Lesson-11: Time and Temperature

11 Periods (40 minutes each)

Learn Better (Main Coursebook), Stay Ahead (Workbook), Book of Holistic Teaching, Book of Project Ideas, CRM signs, Poster

Animation, Animated Activities, Dictionary, eBook, Explainer Video, HOTs, I Explain, Know It Right, Maths Lab, Mental Maths, Quiz, Slideshow, Infographic, Test Generator

Confirming better
I share my feelings with my parents.

Curricular Goals and Objectives (NCF-FS)

To enable the students:

- to understand the different units used for measuring time and temperature.
- to apply the concept of time in daily life by solving real-world problems.
- to learn how to use thermometers to measure temperature and interpret the results.
- to convert time and temperature between various units and understand the significance of each.
- to develop teamwork and problem-solving skills by completing exercises and projects related to time and temperature.

Methodology

Period 1

SHOULD DO
05 MIN.

Teacher: Good morning students. How are you all today?

Teacher: Wonderful. Before we begin today's lesson, let us play a quick game. I will ask you a few questions about time and temperature and you have to answer quickly.

Teacher: How many of you have noticed time at railway station? Did you see any difference?

Teacher: Exactly! After 12:00 p.m. it shows 13:00 hours instead of 01:00 p.m. So, we can say that we use two different time formats. Can you guess them?

Teacher: Yes, one is 12-hour format and the other is 24-hour format. In our daily-life, we use 12-hour format.

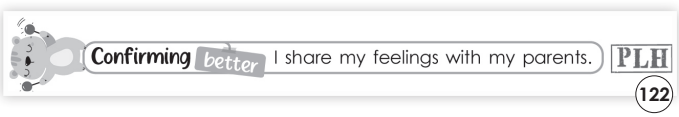
Teacher: Now, try this − How many hours are there in a full day?

Teacher: Very good. A full day has 24 hours. What is the normal body temperature of a human in degrees Celsius?

Teacher: Excellent! It is 37°C. Now, tell me − Is 10°C a warm or cold temperature?

Teacher: Yes, it is cold. Brilliant answers everyone. Now, let us begin today's lesson. Look at the 'Confirming better' section given on page 122 in your Main Coursebook.

Confirming better



Teacher: It says, "I share my feelings with my parents." Let us say it together. (You may repeat it 2-3 times with the students.)

MUST DO
05 MIN.

Teacher: Think about a time when you recently shared your feeling with parents. What was it and what did they do to help you?

(Accept and acknowledge various responses.)

Teacher: Similarly, we can share our feelings about temperature with our parents. If we feel too cold, they might give us a warm blanket. If we feel too hot, they might give us a cool drink. Sharing helps us stay comfortable and safe.

Teacher: I want each of you to think of a time when you were uncomfortable due to the temperature. How did you express it to your parents? Share it with your partner.

Teacher: Well done everyone. Now, let us move on to our kinaesthetic activity.

KWL chart

SHOULD DO
10 MIN.

Teacher: We will begin a new chapter, Time. We are going to use a KWL chart to help us organise our thoughts and learning. I have made a KWL format on the blackboard. Please take out your notebooks and draw the same format in your notebooks.

K	W	L

Teacher: Take a few minutes to think and write. If you have any questions, feel free to ask.

Teacher: You all did an amazing job in this activity. We can now move to Re-KAP activities. We will use Kinaesthetic, Auditory and Pictorial activities today to make our learning exciting. Let us start with the Kinaesthetic activity.

Kinaesthetic

Kinaesthetic

Form pairs. One student will use their arms to represent the hands of a clock, showing a specific time. The other student will read the time aloud. 122

MUST DO 10 MIN.

Teacher: Look at the 'Kinaesthetic' section on page 122. Can someone read it aloud for me?

Teacher: Excellent reading! Let us form pairs. One of you will use your arms to show the time I say. The other will read the time aloud. For example, if I say '3:00', your left arm should point straight up and your right arm should point to the right. Your partner will then say, 'Three o'clock.'

Teacher: Let us begin. The first time is 6:30. Show it with your arms.

Teacher: Fantastic. Now, try 9:15.

Teacher: Well done. Let us try a tricky one – 10:45.

Teacher: Excellent work. We can now move on to our next activity.

Auditory

Auditory*

Listen to your teacher carefully. Answer the questions. 122

MUST DO 05 MIN.

Teacher: Look at the 'Auditory' section on page 122. Listen to me carefully and answer the questions.

Teacher: 'Amit reaches school at 7:45 a.m. Rohan arrives 15 minutes late.

- What time does Rohan reach school?
- If Sonam arrives 10 minutes earlier than Amit, when does Sonam reach the school?

Teacher: Now, tell me – What time does Rohan reach school? (8:00 a.m.)

Teacher: Well done. What time does Sonam reach school? (7:35 a.m.)

Teacher: Brilliant answers everyone. Let us move to the next activity.

Pictorial

MUST DO 05 MIN.

Teacher: Look at the picture given in the 'Pictorial' section on page 122. What do you notice about them?

Pictorial PS

Look at the pictures. Write a.m. or p.m. for the given activities. Convert and write the time in the 24-hour format.

9:30 _____ 6:45 _____ 8:00 _____

122

Teacher: Yes, we see a boy sleeping at night, waking up in the morning and going to school.

Teacher: Below each picture, there is a time. Write 'a.m.' or 'p.m.' in the blank space. Then, convert the given time into the 24-hour format.

Teacher: Let us do the first one together. The first picture shows a boy sleeping at night at 9:30. Is it a.m. or p.m.? (p.m.)

Teacher: Correct. Now, let us convert it into 24-hour format. We add 12 to 9:30 p.m., which gives us 21:30 p.m.

Teacher: You can now complete the other two on your own. Discuss with your partner if needed.

Teacher: Fantastic work everyone. Let us end today's session and give ourselves a big round of applause for the effort.

You may show the **eBook** given on digital platform.

Differentiated Activities

110 km/hr

Convert the following times into 24-hour format:

1. 5:15 p.m.
2. 11:45 a.m.
3. 7:30 p.m.

80 km/hr

Identify whether the given times are in a.m. or p.m.:

1. 22:00
2. 06:15
3. 18:30

40 km/hr

Match the following times to their correct 24-hour format:

1. 2:00 p.m.	14:00
2. 9:30 a.m.	09:30
3. 11:45 p.m.	23:45

Home Task

Write down the time you wake up, eat lunch and go to bed. Write them in both 12-hour and 24-hour formats. Then, ask your parents about their daily routine and write their wake-up and bedtime in both formats.

Period 2

SHOULD DO
5 MIN.

Teacher: Good morning/ afternoon students. How are you all today?

Teacher: Wonderful. Before we begin today's lesson let us play a quick game. I will say a statement about sleep and you have to tell me whether it is true or false.

Teacher: Sleeping for only four hours every night is good for health. (False)

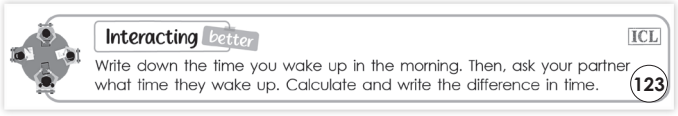
Teacher: Well done. Waking up early helps us stay fresh and focused. (True)

Teacher: Very good. We should sleep at least 8 hours every night. (True)

Teacher: Excellent. Watching television late at night helps us sleep better. (False)

Teacher: Brilliant answers everyone. Now let us move on to the next activity.

Interacting better



MUST DO
05 MIN.

Teacher: Look at the 'Interacting better' section on page 123 of your Main Coursebook. We are going to talk about our daily sleep routine. Write down the time you wake up in the morning. Then ask your partner what time they wake up.

Teacher: Once you have both written your wake-up times compare them. Now calculate the difference between your wake-up time and your partner's wake-up time. You have five minutes to discuss it with your partner and complete the activity.

Teacher: Excellent teamwork. Now I want you all to discuss with your partner whether you think you get enough sleep. How many hours do you sleep each night? Is it at least 8 hours?

Teacher: Well done everyone. Now let us look at a short story about why sleep is important.

MUST DO
10 MIN.

Teacher: Let us read and discuss the story given on page 123. Look at the pictures in your book. What do you see in the first image?

Teacher: That is right. Ryan is getting ready to sleep. Who is talking to Ryan?

Teacher: Good observation. His father is talking to him. What question does Ryan ask?

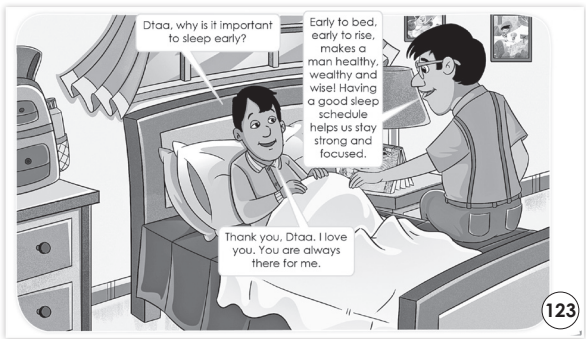
Teacher: Yes, "How long does he sleep in a day?" How do we calculate this?

Teacher: Correct, we subtract bedtime from wake-up time. What time does Ryan go to bed? (9:00 p.m.) What time does he wake up? (5:00 a.m.)

Teacher: Now let us calculate. How many hours does he sleep?

Teacher: Well done. He sleeps for 8 hours. Why is it important to sleep early?

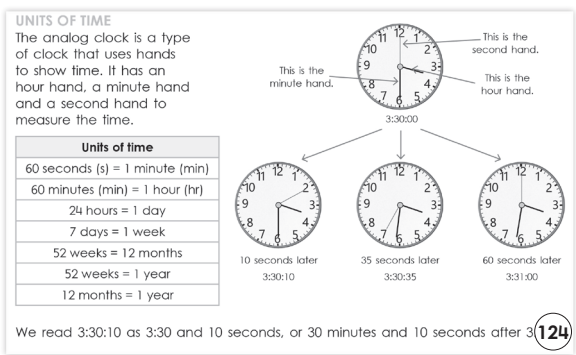
Teacher: Exactly, it helps us stay strong and focused. Look at the second image. What advice does Ryan's father give him?



Teacher: Great, "Early to bed, early to rise makes a man healthy wealthy and wise!" Why do you think having a good sleep schedule is important?

Teacher: Excellent! It helps us stay focused. Now let us move to the next activity and discuss different units of time.

Units of Time



Units of time
60 seconds (s) = 1 minute (min)
60 minutes (min) = 1 hour (hr)
24 hours = 1 day
7 days = 1 week
52 weeks = 12 months
52 weeks = 1 year
12 months = 1 year

MUST DO
15 MIN.

Teacher: Look at the different clocks under 'Units of time' section on page 124. What do you see?

Teacher: That is right. It is an analogue clock. Can anyone tell me what an analogue clock is? (A clock that uses hands to show time)

Teacher: Excellent. Let us identify the hands of the clock. Look at the clock on the top. It has three hands. The short hand is the hour hand, the long hand is the minute hand, and the thin hand is the second hand.

Teacher: Let us understand how these hands move. If the second hand moves once around the clock, how many seconds does it take? (60 seconds)

Teacher: Very good. That means 60 seconds make 1 minute. Now, if the minute hand moves once around the clock, how many minutes does it complete? (60 minutes)

Teacher: Correct. That means 60 minutes make 1 hour. Now look at the table on the left. Can someone read the first three rows aloud?

