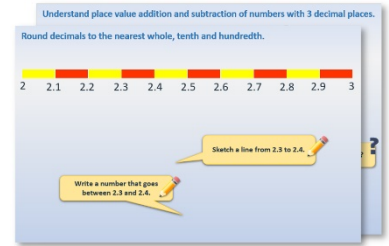


Year 3: Week 2, Day 4

Multiplying and dividing by 10 using money

Each day covers one maths topic. It should take you about 1 hour or just a little more.

1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



2. Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.

Practice Sheet (Mild)

Place value addition and subtraction

1. $4.538 + 0.2$	2. $4.538 + 0.03$
3. $4.538 - 0.004$	4. $4.538 - 0.02$
5. $6.231 + 0.11$	6. $6.231 - 0.101$
7. $6.231 + 0.111$	8. $5.846 - 0.211$
9. $5.846 - 0.13$	10. $5.846 - 0.013$
11. $5.846 - 0.204$	12. $4.789 + 0.001$

Challenge

- Start at 4.542. Add tenths and hundredths to make an addition chain ending with the number 4.627.
- Start at 10.749. Subtract tenths, hundredths and thousandths to make a subtraction chain ending with the number 9.782.

3. Finding it tricky? That's OK... have a go with a grown-up at **A Bit Stuck?**

Deduce the decimal

Work in pairs

Things you will need:

- Two different coloured pencils
- A place value chart
- 7 coins

What to do:

- Without showing your partner, write down a number with three decimal places like 4.538.
- Use a coloured pencil to shade numbers on the place value chart which add to make your number.
- Show your partner the chart.
- Your partner looks at the shaded numbers and writes the complete number.
- Does what they have written match your number?
- Swap roles and repeat.
- Use 6 different coloured pencils to shade numbers on the place value grid. Numbers already shaded cannot be re-used.

Learning outcomes:

- Understand the value of digits in numbers with three decimal places.
- Use knowledge of place value to deduce the value of digits in numbers with three decimal places.

Number line

10s	000s
-----	------

4. Have I mastered the topic? A few questions to **Check your understanding**. Fold the page to hide the answers!

Identify the value of the '4' in the following numbers:

- (a) 3.407
- (b) 4.821
- (c) 0.043
- (d) 5.104
- (e) 48,739

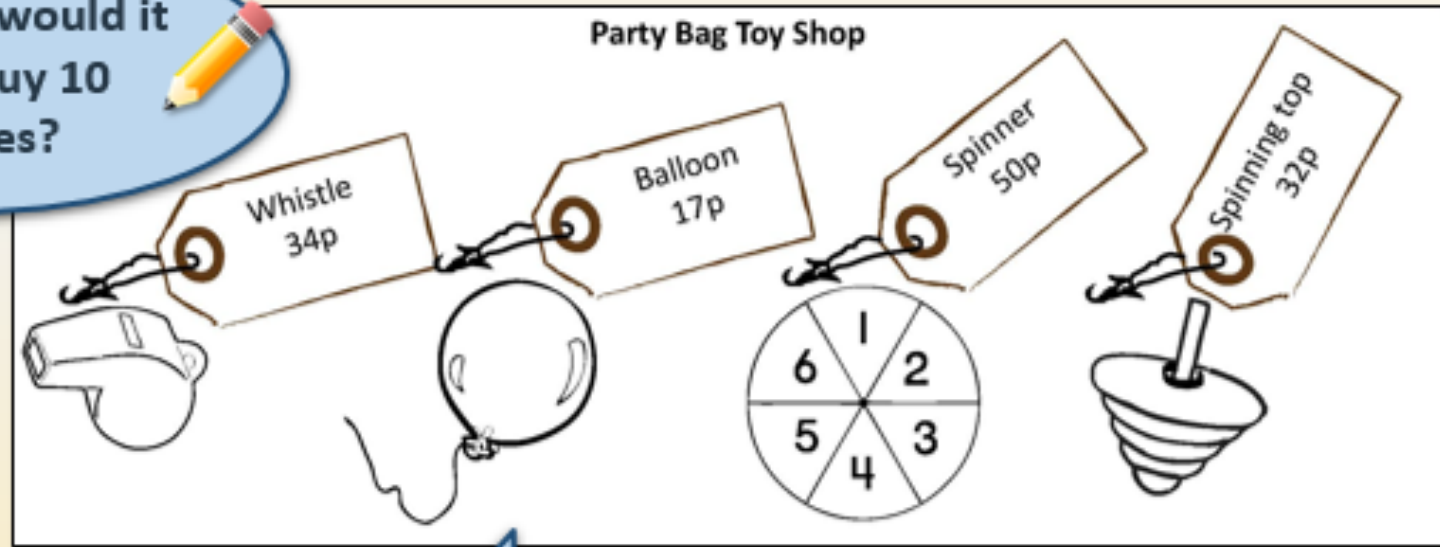
How many times must Dan multiply 0.048 by 10 to get 48,000?

