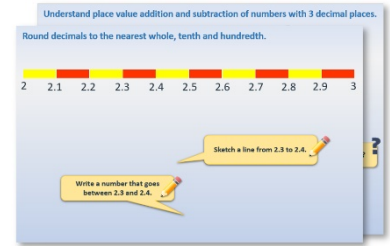


Year 5: Week 2, Day 1

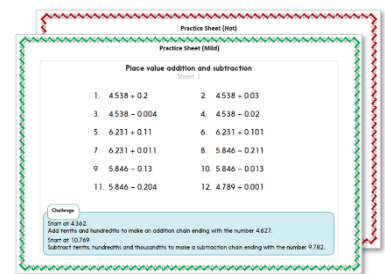
Decimals: Multiply and divide by 10, 100 and 1000

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

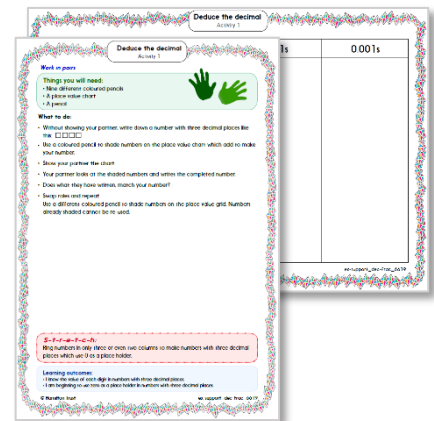
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



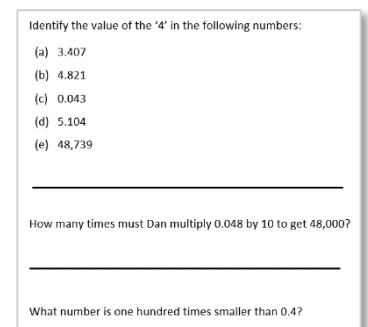
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.



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



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



Learning Reminders

Multiply and divide by 10, 100 and 1000.

10,000s	1000s	100s	10s	1s	● 0.1s $\frac{1}{10}$ s	0.01s $\frac{1}{100}$ s
		2	3	5		
				2	●	3 5

If this was a measurement in centimetres, how would we write it in metres?

Note that the digits move and the decimal point does NOT move.

$235 \div 100 = 2.35$

When we divide by 100, the digits all move together, two place value columns to the right.

Multiply and divide by 10, 100 and 1000.

10,000s	1000s	100s	10s	1s	● 0.1s $\frac{1}{10}$ s	0.01s $\frac{1}{100}$ s
		4	2	9	●	9
	4	2	9	9		

What if this was a distance in centimetres and I wanted to write it in millimetres?

$429.9 \times 10 = 4299$

When we multiply by 10, the digits all move together, one place value column to the left.

What did you need to do? ?

Learning Reminders

Multiply and divide by 10, 100 and 1000.

Divide 7840 by 1000.
How many places will the digits
need to move?

1000s	100s	10s	1s	0.1s $\frac{1}{10}$ s	0.01s $\frac{1}{100}$ s
7	8	4	0		
			7	8	4

Where has the zero
gone?

When we **divide by 1000**, the digits all move
together, three place value columns to the right.

When we **multiply** by 10, 100 and 1000, the digits all move together, **one**, **two**, or **three** place value columns **to the left**.

When we **divide** by 10, 100 and 1000, the digits all move together, **one**, **two**, or **three** place value columns **to the right**.

Practice Sheet Mild

Multiplying and dividing by 10 and 100

1. 34.6×10

2. 34.6×100

3. 6.74×10

4. 6.74×100

5. $483 \div 10$

6. $483 \div 100$

7. $56.1 \div 10$

8. 56.1×100

9. $83.4 \times \boxed{} = 834$

10. $83.4 \div \boxed{} = 8.34$

11. $47.2 \div \boxed{} = 4.72$

12. $47.2 \times \boxed{} = 4720$

Practice Sheet Hot

Multiplying and dividing by 10, 100 and 1000

1. 456.8×10

2. $4568 \div 10$

3. 2.76×10

4. $843 \div 100$

5. 47.3×100

6. $783 \div 100$

7. 45.62×100

8. $783.4 \div 10$

9. 45.74×1000

10. $3620 \div 1000$

11. $348.2 \times \boxed{} = 3482$

12. $34,820 \div \boxed{} = 34.82$

Challenge

Complete the following calculations.

