3 My delivery job

Coverage	Skills
This unit is about measuring time, working with fractions, calculating fractions, decimals and percentages, and working with a calculator.	**MSS1/L2.2** calculating, measuring and recording time **N2/L2.2** calculating equivalent fractions, decimals and percentages **N2/L2.4** working with fractions **N2/L2.10** working with a calculator

Resources needed for effective teaching of this unit:

Demonstration	Pair	Individual
Calculator	Access to internet desirable	Access to Internet desirable
Calendars	Calculators	Calculators
	Calendars	Calendars
		Road maps
		Distance charts
		Highlighter pens

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.
Some learners will benefit from using a highlighter pen to highlight the mathematical information needed in a word problem.
Most learners will benefit from having separate copies of all information that would otherwise involve turning back to earlier pages.

Context

Discuss the scenario as a group.
Be aware that some people may have had little experience of driving times, work regimes or timesheets, whereas others may have a lot.

Stimulus questions

- Do you know anyone whose job is to drive a lorry or van?
- Do they drive in Britain or other parts of Europe? Do they deliver goods? What other driving jobs can you think of?
- Why do you think there are laws to limit to the length of time someone should drive when they are working?
- As a group discuss reasons for limiting driving times for new employees and in general. For example, on health and safety grounds.

Possible points for discussion:

  - In 2000, over 3000 people were killed and almost 40 000 injured in road traffic accidents. Research indicates that between a quarter and a third of all accidents involved someone who was at work at the time.
  - In 2000, 20 000 accidents were caused by drivers falling asleep at the wheel.
  - Source: www.lhc.org.uk/members/pubs/factsht/74fact.pdf

- Have you had goods delivered to your home? How long did you wait for the delivery? A week, a day, six weeks?
- Discuss the different ways learners have seen prices reduced in sales.
- Discuss the different ways people get paid to work in shops or drive lorries.

A note on time

The notation of time needs to be clarified here. In 12-hour clock times, use a colon (not a decimal point) between the hours and minutes. When using the 24-hour clock, times can be written in three ways, e.g. 10:32 am, could be written 10:32, 10 32 or even 1032 (but never with a decimal point).

Pages 2–5
Time to drive

Introduction to activity 1

- Ask learners to work in pairs to find out EU and UK legislation on driving restrictions. They could use the Internet or the library.
- EU rules state that:
  - A driver must not drive more than 9 hours in a day, but this can be extended to 10 hours twice a week.
  - After $4\frac{1}{2}$ hours driving, whether continuous or accumulated, a driver must take a break of at least 45 minutes, unless he begins a daily or weekly rest period. This break may be replaced by breaks of 15 minutes each distributed over the driving period, or immediately after this period.
  - Source: http://www.pslgroup.net/break.html
- UK rules state that:
  - The maximum driving time is 10 hours per day and a drive must not be on duty for more than 11 hours per day. A break of at least 30 minutes must be taken after 5.5 hours.
  - Source: www.lhc.org.uk/members/pubs/factsht/74fact.pdf
- Encourage learners to draw rectangles to reinforce concepts of halves, whole numbers etc.
- Remind learners about fraction notation: $\frac{1}{2}$ = half.
- Discuss how simple mixed fractions e.g. $4\frac{1}{2}$, $5\frac{1}{2}$ etc. can be broken up into whole units and halves.
- Work through the examples.
- Go through other examples with different times if necessary.

Activity 1

- Learners complete the activity individually or in pairs.

Introduction to activity 2

- Discuss the number of minutes in an hour, quarter of an hour, half an hour and a third of an hour.
- Ensure learners can write these fractions ($\frac{1}{4}$, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{1}{3}$ etc.) and understand what they mean.
- Revise $\frac{1}{2} = \frac{2}{4}$ and the terminology 'denominator', leading to 'common denominator'.
- Demonstrate adding quarters and halves and converting the answers to mixed numbers.
- Work through the examples.

Activity 2

- Make sure learners can read and understand the questions.
- Some learners will benefit from highlighting the mathematical information in the questions.
- Learners complete the activity individually or in pairs.

Activity 3

- Discuss how to add mixed numbers: add the whole numbers together, add the fraction parts together and then combine.
- Work through the examples.
- Introduce further examples if necessary.
- Learners complete the activity individually or in pairs.

LINKS: H1, E3, M1, M4

Pages 6 and 7
The time it takes

Introduction to activity 4

- Discuss the concept of start and finish times for work, 'normal' working hours, etc.
- Discuss how to add times to a time: hours to hours, minutes to minutes.
- Remind learners that 1 hour = 60 minutes and that once 60 minutes is reached in addition, it is an hour.
- Work through the examples.
- Highlight that these times use the 12-hour clock.
- Revise the 24-hour clock and ensure learners can convert the times.

Activity 4

- Learners complete the activity individually or in pairs.
- Learners will need the completed time sheets from activity 3 on page 5 – it would helpful to supply copies for them to refer to.

Introduction to activity 5

- Discuss time counted on a calendar: 7 days, 10 days, 3 weeks or one month (varying according to month e.g. 28 days, 30 days, 31 days).
- Demonstrate counting using a calendar.
- Work through the examples as a group.
- Many learners will need support with the reading content of this activity.
- Some learners will benefit from highlighting the mathematical information.

Activity 5

- Get learners to work in pairs and discuss the question of length of time from purchase to delivery.
- Ask each pair to share one answer with the rest of the group.

LINKS: H2, H3, E1

Pages 8 and 9
Comparing prices

Introduction to activities 6–11

- Learners will need access to a calculator and may need to be reminded of calculator skills (learned in N2/E3.4 and N2/L1.1).
- Learners will need to use equivalence in fractions, decimals and percentages, and rounding decimals. They may need to be reminded of skills learned in earlier levels (N2/E3.4, N2/L1.3 and N2/L1.7).