What number is one hundred times smaller than 0.4?

Learning Reminders

Multiplying and dividing by 10 using money.

How much would it cost to buy 10 whistles?



£10	£1	.	10p	1p
		.	3	4
	3		4	0


We can use this money place value grid to help.

The digits move **one place** to the left when we **multiply by 10**.

Learning Reminders


Multiplying and dividing by 10 and 100 using money.

I bought **10** of these pencils for **£2.70** in total. How much were they each?



What happens to the digits this time?

I bought **10** coloured pencils for **£3.40** in total. How much were they each?



£10	£1	.	10p	1p
	2	.	7	0
			2	7

$$£2.70 \div 10 = ?$$

£10	£1	.	10p	1p
	3	.	4	0
			3	4

$$£3.40 \div 10 = ?$$

Practice Sheet Mild

Place value practice

1. How much would it cost to buy 10 of the following? Show your calculations.

Pencils: 35p each
 Balloons: 28p each
 Envelopes: 16p each

£10	£1	.	10p	1p

2. What would it cost if you bought 100 of each? Show your calculations.

3. How much does **one** of each of the following cost? Show your calculations.

Balloons: £5.40 (pack of 10)
 Notebooks: £12.50 (pack of 10)
 Key rings: £16.90 (pack of 10)

£10	£1	.	10p	1p

Challenge

Now create some of your own money questions for a friend to solve. Make sure you know what the answer is before giving them your questions!

Practice Sheet Hot

Place value practice

1. How much would it cost to buy 10 of the following? Show your calculations.

Pencils: 35p each
Balloons: 28p each
Envelopes: 16p each
Rubbers: 50p each
Notepads: £1 each
Soft toy: 99p each
Mugs: 87p each

2. What would it cost if you bought 100 of each? Show your calculations.

3. How much does **one** of each of the following cost? Show your calculations.

Balloons: £5.40 (pack of 10)
Notebooks: £12.50 (pack of 10)
Key rings: £16.90 (pack of 10)
Pencils: £22.00 (pack of 100)
Rubbers: £15.00 (pack of 100)
Rubber bands: £6.00 (pack of 100)

Challenge

Now create some of your own money questions for a friend to solve. Make sure you know what the answer is before giving them your questions!

Practice Answer Sheets

Place value practice (Mild and Hot)

1.

Pencils: 35p each	$35\text{p} \times 10 = \text{£}3.50$
Balloons: 28p each	$28\text{p} \times 10 = \text{£}2.80$
Envelopes: 16p each	$16\text{p} \times 10 = \text{£}1.60$
Rubbers: 50p each	$50\text{p} \times 10 = \text{£}5.00$
Notepads: £1 each	$\text{£}1 \times 10 = \text{£}10$
Soft toy: 99p each	$99\text{p} \times 10 = \text{£}9.90$
Mugs: 87p each	$87\text{p} \times 10 = \text{£}8.70$

2.

