

## Chapter-10

## TIME

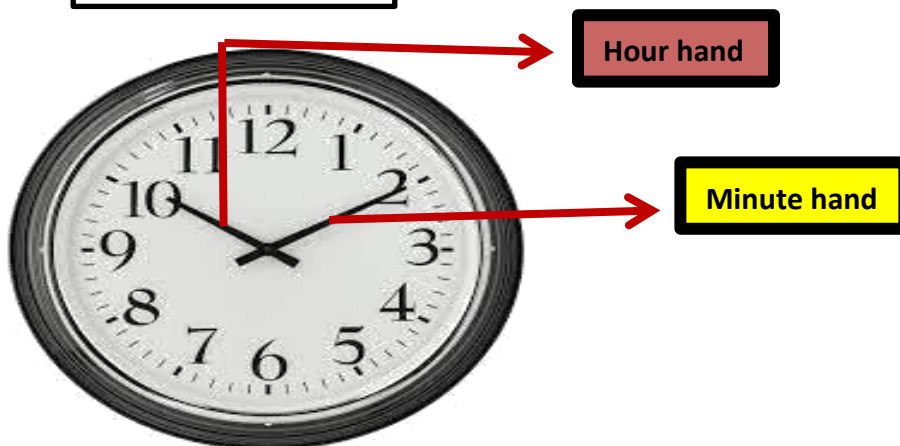
## STUDY NOTES

- \* Measurement of time and Let us Revise
- \* Concept of a.m. and p.m.
- \* 24 - hour clock
- \* Relationship between various units of time
- \* Hours and minutes
- \* Calendar

1. Measurement of time and Let us Revise➤ EXPLANATION

We use a clock to see the  
TIME

A clock has 2 hands.



The long hand that tells about the minute is the **MINUTE HAND**.



The short hand that tells about the hours is the **HOUR HAND**.

### EXAMPLE

#### LET US REVISE



The minute hand is at 12.

The hour hand is at 5.

The time is 5 o'clock.



The minute hand is at 3.

The hour hand is between 5 and 6.

The time is 5:15 or quarter past 5.



The minute hand is at 6.

The hour hand is between 5 and 6.

The time is 5:30 or half past 5.



The minute hand is at 9.

The hour hand is close to 6.

The time is 5:45 or quarter to 6.

## 2. Concept of a.m. and p.m.

### ➤ EXPLANATION

👉 Clocks only have 12 hours on them.

👉 But there are 24 hours in each day!

👉 That means the hour hand spins around the clock two times every day.

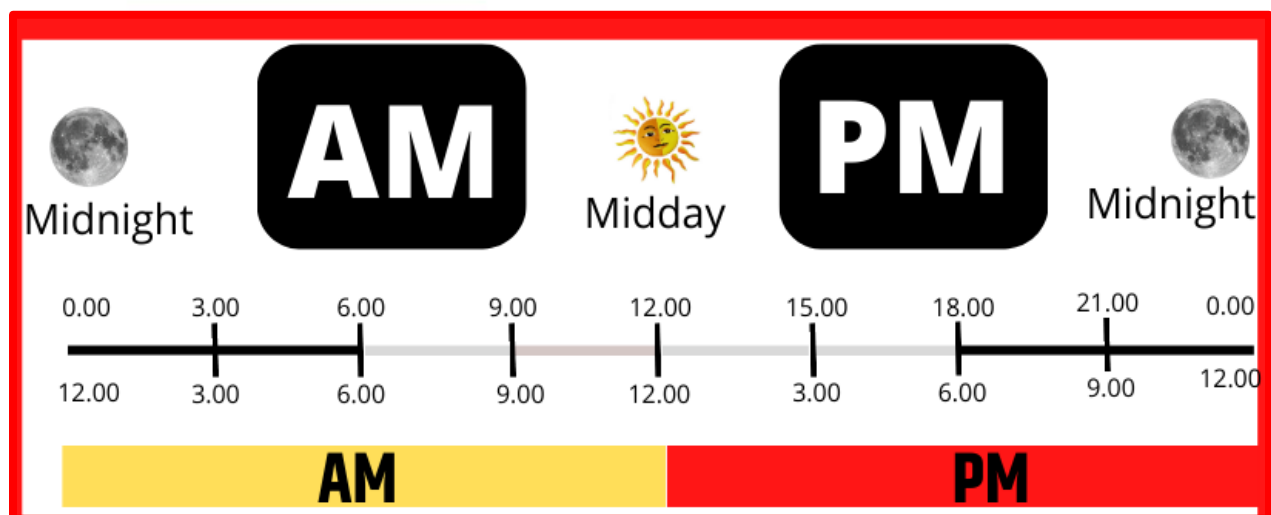
🤔 So 10:00 happens twice every day! 12:00 happens twice every day too!

