

3

Time to go

Coverage This unit is about reading, measuring and recording time using the 12-hour and 24-hour clock. This unit also develops skills in documenting common date formats and calculating, measuring and converting units of time.	Skills MSS1/L1.2 read, measure and record time in common date formats using the 12-hour and 24-hour clock MSS1//L1.3 calculate using time MSS1/L1.6 (time) add and subtract common units of measure within the same system MSS1/L1.7 (time) convert units of measure in the same system
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Resources needed for effective teaching of this unit:

Demonstration Digital watch Calendar Number line Geared clock Selection of timetables	Pair Stopwatches or digital watches with stopwatch facility Ball 20 cubes	Individual Clocks with moveable hands if necessary TV guide
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Reminder

In the Links, H means Help, E means Extension and M means Mini-project.

Remember

Throughout the unit, be aware of the reading needs of learners.

You may need to read out parts of the text.

Words **highlighted** in **bold** will need particular clarification.

Context

- This unit is about Ben who is a keen runner and sports enthusiast.
- Ben uses timetables when he travels by bus and train.
- Ben runs with a club and keeps track of his lap times.
- Ask learners if they are interested in sport and open up the discussion.

Stimulus questions

- Do you have a watch? Is it digital? Does it also show the date?
- Do you ever travel by bus or train?
- How do you know what time the train leaves?
- Do you use a timetable?
- Have they ever used a stopwatch?

Page 2 **Sporting dates**

Introduction to activity 1

- Discuss dates and the common format for writing dates. Be aware that in some countries, e.g. the US, the date is written with the month first.
- Look at the 12 months, the order and why January is 01 and June is 06 etc. (NB: Many forms or computers require two digits for the month.)
- Use a calendar to show the sequence of the months if necessary.
- Play a game in which you call out the month for learners to call back the correct two-digit numerical equivalent.
- NB: Date formats have already been covered at Entry 2 and Entry 3.
- Work through the examples.
- Practise writing important dates in this way.

Activity 1

- Ask learners to complete the activity individually or in pairs.

Activity 2

- If learners do not object, ask volunteers to state how old they are. Can other learners work out the year in which they were born?
- Ask learners to work out the dates of birth of the sports personalities.
- Provide help with reading if necessary.
- Use calendars and number lines to help with calculations.

Page 3 **Twenty-four/seven**

Introduction to activity 3

- Do any of the learners have digital watches?
- Do they use the 12- or 24-hour clock?
- Show a watch using the 24-hour clock.
- Draw a clock face on the board.
- Remind learners about am and pm and the fact that times are repeated twice to make 24 hours.
- Go through the am hours from midnight to midday. Introduce 13–23 for the pm hours.
- The common format is 13:00 or 1300 (stated thirteen hundred hours).
- Write 13:58 on the board and explain the position of the ‘hour’ digits and the ‘minute’ digits.
- Hour digits will only go up to 23, with midnight starting again at 00:00, while minute digits will go up to 59 because there are 60 minutes in one hour.
- Spend some time on this to make sure learners understand.
- Work through the examples.
- Play a game in which you call out the 12-hour clock time, asking learners to tell you the 24-hour pm equivalent.

↑ Activity 3

- Ask learners to complete the activity individually or in pairs.

LINKS: H1, E1, M1

Pages 4–5 **Time flies – or does it?**

Introduction to activity 4

- Using a stopwatch or minute hand, ask learners to close their eyes for one minute then quietly open them when they think one minute has passed. You time it and call finish when a minute is up. How close were they?

- Discuss which units of time learners would use for calculating different times. For example, running a 100-metre race would be timed in seconds, a football match in hours and minutes, someone's age in years.
- List the different units on the board and discuss their relationships. For example, seven days in one week. 12 months in one year, 100 years in one century etc.

Activity 4

- Ask learners to complete the activity individually or in pairs.
- Each number is used once.

Activity 5

- Ask learners to complete the activity individually or in pairs.
- Learners may use calculators, number lines, cubes etc. to help with the calculations.
- Check that learners use the correct amounts for the units of time.

Activity 6

- Look through some TV guides for sports programmes. Look at the start times and calculate how long the programmes will last.
- Use a number line or time line or draw a time line on the board.
- Go through the football example together, showing how to add two hours on to 3 o'clock, by counting on two hours or use a number line.
- Individually or in pairs, ask learners to work through the questions, adding the length of time to find the finishing times.
- Be aware that question 2 goes over midday. Use clocks with moveable hands, and time and number lines to help with calculations.

Activity 7

- This activity is similar to activity 6 but looks at the difference between start and finish times; learners will have to count on to find the length of the programme.
- Work through the example.

- Work through some similar questions on the flipchart.

LINKS: H2, E2, M2

Pages 6–7 In record time

Introduction to activity 8

- Look at stopwatches, or digital watches that have stopwatch facilities.
- Ask learners to describe the position of the digits and their meaning.
- Discuss why stopwatches have to be so accurate and that races are often timed to hundredths of a second.
- Allow learners to explore and use the stopwatches.
- Make sure the watches are suitable and that learners do not have difficulty reading the display.

Activity 8

- Ask learners to work with another person and use a stopwatch.
- Learners first estimate how long they think it will take them to complete each activity.
- Ensure learners are working in suitable units of time (minutes and seconds) and are recording them as such.
- Each learner should time another person with the stopwatch as accurately as possible for each activity and record the results, as well as recording their own times.
- As a group, discuss the times recorded. Were the estimates fairly accurate? Who was the fastest in the group for each activity?

