REAL-LIFE MATHS

Manage Money and Data

Workbook for National 3 Applications of Mathematics

Unit 1: Manage Money and Data



C. Blewis

Blewis LEARNING

Contents

GETTING STARTED

	How to use this book	4

MANAGE MONEY

Topic 1	Earning money	6
Topic 2	Where my money goes	18
Topic 3	Budgeting	28
Topic 4	Saving up	39
Topic 5	Best deal	49

MANAGE DATA

Topic 6	Collecting data	65
Topic 7	Comparing data	76
Topic 8	Drawing graphs	85
Topic 9	Reading graphs	95

AT THE BACK

	My progress tracker	105
	Answers	106

How to use this book

This book helps you use maths in real life: earning, spending, saving and making sense of data. Each topic follows the same pattern, so you always know what comes next.

EACH TOPIC HAS

Opener	the story for the topic, what you will learn and the key words
Skill pages	a short explanation, a method box and a worked example
Practice pages	questions for you to try, with space for your working
Real-life task	a bigger problem that uses all the skills in the topic
Check-up	a few questions to show what you can do, and a checklist

LOOK OUT FOR

Method	the steps to follow
Worked example	a question that has been answered for you, step by step
Top tip / Watch out	helpful hints and common mistakes
Talk about it	questions to discuss with a partner or your teacher

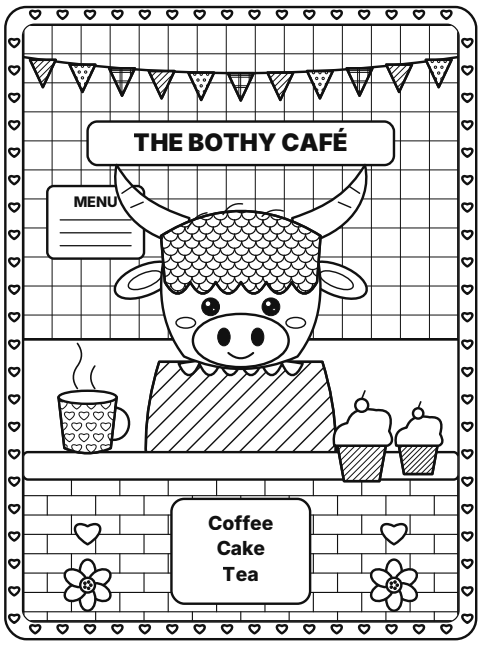
SHOW YOUR WORKING
Write down your working in the boxes, not just the answer. It helps you check your answer, and your teacher can see how you got there.

CALCULATORS
Try to work things out in your head or on paper first. You can use a calculator when the page says so, or when your teacher says it is OK.

ANSWERS
The answers are at the back of the book. Use them to check your work after you have tried the questions yourself.

Earning money

Most people earn money by working. In this topic you will learn how pay is worked out, and how to compare jobs that pay in different ways.



Theme: a summer job. Ruby has a summer job at The Bothy Café in Glen Arrin, a village in the Highlands. She serves food, clears tables and sometimes works extra shifts. Follow Ruby as she works out what she earns.

IN THIS TOPIC YOU WILL LEARN TO

Skill 1	work out pay from hours worked and a rate per hour
Skill 2	compare weekly, monthly and yearly pay
Skill 3	work out overtime and bonus pay
Skill 4	add up money from different places, like tips and allowances

KEY WORDS

Wage	money you are paid for working, often per hour or per week
Salary	pay for a year, usually paid in monthly parts
Rate of pay	how much you are paid for each hour
Overtime	extra hours, often paid at a higher rate
Bonus	extra money for doing well
Allowance	money given to help with costs, not for working

❶ Pay per hour

Many jobs pay a set amount for each hour you work. This is called the **rate of pay**.

METHOD

Pay = number of hours × rate of pay

WORKED EXAMPLE

Ruby works a 6-hour shift. She is paid **£11 an hour**. How much does she earn?