🤔 But how can we tell one 10:00 apart from the other.

👉 We use a.m. and p.m.!

👉 We switch from p.m. to a.m. at midnight.

What is a.m. and p.m.???



**COMMON ERROR**

There is a common mistake which many people make and that is calling 12 p.m. and 12 a.m. No a.m. or p.m. is attached with 12. It's 12 noon and 12 midnight.

**3. 24 - hour clock****➤ EXPLANATION**

The main difference in 12-hour clock and 24-hour clock is that there is no AM and PM in the 24-hour time format. However, in 12-hour format, there is confusion because 12 hours are repeated twice in a day. 24-hours time format is also known as Military Time.



24-HOUR CLOCK - 4 DIGITS

0000

HOURS

MINUTES

A chart showing 24-Hour Clock Conversion

24-Hour Clock	12-Hour Clock	24-Hour Clock	12-Hour Clock
00:00 Hours	12:00 (MIDNIGHT)	12:00 Hours	12:00 (NOON)
01:00 Hours	1:00 A.M.	13:00 Hours	1:00 P.M.
02:00 Hours	2:00 A.M.	14:00 Hours	2:00 P.M.
03:00 Hours	3:00 A.M.	15:00 Hours	3:00 P.M.
04:00 Hours	4:00 A.M.	16:00 Hours	4:00 P.M.
05:00 Hours	5:00 A.M.	17:00 Hours	5:00 P.M.
06:00 Hours	6:00 A.M.	18:00 Hours	6:00 P.M.
07:00 Hours	7:00 A.M.	19:00 Hours	7:00 P.M.
08:00 Hours	8:00 A.M.	20:00 Hours	8:00 P.M.
09:00 Hours	9:00 A.M.	21:00 Hours	9:00 P.M.
10:00 Hours	10:00 A.M.	22:00 Hours	10:00 P.M.
11:00 Hours	11:00 A.M.	23:00 Hours	11:00 P.M.

FORMULAS TO REMEMBER

Changing between the 12 and 24-hour clocks

To convert from the 12-hour clock to the 24-hour clock is easy - you just need to add 12 to the hours after 12 noon.

**BUT REMEMBER THERE IS NO CHANGE FROM 12 MIDNIGHT TO 12 NOON**

For example:

2 o'clock PM becomes 14:00, as  $2 + 12 = 14$ .

8 o'clock PM becomes 20:00, as  $8 + 12 = 20$ .

To convert from the 24-hour clock to a PM time in the 12-hour clock, just subtract 12:

19:00 becomes 7 o'clock PM, as  $19 - 12 = 7$ .

**EXAMPLE**

$$10 \text{ p.m.} \quad \underline{10 + 12 = 22 : 00}$$

$$15 : 00 \quad \underline{15 - 12 = 3 \text{ p.m.}}$$

The most important facts about the 24-hour clock time format:

- Hours don't repeat twice a day in this time format
- The 24-hour clock doesn't use AM and PM
- AM hours are the same in 24-hour time format as in 12-hour time format and are counting from 0 to 12
- PM hours are different, they are counting from 13 to 24
- The 24-hour clock contains four digits, the first two digits belong to hours and the second ones to minutes
- The minutes are always the same in both time formats