Activity 9

- Introduce the table of race times.
- Ensure learners know which digits are minutes and seconds.
- Compare Ben's time with the winner's time and find the difference between them.
- Use a number line to help if necessary.

- Ask learners to complete the activity individually or in pairs.

LINKS: E3, M3

Pages 8–9

Every second counts

Introduction to activity 10

- Remind learners that there are 60 seconds in one minute, 60 minutes in one hour.
- Write on the board $60 \text{ seconds} = 1 \text{ minute}$.
- Ask how many seconds there are in two minutes? (120) Ask how many seconds there are in $1\frac{1}{2}$ minutes? (90) Use a clock to help.
- Reverse the process and ask how many minutes there are in 75 seconds. How many seconds remain? (1 min 15 sec).
- Write this format on the board and go through a few other examples, asking learners to convert seconds into minutes and seconds.

Activity 10

- Learners should complete the activity individually or in pairs.

Activity 11

- Start with an easy example such as 1 min 15 sec and 1 min 10 sec. Ask learners to add these two times together (2 min 25 sec).
- Discuss how to add two times when they cross the 60 seconds e.g. 35 sec and 40 sec (75 sec converted 1 min 15 sec).
- Go through a few examples until learners feel confident. Ask them to complete the additions.
- Ask learners to complete the activity individually or in pairs.

Activity 12

- Emphasise that each unit of time is based on 60: $60 \text{ seconds} = 1 \text{ minute}$ and $60 \text{ minutes} = 1 \text{ hour}$.
- Discuss some examples.
- Ask learners to complete the exercises individually or in pairs.

Activity 13

- This activity develops skills in adding minutes and half minutes.
- Discuss whether learners have used a tube or metro map.
- Go through the map together, explaining about junctions (for learners who have not experienced the tube map before).
- Give some practice routes for learners to 'travel'.
- Be sensitive to reading or sight difficulties.
- Look at the example together and try some different routes.
- Add the times of the station stops and changes, to arrive at a total time for each journey. Which is the quickest route?
- Ask learners to complete the activity individually or in pairs.

LINKS: H3

Pages 10–12

Time travel

Introduction to activity 14

- Discuss timetables. Have learners used timetables before? Have they used them when travelling?
- Look at a selection of timetables and discuss the layouts. Are there common features? What information do they hold?
- Look at the timetable for the number-2 bus route. Discuss the features, journey stops, and time between stops. How can you calculate total journey time?
- Pose some group questions, e.g. how many stops between ___ and ___? What time is the last bus back to Stockwell on Saturday? etc.

Activity 14

- When learners are confident, ask them to work individually or in pairs on the remaining questions.

Activity 15

- Discuss the Commonwealth Games and other sporting events around the country.

- Have learners been to sporting events?
- How did they travel there?
- How do they work out the time needed to ensure they arrive in time?
- Look at the time it takes to get from the station to the stadium seats. Add the minutes together.
- Look at the train timetable together. Discuss the information given.
- Ask learners to work in pairs to discuss how they will work out which train is needed.
- Estimate the train times and ring the estimate before answering questions 1 and 2.
- Go through the answers as a group. Discuss possible outcomes.

LINKS: H4, E3, M3

Page 13

Time to work

Introduction to activity 16

- Discuss time sheets, shifts, hourly work and flexitime.
- Do any of the learners have to fill in time sheets where they work? Do the sheets look similar to the one displayed?
- What information is usually on the time sheets?

Activity 16

- Look at the time Ben is in on Monday.
- Calculate his daily hours.
- Encourage learners to add in hourly chunks or count the boxes before converting half-hour totals to hours.
- Ensure learners count the 'in' box and do not count the 'out' box.

Activity 17

- Learners complete the activity individually or in pairs.

Pages 14–15

Help

H1

- Ask learners to fill in the missing equivalent 24-hour times on the grid.
- Show the pattern of numbers counting up.

H2

- Use a clock with moveable hands if necessary to count on the time.
- Remind learners how to add times.

H3

- Remind learners that 60 seconds is one minute and that there are 60 minutes in one hour.

H4

- Use different examples of simple timetables.
- Look at the information presented and the layout. Identify where the times are to be found, the days etc.
- Encourage learners to look at the whole picture first in order to aid comprehension before breaking the timetable into parts.
- Why would you use this timetable?

Page 16

Extension

↑ E1

- Encourage learners to complete this activity without using number lines or time aids.

↑ E2

- Use copies of TV guides. Ask learners to choose programmes Ben might like.
- Be systematic. Break down the 16 hours into daily times.
- Add the programme times carefully.

E3

- This is a timetable of a local rural train.
- Discuss how often it runs during the day.
- What is the length of time between trains?
- Help learners with reading the station names if necessary.

Page 17

Mini-projects

M1

- Encourage learners to look in newspapers, on digital display boards etc. to find examples of times using the 24-hour clock.
- Discuss how the 24-hour clock is used to avoid confusion between am and pm.

M2

- Ask learners to keep a record of their TV viewing for the week.
- What is their average daily viewing time?
- How many hours in total for the week?
- If learners do not have access to a television, use the radio instead.

M3

- If learners have access to a computer, encourage them to plan journeys using bus, train or flight timetables.

Pages 18–19

Check it

Use these questions to assess how learners have coped with the skills in this unit. Ask learners to indicate the areas in which they would like more help.

How am I doing?

Learners complete this individually, with teacher support.