

16. Day and Night

Shevanta wakes up at a quarter to seven every morning.



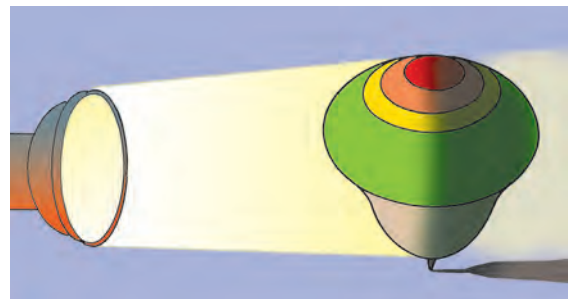
What differences do you see in the two pictures? What causes these differences ?

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We live on the earth. The earth gets light from the sun. The earth's shape is like that of a very large ball. Therefore, light from the sun does not reach the entire earth at one and the same time. Half the earth gets sunlight while the other half remains dark.

We say that it is **day** in the half that gets light, while in the other half where sunlight does not reach, it is **night**. Every day we see day chasing night and then night chasing day. Night comes after day and then day follows night. This cycle goes on without stopping. What could be the reason for this ?

Just as a top spins about itself, the earth, too, turns around itself. So, the part of the earth that is getting sunlight goes into darkness and the part that is in darkness comes into the light. That is, where there is day it becomes night after some time and where there is night, it becomes day.



Do you know ?

- The sun rises in the east in the morning and moves towards the west. In the evening, the sun sets in the west. So we feel that the sun goes around the earth. But that is only an impression. Actually, the earth turns around itself. That is why we have day and night on the earth.
- This spinning of the earth around itself is called the rotation of the earth.

The whole day has 24 hours. But, are there always twelve hours of daylight and twelve hours of darkness? If that were true we would have sunrise every morning at six o'clock and sunset every evening at six o'clock, too.

Let us see what really happens.



Try this.

Some calendars give the times of sunrise and sunset for every day. Take such a calendar for this year and use it to complete the following tables.

Table 1	Date	4	8	12	16	20	24	28
	Sunrise							
May	Sunset							

Table 2		4	8	12	16	20	24	28
	Sunrise							
November	Sunset							

What do you see?

- In November, the sun rises a little later every day while it sets a little earlier every day.
- In the month of May, the sun rises a little earlier every day and sets a little later every day.

What does this tell us?

- In November, the days become shorter and shorter, while nights become longer.
- In May, the days become longer and longer while the nights become shorter and shorter.

Thus, we are now sure that day and night are not of 12 hours each all year round.



Do you know ?

- The phenomenon of a 12-hour long day and a 12-hour long night can be observed on 21 March and 22 September.

On March 21, day and night are both 12 hours long. Then, in our part of the earth, daytime increases slowly and night time decreases. This goes on till June 21. On June 21, our day is the longest and the night is the shortest.

From June 21, in our part of the earth, daytime becomes shorter and shorter and nights become longer. This goes on till September 22. On September 22, our day is of 12 hours and the night too is of 12 hours. After that, the days continue to become shorter. The nights become longer. This goes on till December 22.

On December 22, our night is the longest and the day is the shortest. From December 22, the day grows longer and the night, shorter. This goes on till March 21. From March 21, this cycle repeats itself.

Note that these dates may vary a little.



Do you know ?

- When the days are longer and the nights are shorter, it is summer.
- When the nights are longer and the days are shorter, it is winter.



What we have learnt –

- As the light of the sun does not reach the whole earth at the same time, there is daylight on half the earth while there is darkness on the other half.
- The earth spins around itself. So, the part that faces the sun goes into darkness and the part that is in the dark comes into the light. That is why, we have day and night on the earth alternately.
- We can observe that the 24 hours of the day are divided into a 12-hour day and a 12-hour night on 21 March and 22 September.
- From December to June, the day gets longer while from June to December, the day gets shorter.



Always remember –

There is a connection between the seasons and the changing lengths of days and nights.



Exercises

(A) Think and tell.

1. On a new moon day, we cannot see the moon even though it is there in the sky. Why is that so?
2. Why do birds return to their nests earlier in winter than in summer?

(B) Answer in brief.

1. From where does the earth get light?
2. What is the earth shaped like?
3. When do we say that it is daytime?
4. When do we say that it is nighttime?

(C) Describe.

1. The spinning of the earth.
2. The cycle of day and night.

(D) Fill in the blanks.

1. The whole day has hours.
2. The sun appearing in the sky in the morning is called..... .
3. The disappearance of the sun from the sky in the evening is called
4. From March 21 tillour days become longer and the nights shorter.



(E) True or false?

1. The number of hours in the day and the night on March 21 are equal.
2. In our part of the earth, on June 21, the day is the longest and the night, shortest.
3. On September 22, the lengths of the day and the night are unequal.
4. In our part of the earth, on December 22, the day is the longest and the night, shortest.
