04 - TIME

"**Time** is gold"
"Do not waste **time**"
"You cannot take back **time**"
"Time taken for the journey is too long**"**
"It will take some **time** to recover from the illness"
"Now its **time** for the musical show"
"The **time** school closes is 1.30 p.m."

Observe that the word **time** is highlighted in all the statements given above. Hence let us study about **time.**

What is the instrument used to measure **time** today?

Activity 4.1

1. What do you know about the instruments that were used to measure time in the past?
2. What are the instruments used to measure time in the modern world?

Now do the following activities.

Activity 4.2

Answer the following questions.

1. How many hours do you stay in school during a day?
2. What is the duration of time which your school is held?
3. What is the time taken by the Earth to rotate round its own axis?
4. What is the time taken by the Earth to revolute round the sun?
4. What is the time allocated for each period in your school ?
5. What was the time taken by the Sri Lankan athlete Susanthika to run 100 metres at the Olympic games?

Activity 4.3

1. Identify the hour hand and the minute hand of a clock.
2. Have you noted that certain clocks have a second hand also?
3. (i) What is the time taken by the minute hand of a clock to go round once?
   (ii) What is the distance the hour hand moves by then?

4. (i) What is the time taken by the second hand of a clock to go round once?

(ii) What is the distance the minute hand moves by then?

60 seconds = 1 minute

60 minutes = 1 hour

How many hours are there in a day?

A day begins after 12 midnight, the day ends after 24 hours.

A duration of a day is 24 hours.

60 seconds	**=**	**1 Minute**
60 Minutes	**=**	**1 Hour**
24 Hours	**=**	**1 Day**
7 Days	**=**	**1 Week**
4 Weeks	**=**	**1 Month**
12 Months	**=**	**1 Year**
365 Days	**=**	**1 Year**
366 Days	**=**	**1 Leap Year**

Indicating time

You would have seen notices such as the following.

" School starts at 7.30 a.m."

"School closes at 1.30 p.m."

This shows that the school starts and closes at a fixed time.

This clarifies that time denotes a certain moment and a difference of time denotes a time duration.

Activity 4.4

1. Draw clock faces and indicate the time that you and three of your friends in the class leave home to come to school.
2. Draw clock faces and indicate the time each of them reaches home after school.

3. Draw clock faces and indicate the time they go to sleep.

4. Write down the times indicated in question 3. Mention whether it is in the morning or in the evening. Use a.m. to denote time before noon and p.m. to denote time after noon.

   Example : (1) Time leaving home to go to school 6.30 a.m.
   (2) Time going to sleep 9.00 p.m.

Note that a.m is Ante Meridiem and p.m. is Post Meridiem.

From 12 midnight to 12 noon is a.m. and from 12 noon to 12 midnight is p.m.

Time duration:

Nimal starts from home at 6.30 a.m. and reaches school at 7.25 a.m. What is the duration of time he has taken to reach school?

The time taken by Nimal to come to school.

Time taken from 6.30 a.m. to 7.00 a.m. is 30 minutes.
Time taken from 7.00 a.m. to 7.25 a.m. is 25 minutes.
The total time taken is 30 + 25 = 55 minutes.

An aeroplane leaves an airport at 1.10 a.m. and reaches another airport at 2.00 p.m. Find the flying time of the aeroplane.

Time from 1.10 a.m. to 2.00 a.m. is 50 minutes.
Time from 2.00 a.m. 12.00 noon is 10 hours.
Time from 12.00 noon to 2.00 p.m. is 2 hours
The total time taken = 50 minutes + 10 hours + 2 hours
= 12 hours 50 minutes

Activity 4.5

1. Kamal woke up at 5.00 a.m. He started from home to go to school at 7.20 a.m. What is the duration of time from the time he woke up to the time he left for school?

2. A cricket match commenced at 10.15 a.m. and concluded at 5.50 p.m. Find the time duration of the cricket match.

Exercise 4.1

1. (i) At what time do you wake up?

   (ii) At what time does the school begin?

(iii) At what time is the school interval ?

(iv) At what time do you go to sleep?

2. Find the duration of the following time intervals.

(I) 4.30 p.m. to 6.50 p.m.

(II) 8.00 a.m. to 2.00 p.m.

(III) 10.00 a.m. to 6.30 p.m.

(IV) 9.10 a.m. to 1.20 p.m.

(V) 9.40 a.m. to 8.25 p.m.

3. In a certain television channel the transmission starts at 6.55 a.m. and ends at 10.20 p.m. What is the duration of time of the channel?

4. The school interval begins at 10.45 a.m.The duration of the interval is 20 minutes. At what time does the interval end?

5. A film show begins at 6.30 p.m. The duration of the show is 1 hour 40 minutes. At what time does the film show end?

6. Rewrite filling the blanks.

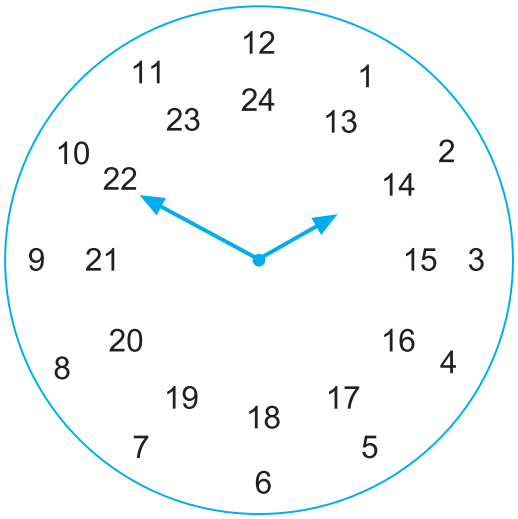
(I) 1 hour 40 minutes = ...minutes

(II) 12 minutes 25 seconds = ...seconds

(III) 125 seconds = ...minutes .....seconds

(IV) 12 minutes 8 seconds = ...seconds

24 Hour clock :



You may have seen clock faces as shown above in airports, railway stations, post offices etc. 24 hour clock helps to represent the time in international standard.