$78.43 \times \boxed{} = 7843$

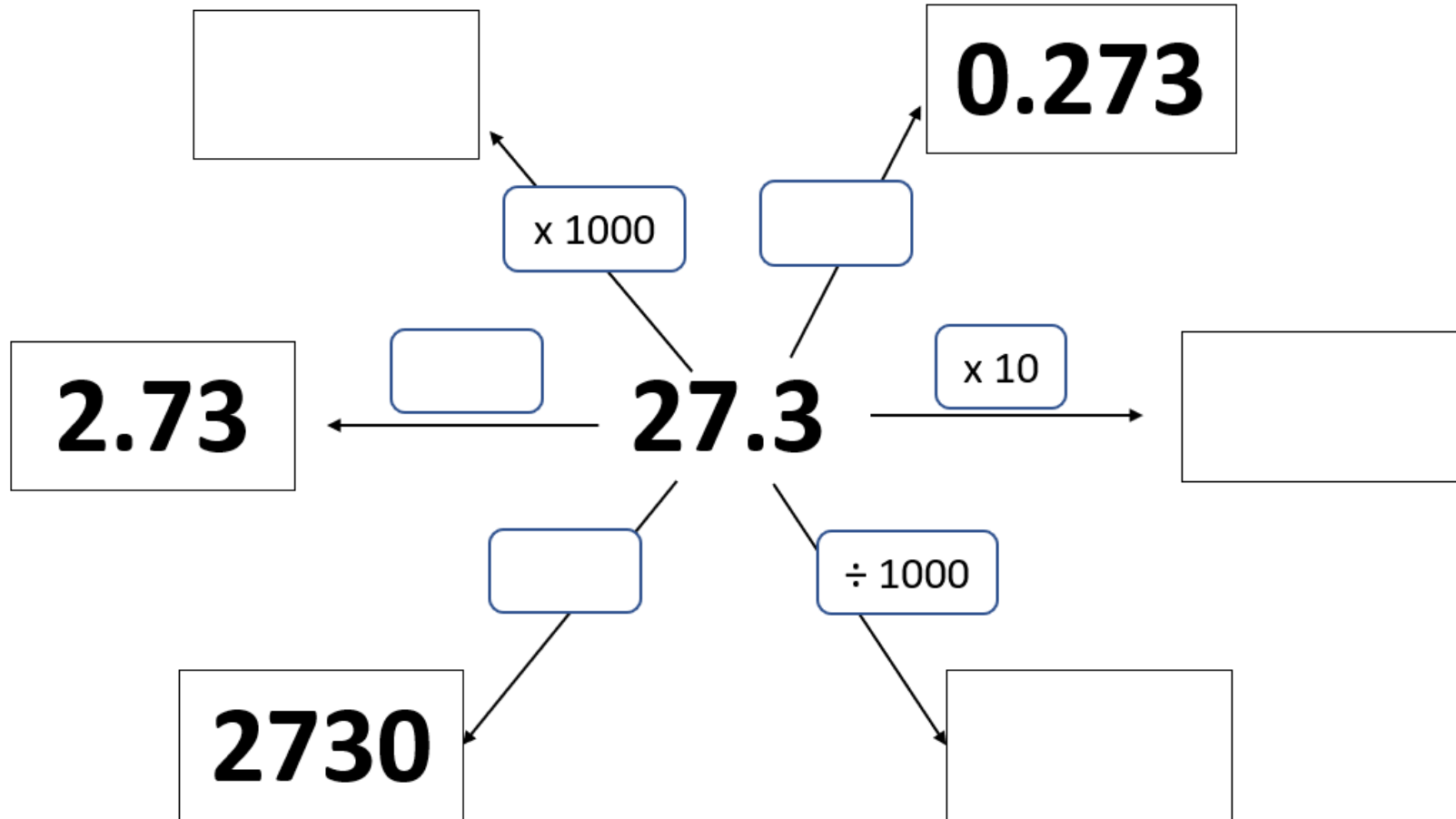
$78.43 \times \boxed{} = 78,430$

$6450 \div \boxed{} = 64.5$

$6450 \div \boxed{} = 6.45$

Extra Practice for All

Complete any empty boxes on this diagram. Watch out - they might be answers or operations...