Teacher: Well done. These rows tell us how time is measured. If 24 hours make 1 day, how many days do we have in a week? (7 days)

Teacher: That is correct. What about weeks in a year? (52 weeks)

Teacher: Very good. Now let us look at the bottom of the page. We see a clock showing 3:30:00. What does this time mean? (3 hours, 30 minutes, and 0 seconds)

Teacher: Let us observe the changes in the three clocks below. The first clock shows 3:30:10. What has changed? (The second hand has moved 10 seconds forward)

Teacher: Excellent. Now look at the next clock. What does it show? (3:30:35)

Teacher: That is right. The second hand has moved 35 seconds forward. Finally, look at the last clock. What does it show? (3:31:00)

Teacher: Correct. The second hand has completed a full round, which means 60 seconds have passed and the minute hand has moved one step forward.

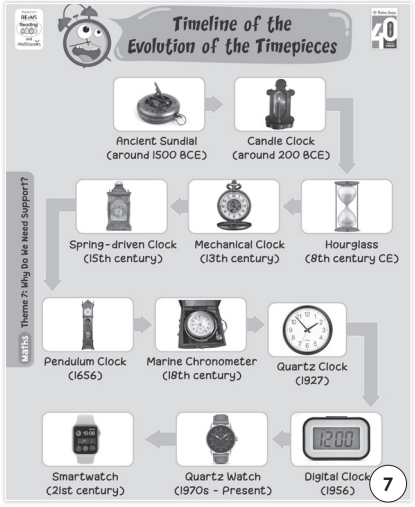
Teacher: Now let us try reading sometimes together. If the clock shows 5:15:45, how will we read it? (5 hours, 15 minutes and 45 seconds)

Teacher: Well done. What if it shows 8:45:20? (8 hours, 45 minutes, and 20 seconds)

Teacher: Excellent. Now let us reflect. Why is it important to know how to read time?

Teacher: That is right. It helps us manage our daily activities. Also, knowing time helps us stay punctual and organised.

Poster



Teacher: (Display and discuss the poster prominently in the classroom to reinforce the learning about telling the time.)

SHOULD DO 05 MIN.

Teacher: Great observation everyone. You all did a fantastic job today. Give yourselves a huge round of applause. See you in the next class.

You may show the **Animation** given on digital platform.

Differentiated Activities

110 km/hr

If a clock shows 4:50:25, how many seconds will it take for the minute hand to move to the next number?

80 km/hr

If you wake up at 6:30 a.m. and go to bed at 9:15 p.m., how many hours do you stay awake?

40 km/hr

If the clock shows 2:45, what is the next number the minute hand will point to after 15 minutes?

Home Task

Discuss with your parents why a proper sleep schedule is important for health. Write two benefits of sleeping early and getting enough rest.

Period 3

SHOULD DO 05 MIN.

Teacher: Good morning students. How are you all today?

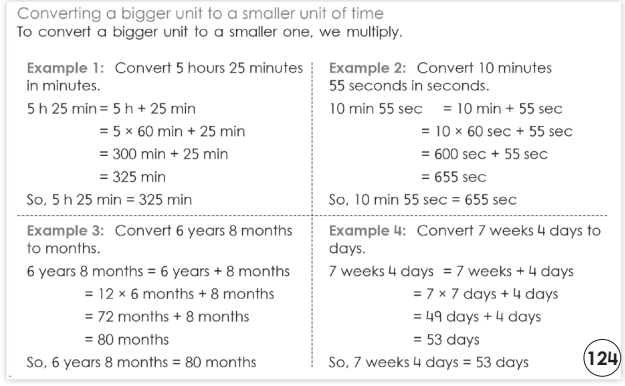
Teacher: Wonderful. Before we begin today's lesson let us play a quick game. Listen to the statements I say carefully and tell me whether it is true or false.

Teacher: There are 100 minutes in an hour.

Teacher: Yes, false. It is 1 hour and 40 minutes. Next, "There are 60 seconds in one minute."

Teacher: Very good, true. Now what about – One year has exactly 50 weeks.

Teacher: Excellent, false. A year has 52 weeks. Now let us move on to our lesson and learn how to convert between different units of time.


Converting a bigger unit to a smaller unit of time

To convert a bigger unit to a smaller one, we multiply.

Example 1: Convert 5 hours 25 minutes in minutes.

5 h 25 min = 5 h + 25 min
= 5 × 60 min + 25 min
= 300 min + 25 min
= 325 min

So, 5 h 25 min = 325 min

Example 2: Convert 10 minutes 55 seconds in seconds.

10 min 55 sec = 10 min + 55 sec
= 10 × 60 sec + 55 sec
= 600 sec + 55 sec
= 655 sec

So, 10 min 55 sec = 655 sec

Example 3: Convert 6 years 8 months to months.

6 years 8 months = 6 years + 8 months
= 12 × 6 months + 8 months
= 72 months + 8 months
= 80 months

So, 6 years 8 months = 80 months

Example 4: Convert 7 weeks 4 days to days.

7 weeks 4 days = 7 weeks + 4 days
= 7 × 7 days + 4 days
= 49 days + 4 days
= 53 days

So, 7 weeks 4 days = 53 days

124

Interchanging Units

MUST DO
15 MIN.

Teacher: Look at the 'Interchanging units' section on page 124. Sometimes we need to **convert larger units of time into smaller ones**. For example, converting hours into minutes or days into hours. Can anyone tell me how many minutes are there in one hour? (60 minutes)

Teacher: Correct. What do we do if we want to convert hours into minutes? (Multiply by 60)

Teacher: Excellent. Now let us look at the first example on the board. We need to convert 5 hours 25 minutes into minutes. What do we do first? (Multiply 5 by 60)

Teacher: That is correct. 5 × 60 equals 300 minutes. Now what do we do next? (Add 25 minutes)

Teacher: Very good. 300 + 25 equals 325 minutes. So, 5 hours 25 minutes = 325 minutes.

Teacher: Now, let us try example 4 together. Convert 7 weeks 4 days into days. What is the first step? (Multiply 7 by 7)

Teacher: Very good. 7 × 7 equals 49 days. Now what do we do? (Add 4 days)

Teacher: Well done. 49 + 4 equals 53 days. So, 7 weeks 4 days = 53 days.

Converting a smaller unit to a bigger unit of time

To convert a smaller unit to a bigger one, we divide.

Example 5: Convert 725 seconds to minutes and seconds.

Divide 725 by 60.

```
       1 2    <- minutes
60 | 7 2 5
   - 6 0
     1 2 5
   - 1 2 0
         5    <- seconds
```

725 ÷ 60 gives the quotient 12 and remainder 5.

So, 725 seconds = 12 min 5 sec

Example 6: Convert 352 days to weeks and days.

Divide 352 by 7.

```
      5 0    <- weeks
7 | 3 5 2
  - 3 5
      0 2    <- days
```

352 ÷ 7 gives the quotient 50 and remainder 2.

So, 352 days = 50 weeks and 2 days

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Teacher: Great effort everyone. Now let us learn how to **convert smaller units into bigger ones**. Look at other examples and discuss them with your partner (sitting next to you). If you have any questions, raise your hand.

Teacher: Now we will learn how to convert a smaller unit of time into a bigger unit. Instead of multiplying, what operation do we use?

Teacher: Correct, division. Look at example 5. We need to convert 725 seconds into minutes and seconds. What do we divide by?

Teacher: Well done, 60. 725 ÷ 60 gives a quotient of 12 and a remainder of 5. What does the quotient represent?

Teacher: That is correct, minutes. And what does the remainder represent?

Teacher: Fantastic, seconds. So, 725 seconds = 12 minutes 5 seconds.

Teacher: Now let us try example 6. Convert 352 days into weeks and days. What do we divide by? (7)

Teacher: Yes, we divide it by 7. 352 ÷ 7 gives 50 weeks and a remainder of 2 days. So, 352 days = 50 weeks 2 days.

Teacher: Excellent effort everyone. Now let us discuss why these conversions are useful in daily life.

Teacher: That is correct. Understanding time conversions helps us in everyday tasks like planning schedules and managing activities.

Exercise 1, 2 and 3

1. **Convert the following into minutes. Write the answers in your notebook.**
   a. 3 h b. 12 h c. 5 h 24 min d. 15 h 35 min
2. **Convert the following into hours and minutes. Write the answers in your notebook.**
   a. 524 min b. 620 min c. 745 min d. 1400 min
3. **Convert the following into seconds. Write the answers in your notebook.**
   a. 15 min b. 26 min c. 12 min 40 sec d. 45 min 10 sec

LO13

125

Exercise 1

MUST DO
20 MIN.

Teacher: Look at questions in Exercise 1. Convert the given time into minutes and write the answers in your notebook.

(Guide/help students to solve the questions and complete the exercise.)

Exercise 2

Teacher: Now, look at questions in Exercise 2. Convert the given time into hours and minutes and write the answers in your notebook.

(Guide/help students to solve the questions and complete the exercise.)

Exercise 3

Teacher: Look at questions in Exercise 3. Convert the given time into seconds and write the answers in your notebook.

(Guide/help students to solve the questions and complete the exercise.)

Teacher: Let us all give a huge round of applause to everyone for their effort and end today's session. See you in the next class. Have a wonderful day ahead.

You may show the **Animated Activities** given on digital platform.

Differentiated Activities

110 km/hr

A train leaves the station at 8:15 a.m. It travels for 3 hours 45 minutes. At what time will the train reach its destination? Show the steps clearly.

80 km/hr

Karan's cricket practice starts at 5:30 p.m. and finishes at 7:00 p.m. How long does Karan practise cricket? Write your answer in hours and minutes.

40 km/hr

Priya watches her favourite cartoon show for 1 hour. How many minutes does Priya spend watching her cartoon?

Home Task

Complete Exercises 4, 5, 6 and 7 given on page 125 in the Main Coursebook.

Period 4

SHOULD DO
05 MIN.

Teacher: Good morning/ afternoon students. How are you all today?

Teacher: Wonderful. Let us start with a quick warm-up. I will give you a few questions and you need to tell me whether they are true or false. Ready?

Teacher: Here is the first one – "There are 60 minutes in an hour." (True)

Teacher: Well done. Now, "There are 60 seconds in a minute." (True)

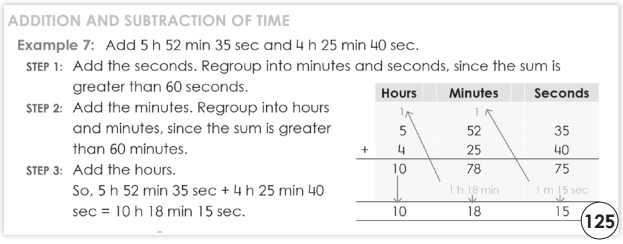
Teacher: Very good. Now, "One hour has 100 minutes." (False)

Teacher: Great! One hour only has 60 minutes. Here is another one – "There are 24 hours in a day." (True)

Teacher: Well done, everyone. Last one – "A day has 1,000 minutes." (False)

Teacher: Excellent. A day has 24 x 60 = 1440 minutes. Now, let us dive into today's topic on addition and subtraction of time.

Addition and Subtraction of Time



ADDITION AND SUBTRACTION OF TIME

Example 7: Add 5 h 52 min 35 sec and 4 h 25 min 40 sec.

STEP 1: Add the seconds. Regroup into minutes and seconds, since the sum is greater than 60 seconds.

STEP 2: Add the minutes. Regroup into hours and minutes, since the sum is greater than 60 minutes.

STEP 3: Add the hours.
So, 5 h 52 min 35 sec + 4 h 25 min 40 sec = 10 h 18 min 15 sec.

	Hours	Minutes	Seconds
	1	1	
	5	52	35
+	4	25	40
	10	78	75
		1 h 18 min	1 m 15 sec
	10	18	15

125

Teacher: Look at the 'Addition and subtraction of time' section in your Maths Coursebook on page 125. We will learn how to add and subtract time. Let us look at an example of adding time.

MUST DO
10 MIN.

Teacher: Look at Example 7 – we need to add 5 hours 52 minutes 35 seconds and 4 hours 25 minutes 40 seconds. Let's start by adding the seconds. What happens when we add 35 seconds and 40 seconds together?

