

2

Making ends meet

Coverage

This unit is about working with sums of money written in decimal notation, using payslips and budgeting. There is plenty of scope for broadening the context to take account of learners' needs and interests. At this level, decimals are introduced in the practical contexts of money and measures, drawing on learners' knowledge and life experiences. It is important not to assume that learners understand the decimal number system because of familiarity with money. Decimal place value needs to be taught explicitly. Learners also need to be taught how to enter decimal points in a calculator and how to interpret the results of calculations. (At Entry 3 learners are not expected to use paper-and-pen methods for calculations using decimals.)

As well as using a calculator to check calculations, teachers need to encourage learners to use approximate calculations to estimate the size of the answer that should be obtained with a calculator. This is a way of identifying place-value errors.

Skills

MSS1/E3.1 add and subtract sums of money using decimal notation

MSS1/3.2 round sums of money to the nearest £ and 10p and make approximate calculations

N2/3.3 read, write and understand decimals up to two decimal places in practical contexts

N2/E3.4 use a calculator to calculate using whole numbers and decimals to solve problems in context, and to check calculations

N1/E3.9 use and interpret $+$ $-$ \times \div and $=$ in practical situations for solving problems

Resources needed for effective teaching of this unit:

Demonstration	Small group	Pair and individual
Payslips	Calculators	Pencil
Bills	Price lists	Calculator
Child benefit book	Till receipts from variety of shops	
OHP	Supermarket leaflets showing price deals	
OHT		
Flipchart		

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

Discuss the scenario in a group.
Be aware that some learners may not have a job or a family.

Talk about it

- Have you ever seen a payslip?
- Have you ever tried to understand a payslip?
- What bills do you have to pay? How often do you pay them?
- How do you make sure you have enough money to pay when you go shopping?
- Do you work out in advance how you are going to pay for all the things you need?
- How do you pay for special events like birthdays and Christmas?

Pages 2 and 3

The payslip – gross pay

Introduction to activity 1

- Find out how many learners have seen a payslip or have looked closely at payslips.
- Introduce the term **gross pay**. How many understand what is meant by gross pay?
- How many of the group understand how to calculate gross pay?
- Discuss how many hours a week people work without overtime etc.
- Remember that some of the group may not have a job.
- Ask what we mean by an **hourly rate of pay**.
- Talk about how we can be paid
 - monthly (same date each month; 12 payments per annum)
 - 4 weekly (every four weeks; 13 payments per annum).

Activity 1

- Complete as a group activity using calculators.
- Discuss the meaning of £5.75.
- Emphasise the use of the decimal point to split pounds and pence and **never** add a 'p' after the decimal point.

Pounds			•	Pence	
Hundreds (£)	Tens (£)	Units (£)	•	tenths	hundredths
		5	•	7	5

- Be prepared to illustrate using real (or other) coins. Remind learners that $10 \times 10\text{p}$ or $100 \times 1\text{p}$ coins are equal to £1 and that there are $10 \times 1\text{p}$ in a 10p coin.
- Look at the *Remember* box and discuss hourly rates.
- Ask what the hourly rate of pay is. (£5.75)
- How many hours were worked in one week? (38 hours)
- To work out gross pay, multiply the number of hours worked by the hourly rate.
- Go through the calculator button sequences, explaining each stage.
- Look at the answer (218.5) and explain that £0.5 is 50p – we need to add a zero to the end to avoid confusion.
- Explain that the digits to the right of the decimal point are in pence:
 - how many pence in one pound?
 - to the left of the point are pounds (£).
- Demonstrate and explain on the flipchart or OHT, the place-value of each figure and amount of money earned in one week.

Hundreds	Tens	Units	•	tenths	hundredths
2	1	8	•	5	0

Note that tenths and hundredths start with a lower-case letter – they are part of the whole, which in this instance is the pound (£).

Activity 2

- Be aware of the statutory minimum wage for adults and for 16–18-year-olds.

- Learners complete the table individually or in pairs using calculators. (Try to ensure that both learners in a pair do calculations on the calculator.)

Activity 3

- Learners transfer the information from the table in Activity 2 to the place-value table.
- Discuss the answers. Ask questions, for example: For Howard Jones's wage, the '1' in the tens column means how much? (You can ask a series of questions once the answers are completed.)

LINKS: H1, E1

Pages 4 and 5

Working out net pay

Introduction to activity 4

- Discuss the deductions.
- Explain that 'deduct' means to take off. Give examples: deduct from pocket money for broken window; deduct from wages for broken pots etc.
- Ask if they can think of any other instances where money may be deducted.
- Discuss net pay.
- Net pay is the amount of our wage we take home – often called 'take-home pay'.

