Chapter 10: Our Sky

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10.1 Pictures of the Sky

Q1 Draw a picture of the sky as it appears in the morning, afternoon and at night.

Draw activity (three empty boxes in textbook). Morning Sky box: draw an orange-pink sky with the Sun low near the horizon and birds flying. Afternoon Sky box: draw a bright blue sky with the Sun high overhead. Night Sky box: draw a dark sky with a crescent Moon and scattered twinkling stars.

Q2 Write down what you observe in the sky during the morning, afternoon and at night. A few boxes are filled for you.

Morning sky: orange colour of the sky, orange Sun rising in the east, birds begin to chirp and fly. Afternoon sky: sunlight is strong and bright, blue sky, Sun is overhead. Night sky: Moon and stars are visible, sky is dark, it is cool and quiet.

Q3 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.

Sample answer: In the morning, birds start chirping and flowers begin to open. During the day, bees and butterflies visit flowers, and most animals are active. At night, owls and bats come out, flowers close, and most animals sleep or rest.

10.2 Sunrise and Sunset Observations

Q1 When the Sun rises — How does the sky look?

At sunrise the sky turns orange and pink. Slowly it brightens and becomes blue as the Sun rises higher.

Q2 When the Sun rises — What do the birds and animals do?

Birds begin to chirp, sing, and fly out to search for food. Animals that were resting at night become active and start moving around.

Q3 When the Sun rises — What changes do we find at home?

Sample answer: People wake up, lights are switched off, curtains are opened, and the day's activities like cooking, bathing, and going to school begin.

Q4 When the Sun sets — How does the sky look?

At sunset the sky turns orange, red, and pink again. After the Sun disappears, the sky gradually becomes dark and stars begin to appear.

Q5 When the Sun sets — What do the birds and animals do?

Birds fly back to their nests and stop singing. Many animals slow down or find a safe place to rest, while nocturnal animals like owls begin to become active.

Q6 When the Sun sets — What changes do we find at home?

Sample answer: Lights are switched on, family members return home, evening meals are prepared, and children finish outdoor play and come indoors.

10.3 The Shadows

Q1 In the pictures above, what are the differences in the shadows at early morning, noon and evening?

The textbook pictures show three children at different times. Early morning shadow: the child's shadow is very long and stretches far to one side (west). Noon shadow: the child's shadow is very short and falls almost directly under the feet. Evening shadow: the child's shadow is long again but falls in the opposite direction (east) to the morning shadow. So the three differences are: (1) morning and evening shadows are long, noon shadow is short; (2) morning shadow points west, evening shadow points east — they are in opposite directions; (3) noon shadow points almost straight down under the object.

Q2 If we change the distance of the source of light from the stick (an object), how will the shadow change?

If the light source is moved closer to the object, the shadow becomes bigger. If the light source is moved farther away, the shadow becomes smaller.

Q3 If we change the direction of the torch (source of light), how will the shadow change?

If the direction of the torch changes, the direction of the shadow also changes. The shadow always falls on the side opposite to the light source.

Q4 Draw the position of the Sun and corresponding shadows in the images given below — Morning, Noon, Evening.

Draw activity (three figures of a child — Morning at top, Noon at bottom-left, Evening at bottom-right — with blank spaces for Sun and shadow). Morning: draw the Sun low on the left (east side) of the sky; draw the child's shadow as a long line pointing to the right (west). Noon: draw the Sun high directly above the child's head; draw the shadow very short, directly beneath the child's feet. Evening: draw the Sun low on the right (west side) of the sky; draw the child's shadow as a long line pointing to the left (east).

10.4 Night Sky

Q1 Draw any pattern of stars you have observed in the night sky.

Personal observation draw activity (empty box in textbook). Look at the night sky and draw the star pattern you see. One well-known pattern is Saptarshi — seven bright stars arranged in the shape of a ladle or a question mark. Draw dots for stars and connect them to show the pattern. Share your drawing with friends and discuss common patterns you all noticed.

Q2 Observe the Moon in the sky and draw the shapes of the Moon you have observed on different nights.

Personal observation draw activity (nine empty boxes in textbook for different nights). The Moon's shape changes gradually. Draw what you observe: a thin crescent (like the letter C) when the Moon is just growing; a half circle when half the Moon is lit; a large almost-round shape (gibbous) as it grows; a full circle on Poornima (full Moon); then the same shapes shrinking back; and finally a blank box for Amavasya when the Moon is not visible.

Q3 Is there a pattern to the way the shape of the Moon changes?

Yes, the Moon's shape changes gradually and repeats in a regular cycle. It grows from a thin crescent to a full Moon, then shrinks back to no Moon (Amavasya), and the cycle begins again.

Q4 Are there days when the Moon is not visible in the sky?

Yes, on Amavasya (New Moon) the Moon is not visible in the sky at all. This happens periodically as part of the Moon's regular cycle of shapes.

Q5 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?

Sample answer: Yes, we celebrate Diwali on the night of the New Moon (Amavasya) and Guru Poornima on the Full Moon day. Chhath Puja is celebrated to worship the Sun. Eid is celebrated when the Moon is seen after Amavasya. Different communities have different names for these festivals in their languages.

10.5 Questions

Q1 Give two differences between day and night.

During the day, the Sun is visible and it is bright and warm. At night, the Sun is not visible, it is dark, and we can see the Moon and stars.

Q2 Give two differences between the sky in the morning and in the evening.

In the morning the sky turns orange-pink as the Sun rises in the east, and shadows are long and point west. In the evening the sky also turns orange-red as the Sun sets in the west, and shadows are long and point east.

Q3 Give two differences between our activities during the day and at night.

During the day we go to school, play outside, and do work in natural sunlight. At night we sleep, rest indoors, and use artificial lights for any activity.

Q4 Give two differences between activities of animals during the day and at night.

During the day, birds sing and fly out to find food, and most animals like cows and dogs are active. At night, birds return to their nests and sleep, while nocturnal animals like owls and bats come out to hunt.

Q5 A teacher said that the Sun appears to move from East to West during the day. Meera is curious about this statement. List at least two questions that she can ask.

Sample answer: (1) Why does the Sun appear to move from east to west — does the Sun really move, or does the Earth move? (2) Does the Sun always rise exactly in the east and set exactly in the west every day of the year?

Q6 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?

The shadow changes direction because the Sun's position in the sky changes during the day. In the morning the Sun is in the east, so the shadow points west. In the afternoon the Sun moves towards the west, so the shadow points east. The length would also be different — morning and afternoon shadows are long, while shadows at noon (when the Sun is overhead) are the shortest.

Q7 Write your own poem inspired by the beauty of the sky.

Sample answer: The sky turns golden at break of day, the Sun wakes up and chases night away. Blue and bright through the afternoon it gleams, and at night fills up with starry dreams.

Q8 Complete the riddle — Only one colour, but not one size / Appears with light, looks very nice / ___ / ___. What is it?

Sample completion: 'It follows you wherever you go, / Disappears when lights are low. What is it? — A shadow.' (The riddle describes a shadow: it has one colour — dark/black — but its size changes with the light source; it appears only when there is light.)