Teacher: That's right! 35 seconds plus 40 seconds equals 75 seconds. Now, can anyone tell me what we need to do with 75 seconds?

Teacher: Exactly! Since 75 seconds is more than 60 seconds, we regroup. 60 seconds make 1 minute. So, 75 seconds is 1 minute and 15 seconds.

Teacher: Now, we have 1 minute and 15 seconds. What do we do with the 1 minute?

Teacher: Correct! We add it to the minutes. So, we now have 52 minutes + 25 minutes + 1 minute. How many minutes is that in total?

Teacher: Well done! 52 + 25 + 1 equals 78 minutes. But we can't leave 78 minutes like that. What do we do with 78 minutes?

Teacher: Exactly, we regroup again! 60 minutes make 1 hour, so 78 minutes equals 1 hour and 18 minutes. Now, let us add the hours. 5 hours plus 4 hours plus 1 hour equals how many hours?

Teacher: Right! 5 hours + 4 hours + 1 hour equals 10 hours. So, the final answer is 10 hours, 18 minutes and 15 seconds.

(Similarly, discuss Examples 8 and 9 in steps with the students.)

Teacher: Excellent participation everyone. Now, let us answer questions given in 'Understanding better' section.

Understanding better

Teacher: Let us think about how we use time in our daily routines. How much time do you take to bathe?

MUST DO
05 MIN.

Teacher: Take a moment to think about it. Is there a specific time you usually spend bathing each day?

Understanding better

Answer the following questions.

1. How much time do you take to bathe?
2. How much time do you take to have breakfast?

ICL

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Teacher: Great! Some of you might take 10 minutes, while others might take longer. Now, how much time do you take to have breakfast?

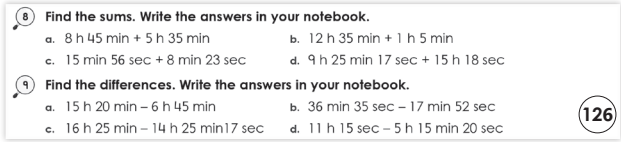
Teacher: Think about your routine. Do you eat quickly or take your time? How many minutes does it usually take?

Teacher: Fantastic! Some may take 15 minutes, while others may take 30 minutes. Why do you think it is important to know how much time we spend on things like bathing and eating breakfast?

Teacher: Excellent! Knowing how much time we spend on different activities helps us plan our day better and manage our time more effectively.

Teacher: Now, let us continue learning more about time by solving questions in Exercises 8 and 9.

Exercises 8 and 9



8 **Find the sums. Write the answers in your notebook.**

a. 8 h 45 min + 5 h 35 min
b. 12 h 35 min + 1 h 5 min
c. 15 min 56 sec + 8 min 23 sec
d. 9 h 25 min 17 sec + 15 h 18 sec

9 **Find the differences. Write the answers in your notebook.**

a. 15 h 20 min – 6 h 45 min
b. 36 min 35 sec – 17 min 52 sec
c. 16 h 25 min – 14 h 25 min17 sec
d. 11 h 15 sec – 5 h 15 min 20 sec

126

Teacher: In **Exercise 8,** we need to find sums. Solve the questions in your notebook and compare your answers with a partner.

MUST DO
20 MIN.

Teacher: If you have any doubts, raise your hand and we will discuss them together.

(Guide/help students to solve the questions and complete the exercise.)

Teacher: Excellent! In **Exercise 9,** we need to find differences. Solve the questions in your notebook and compare your answers with a partner.

Teacher: If you have any doubts, raise your hand and we will discuss them together.

(Guide/help students to solve the questions and complete the exercise.)

Teacher: Excellent work today, let us end the session with a huge round of applause.

You may show the **Mental Maths** given on digital platform.

Differentiated Activities

110 km/hr

You are planning a long road trip. The trip will last for 6 hours 45 minutes. If you stop for 30 minutes every 2 hours, how much total time will you spend on the trip? Also, how can you calculate the total time spent, including the stops?

80 km/hr

Your school assembly starts at 8:30 AM and lasts for 45 minutes. After that, you have 15 minutes to walk to your next class. What time will you reach your next class? Also, how can you add the 45 minutes of the assembly and the 15 minutes of walking time together?

40 km/hr

You have 1 hour to complete your homework. You spend 20 minutes on one subject and 25 minutes on another. How much time do you have remaining to finish your homework?

Home Task

Complete Exercise 10 given on page 126 in the Main Coursebook.

Period 5

SHOULD DO
05 MIN.

Teacher: Good morning/afternoon students. How are you all today?

Teacher: Wonderful! Let us start with a quick warm-up. Imagine you are planning a birthday party. You need to calculate the time for various activities.

Teacher: First, think about how many months are in one year. Can anyone tell me how many months are in a year?

Teacher: That's right! There are 12 months in a year. Now, if you are planning a party in a month, how much time do you have until the party?

Teacher: Now, let us think about how many months are in 2 years. How many months would that be?

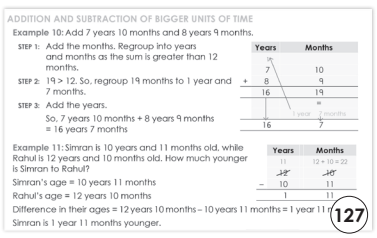
Teacher: Exactly! It would be 24 months because 2 years = 12 months + 12 months.

Teacher: Imagine if you had a 3-year-long project. If you finished 2 years and 9 months of the project, how many months are left to complete the project?

Teacher: Good thinking! You would have 3 months left.

Teacher: Great work, everyone! Now that we have warmed up, let's move on to today's lesson on adding and subtracting bigger units of time.

Addition and Subtraction of Bigger Units of Time



ADDITION AND SUBTRACTION OF BIGGER UNITS OF TIME

Example 10: Add 7 years 10 months and 8 years 9 months.

STEP 1: Add the months. Regroup into years and months as the sum is greater than 12 months.

STEP 2: 19 > 12. So, regroup 19 months to 1 year and 7 months.

STEP 3: Add the years.

So, 7 years 10 months + 8 years 9 months = 16 years 7 months

	Years	Months
	7	10
+	8	9
	16	19
		1 year 7 months
	16	7

Example 11: Simran is 10 years and 11 months old, while Rahul is 12 years and 10 months old. How much younger is Simran to Rahul?

Simran's age = 10 years 11 months

Rahul's age = 12 years 10 months

Difference in their ages = 12 years 10 months – 10 years 11 months = 1 year 11 months

Simran is 1 year 11 months younger.

	Years	Months
	12	12 + 10 = 22
–	10	11
	1	11

127

Teacher: Open your book to page 127 and look at the 'Addition and subtraction of bigger units of time'. We are going to learn how to add and subtract bigger units of time, like years and months.

Teacher: This can help us understand things like ages and durations over long Periods. Let us look at Example 10, where we add 7 years 10 months and 8 years 9 months. (Discuss the example in steps with the students and help them understand the concept.)

MUST DO
10 MIN.

Teacher: Now, look at Example 11. Simran is 10 years 11 months old, and Rahul is 12 years 10 months old. How much younger is Simran than Rahul?

Teacher: We can start by subtracting the months first. What happens when we subtract 11 months from 10 months?

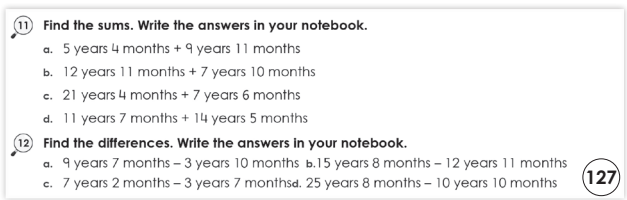
Teacher: Since 10 months is less than 11 months, we need to exchange 1 year from 12 years and convert it into months. 1 year equals 12 months, so we add those 12 months to the 10 months. 12 + 10 equals 22 months. Now, we subtract 11 months from 22 months. What do we get?

Teacher: That is right! 11 months. Let us subtract the years now. What do we get when we subtract 10 years from 11 years (remember we exchanged 1 year)?

Teacher: Exactly! 1 year. So, the final difference is 1 year and 11 months. Simran is 1 year 11 months younger than Rahul.

Teacher: Great work, everyone! Let us continue learning more about addition and subtraction of bigger units of time by solving questions in Exercises 11 and 12.

Exercises 11 and 12



11 **Find the sums. Write the answers in your notebook.**

a. 5 years 4 months + 9 years 11 months

b. 12 years 11 months + 7 years 10 months

c. 21 years 4 months + 7 years 6 months

d. 11 years 7 months + 14 years 5 months

12 **Find the differences. Write the answers in your notebook.**

a. 9 years 7 months – 3 years 10 months b. 15 years 8 months – 12 years 11 months

c. 7 years 2 months – 3 years 7 months d. 25 years 8 months – 10 years 10 months

127

Teacher: Look at **Exercise 11** on page 127. We need to find the sums. Solve the questions in your notebook and compare your answers with a partner.

MUST DO
20 MIN.

Teacher: If you have any doubts, raise your hand and we will discuss them together.

(Guide/help students to solve the questions and complete the exercise.)

Teacher: Excellent! In **Exercise 12,** we need to find the differences. Solve the questions in your notebook and compare your answers with a partner.

Teacher: If you have any doubts, raise your hand and we will discuss them together.

(Guide/help students to solve the questions and complete the exercise.)

Teacher: Excellent work everyone! Let us now move to our next activity.

Laughing better

SHOULD DO
05 MIN.

Teacher: Let us look at the 'Laughing better' section and have a laughter activity.

Teacher: Can anyone tell me what the bear, Roli, is asking the rabbit, Hopper?

Teacher: That is right! Roli says, "Why are you sitting on the clock?"

Teacher: Now, let us hear Hopper's response. Hopper says, "Because I want to be always on time."

Teacher: That is quite funny, isn't it? Can you think of any other funny situations where someone might want to be on time—like someone sitting on a calendar to make sure they never miss a date?

Teacher: Great! let us clap for everyone's effort and end today's session.

You may show the **Know it Right** given on digital platform.

Differentiated Activities

110 km/hr

Imagine you are organizing a 5-day event. On Day 1, the event lasts for 4 hours, on Day 2, it lasts for 5 hours, on Day 3, it lasts for 3 hours 45 minutes, on Day 4, it lasts for 6 hours 30 minutes and on Day 5, it lasts for 4 hours 15 minutes. What is the total time spent on the event in hours and minutes?

80 km/hr

You have a study schedule for the week. On Monday, you study for 2 hours 45 minutes. On Tuesday, you study for 3 hours 30 minutes. On Wednesday, you study for 1 hour 50 minutes. How much time did you spend studying in total during these three days?

40 km/hr

You are planning to do some gardening. On Saturday, you spent 1 hour 20 minutes gardening. On Sunday, you spent 2 hours 10 minutes gardening. How much time did you spend gardening in total?

Home Task

Complete Exercise 13 given on page 127 in Main Coursebook

Period 6

SHOULD DO
05 MIN.

Teacher: Good morning/afternoon students. How are you all today?

Teacher: Wonderful! Let us start with a warm-up activity. Imagine you are going on a road trip with your family. You need to calculate the total time for the trip.

Teacher: First, let us think about how many hours are in a day. Can anyone tell me how many hours are in a day?

Teacher: That's right! There are 24 hours in a day. Now, if you are travelling for 2 days, how many hours would that be?

Teacher: Exactly! 2 days would be 48 hours (24 + 24 = 48 hours).

Teacher: Now, let us say the trip lasts for 3 days and 6 hours. How many hours would that be in total?

Teacher: Excellent! 3 days equals 72 hours (24 x 3) and with the additional 6 hours, the total time would be 78 hours.