Work it out 6 × £11 = £66

Answer **Ruby earns £66 for the shift.**

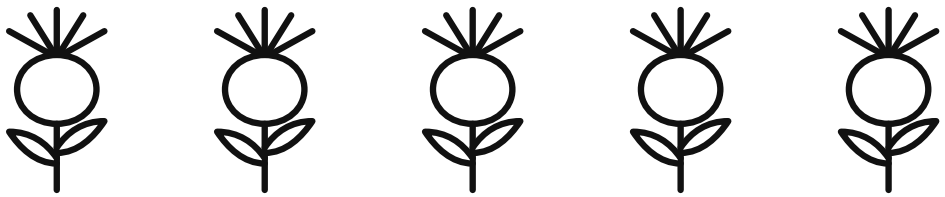
TOP TIP

If the hours are tricky, split them up. 8 × £11 is the same as 8 × £10 plus 8 × £1, which is £80 + £8 = £88.

TALK ABOUT IT

Why do you think some jobs pay more per hour than others?

DOODLE CORNER



Practice: pay per hour

1 Ruby is paid £11 an hour. Complete her shift table for one week.

Day	Hours worked	Pay
Monday	4	
Wednesday	5	
Friday	8	
Saturday	6	
Total		

2 Jamie works at the outdoor centre for 7 hours. He is paid £12 an hour. How much does he earn?

Answer: .....

3 Mia works 3 days a week, 6 hours each day. She is paid £10 an hour.

a How many hours does she work in a week?

Answer: .....

b How much does she earn in a week?

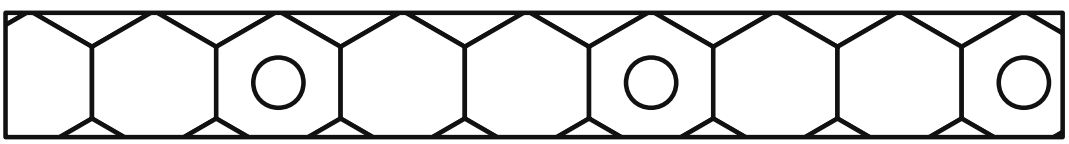
Answer: .....

4 Tom is paid £9 an hour. He works 5 hours on Saturday and 4 hours on Sunday. How much does he earn at the weekend?

WORKING

Answer: .....

DOODLE CORNER



❷ Weekly, monthly or yearly?

Jobs show pay in different ways. Some say how much you get **a week**, some **a month** and some **a year**. To compare them fairly, change them all to the same thing. Changing to yearly pay works well.

METHOD

Weekly to yearly	× 52 (there are 52 weeks in a year)
Monthly to yearly	× 12 (there are 12 months in a year)

WORKED EXAMPLE

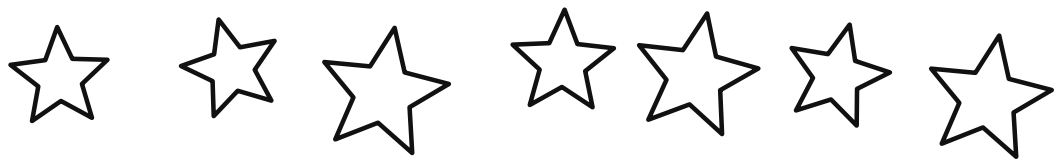
Job A pays **£300 a week**. Job B pays **£1,250 a month**. Which job pays more?

Job A	£300 × 52 = **£15,600** a year
Job B	£1,250 × 12 = **£15,000** a year
Compare	£15,600 − £15,000 = £600
Answer	**Job A pays £600 more each year.**

WATCH OUT

A month is not exactly 4 weeks, so do not multiply weekly pay by 4 to get monthly pay. Change both to yearly pay instead.

DOODLE CORNER



Practice: weekly, monthly or yearly?

You can use a calculator for these questions.