Activity 4

- Work through the question as a group.
- Discuss how to key numbers into a calculator.
- When we are subtracting, which number do we key in first?
- Why do we have to key in the larger number first? Ask learners to key a subtraction algorithm in reverse order to see what the calculator displays – some show a negative number whereas others show 'E'.

Activity 5

- Learners complete the activity individually or in pairs.
- Check answers to ensure understanding.

- At the end of the activity, recap the meaning of terms to ensure understanding.
- Use a flipchart or OHT with further examples to reinforce understanding.

Activity 6

- Focus on the deductions made from gross pay.
- Explain that deductions are for specific purposes. Discuss each in turn and how the money is used:
 - income tax
 - national insurance contributions
 - pension (talk about different pension schemes to encourage people to save).
- Show learners examples of payslips, or use an OHT of a payslip.
- Identify key sections. Explain what is meant by the term 'employee' and introduce the term 'employer' and what this means.
- Who is their employer? (Be mindful of the fact that some learners might not have a job.)
- Basic pay:
 - What does this mean?
 - How is the basic pay calculated?
 - Identify the deductions.
- Recap on the terms:
 - gross pay
 - deductions
 - net pay.
- Work through the example using a flipchart or OHT.
- Learners will need calculators.

LINKS: H2, E2

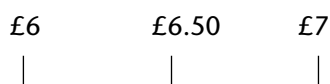
Pages 6 and 7

Rounding to the nearest pound

Introduction to activity 7

- Discuss with learners what we mean when we talk about rounding to the nearest pound.
- Talk about why you might want to round up or down to get an appropriate figure.
- Illustrate with examples, e.g. £6.77.

- It might be helpful to illustrate using a number line:



Activity 7

- Work through the examples together.
- Why does it sometimes help to round to the nearest pound?
- Learners complete the questions individually or in pairs.

Activity 8

- Discuss how deductions can vary from one week's payslip to another and why. (Different hours worked etc.)
- Working individually or in pairs and using a calculator, learners complete the tables by writing the answers to the nearest pound and then find the total deductions for both columns.
- Discuss, if it arises, why the total of the estimates is not the correct approximation of the exact total.

LINKS: H3, E4

Pages 8 and 9

The family budget

Introduction to activity 9

- Be aware that not all learners have children.
- Discuss the fact that children give their parent(s) (be mindful that learners maybe in one-parent families) money towards their keep once they start work. Is this important? Why? How does it help their son or daughter? What is a reasonable amount to take from a son/daughter? Try to obtain examples.
- Talk about child benefit – why do families receive it? What is it used for?
- Talk about the amounts received – but do not expect learners to state how much **they** receive.
- How often is child benefit collected and from where?
- If possible, look at a child benefit book.

Activity 9

- Work through the activity as a group.
- Learners will need a calculator to work out the answer.
- Work through the process of dividing £63 by 4.
- Remind learners which number is entered into the calculator first. What would happen if the figures were entered in the wrong order? (Again, try it so that the learners know what to look out for.)

Activity 10

- Talk about how the extra contributions add to a weekly income.
- Learners will need a calculator to work out the answer.
- Direct learners to Activity 7 (page 6) to find weekly net pay (£168.55).

Introduction to activity 11

- Discuss with the group:
 - the different bills we have to pay
 - how often we have to pay these bills – monthly, quarterly, annually (make sure learners know what these words mean)
 - which bills are often the most expensive and why.
- Talk about the importance of budgeting.
 - What do we mean by this?
 - The activity addresses how to budget by working out bills as weekly amounts – figures are given.
- Discuss appropriate ways of dealing with each bill in order to arrive at a weekly amount, using simple figures as examples.

Activity 11

- As a group, look at the amounts of money in the table, drawing attention to the positions of the zeros.
- Before starting the activity, ask learners to enter decimal numbers into a calculator.
 - If you enter 9.80 and press + what happens to the zero?
 - If you enter 7.06 and press + what happens to the zero?
- Use this to reinforce the concept of place value.

- When you are working with money, what does 6.5 mean? How is this different from 6.05 or 0.65?
- Ask learners to complete the total for the column headed 'weekly amount (£)' using a calculator.
- Discuss and revise rounding to the nearest pound (£) as a group.
- Ask learners to complete the column headed 'rounded weekly amount (£)'.

Activity 12

- Refer learners to the appropriate activity to find the amount needed:
 - weekly income (Activity 10)
 - weekly outgoings for bills (Activity 11).
- Discuss the importance of knowing how much money you have left each week to buy food, other essentials, luxuries, or to save for special occasions.
- Ask learners to complete the questions.

LINKS: H3, E4, M1

Pages 10 and 11 Weekly shopping

Activity 13

- Discuss rounding to the nearest 10p. Why do we sometimes round to the nearest 10p instead of to the nearest pound?
- Can we round 37p to the nearest pound? What answer would we get? Does it make more sense to round to the nearest 10p? What answer do we get then?
- Work through the examples.
- Learners should complete the activity individually or in pairs.