Teacher: Great work, everyone! Let us move on to today's topic on multiplication and division of time.

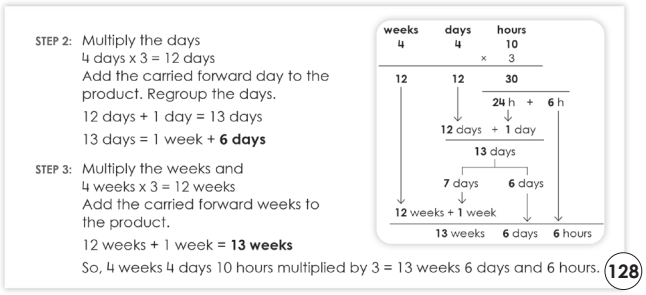
Multiplication and Division of Time


MULTIPLICATION AND DIVISION OF TIME

Example 12: Multiply 4 weeks 4 days 10 hours by 3.

STEP 1: Multiply the hours.
10 × 3 = 30 hours.
30 hours > 24 hours. So, regroup the hours.
30 hours = 24 hours + 6 hours = 1 day + **6 hours**

127


STEP 2: Multiply the days
4 days x 3 = 12 days
Add the carried forward day to the product. Regroup the days.
12 days + 1 day = 13 days
13 days = 1 week + **6 days**

STEP 3: Multiply the weeks and
4 weeks x 3 = 12 weeks
Add the carried forward weeks to the product.
12 weeks + 1 week = **13 weeks**

weeks 4 | days 4 | hours 10 × 3
12 | 12 | 30
24 h + 6 h
12 days + 1 day
13 days
7 days | 6 days
12 weeks + 1 week
13 weeks 6 days 6 hours

So, 4 weeks 4 days 10 hours multiplied by 3 = 13 weeks 6 days and 6 hours.

128

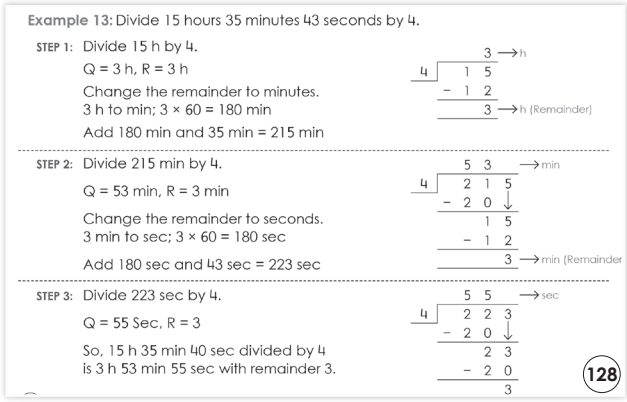
MUST DO
15 MIN.

Teacher: Open your Maths book to page 127 and look at the 'Multiplication and division of time' section. We will learn how to multiply and divide time, just like we do with regular numbers.

Teacher: This helps us calculate time for long durations. Let us begin with Example 12, where we multiply 4 weeks 4 days and 10 hours by 3.

(Discuss the example in steps with the students and help them understand the concept of multiplication of time.)

Teacher: Let us now look at **Example 13** where we divide 15 hours 35 minutes 43 seconds by 4.


Example 13: Divide 15 hours 35 minutes 43 seconds by 4.

STEP 1: Divide 15 h by 4.
Q = 3 h, R = 3 h
Change the remainder to minutes.
3 h to min; 3 × 60 = 180 min
Add 180 min and 35 min = 215 min

STEP 2: Divide 215 min by 4.
Q = 53 min, R = 3 min
Change the remainder to seconds.
3 min to sec; 3 × 60 = 180 sec
Add 180 sec and 43 sec = 223 sec

STEP 3: Divide 223 sec by 4.
Q = 55 Sec, R = 3
So, 15 h 35 min 40 sec divided by 4 is 3 h 53 min 55 sec with remainder 3.

4 | 15 → 3 h, − 12, 3 h (Remainder)
4 | 215 → 53 min, − 20, 15, − 12, 3 min (Remainder)
4 | 223 → 55 sec, − 20, 23, − 20, 3

128

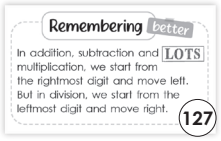
(Follow the steps and discuss the example in detail with the students to help them understand the concept of division of time.)

Teacher: Well done everyone. Let us now move to the next activity.

Remembering better

MUST DO 05 MIN.

Teacher: Look at the 'Remembering better' section on page 127. We will discuss how we approach different operations in mathematics.



Teacher: In addition, we start from the rightmost digit and move to the left. What about subtraction and multiplication?

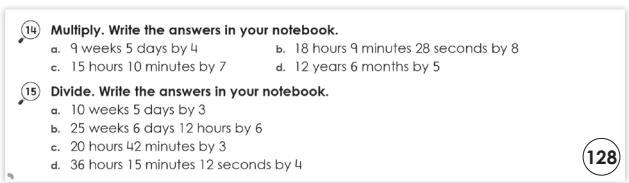
Teacher: Correct! Similarly, in subtraction, we start with the rightmost digit. We subtract the ones place first and then move to the tens place. How do we approach in multiplication?

Teacher: Exactly! In subtraction and multiplication, we do the same thing. We start with the ones place and then move to the tens place. How about division?

Teacher: Absolutely! But in division, we start from the leftmost digit and move to the right. This is an important point to remember for solving problems efficiently!

Teacher: Great job, everyone! Let's keep this in mind as we continue working with time calculations.

Exercise 14(a) and 15(a)


14 **Multiply. Write the answers in your notebook.**
a. 9 weeks 5 days by 4
b. 18 hours 9 minutes 28 seconds by 8
c. 15 hours 10 minutes by 7
d. 12 years 6 months by 5

15 **Divide. Write the answers in your notebook.**
a. 10 weeks 5 days by 3
b. 25 weeks 6 days 12 hours by 6
c. 20 hours 42 minutes by 3
d. 36 hours 15 minutes 12 seconds by 4

128

MUST DO 10 MIN.

Teacher: Look at **Exercise 14** on page 128. You need to multiply and write the answers in your notebook. Try solving question (a) and then compare your answers with a partner.

Teacher: If you have any doubts, raise your hand and we will discuss it together.

(Guide/help students as required to solve the question.)

Teacher: Excellent! In **Exercise 15,** you need to divide and write the answers in your notebook. Try solving question (a) and then compare your answers with a partner.

Teacher: If you have any doubts, raise your hand and we will discuss it together.

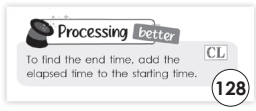
(Guide/help students as required to solve the question.)

Teacher: Excellent work everyone! Complete the remaining questions at home. Now, let us move on to our next activity.

Processing better

SHOULD DO 05 MIN.

Teacher: Let us look at the 'Processing better' section. It says, "To find the end time, add the elapsed time to the starting time." Can you think of a real-life example?



Teacher: Yes! Imagine you are going on a bus trip. The bus leaves at 10:00 AM and the journey takes 2 hours and 30 minutes. How can we find the time the bus will reach its destination?

Teacher: That's right! We start with the starting time, which is 10:00 AM and then we add the elapsed time, which is 2 hours and 30 minutes.

Teacher: Exactly! It will be 12:30 PM. So, the bus will arrive at 12:30 PM. Therefore, by adding the elapsed time to the starting time, you can easily find the end time for any activity in your daily routine. Let us clap for everyone's effort and end today's session.

You may show the **Explainer Video** given on digital platform.

Differentiated Activities

110 km/hr

You are planning a big event that lasts for 5 days, 3 hours, and 45 minutes. If the event schedule repeats 4 times, how much total time will the event last?

80 km/hr

Your school project takes 2 hours 30 minutes each day. You plan to work on the project for 6 days. How much time will you spend on the project in total?

40 km/hr

You are cooking a meal that takes 1 hour and 15 minutes. After 45 minutes, you need to check the meal. How much time is left for cooking?

Home Task

Complete Exercise 14 (b, c and d) and 15 (b, c and d) given on page 128 in the Main Coursebook.

Period 7

SHOULD DO 05 MIN.

Teacher: Good morning/afternoon students. How are you all today?

Teacher: Wonderful! Let us begin with a warm-up. Imagine you are getting ready for your evening sports practice. The practice starts at 4:00 p.m. and lasts for 1 hour 15 minutes. Can anyone tell me what time practice will finish?

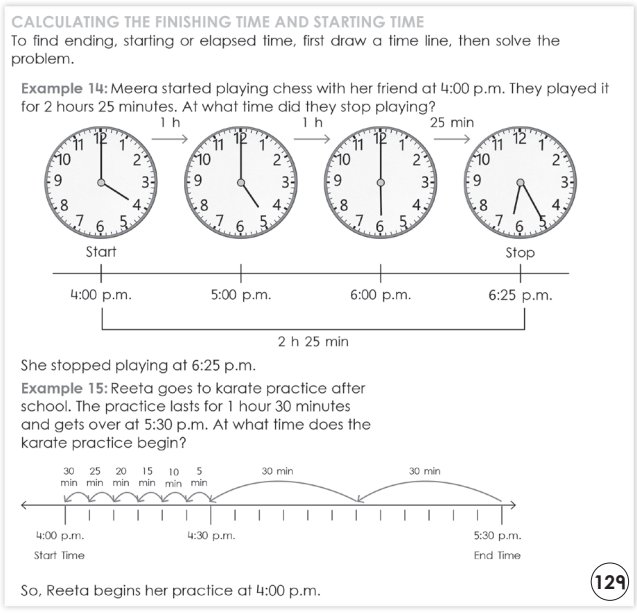
Teacher: That is right! The practice will finish at 5:15 p.m. Now, imagine you have a movie night. If the movie starts at 7:30 p.m. and lasts for 2 hours 20 minutes, what time will it finish?

Teacher: Excellent! 7:30 p.m. + 2 hours = 9:30 p.m. Now, add 20 minutes to that. What do we get?

Teacher: That is right! The movie will finish at 9:50 p.m.

Teacher: Great work, everyone! Let us dive into today's lesson on calculating finishing time and starting time.

Calculating the Finishing Time and Starting Time



MUST DO

15 MIN.

Teacher: Look at page 129 in the Main Coursebook. To calculate the finishing time and starting time, we need to use a simple process of adding or subtracting time. Let us begin with Example 14, where Meera started playing chess with her friend at 4:00 p.m. They played for 2 hours 25 minutes. What time did they stop playing?

Teacher: First, we will draw a timeline to help us. The starting time is 4:00 p.m., and we need to add 2 hours and 25 minutes to that. Let us break it down step by step.

Teacher: We start with the 2 hours. What time will it be after 2 hours from 4:00 p.m.?

Teacher: That is right! It will be 6:00 p.m. Now, we need to add the 25 minutes. Can anyone tell me what time it will be if we add 25 minutes to 6:00 p.m.?

Teacher: Exactly! It will be 6:25 p.m. So, Meera stopped playing at 6:25 p.m.

Teacher: Now, let us look at Example 15. Reeta goes to karate practice after school. The practice lasts for 1 hour 30 minutes and finishes at 5:30 p.m. What time does the karate practice begin?

Teacher: To find the starting time, we need to subtract the elapsed time (1 hour 30 minutes) from the finishing time (5:30 p.m.).

Teacher: Let us first subtract 1 hour from 5:30 p.m. What time does that give us?

Teacher: Correct! 5:30 PM minus 1 hour is 4:30 p.m. Now, we need to subtract the remaining 30 minutes. What do we get when we subtract 30 minutes from 4:30 p.m.?

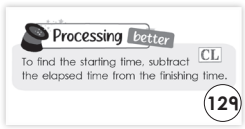
Teacher: That is right! 4:30 p.m. minus 30 minutes is 4:00 p.m. So, Reeta begins her practice at 4:00 p.m.

