but not one size Appears with light, looks very nice What is it?

Answer:

(a) Poem on the Sky

The sky so wide, so blue and bright,
It changes colours day and night.
With shining Sun and twinkling stars,
It looks so lovely from afar.

(b) Riddle

Only one colour, but not one size
Appears with light, looks very nice
Changes shades from blue to red
Spreads above our tiny head

- **What is it?** - A shadow



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