Activity 14

- Learners use the skills from activity 13 to complete activity 14.
- If appropriate, reinforce skills.
- Discuss the difficulties with entering a long string of numbers into a calculator.

- Ask learners for ideas on how they could keep their place in the list and how they could check they have entered all the numbers.
- Learners could work in pairs with one calling out the numbers and the other entering them into the calculator.

Activity 15

- Refer learners to activity 12 (page 9) to find how much of the weekly wage there is to buy food, essentials and to save.
- How will I find out how much is left after the food bill has been paid? Do we use $+$, $-$, \times or \div ?
- Once learners understand the process, ask which numbers we key into the calculator first. Why?
- Ask learners to calculate the answer.

LINKS: H4, M3

Page 12 Gemma's budget

Introduction to activity 16

- In the group, discuss how children manage money.
- Why is it important for them to understand how to manage money?

Activity 16

- Ask learners to work out three items that Gemma can afford to buy with her money. Emphasise that the items must be different and not two of the same.
- Learners should use a calculator to work out totals.
- Discuss the benefit of rounding in relation to spending. By rounding you ensure that you do not spend more than you have.

LINKS: H4, E3, E4, M2, M3

Pages 13 and 14

Help

H1

- Revise how wages are calculated.
- People who work – the employees – are often paid by the hour (this is not always the case).
- Discuss other ways people might be paid e.g. piecework.
- People work for a maximum number of hours per week as part of their job. After that, they can choose whether to work longer and are paid extra for this.
- Recap what is meant by gross pay.
- Talk about how to calculate gross pay – number of hours worked \times pay per hour.
- Check learners are confident using a calculator.
- Be aware of the statutory minimum wage.

H2

- Use an OHT of a payslip. Remind learners of each point on the payslip.
- Discuss:
 - basic pay
 - gross pay
 - deductions, and what they are
 - net pay.
- Reinforce that net pay is often called 'take-home pay'.
- Learners complete the activity using a calculator.

H3

- Reinforce rounding to the nearest pound.
- Discuss the importance of budgeting for known expenses. Why is this important? It helps us to work out how much money we have spare each week to spend on non-essentials, luxuries or to save.
- Talk about how, if we want to do different things (e.g. Luke learning to drive), we sometimes have to look at how we spend our money and find ways of saving more i.e. cutting back on some of our spending to pay for these different activities and goods.
- Discuss the cost of the ingredients for the sandwiches Luke will make, but do not include this in the calculation.
- Ask learners to complete the activity.

H4

- Reinforce rounding to the nearest 10p.
- How does this help us when we are in a shop looking at items we want to buy?
- Ask learners to complete the activity.
- Talk about the different rounding (up and down) involved in activities H3 and H4 if learners are completing both activities.
- Why do we sometimes round to the nearest pound and sometimes to the nearest 10p?

Pages 15 and 16

Extension

E1

- Recap what gross pay is and how to calculate it.
- Discuss half-hour time slots. How do we enter $39\frac{1}{2}$ into the calculator? What does it mean?
- How much is earned in half an hour?
- Learners should use a calculator.

E2

- Discuss gross pay, deductions and net pay.
- Which will be the largest amount each time – gross pay, deductions or net pay?
- If we are given values for net pay and deductions, how do we calculate gross pay?
- Discuss the relationship between adding and subtracting for the different calculations.
- Will the deductions always be less than or more than the gross pay?
- Will the net pay always be less than or more than the gross pay?
- Net pay and deductions are the smaller amounts.
- If we know the gross pay and deductions, how will we find the net pay?
- Learners should use a calculator.

E3

- Discuss the number of hours Michelle actually works. Help learners to work out the time difference if necessary. Although she is at the golf driving range from 9:00 am to 6:00 pm, Michelle actually works eight hours. She has one hour in total for her lunch and two breaks.

- Ask learners about single fares and return fares – what do these mean?
- How do we calculate how much per day Michelle's fares cost?
- Learners complete the activity using a calculator.

E4

- Remind learners how to round to the nearest pound.
- Learners complete the activity using a calculator.

Page 16

Mini-projects

M1

- Learners can work individually or in pairs.
- This might be a sensitive issue. Learners who do not wish to disclose their financial details could work with a hypothetical family or individual budget.

M2

- Learners can work individually or in pairs.
- Make sure learners know how to approach this task. Model an example first.

M3

- Learners can work individually or in pairs.
- Make sure learners know how to approach this task. Model an example first.

Pages 17 and 18

Check it

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

How am I doing?

Learners should complete this individually or with teacher support.