Pencils: 35p each	$35\text{p} \times 100 = \text{£}35$
Balloons: 28p each	$28\text{p} \times 100 = \text{£}28$
Envelopes: 16p each	$16\text{p} \times 100 = \text{£}16$
Rubbers: 50p each	$50\text{p} \times 100 = \text{£}50$
Notepads: £1 each	$\text{£}1 \times 100 = \text{£}100$
Soft toy: 99p each	$99\text{p} \times 100 = \text{£}99$
Mugs: 87p each	$87\text{p} \times 100 = \text{£}87$

3.

Balloons: £5.40 (pack of 10)	$\text{£}5.40 \div 10 = 54\text{p}$
Notebooks: £12.50 (pack of 10)	$\text{£}12.50 \div 10 = \text{£}1.25$
Key rings: £16.90 (pack of 10)	$\text{£}16.90 \div 10 = \text{£}1.69$
Pencils: £22.00 (pack of 100)	$\text{£}22.00 \div 100 = 22\text{p}$
Rubbers: £15.00 (pack of 100)	$\text{£}15.00 \div 100 = 15\text{p}$
Rubber bands: £6.00 (pack of 100)	$\text{£}6.00 \div 100 = 6\text{p}$

A Bit Stuck? Treasure or trap

Work in pairs

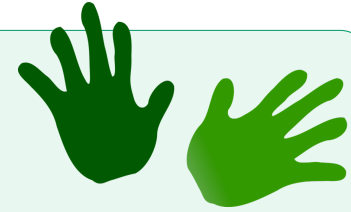
What to do:

- Look at the tables below. Work out each player's new score.
 - If a player finds a treasure chest, multiply their score by 10.
 - If they step on a trap door, divide their score by 10.
 - Use your place value grid and digit cards to help you.

If you get stuck, use a calculator and watch which way the digits move.

Things you will need:

