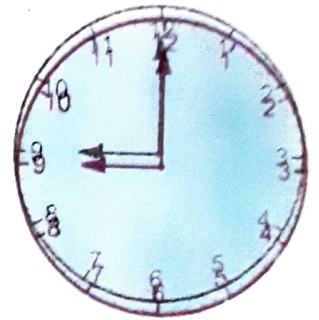


Shreya and Shreyas are making preparations to go to Dussehra fair since morning. Shreya asked her father, "It's 8.30 a.m. now when will we go to the fair"? Her father said, "We will go in the evening at 4 o'clock." Her father gave his watch to her and asked, "Can you tell the time by this watch"? Shreya said, "Yes, why not"?



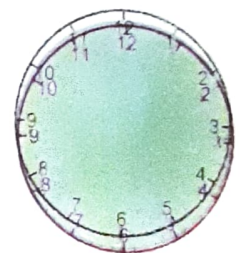
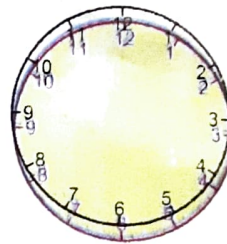
Shreya said, "It's 9 o'clock".



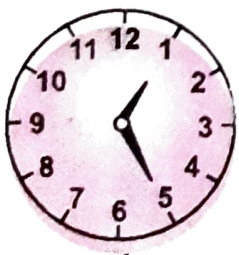
Do it yourself-

2:00

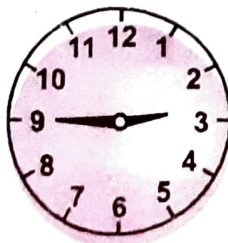
8:00

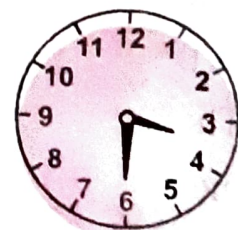


- Show the time given in the box. In the clocks.
- Fill in the blanks-
 - (a) The small hand of the clock shows
 - (b) The big hand of the clock shows
 - (c) The fastest hand of the clock shows
- Write the time shown in each clock-



1





3



Convert into hours-

(a) 2 days 5 hours

(b) 1 week 2 hours

Convert into minutes-

(a) 8 hours

(b) 6 hours 40 minutes

Fill in the blanks-

(a) minutes past 6 = quarter to seven

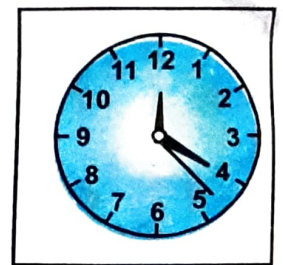
(b) minutes past 10 = half past ten

(c) 30 minutes past 3 =

(d) 45 minutes past 11 =

Identify the Second Hand-

Some clocks have three hands. Among them the fastest moving hand is of the second hand. This hand crosses 60 small divisions within one minute. It takes one second to move from one division to the next division.



1 minute = 60 seconds



Do it yourself-

Fill in the blanks-

(a) 5 minutes = 300 seconds

(b) 10 minutes = seconds

(c) 455 seconds = 7 minutes seconds

(d) 320 seconds = minutes 20 seconds

(e) 720 seconds = minutes seconds

To show the time we put the symbol ':' between hours and minutes.



Forenoon - Afternoon (Ante meridian - Post meridian)

The earth revolves around the sun and at the same time it rotates on its axis. Rotating on its own axis the earth completes its full rotation in 24 hours. Due to this day and night occur.

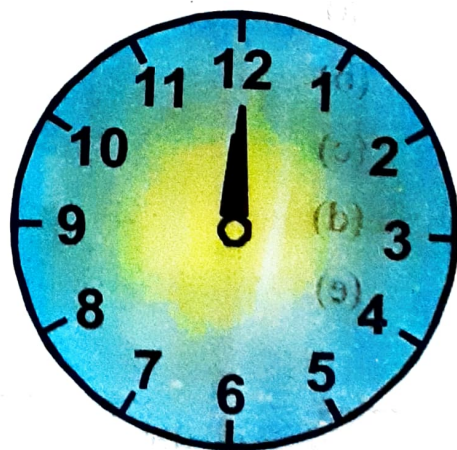
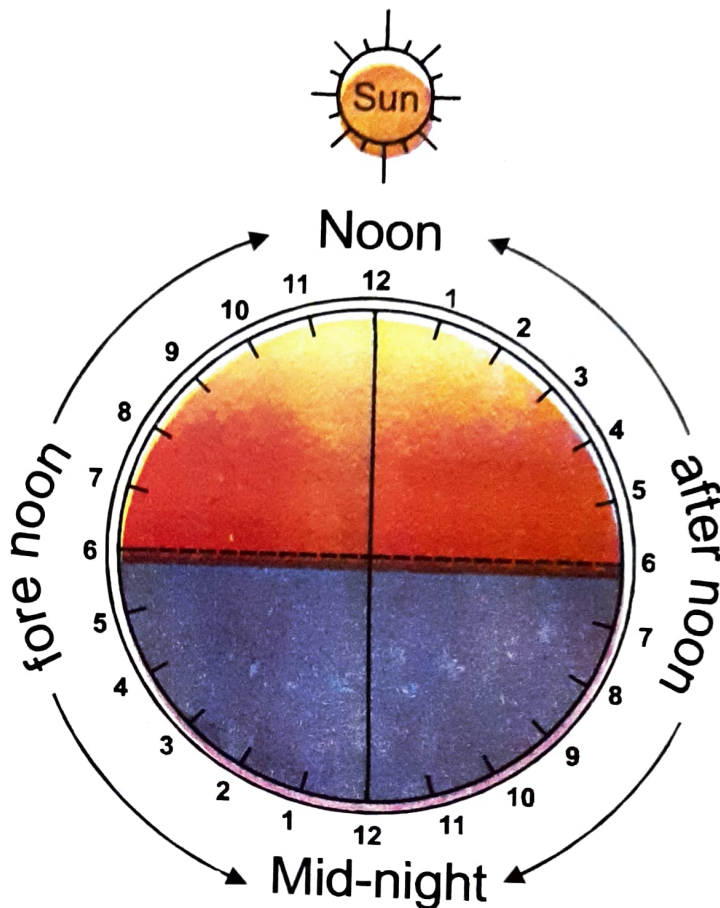
12 o'clock in the day is known as **mid-day** and 12 o'clock, in the night is known as **mid-night**. The next date starts from the mid-night.