Teacher: Great work, everyone! Now, let us understand 'Processing better' by solving one more problem together.

Processing better

SHOULD DO

05 MIN.



Teacher: Look at the 'Processing better' section. It says, "To find the starting time, subtract the elapsed time from the finishing time." Let us understand this with an example.

Teacher: Imagine you finish reading a book at 7:30 p.m., and it took you 2 hours and 15 minutes to read it. What time did you start reading the book?

Teacher: To find the starting time, we need to subtract the elapsed time (2 hours and 15 minutes) from the finishing time (7:30 p.m.).

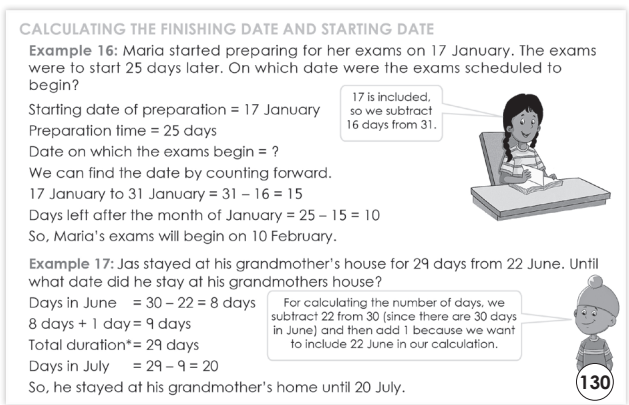
Teacher: First, let us subtract the 2 hours. What time will it be if we subtract 2 hours from 7:30 PM?

Teacher: Correct! 5:30 p.m. Let us subtract the remaining 15 minutes. What do we get when we subtract 15 minutes from 5:30 p.m.?

Teacher: That's right! 5:15 p.m. So, the starting time was 5:15 p.m.

Teacher: Great work, everyone! Let us now move on to calculating the finishing date and starting date.

Calculating the Finishing Date and Starting Date



MUST DO

15 MIN.

Teacher: Look at the 'Calculating the finishing date and starting date' section on page 130. Let us begin with Example 16 where Maria started preparing for her exams on 17 January and the exams were to start 25 days later. Can anyone help me figure out on which date the exams were scheduled to begin?

Teacher: We know that the starting date of preparation is 17 January and the preparation time is 25 days. How can we find the date when the exams begin?

Teacher: That is right! We can count forward from 17 January. First, let us calculate how many days are left in January. From 17 January to 31 January, we have 31 − 16 = 15 days.

(Note: - 17 is included, so we subtract 16 days from 31.)

Teacher: Now, we need to find out how many more days are left after the month of January. So, 25 − 15 = 10 days left after January.

Teacher: Therefore, if we add 10 days to 1 February, we will get the date when Maria's exams begin, which is 10 February.

Teacher: Now, let us look at Example 17 where Jas stayed at his grandmother's house for 29 days starting from 22 June. Until what date did he stay at his grandmother's house?

Teacher: We need to calculate the number of days Jas stayed. First, let us figure out how many days are left in June. The total days in June are 30 and Jas started staying on 22 June. So, 30 − 22 = 8 days in June.

Teacher: Now, we need to add 1 day to the 8 days in June because we want to include 22 June in our calculation. So, 8 + 1 = 9 days.

Teacher: The total duration Jas stayed is 29 days, so we subtract the 9 days in June from 29. This gives us 29 − 9 = 20 days in July.

Teacher: Therefore, Jas stayed at his grandmother's house until 20 July.

Teacher: Well done, everyone! You've learned how to calculate both the finishing and starting dates by counting forward or backward, depending on the situation. Let us clap for everyone's effort and end today's session.

You may show the **I Explain** given on digital platform.

Differentiated Activities

110 km/hr

You are planning a vacation that starts on 5th June and lasts for 12 days. You plan to visit three different cities, spending 4 days in each city. How many days will you spend in the third city, and on which date will you return home?

80 km/hr

Imagine you are planning a project that will last for 45 days. You start on 1st October. What date will the project finish?

40 km/hr

Your homework takes 1 hour and 40 minutes to complete, and you start at 5:30 PM. What time will you finish your homework?

Home Task

Complete Exercises 16 and 17 given on page 129 – 130 in the Main Coursebook.

Period 8

SHOULD DO 05 MIN.

Teacher: Good morning/afternoon students. How are you all today?

Teacher: Wonderful! Let us begin with a quick warm-up. Imagine you are going outside on a hot summer day. How would you know if it is too hot to be outside?

Teacher: That is right! You would need to check the temperature. Temperature is the measure of warmth or coldness of an object, body or substance. We use a thermometer to measure temperature.

What tool would you use to measure the temperature outside?

Teacher: Yes, we would use a thermometer! So, if the thermometer shows a high number, like 40°C, what does that tell us about the temperature?

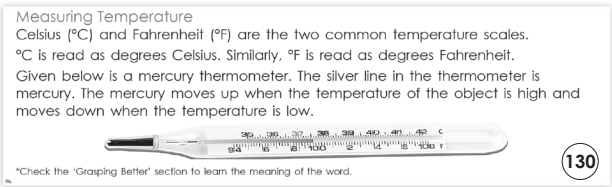
Teacher: Exactly! It tells us it is very hot outside.

Teacher: Now, imagine you are going for a walk in winter. If you check the thermometer and see a low number, like 5°C, what would that tell you?

Teacher: That is right! It tells you that it is very cold outside.

Teacher: Great work, everyone! Now, let us move on to measuring temperature.

Measuring temperature



Measuring Temperature

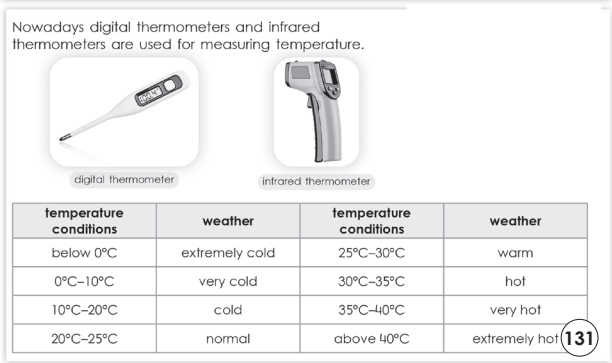
Celsius (°C) and Fahrenheit (°F) are the two common temperature scales.

°C is read as degrees Celsius. Similarly, °F is read as degrees Fahrenheit.

Given below is a mercury thermometer. The silver line in the thermometer is mercury. The mercury moves up when the temperature of the object is high and moves down when the temperature is low.

*Check the 'Grasping Better' section to learn the meaning of the word.

130



Nowadays digital thermometers and infrared thermometers are used for measuring temperature.

digital thermometer

infrared thermometer

temperature conditions	weather	temperature conditions	weather
below 0°C	extremely cold	25°C–30°C	warm
0°C–10°C	very cold	30°C–35°C	hot
10°C–20°C	cold	35°C–40°C	very hot
20°C–25°C	normal	above 40°C	extremely hot

131

MUST DO 05 MIN.

Teacher: Look at the 'Measuring temperate' on page 130 on Main Coursebook. There are two common temperature scales we use: Celsius (°C) and Fahrenheit (°F). Can anyone tell me what the symbol for Celsius looks like?

Teacher: That's right! It is °C and for Fahrenheit, it is °F. So, if you see 10°C, you will read it as 10 degrees Celsius. Similarly, 50°F would be read as 50 degrees Fahrenheit.

Teacher: Now, let us look at this mercury thermometer. Can anyone see the silver line inside the thermometer?

Teacher: That is the mercury. It moves up when the temperature is high and moves down when the temperature is low. Can anyone think of an example when the mercury might rise in the thermometer?

Teacher: Exactly! When the temperature of an object or body is high, like on a hot day, the mercury in the thermometer will rise.

Teacher: Nowadays, we also have digital thermometers and infrared thermometers. Let us look at these. Can anyone tell me what the difference is between a digital thermometer and an infrared thermometer?

Teacher: Great! A digital thermometer gives a digital reading of the temperature and an infrared thermometer measures the temperature from a distance, usually by scanning the surface of an object or body.

Teacher: Now, look at the table on temperature conditions and weather. If the temperature is below 0°C, what weather condition does it correspond to?

Teacher: That is right! It is extremely cold. And if the temperature is between 25°C and 30°C, what would the weather be like?

Teacher: Exactly! It is warm. So, understanding temperature and using a thermometer is very important to know how cold or hot it is in different situations.

Teacher: Let us move on to the next activity and answer a few questions based on it.

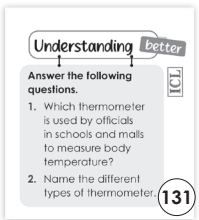
Understanding better

SHOULD DO

05 MIN.

Teacher: Now, look at the 'Understanding better' section on page 131. Let us answer them together.

Teacher: The first question is, "Which thermometer is used by officials in schools and malls to measure body temperature?"


Understanding better

Answer the following questions.

1. Which thermometer is used by officials in schools and malls to measure body temperature?
2. Name the different types of thermometer.

131

Teacher: Can anyone think of the type of thermometer that is commonly used in places like schools and malls, especially for measuring body temperature?

Teacher: That is right! The infrared thermometer is used to measure body temperature without contact. It is quick and easy, especially for checking people's temperature in public spaces.

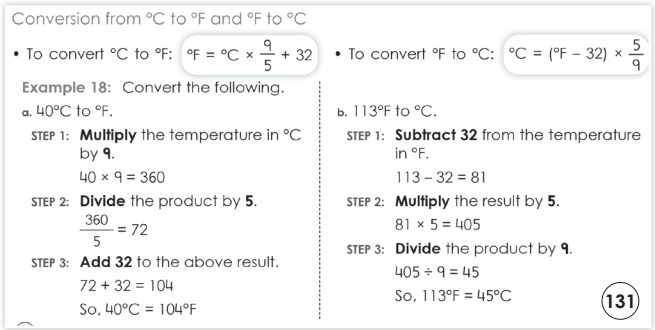
Teacher: Now, the second question is, "Name the different types of thermometers."

Teacher: We already know that there are different types of thermometers. Can anyone name some of them?

Teacher: Correct! There is the mercury thermometer, digital thermometer and infrared thermometer. The digital thermometer gives a digital reading, while the infrared thermometer can measure temperature without contact.

Teacher: Let us now move on to conversion of temperatures.

Conversion from °C to °F and °F to °C


Conversion from °C to °F and °F to °C

- To convert °C to °F: $°F = °C \times \frac{9}{5} + 32$
- To convert °F to °C: $°C = (°F - 32) \times \frac{5}{9}$

Example 18: Convert the following.

a. 40°C to °F.

STEP 1: **Multiply** the temperature in °C by **9**.
$40 \times 9 = 360$

STEP 2: **Divide** the product by **5**.
$\frac{360}{5} = 72$

STEP 3: **Add 32** to the above result.
$72 + 32 = 104$
So, 40°C = 104°F

b. 113°F to °C.

STEP 1: **Subtract 32** from the temperature in °F.
$113 - 32 = 81$

STEP 2: **Multiply** the result by **5**.
$81 \times 5 = 405$

STEP 3: **Divide** the product by **9**.
$405 \div 9 = 45$
So, 113°F = 45°C

131

Teacher: Look at the 'Conversion from °C to °F and °F to °C' section on page 131. We are going to learn how to convert temperatures from Celsius (°C) to Fahrenheit (°F) and from Fahrenheit (°F) to Celsius (°C). Let us start with the conversion from Celsius to Fahrenheit.

MUST DO

10 MIN.

Teacher: Look at Example 18, where we need to convert 40°C to Fahrenheit. We will follow the three steps:

Teacher: First, multiply the temperature in Celsius by 9 which is 40 × 9 = 360. Can anyone tell me what we do next?