- A 100s, 10s and 1s place value grid
- 0 to 9 cards
- A calculator

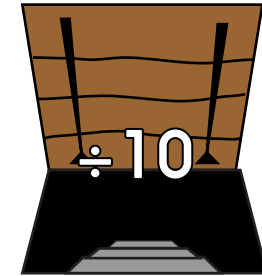


Players 1 to 4 find a treasure chest 😊



	Score	New score
Player 1	28	
Player 2	37	
Player 3	15	
Player 4	94	

Players 5 to 8 step on a trap door 😞



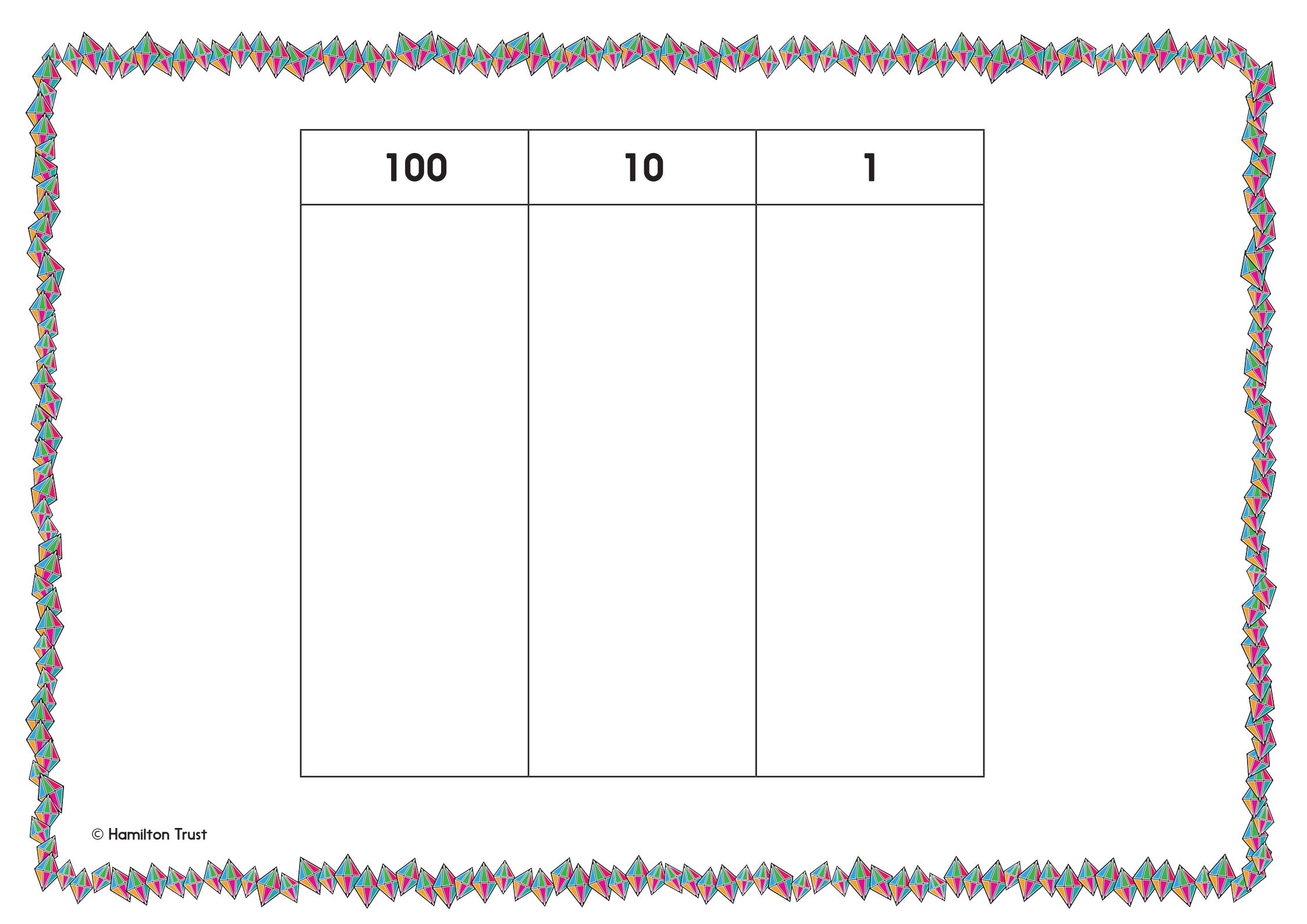
	Score	New score
Player 5	850	
Player 6	490	
Player 7	320	
Player 8	560	

S-t-r-e-t-c-h:

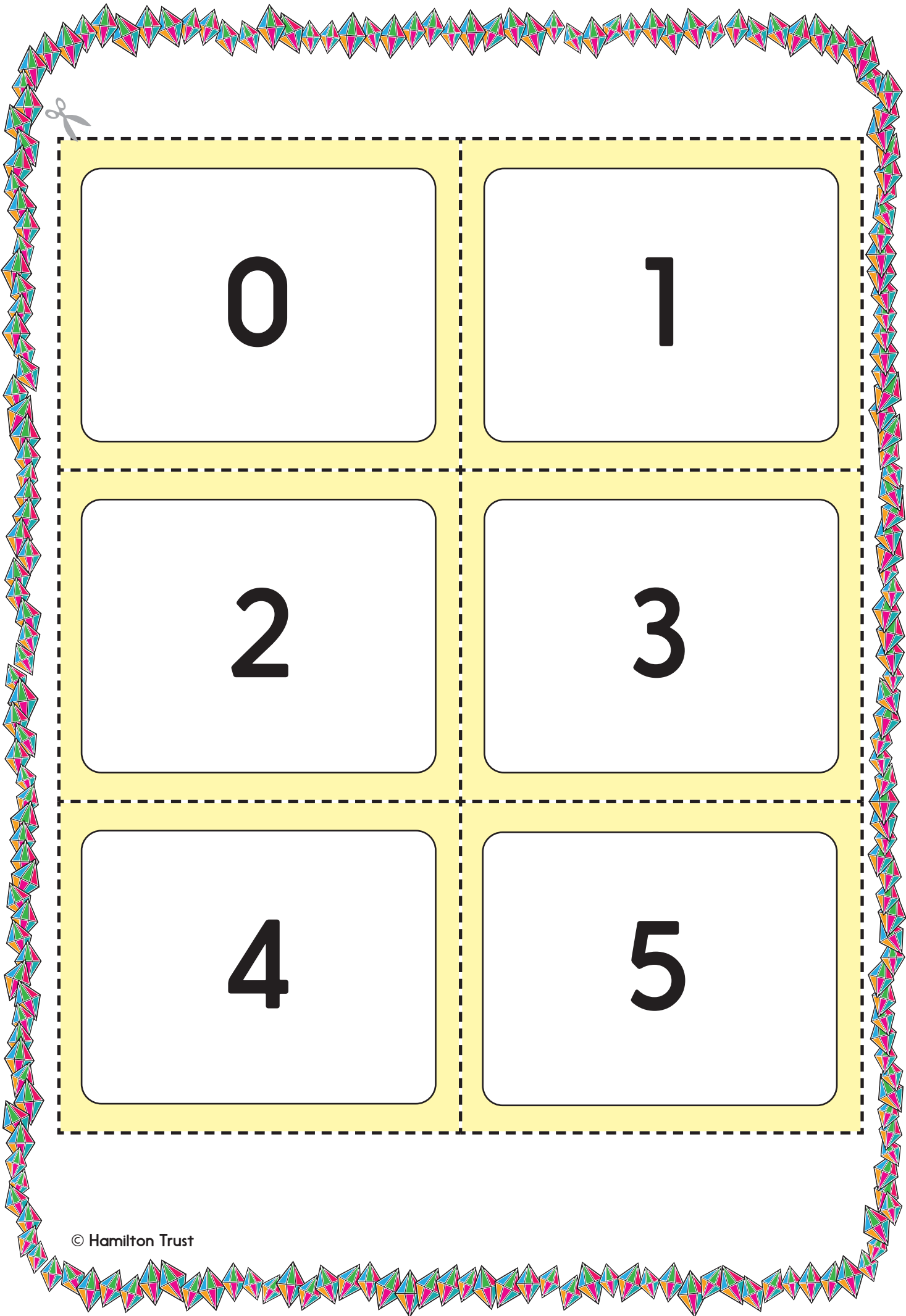
Player 9 has found a treasure chest! Her score is now 250. Work out what her score was just before she found the treasure chest. Test out your idea using a calculator.