**4. Relationship between various units of time****➤ EXPLANATION**

The standard units of time are:

a) 1 hour = 60 minutes

b) 1 minute = 60 seconds

c) 1 hour = 60 minutes = 3600 seconds ( $60 \times 60$ )

d) 1 day = 24 hours

e) 1 week = 7 days

f) 1 year = 365 days

g) 1 year = 12 months

CONVERSION	RULE	EXAMPLE
Days into Hour	1 day = 24 hours	7 days = $7 \times 24 = 168$ hours
Hours into Minutes	1 hour = 60 minutes	5 hours = $5 \times 60 = 300$ minutes
Minutes into seconds	1 minute = 60 seconds	25 minutes = $60 \times 25 = 1500$ seconds
Year into Months	1 Year = 12 Months	5 Years = $5 \times 12 = 60$ Months

**EXAMPLE**

1. Convert 16 days into hours

Since 1 day = 24 hours

so, 16 days =  $16 \times 24$  hours  
= 384 hours



2. Convert 5 days 25 hours into hours

Since 1 day = 24 hours

so, 5 days =  $5 \times 24$  hours = 120 hours

Thus, 5 days and 25 hours = 120 hours + 25 hours  
= 145 hours

**5. Hours and minutes****➤ EXPLANATION**

To convert hour to minute, multiply the time by 60. As 60 minutes make 1 hour.

\*We always multiply when we change higher unit to lower unit.

\*We always divide when we change lower unit to higher unit.

- The minute hand takes 60 minutes to complete one round on the clock. So, 1 hour = 60 minutes.
- There are 60 seconds in one minute and 60 minutes in one hour.
- To convert from hours to minutes and minutes to seconds, you multiply by 60.

### EXAMPLE

1. Convert 6 hours into minutes.

We know, 1 hour = 60 minutes

Therefore, 6 hours =  $(6 \times 60)$  minutes = 360 minutes



2. Convert 9 hours 35 minutes into minutes.

First, we convert 9 hours into minutes and then we add 35 minutes to it.

9 hours 35 minutes =  $(9 \times 60)$  minutes + 35 minutes (1 hour = 60 minutes)  
= 540 minutes + 35 minutes = 575 minutes.

## 6. Calendar

### ➤ EXPLANATION

Calendars are useful tools for keeping track of upcoming events. They can help you visualize your schedule and remind you of important events, such as holidays and vacation time.



- A chart or series of pages showing the days, weeks, and months of a particular year and gives the information.
- It also shows the date.
- Days of each month is divided into weeks, one week has seven days from Monday to Sunday. Each month has 30 or 31 days, only February has 28/29 days.

**REMEMBER**

- It has 12 months.
- There are 365 days in a year.
- The time taken by the earth to make one revolution around the sun.
- It is the one-year period between January 1 and December 31.

**EXAMPLE**

**2021 Calendar** [www.calendar.best](http://www.calendar.best)

January							February							March							April						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2	1	2	3	4	5	6	1	2	3	4	5	6					1	2	3		
3	4	5	6	7	8	9	7	8	9	10	11	12	13	7	8	9	10	11	12	13	4	5	6	7	8	9	10
10	11	12	13	14	15	16	14	15	16	17	18	19	20	14	15	16	17	18	19	20	11	12	13	14	15	16	17
17	18	19	20	21	22	23	21	22	23	24	25	26	27	21	22	23	24	25	26	27	18	19	20	21	22	23	24
24	25	26	27	28	29	30	28							28	29	30	31				25	26	27	28	29	30	
31																											

May							June							July							August							
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	
						1				1	2	3	4	5					1	2	3	1	2	3	4	5	6	7
2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14	
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21	
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28	
23	24	25	26	27	28	29	27	28	29	30				25	26	27	28	29	30	31	29	30	31					
30	31																											

September							October							November							December										
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa				
					1	2	3	4						1	2					1	2	3	4					1	2	3	4
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11				
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18				
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25				
26	27	28	29	30			24	25	26	27	28	29	30	28	29	30					26	27	28	29	30	31					
							31																								

Use the calendar to answer the questions.