Activity 4.6

Draw a clock face as shown in page 33. Mark 1 to 12 in the outer circle and from 13 to 24 in the inner circle.

Observe the following statements which show different times in the 12 hour clock and the relevant times in the 24 hour clock. This is 24-hour clock face.

7.25 a.m. in a 24 hour clock is written as 0725h.
7.25 p.m. in a 24 hour clock is written as 1925h.
1.38 a.m. in a 24 hour clock is written as 0138h.

12 Hour clock	24 Hour clock
2.40 a.m.	0240h
7.00 a.m.	0700h
12.00 Noon	1200h
1.35 p.m.	1335h
6.00 p.m.	1800h
12 Midnight	0000h

Table 4-1

Activity 4.7

Copy the table given below and fill in the blanks.

Time in a 12 hour clock	Time in a 24 hour clock
1.20 a.m.	.....
3.50 a.m.	.....
10.35 a.m.	.....
11.58 a.m.	.....
12.15 a.m.	.....
1.00 a.m.	.....
8.40 a.m.	.....
11.52 a.m.	.....
.....	0025h
.....	0240h
.....	0600h
.....	0935h
.....	1107h
.....	1259h
.....	1408h
.....	1755h
.....	2020h
.....	0600h

Table 4.2

Exercise 4.2

1. The following table shows the times a sportsman commences and finishes his training. Write the duration of his training periods in the last column.

Day	Starting time	Finishing time	Duration of time
Monday	1430h	1550h	.....
Tuesday	1510h	1735h	.....
Wednesday	1725h	1842h	.....
Thursday	1740h	1835h	.....
Friday	1635h	1820h	.....
Saturday	0845h	1015h	.....
Sunday	0925h	1110h	.....

Table 4.3

2. An aeroplane starts from Katunayake airport at 1150h and reaches Trichinopoli airport at 1235h. Find the duration of time for the journey.
3. A train starts from Colombo at 0720h and reaches Anuradhapura at 1335h. Find the duration of the time for the journey.
4. A bus carrying students of a school who were on an educational tour was scheduled to reach the school at 2030h. Due to a mechanical defect in the bus it reached the school 1 hour and 15 minutes late. At what time did the bus reach the school?
5. The school cricket match was scheduled to start at 1000h on a certain day. But due to bad weather, the match started 2 hours 30 minutes late. At what time did the match start ?

Hours, minutes and seconds are used to measure time.

Examples

Example 1: 30 minutes 15 seconds past 8 a.m. → 083015h
15 minutes 20 seconds past 10 p.m. → 221520h

Date in standard form

The standard form to state a date:
year,month,date are written in order.

Examples :
1. 23rd September in the year two thousand four is written as 2004.09.23
2. 1st of April in the year 2006 is written as 2006.04.01
3. 25th of December in the year 2006 is written as 2006.12.25

Monday is the first day of the week.

Exercise 4.3

1. Fill in the blanks

   State the times given below in 24 hour clock

   (i) 30 minutes 10 seconds past 11 a.m. → .....
   (ii) 8 minutes 5 seconds past 3 p.m. → .....
   (iii) 40 minutes 12 seconds past 10 p.m. → .....

2. In a track event a runner started a 1500 m race at 154025 h. He completed the race at 154540 h. Find the time he has taken to complete the race.

3. Bandula took part in a 100 m swimming race. Swimming started at 085000 h. He completed the event at 090030h. Find the time taken for the event.

4. Write the following in the standard form.

   (i) Your birthday
   (ii) The day Sri Lanka gained independence.
   (iii) The day your school was inaugurated.

Additional exercises

1. Rewrite filling the blanks.

   (i) 3 hours = ... minutes

   (ii) 2 hours 20 minutes = ... minutes

   (iii) ..... hours ..... minutes = 75 minutes

   (iv) ..... hours ..... minutes = 250 minutes.

   (v) 5 minutes = ... seconds

   (vi) 2 minutes 10 seconds = ... seconds

   (vii) 1 hour 5 minutes 20 seconds = ... seconds

   (viii) ..... hours ..... minutes ..... seconds = 80 seconds

   (ix) ..... hours ..... minutes ..... seconds = 3670 seconds

2. Copy the table given below and fill in the blanks.

	Time in the 12 hour clock	Time according to 24 hour clock
(i)	1.10 a.m.	.....
(ii)	7.30 a.m.	.....
(iii)	.....	0800 h
(iv)	.....	1110 h
(v)	.....	1445 h
(vi)	3.15 a.m.	.....
(vii)	6.00 a.m.	.....
(viii)	8.30 a.m.	.....
(ix)	.....	2330 h
(x)	12.10 a.m.	.....

Summary

* **In a 12 hour clock the time from 12 midnight to 12 noon the following day is considered as antemeridiem (a.m.) and from 12 noon to 12 midnight is considered as postmeridiem.(p.m.)**
* **The standard time is shown by a 24 hour clock.**
* **The standard form for a date is written in the order year, month and date.**