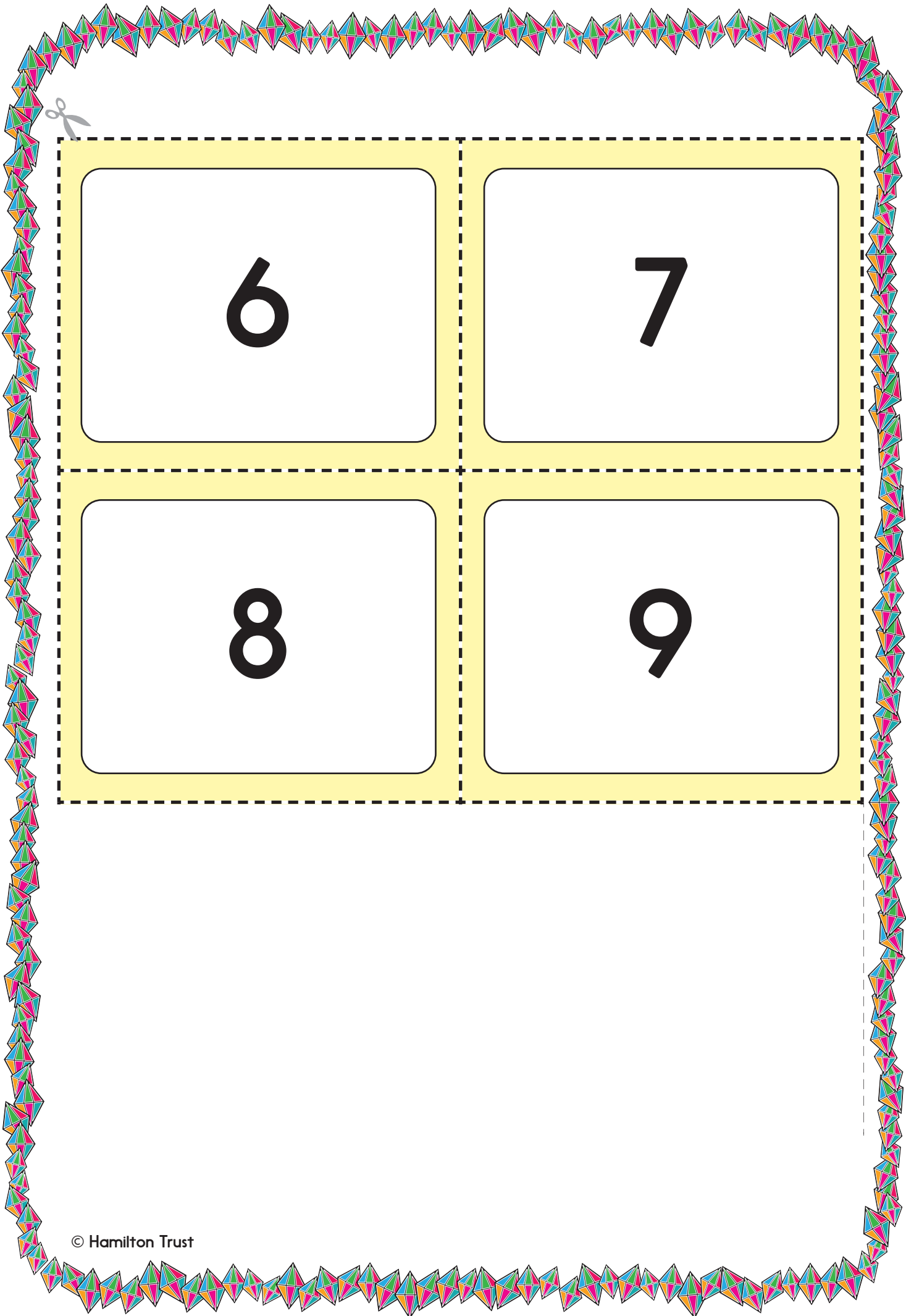
Learning outcomes:

- I can multiply 2-digit numbers by 10, e.g. 28×10 .
- I can divide 3-digit multiples of 10 by 10, e.g. $850 \div 10$.
- I am beginning to work out missing numbers in place value multiplications.



100	10	1





6

7

8

9

Check your understanding: Questions

Write the missing numbers:

$$£3.40 \times 10 = \square$$

$$\square \div 10 = £5.50$$

$$100 \times 9\text{p} = \square$$

$$£7 \div \square = 7\text{p}$$

$$£0.67 \times 10 = \square$$

Fold here to hide answers:

Check your understanding: Answers

Write the missing numbers:

$$£3.40 \times 10 = £34.00$$

$$£55 \div 10 = £5.50$$

$$100 \times 9\text{p} = £9.00$$

$$£7 \div 100 = 7\text{p}$$

$$£0.67 \times 10 = £6.70$$

If children are making errors with these, check by moving the digits on a money place value grid.

£10s	£1s	•	10ps	1ps
		•	4	9
	4	•	9	

$49\text{p} \times 10 = £4.90$