JANUARY						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

1. How many days are in January?

**31**

2. What day of the week is January 17?

**THURSDAY**

3. What day of the week is January 29?

**TUESDAY**

4. How many Mondays are in January?

**4**

5. How many Wednesdays are in January?

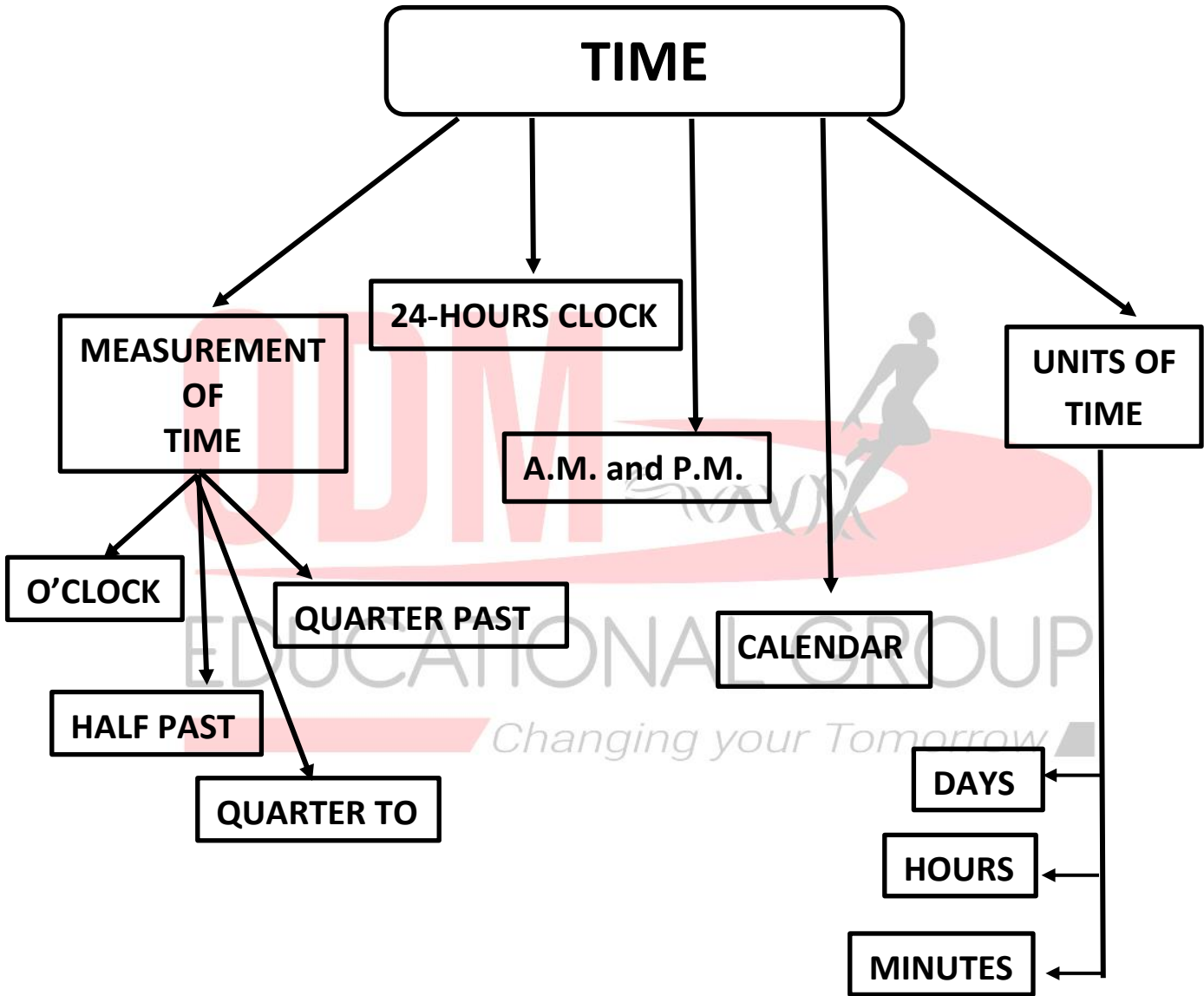
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EDUCATIONAL GROUP

*Changing your Tomorrow*

MIND MAP



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