1 Change each wage to a yearly amount.

a £200 a week	b £1,000 a month	c £350 a week

2 Job C pays £250 a week. Job D pays £1,100 a month. Which job pays more in a year, and by how much?

WORKING

Answer:

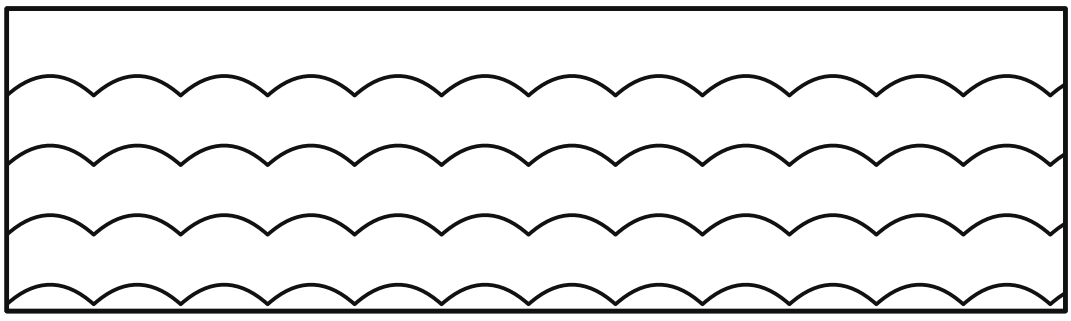
3 A job advert says £12,000 a year. Another says £240 a week. Which pays more in a year, and by how much?

WORKING

Answer:

4 Which do you think is more useful to know when planning your spending: weekly pay or yearly pay? Why?

DOODLE CORNER



3 Overtime and bonuses

Overtime means working more than your normal hours. Overtime is often paid at a higher rate, such as **time and a half**.

METHOD

Time and a half	the normal rate plus half of it again. £10 an hour → £10 + £5 = **£15** an hour
Double time	the normal rate × 2. £10 an hour → **£20** an hour
Total pay	normal pay + overtime pay + any bonus

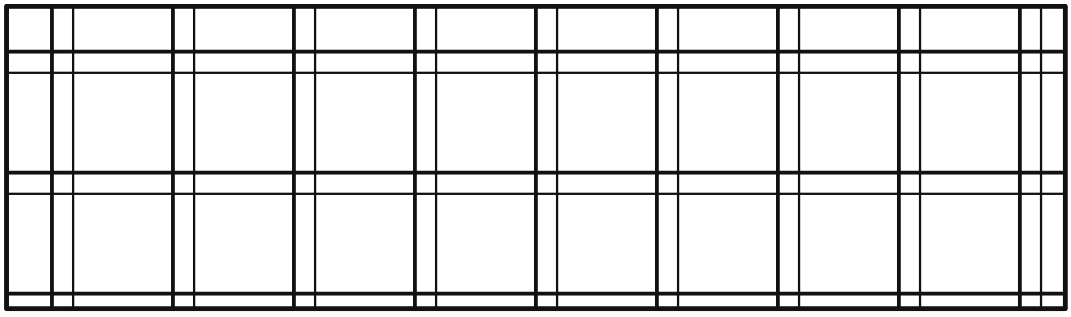
WORKED EXAMPLE

Ruby normally works 30 hours a week at £10 an hour. One busy week she works 4 hours of overtime at time and a half.

Normal pay	30 × £10 = £300
Overtime rate	£10 + £5 = £15 an hour
Overtime pay	4 × £15 = £60
Total	£300 + £60 = **£360**

A **bonus** is an extra payment, for example for selling a lot or for working hard. Some jobs pay for each item you make or pack instead of for each hour.

DOODLE CORNER



FREE SAMPLE

Manage Money and Data (N3 Maths, Unit 1)

This sample shows a few pages. The full printed workbook is available from Amazon.

blewislearning.co.uk

Blewis
LEARNING