The period from mid-night till mid-day is known as **forenoon**. This is also written as **a.m. (ante meridian)**.

The period from mid-day till mid-night is known as **after noon**. This is also written as **p.m. (post meridian)**.

In the given picture at 12 o'clock in the day time the sun is shining at the centre. The hemisphere towards the right has been shown as afternoon and the hemisphere towards the left has been shown as forenoon.

The hands of the clock overlap at 12 o'clock because the hour hand and the minute hand both are at 12:00. This situation comes twice in a day.



Look and understand-

2:30 in the afternoon	afternoon	2:30 p.m.
4:05 in the morning	forenoon	4:05 a.m.
4:15 in evening	afternoon	4:15 p.m.
1 o'clock afternoon	afternoon	1:00 p.m.
3 o'clock at night	forenoon	3:00 a.m.



Do it yourself-

1- Fill in the blanks using **a.m.** and **p.m.** -

- 6:50 forenoon
- 12:00 midnight
- 11:30 afternoon
- 12:00 noon

2- Write forenoon / afternoon

- 8 o'clock
- 1:30 in the afternoon
- 12:50 at night
- 4:10 in the evening

The 24 hour clock

Normally we use 1-12 hour clock in which the hour hand takes two rounds in 24 hours but some departments like Railways and Airlines use the 24-hour clock. The time is shown here as following-

Afternoon 1 o'clock is written as

13 o'clock

Afternoon 3:20 is written as

15:20 hours

Forenoon 1:30 is written as

01:30 o'clock

Midnight 12 hours is written as

24 o'clock or 00:00 hours.





Do it yourself-

In the following table, time is written according to the 12 hour clock. Convert these times from 12 hour clock to 24-hour clock.

Time by 12-hour clock	Time by 24 hour clock
1:30 in the morning	
10:45 in the morning	
12:00 at noon	
4:30 in the evening	
11:55 at night	

Addition and Subtraction of time

Example 1: I leave home at 7:50 in the morning to go to school. I take 30 minutes to cover the distance of the school. At what time do I reach the school?

$$\begin{array}{r}
 7 \text{ hours } 50 \text{ minutes} \\
 + \quad 0 \text{ hours } 30 \text{ minutes} \\
 \hline
 7 \text{ hours } 80 \text{ minutes} \\
 \hline
 8 \text{ hours } 20 \text{ minutes}
 \end{array}$$

Here the total number of minutes is more than 60, but as we know that 60 minutes = 1 hour, we add hour with hours and the left one is written as minutes.

So I reached the school at 20 minutes past 8.

Example 2- Anmol starts his studies at home at 7:30 p.m. and continues till 9 p.m..

For how much time does he study?

$$\begin{array}{r}
 9 \text{ hours } 00 \text{ minutes} \\
 - \quad 7 \text{ hours } 30 \text{ minutes} \\
 \hline
 1 \text{ hour } 30 \text{ minutes}
 \end{array}$$

Here we have to subtract 30 minutes from zero. To subtract we will borrow 1 hour (60 minutes) from 9 hours so $60 - 30 = 30$ minutes and $8 \text{ hours} - 7 \text{ hours} = 1 \text{ hour}$

Hence Anmol studies for 1 hour and 30 minutes.

Example 3- Akash completes 200 metres race in 4 minutes and 30 seconds and



Subhash completes the same race within 3 minutes and 50 seconds. How much time less than Akash does Subhash take to complete the race?

4 minutes	30 seconds
- 3 minutes	50 seconds
0 minutes	40 seconds

Therefore, Subhash will take 40 seconds less than Akash.

Here, we have to subtract 50 seconds from 30 seconds. To subtract we will borrow 1 minute (60 seconds) from 4 minutes. So by subtracting 50 seconds from $60 + 30 = 90$ seconds, 40 seconds will be left. If we subtract 3 minutes from 3 minutes, the answer will be 0 minutes.

We have learnt

- To tell the time by looking at the hands of hours and minutes.
- To show the time on the picture of the clock.
- To convert the given time into hours, minutes and seconds.
- To identify the time of forenoon, noon and afternoon.
- To form and solve word problems related to time.

Exercise

- 1- Nargis's mother gets up at 5:30 in the morning, after half an hour she wakes Nargis up. At what time does Nargis wake up?
- 2- Vipin's grandmother goes to bed at 10 p.m.. She sleeps for 5 and a half hours. At what time does Vipin's grandmother wake up?
- 3- Sushma's sister does exercise for 45 minutes early in the morning, she continues her exercise till 7 o'clock. At what time does Sushma's sister start her exercise?
- 4- What will be the time after 5 hours from 9:45 a.m.-
(a) 1:45 afternoon (b) 2:45 afternoon (c) 2:45 forenoon
- 5- At a crossing the red signal remains for 90 seconds at 8 a.m. Tell at what time will the signal be green?



✿ The teacher should clarify the signals according to the sequence of the traffic lights.