Teacher: Exactly! Next, we divide the product by 5. 360 ÷ 5 = 72. What do we do next?

Teacher: That is right! We add 32 to the result. 72 + 32 = 104. So, 40°C is equal to 104°F.

Teacher: Now, look at the conversion from Fahrenheit to Celsius. In Example 18, we need to convert 113°F to Celsius. Let us follow the three steps:

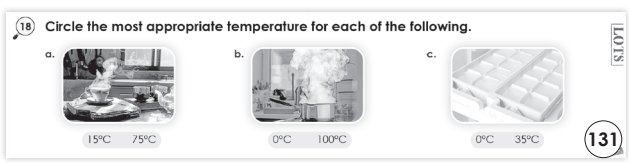
Teacher: First, subtract 32 from the temperature in Fahrenheit. 113 – 32 = 81. What do we do next?

Teacher: Next, multiply the result by 5. 81 × 5 = 405. What do we do after that?

Teacher: Exactly! Now, divide the product by 9. 405 ÷ 9 = 45. So, 113°F is equal to 45°C.

Teacher: Great participation, everyone! Now let us continue practicing this with a few more examples!

Exercise 18, 19, 20 and 21

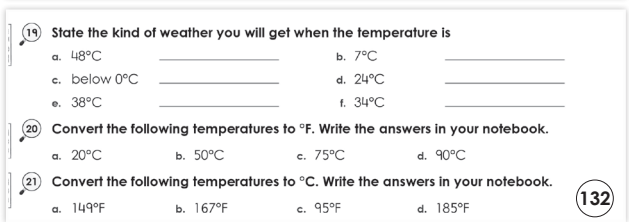

18 Circle the most appropriate temperature for each of the following.

a. 15°C 75°C

b. 0°C 100°C

c. 0°C 35°C

131


19 State the kind of weather you will get when the temperature is

a. 48°C _____ b. 7°C _____

c. below 0°C _____ d. 24°C _____

e. 38°C _____ f. 34°C _____

20 Convert the following temperatures to °F. Write the answers in your notebook.

a. 20°C b. 50°C c. 75°C d. 90°C

21 Convert the following temperatures to °C. Write the answers in your notebook.

a. 149°F b. 167°F c. 95°F d. 185°F

132

MUST DO

15 MIN.

Teacher: Look at Exercise 18 on page 131. You need to circle the most appropriate temperature for the given images.

Teacher: If you have any doubts, raise your hand and we will discuss it together.

(Guide/help students as required to solve the question.)

Teacher: Excellent! In Exercise 19, you need to state the kind of weather you will get based on the given temperatures.

Teacher: If you have any doubts, raise your hand and we will discuss it together.

(Guide/help students as required to solve the question.)

Teacher: Superb! In Exercise 20, convert the given temperatures to °F and write answers in your notebook.

Try solving question (a) and then compare your answers with a partner.

Teacher: If you have any doubts, raise your hand and we will discuss it together.

(Guide/help students as required to solve the question.)

Teacher: Great work! Now, in Exercise 21, convert the given temperatures to °C and write answers in your notebook. Try solving question (a) and then compare your answers with a partner.

Teacher: If you have any doubts, raise your hand and we will discuss it together.

(Guide/help students as required to solve the question.)

Teacher: Very good! Let us clap for everyone's effort and end today's session. Complete the remaining questions of Exercise 20 and 21 at home.

You may show the **Dictionary** given on digital platform.

Differentiated Activities

110 km/hr

Imagine you are planning an outdoor event and you check the weather forecast. The temperature is expected to be 32°C in the afternoon and 90°F in the evening. Can you convert both temperatures to the other scale (Celsius to Fahrenheit and Fahrenheit to Celsius) and explain the difference in weather conditions?

80 km/hr

You are preparing for a hike and the weather is 28°C in the morning and 85°F in the afternoon. Convert both temperatures to the other scale (Celsius to Fahrenheit and Fahrenheit to Celsius) and describe the weather conditions for each.

40 km/hr

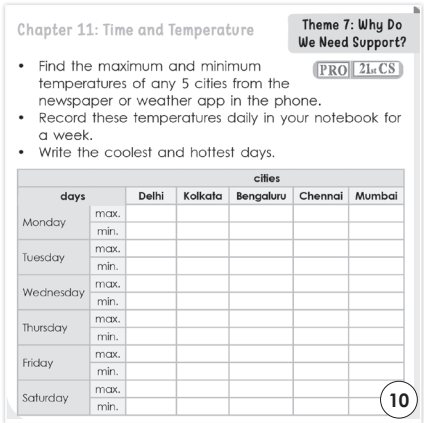
You have a thermometer reading of 22°C in your room. Convert it to Fahrenheit.

Home Task

Complete Exercises 20 and 21 (page 132) from Main Coursebook and Worksheet 1(page 42) from Maths Workbook.

Book of Project Ideas

Complete this project at home with the help of your parents. Track the maximum and minimum temperatures of 5 cities over a week. Use a weather app on your phone or check the newspaper for the temperatures.


Chapter 11: Time and Temperature

Theme 7: Why Do We Need Support?

PRO 21st CS

- Find the maximum and minimum temperatures of any 5 cities from the newspaper or weather app in the phone.
- Record these temperatures daily in your notebook for a week.
- Write the coolest and hottest days.

days		cities				
		Delhi	Kolkata	Bengaluru	Chennai	Mumbai
Monday	max.					
	min.					
Tuesday	max.					
	min.					
Wednesday	max.					
	min.					
Thursday	max.					
	min.					
Friday	max.					
	min.					
Saturday	max.					
	min.					

10

Record the data for Monday to Saturday in the table provided. After collecting the temperatures, identify the hottest and coolest days for each city. You can ask your parents to help you find the temperature information and write it in your notebook. Once completed, note down which day was the hottest and coolest for each city. This activity will help you understand temperature variations.

(Remind them to go through their work carefully before presenting. Each student will get 3-5 minutes to present their project. Ensure they understand deadlines and help them as needed.)

Period 9

SHOULD DO 05 MIN.

Teacher: Good morning/afternoon students. How are you all today?

Teacher: Wonderful! Let us begin with a warm-up. Imagine you are spending a day outdoor. The sun is shining brightly and you want to know how hot it is. What do you think you would use to measure the temperature?

Teacher: That is right! We would use a thermometer. Now, let us think about how time is measured. Can anyone tell me which units we use to measure time?

Teacher: Excellent! We use seconds, minutes, hours, days, weeks, months and years to measure time. These units help us track how long something lasts, whether it is a second or a year.

Teacher: Now that we have refreshed our knowledge, let us move on to our next activity.

Grasping better

MUST DO 05 MIN.

Teacher: Now, look at the 'Grasping better' section on page 132 of Main Coursebook. It defines duration as the length of time that something lasts. Can anyone think of how duration is used in everyday life?


Grasping better

DING

duration: the length of time that something lasts

132

Teacher: Great! If you are planning a trip, the duration of your journey refers to how much time you will spend traveling. If your trip is 3 hours, then the duration is 3 hours.

Teacher: In the same way, we use duration to measure things like a class Period, the time you spend reading or even how long a meal lasts. Duration helps us plan and manage time!

Teacher: Let us now move on to the next activity.

Connecting better

MUST DO 05 MIN.

Teacher: Look at the 'Connecting better' section on page 132. Can anyone read it aloud for me?

Teacher: Excellent reading! Why do you think it is important to exercise regularly?


Connecting better

Science

In the morning, Ryan saw Dtaa exercising. He says, "Dtaa, which exercises do you do in a day?" Dtaa says, "I do sit-ups, push-ups and yoga. Exercise and yoga make our muscles and bones strong and flexible." Ryan says, "Now I know why you are so fit. Dtaa, I want to learn how to exercise and do yoga."

Hol

132

Teacher: Exactly! Exercise helps to keep our bodies healthy and strong. It improves our muscles, bones and overall well-being. When we do exercises like yoga, we also improve our flexibility and reduce stress.

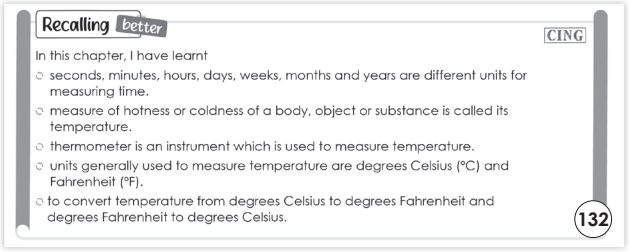
Teacher: Ryan says, "Now I know why you are so fit, Dtaa. I want to learn how to exercise and do yoga." Why do you think Ryan wants to learn?

Teacher: Great answer! Ryan sees the benefits of exercise and yoga in Dtaa, so he wants to be fit too.

Teacher: True! Exercise and yoga are essential to staying healthy. They help our bodies stay strong, flexible and energized. How many of you would like to try yoga or different exercises?

Teacher: Wonderful! Let us make sure we all remember to stay active and exercise regularly to keep our bodies strong and healthy.

Recalling better


Recalling better

CING

In this chapter, I have learnt

- seconds, minutes, hours, days, weeks, months and years are different units for measuring time.
- measure of hotness or coldness of a body, object or substance is called its temperature.
- thermometer is an instrument which is used to measure temperature.
- units generally used to measure temperature are degrees Celsius (°C) and Fahrenheit (°F).
- to convert temperature from degrees Celsius to degrees Fahrenheit and degrees Fahrenheit to degrees Celsius.

132

Teacher: Now, look at the 'Recalling better' section. Can anyone tell me what we have learnt in this chapter?

MUST DO

05 MIN.

Teacher: Yes, we have learned that seconds, minutes, hours, days, weeks, months and years are all different units we use for measuring time. For example, if we want to measure how long a task takes, we might use minutes or hours.

Teacher: Another important concept we learnt is that the measure of hotness or coldness of a body, object or substance is called its temperature. When we want to know how hot or cold something is, we use a thermometer to measure it.

Teacher: Correct! The thermometer is an instrument used to measure temperature. Can anyone tell me what units we use to measure temperature?

Teacher: Exactly! We use Celsius (°C) and Fahrenheit (°F). These are the two main units for measuring temperature.

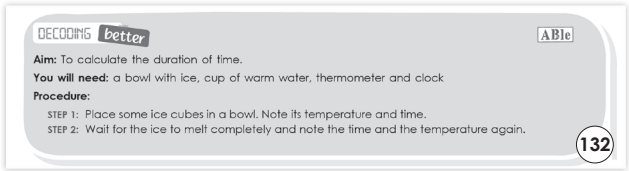
Teacher: Also, we learnt about converting temperatures. If we have a temperature in Celsius, how can we convert it to Fahrenheit?

Teacher: That is right! To convert from Celsius to Fahrenheit, we multiply the Celsius temperature by 9, divide by 5 and then add 32. Can anyone remind me of the process to convert Fahrenheit to Celsius?

Teacher: Yes! To convert from Fahrenheit to Celsius, we subtract 32 from the Fahrenheit temperature, multiply the result by 5, and then divide by 9.

Teacher: Excellent discussion, everyone! Let us keep these in mind as we continue practicing and learning more!

Decoding better


DECODING better

ABIe

Aim: To calculate the duration of time.

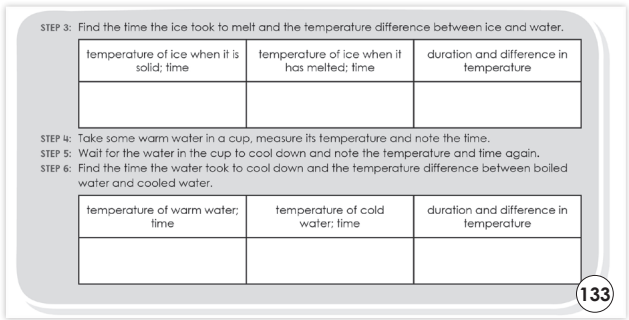
You will need: a bowl with ice, cup of warm water, thermometer and clock

Procedure:

STEP 1: Place some ice cubes in a bowl. Note its temperature and time.