Create a similar diagram for a partner to solve.

Practice Sheets Answers

Multiplying and dividing by 10 and 100 (mild)

1. $34.6 \times 10 = 346$

2. $34.6 \times 100 = 3460$

3. $6.74 \times 10 = 67.4$

4. $6.74 \times 100 = 674$

5. $483 \div 10 = 48.3$

6. $483 \div 100 = 4.83$

7. $56.1 \div 10 = 5.61$

8. $56.1 \times 10 = 561$

9. $83.4 \times 10 = 834$

10. $83.4 \div 10 = 8.34$

11. $47.2 \div 10 = 4.72$

12. $47.2 \times 100 = 4720$

Multiplying and dividing by 10, 100 and 1000 (hot)

1. $456.8 \times 10 = 4568$

2. $4568 \div 10 = 456.8$

3. $2.76 \times 10 = 27.6$

4. $843 \div 100 = 8.43$

5. $47.3 \times 100 = 4730$

6. $783 \div 100 = 7.83$

7. $45.62 \times 100 = 4562$

8. $783.4 \div 10 = 78.34$

9. $45.74 \times 1000 = 45740$

10. $3620 \div 1000 = 3.62$

11. $348.2 \times 10 = 3482$

12. $34,820 \div 1000 = 34.82$

Challenge

$78.43 \times 100 = 7843$

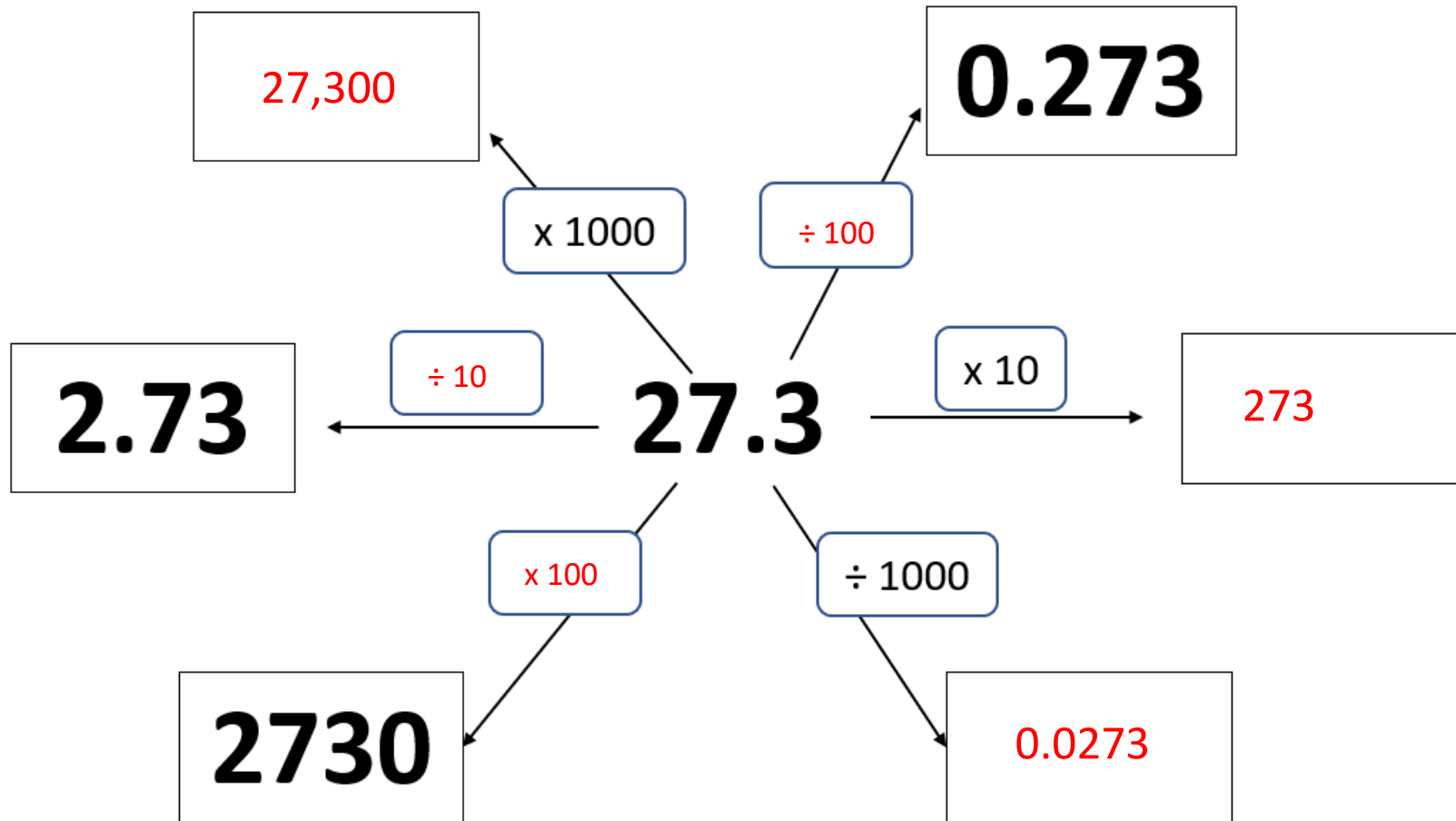
$78.43 \times 1000 = 78,430$

$6450 \div 100 = 64.5$

$6450 \div 1000 = 6.45$

Extra Practice for All Answers

Complete any empty boxes on this diagram. Watch out - they might be answers or operations...



Create a similar diagram for a partner to solve.

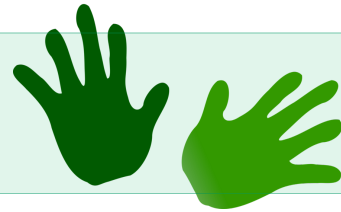
A Bit Stuck?

Left, left, right, right?

Work in pairs, but record numbers on your own place value grid

Things you will need:

- A place value grid
- A pencil



What to do:

- Look at the first group of fraction strips.
What number are they showing?
Write the number in your place value grid.
- Multiply this number by 100.
Write the answer in your place value grid.
- Repeat this for each fraction picture.

100s	10s	1s		0.1s	0.01s
1	6	1	•	6	1

		□
		□□□□□
		□□
		□□□
		□□□□

- Choose three of these numbers to divide by 100.
Write the number and the answer in your place value grid.