Introduction to activity 6

- This activity involves changing percentages to fractions.
- Remind learners that a percentage is a number out of 100, so 30% = $\frac{30}{100}$ etc.
- Remind learners that fractions should be reduced to their simplest terms so 30% = $\frac{30}{100}$ = $\frac{3}{10}$.
- Work through the examples.

Activity 6

- Learners complete the activity individually or in pairs.

Introduction to activity 7

- This activity involves changing decimals to fractions.
- Remind learners of how to establish the place value of a digit in a number, e.g. in 0.125 the 5 is thousandths.
- Some learners will benefit from an individual blank 'tenths, hundredths, thousandths' table.
- Discuss how to change decimals to fractions using knowledge of place value.
- Remind learners that they need to simplify fractions where possible.
- Work through the example given.
- Work through more examples if necessary.

Activity 7

- Learners complete the activity individually or in pairs.

Activity 8

- This activity is about changing fractions to percentages.
- Discuss how to convert fractions to percentages: divide the numerator by the denominator and multiply by 100, using a calculator if necessary.
- Work through the examples.
- Work through other examples if necessary.
- Emphasise that the calculations can be checked by reversing the process and changing the percentage back to a fraction.
- Learners complete questions 1–4 individually or in pairs.
- Ensure learners understand how to round a recurring decimal.
- Learners complete questions 5–8 individually or in pairs.
- You could introduce use of the fraction button on a calculator once the concept and method of converting fractions to percentages has been firmly established.

LINKS: H4, E2

Pages 12 and 13
Help

H1

- Remind learners how to add simple mixed fractions.
- Learners work individually or in pairs.

H2

- Remind learners how to add time (60 minutes = 1 hour).
- Remind learners to use am/pm for the 12-hour clock.
- Remind learners how to convert to 24-hour clock times.
- Some learners will benefit from having a separate copy of the timesheet from week 3 (activity 3, page 5).
- Learners work individually or in pairs.

Pages 10 and 11
Paying wages

Introduction to activity 9

- Discuss hourly, daily and weekly pay, and salaries.
- Discuss that commission is paid in some jobs. Sometimes pay is commission only, while in other jobs pay consists of basic pay and commission.
- Revise how to find 10% and 1% of an amount of money. Work through some examples.

↑ *Activity 9*

- Emphasise the checks made at each stage.
- Ensure learners use the memory buttons on their calculator correctly.
- Work through the examples on how to calculate Len's basic pay, commission and total pay.
- Learners complete the activity individually or in pairs.

LINKS: H5, E5, M2, M3

H3

- Remind learners how to count in days and weeks on a calculator
- Some learners will benefit from having a separate copy of the delivery date information (activity 5, page 7).
- Learners work individually or in pairs.

H4

- Remind learners how to change percentages to fractions, decimals to fractions, and fractions to percentages.
- Learners work individually or in pairs.

H5

- Remind learners how to work out basic pay, commission and total pay.
- Learners work individually or in pairs.

Page 14
Extension

↑ *E1*

- Remind learners how to count in days and weeks on a calendar.
- Learners complete the activities individually or in pairs.

↑ *E2*

- Remind learners how to convert percentages to fractions, decimals to fractions and fractions to percentages.
- Learners should use reverse calculations to check their answers.
- Learners complete the activity individually or in pairs.

↑ *E3*

- Remind learners how to add mixed fractions.
- Learners complete the activity individually or in pairs.

↑ *E4*

- Remind learners how to calculate basic pay, commission and total pay.
- Learners complete the activity individually or in pairs.

Page 15
Mini-projects

M1

- As a group, discuss possible sources for information on EU rules on driving.
- The following websites may be useful:
  - www.lhc.org.uk/members/pubs/factsht/74fact.pdf
  - www.pslgroup.net/break.html
  - www.roads.dft.gov.uk/rooadsafety/tachographs/index.htm
- Decide on a journey starting point, destination and route.
- Agree a speed (suggest 50 miles per hour), timing of the journey, and breaks needed.
- Draw a map or write a schedule showing the route and timing of the journey.
- Tachographs are used to measure the time and speed of vehicles. Examples of tachographs are available at http://www.tachochart.com/indexcurrent.html

M2

- Learners should do this activity in pairs.
- Encourage learners to plan when, where and how they will gather information.
- They should consider searching the Internet, local newspapers and employment offices, using a Learning Resource Centre or a library and asking friends.
- Ensure learners use a range of resources to get reliable information

M3

- Learners should do this in pairs.
- The mini-project is most likely to be chosen by learners who are confident with the concept of annual salaries and wish to investigate tax and national insurance deductions.
- If ICT facilities are available, learners can visit www.inlandrevenue.gov.uk/rates/it.htm or a similar site to get information on tax and national insurance thresholds.
- Care must be taken that the project does not get too complicated. Learners could consider their own personal circumstances for calculation of tax purposes but they will have to be clear with their partner what the circumstances are.

M4

- As a group, discuss possible sources of information on EU rules on driving. The web addresses given in M1 may be useful.
- As a group, discuss where to find information on the relative locations of Wolverhampton and Calais: maps, road atlases, the Internet.
- Discuss the alternative routes for crossing The Channel (Channel Tunnel and various ferry routes) and where to find relevant information.
- This project could be extended into working out the costs of various routes. A comparison of cost and time taken could be used as the variables on which to base a choice of route.

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.
For activity C3 some learners will benefit from a separate copy of the delivery dates information (from activity 5, page 7).

How am I doing?

To be completed by learners individually, with teacher support.