STEP 2: Wait for the ice to melt completely and note the time and the temperature again.

132


STEP 3: Find the time the ice took to melt and the temperature difference between ice and water.

temperature of ice when it is solid; time	temperature of ice when it has melted; time	duration and difference in temperature

STEP 4: Take some warm water in a cup, measure its temperature and note the time.

STEP 5: Wait for the water in the cup to cool down and note the temperature and time again.

STEP 6: Find the time the water took to cool down and the temperature difference between boiled water and cooled water.

temperature of warm water; time	temperature of cold water; time	duration and difference in temperature

133

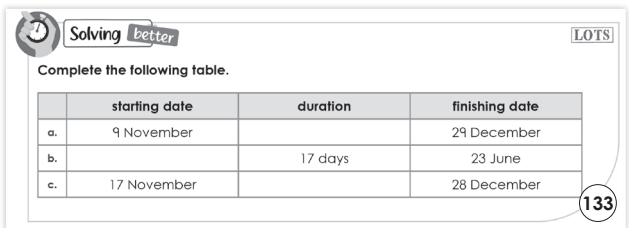
Teacher: Let us look at the 'Decoding better' section. In this activity, we will calculate the duration of time it takes for ice to melt and the temperature difference between ice and water. The aim of the activity is to understand how temperature affects the time it takes for ice to melt and water to cool.

MUST DO

10 MIN.

(Guide the students to complete the activity given on page 132-133 in the Main Coursebook.)

Solving better


Solving better

LOTS

Complete the following table.

	starting date	duration	finishing date
a.	9 November		29 December
b.		17 days	23 June
c.	17 November		28 December

133

Teacher: Let us move on to the 'Solving better' section and complete the given table.

MUST DO

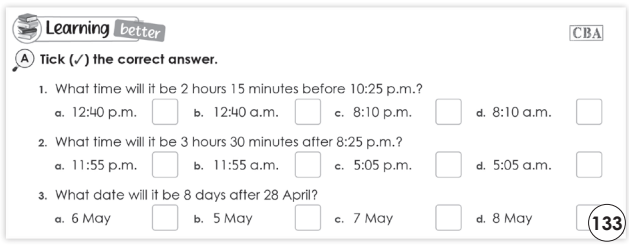
05 MIN.

Teacher: Work together and discuss answers with your partner.

Teacher: If you have any doubts, raise your hand.

(Guide/help students as required to solve the question.)

Learning better

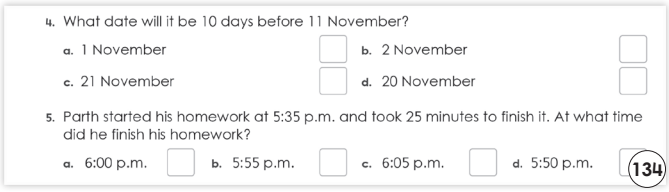

Learning better

CBA

A Tick (✓) the correct answer.

1. What time will it be 2 hours 15 minutes before 10:25 p.m.?
   a. 12:40 p.m. ☐ b. 12:40 a.m. ☐ c. 8:10 p.m. ☐ d. 8:10 a.m. ☐
2. What time will it be 3 hours 30 minutes after 8:25 p.m.?
   a. 11:55 p.m. ☐ b. 11:55 a.m. ☐ c. 5:05 p.m. ☐ d. 5:05 a.m. ☐
3. What date will it be 8 days after 28 April?
   a. 6 May ☐ b. 5 May ☐ c. 7 May ☐ d. 8 May ☐

133


4. What date will it be 10 days before 11 November?

a. 1 November ☐ b. 2 November ☐

c. 21 November ☐ d. 20 November ☐

5. Parth started his homework at 5:35 p.m. and took 25 minutes to finish it. At what time did he finish his homework?

a. 6:00 p.m. ☐ b. 5:55 p.m. ☐ c. 6:05 p.m. ☐ d. 5:50 p.m. ☐

134

Teacher: Now, look at Exercise A under 'Learning better' on page 133. You need to tick the correct answer. Work together and discuss answers with your partner.

MUST DO

05 MIN.

Teacher: If you have any doubts, raise your hand and we will discuss it together.

(Guide/help students as required to solve the question.)

Teacher: Excellent work today! Let us end the session with a huge round of applause.

You may show the **Slideshow** and **Infographic** given on digital platform.

Differentiated Activities

110 km/hr

You are planning a trip to the beach and you check the weather forecast. The temperature is expected to be 35°C in the morning, 40°**C** in the afternoon and 70°F in the afternoon. Convert both temperatures to the other scale (Celsius to Fahrenheit and Fahrenheit to Celsius).

80 km/hr

Imagine you are going for a hike in the mountains. The weather forecast shows 25°C in the morning and 80°F in the evening. Convert both temperatures to the other scale (Celsius to Fahrenheit and Fahrenheit to Celsius).

40 km/hr

You check the temperature in your room and it reads 20°C. Convert it to Fahrenheit.

Home Task

Complete Exercises B, C, D, E, F, G and H from 'Learning better' section page 134-135 in the Main Coursebook.

Also, bring some pictures of yourself or family members for creating something interesting in the next Period.

Period 10

Teacher: Good morning/afternoon, students! How are you all today?

SHOULD DO

05 MIN.

Teacher: Wonderful! Let us begin with a quick warm-up. Imagine you are spending a day outside in the sun and you want to know how hot it is. Can anyone tell me what tool you would use to measure the temperature?

Teacher: That is right! We would use a thermometer. Now, let us think about time. How do we measure time? What units do we use?

Teacher: Excellent! We use seconds, minutes, hours, days, weeks, months and years to measure time. These units help us understand the length of time that has passed or how long something lasts.

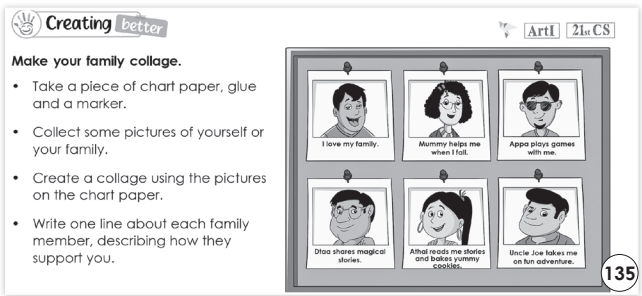
Teacher: Let us practice using these units. If it is 10:00 a.m. now, how many hours will it be until 3:00 p.m.?

Teacher: Great! It will be 5 hours. Now, if you start an activity at 2:30 p.m. and finish at 4:00 p.m., how much time has passed?

Teacher: Yes! It is 1 hour and 30 minutes.

Teacher: Fantastic! You are all doing great. Now, let us move on to the next activity.

Creating better



135

Teacher: Open your Main Coursebook to page 135. Look at 'Creating better' section. We will make a family collage. Ready?

MUST DO

10 MIN.

Teacher: First, take a piece of chart paper, glue and a marker. Then, pictures of yourself or your family members. You can also draw pictures. Can anyone tell me how pictures can help us express our thoughts and memories about our family?

Teacher: That is right! Pictures help us tell a story and express our feelings, especially when it comes to family. Each picture can remind us of the love and support we receive from our family members.

Teacher: Let us arrange the pictures in a fun and creative way on the chart paper to create the collage. Now, write one line about each family member, describing how they support you. For example, "Mummy helps me when I fall" or "Appa plays games with me." Can anyone think of a sentence they would use to describe how a family member supports them?

Teacher: Wonderful! You can use your own words to describe the love and care that your family shows. It could be something like "Dtaa shares magical stories" or "Uncle Joe takes me on fun adventures".

Teacher: After you finish your collage, show it to the class and tell us how your family supports you and why they are special to you.

(Ask a few confident students to talk about their family to the class.)

Teacher: Great participation everyone! Let us clap for everyone's effort and move on to the next activity.

Thinking better


Thinking better
2L.CS HOTS
Think and write the answer in your notebook.
A car starts its journey at 9:00 a.m. and travels at an average speed of 60 kilometres per hour. What time will it reach its destination, which is 180 kilometres away?
135

Teacher: Now, look at the 'Thinking better' section. Can anyone read the question aloud for me?

MUST DO
05 MIN.

Teacher: Yes, it says, "A car starts its journey at 9:00 a.m. and travels at an average speed of 60 kilometres per hour. What time will it reach its destination, which is 180 kilometres away?"

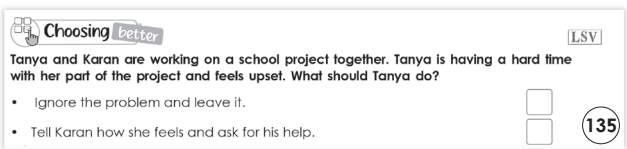
Teacher: Take a moment to think about it. What do we need to do to figure out when the car will reach its destination?

Teacher: That is right! We need to divide the total distance (180 kilometres) by the speed (60 kilometres per hour). Can anyone help me with the calculation?

Teacher: Excellent! 180 ÷ 60 = 3 hours. So, if the car starts at 9:00 a.m., it will reach its destination at 12:00 p.m.

Teacher: Great work! Understanding how to calculate time based on speed and distance is very useful in everyday life. Let us now move on to our next activity.

Choosing better


Choosing better
LSV
Tanya and Karan are working on a school project together. Tanya is having a hard time with her part of the project and feels upset. What should Tanya do?
- Ignore the problem and leave it.
- Tell Karan how she feels and ask for his help.

135

Teacher: Look at the 'Choosing better' section. It says, "Tanya and Karan are working on a school project together. Tanya is having a hard time with her part of the project and feels upset. What should Tanya do?"

MUST DO
05 MIN.

Teacher: There are two options given. Think about them and choose the better option. What do you think Tanya should do? Which option is the better choice?

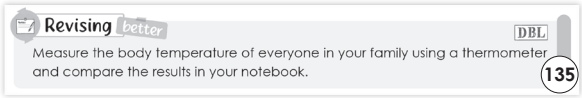
Teacher: Exactly! Tanya should tell Karan how she feels and ask for his help. It is always better to communicate and ask for help when we are struggling.

Teacher: Can anyone explain why asking for help is a good way to solve problems?

Teacher: Well said! Asking for help shows that we understand our challenges and are willing to work together to find a solution. This helps in building teamwork and resolving problems effectively.

Teacher: Great thinking, everyone! Let us remember to always communicate and ask for help when needed, whether it is in school projects or in everyday situations.

Revising better


Revising better
DBL
Measure the body temperature of everyone in your family using a thermometer and compare the results in your notebook.
135

Teacher: Now, look at the 'Revising better' section. It asks us to measure the body temperature of everyone in your family using a thermometer and compare the results in your notebook.

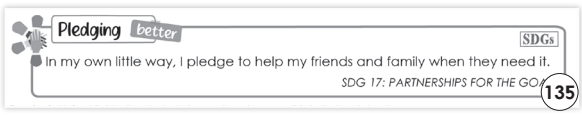
Teacher: Can anyone tell me why it is important to measure and compare our body temperature regularly?

Teacher: That is right! It helps us monitor our health and spot any changes that may indicate we are feeling unwell. A thermometer is a great tool to use when we need to check if we have a fever.

Teacher: So, after you measure everyone's body temperature (at home), write down the results in your notebook. You can compare the readings to see if there are any differences.

Teacher: Make sure you use the thermometer properly and follow the instructions for accurate readings. We can now move on to our next activity.

Pledging better


Pledging better
SDGs
In my own little way, I pledge to help my friends and family when they need it.
SDG 17: PARTNERSHIPS FOR THE GO
135

Teacher: Look at the 'Pledging better' section. Let us read it aloud together - In my own little way, I pledge to help my friends and family when they need it.

MUST DO
05 MIN.

Teacher: Can anyone explain why it is important to help our friends and family?

Teacher: Exactly! By helping others, we create stronger relationships and contribute to making the world a better place. Our small actions can make a big difference in the lives of people around us.

Teacher: So, I want you to think about one way you can help your family or friends today. You can pledge to help in small ways, like helping with tasks or supporting someone who feels down.

Teacher: Let us write this pledge down in our notebooks.

Teacher: Great work, everyone! Let us remember to always be there for each other, just like we support and care for our loved ones. With this, let us now move on to our book of holistic teaching.

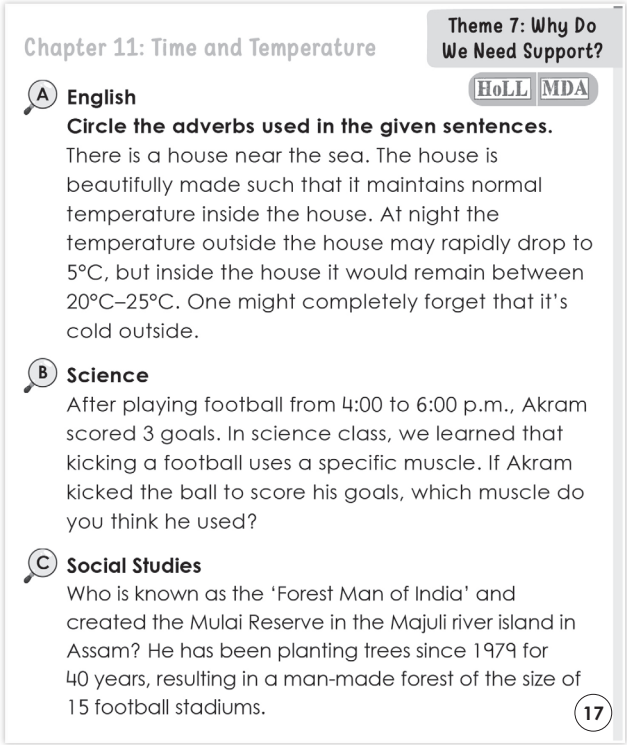
Book of Holistic Teaching

Teacher: Let us open the Book of Holistic Teaching to Chapter 11: Time and temperature on page 17.

COULD DO
05 MIN.

(Ensure that the mentioned activities are completed by

the students. These activities are designed to enhance their holistic understanding and engagement with the topic. Provide any necessary support and/ or materials to help them successfully finish the activities.)



Chapter 11: Time and Temperature

Theme 7: Why Do We Need Support?

HoLL MDA

A English

Circle the adverbs used in the given sentences.

There is a house near the sea. The house is beautifully made such that it maintains normal temperature inside the house. At night the temperature outside the house may rapidly drop to 5°C, but inside the house it would remain between 20°C–25°C. One might completely forget that it's cold outside.

B Science

After playing football from 4:00 to 6:00 p.m., Akram scored 3 goals. In science class, we learned that kicking a football uses a specific muscle. If Akram kicked the ball to score his goals, which muscle do you think he used?

C Social Studies

Who is known as the 'Forest Man of India' and created the Mulai Reserve in the Majuli river island in Assam? He has been planting trees since 1979 for 40 years, resulting in a man-made forest of the size of 15 football stadiums.

17

Teacher: Let us clap for everyone's effort and end today's session. See you in the next class. Have a wonderful day ahead.

You may show the **HOTS** and **Quiz** given on digital platform.

Differentiated Activities

110 km/hr

Imagine you are planning a trip that will last 100 days. You begin your trip on 1st June. Can you calculate the end date of your trip?

80 km/hr

You are working on a school project, and the task will take 45 days. If you begin on 10th January, what is the final date for completing the project?

40 km/hr

Imagine you are planning a fun event that lasts for 15 days. You start the event on 5th April. Can you figure out when the event will finish?

Home Task

Measure the body temperature of everyone in your family using a thermometer and compare the results in your notebook.

Complete Worksheet 2 from Maths Workbook page 43. Also, bring your project work in the next Period for presentation.

Period 11

SHOULD DO

05 MIN.

Teacher: Good morning/afternoon students! How are you all today?

Teacher: Wonderful! Let us start with a quick warm-up. Imagine you are spending a day outside in the sun. How do you think you would check how hot it is?

Teacher: That is right! You would use a thermometer. Now, can anyone tell me what happens when the thermometer shows a high temperature?

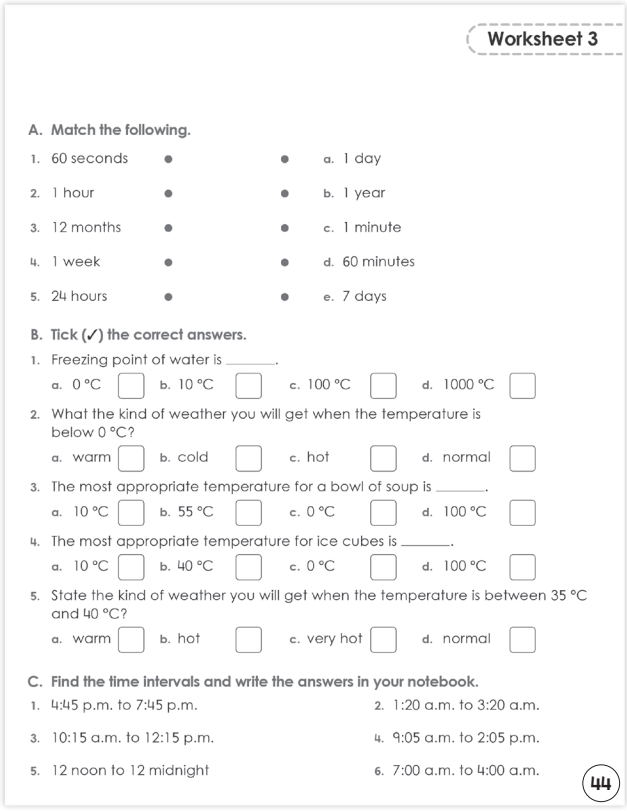
Teacher: Exactly! It means the temperature is hot outside. What about if the thermometer shows a low temperature? What does that tell you?

Teacher: Yes, it tells us it is cold outside. Temperature helps us understand how hot or cold it is around us. Now, let us talk about how we measure time. Can anyone tell me the units we use to measure time?

Teacher: Great! We use seconds, minutes, hours, days, weeks, months and years to measure time. These units help us understand how long something lasts.

Teacher: Now that we have done the recap, we can move on to workbook and complete Worksheet 3.

Worksheet 3



Worksheet 3

A. Match the following.

1. 60 seconds	●	●	a. 1 day
2. 1 hour	●	●	b. 1 year
3. 12 months	●	●	c. 1 minute
4. 1 week	●	●	d. 60 minutes
5. 24 hours	●	●	e. 7 days

B. Tick (✓) the correct answers.

1. Freezing point of water is _____.
   a. 0 °C ☐ b. 10 °C ☐ c. 100 °C ☐ d. 1000 °C ☐
2. What the kind of weather you will get when the temperature is below 0 °C?
   a. warm ☐ b. cold ☐ c. hot ☐ d. normal ☐
3. The most appropriate temperature for a bowl of soup is _____.
   a. 10 °C ☐ b. 55 °C ☐ c. 0 °C ☐ d. 100 °C ☐
4. The most appropriate temperature for ice cubes is _____.
   a. 10 °C ☐ b. 40 °C ☐ c. 0 °C ☐ d. 100 °C ☐
5. State the kind of weather you will get when the temperature is between 35 °C and 40 °C?
   a. warm ☐ b. hot ☐ c. very hot ☐ d. normal ☐

C. Find the time intervals and write the answers in your notebook.

1. 4:45 p.m. to 7:45 p.m.
2. 1:20 a.m. to 3:20 a.m.
3. 10:15 a.m. to 12:15 p.m.
4. 9:05 a.m. to 2:05 p.m.
5. 12 noon to 12 midnight
6. 7:00 a.m. to 4:00 a.m.

44

Teacher: Open your Maths workbook and look at worksheet 3 on page 44. In Exercise A we need to match different units of time with their corresponding equivalents.

MUST DO

20 MIN.

Teacher: Let us read the first question: 60 seconds. What unit can 60 seconds be matched with?

Teacher: Yes! 60 seconds is equal to 1 minute. Now, continue with the rest of the matching in your worksheet. Once you finish, we will review the answers together.

(Give time and let them complete Exercise A.)

Teacher: Excellent! We can now move on to Exercise B. It says, Tick (✓) the correct answers.

Teacher: For the first question, it asks: What is the freezing point of water? Can anyone tell me the freezing point?

Teacher: Yes, the freezing point of water is 0°C. So, we tick option (a). Continue working on the remaining questions and tick the correct answers.

(Give time and let them complete Exercise B.)

Teacher: Once you have completed this, we will discuss the answers together.

Teacher: Let us move on to Exercise C. This section asks us to find the time intervals and write the answers in your notebook.

Teacher: The first question is: 1:45 p.m. to 7:45 p.m. How much time has passed between 1:45 p.m. and 7:45 p.m.?

Teacher: Yes! It is 6 hours. Continue finding the time intervals for the remaining questions. Write your answers in your notebook, and we will review them together.

(Give time and let them complete Exercise C.)

Teacher: Once you have completed this, we will discuss the answers together.

Teacher: Excellent work everyone. Now, take out your project work and have a discussion on it.

Book of Project Idea

COULD DO

10 MIN.

(Discuss the project assigned in the previous Period, focusing on helping students understand the objectives and addressing any challenges they faced.)

SHOULD DO

05 MIN.

Teacher: Now, let us fill in the last column of the **KWL chart**.

Teacher: In this column we will write what we have learned in this chapter.

Teacher: Think about the topics, have we learnt and write them in the 'L' column of the chart. (Wait for students to fill in the chart.)

Teacher: Let us all give a huge round of applause to everyone for their effort. See you in the next class. Have a wonderful day ahead.

You may show the **Maths Lab** given on digital platform.

You may generate additional practice worksheets using the **Test Generator** given on the digital platform.

Differentiated Activities

110 km/hr

Imagine you have an event that lasts for 150 minutes. If it starts at 2:30 p.m., what time will it end?

80 km/hr

If a movie starts at 7:00 p.m. and lasts for 1 hour 50 minutes, what time will it finish?

40 km/hr

If your class starts at 9:30 a.m. and finishes at 11:00 a.m., how much time is there between the start and end of the class?

Home Task

Discuss with your parents - how they use thermometers in their daily lives and when it is important to measure the temperature. Also, revise this lesson in your Little Book.

Learning Outcomes

The students will:

Domain	Learning Outcome
Physical Development	• demonstrate the ability to measure body temperature accurately using a thermometer.
Socio-Emotional and Ethical Development	• express their feelings regarding temperature discomfort and seek help from others, promoting emotional awareness and empathy.
Cognitive Development	• convert and calculate time and temperature using different units and solve real-life problems involving time and temperature.

Language and Literacy Development	• use appropriate vocabulary to discuss time, temperature, and related concepts; write and describe the process of measuring temperature.
Aesthetic and Cultural Development	• create a family collage that reflects personal experiences and family support, demonstrating creativity and artistic expression.
Positive Learning Habits	• develop problem-solving skills and positive learning habits through individual and collaborative activities, promoting active participation and teamwork.

Starry Knights

Could you teach the learners time management? Is it easy to follow the lesson plan and be organised for the class or you prefer to follow random activities? Share your opinion.

Reward yourself with a STAR.