654 127 243 438 364

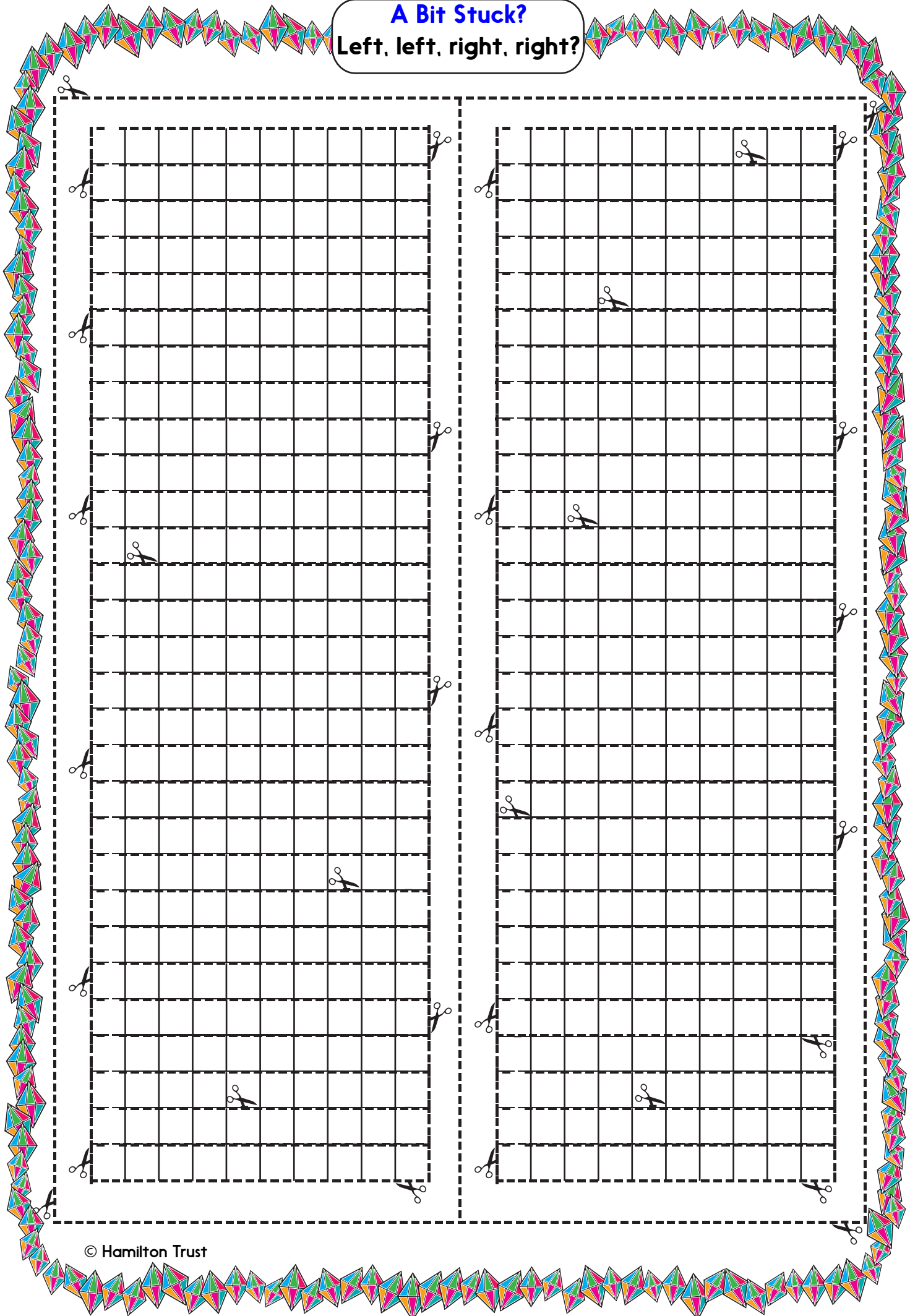
S-t-r-e-t-c-h:

Multiply 0.25, 0.09 and 1.03 by 100.
Divide 408, 27 and 360 by 100.

Learning outcomes:

- I understand the value of each digit in a number with two decimal places.
- I am beginning to multiply numbers with two decimal places by 100 and divide 3-digit numbers by 100.

A Bit Stuck?
Left, left, right, right?



A Bit Stuck?
Left, left, right, right?

100s	10s	1s	• 0.1s	0.01s

Check your understanding

Questions

Divide 47,310 by 10 repeatedly until you get a number that is less than 100.
Write that number.

Fill the empty boxes:

$$0.15 = 1.5 \square 10 \quad 5209 = \square \times 100 \quad \square \div 100 = 4.7 \quad 10.08 = \square \div 1000$$

Write the next two numbers in each sequence.

$$0.41 \quad 4.1 \quad \underline{\quad} \quad \underline{\quad}$$

$$2.05 \quad 20.5 \quad \underline{\quad} \quad \underline{\quad}$$

$$43,020 \quad 4302 \quad \underline{\quad} \quad \underline{\quad}$$

True or false?

$$4030 \div 100 = 43$$

$$1.09 \times 100 = 190$$

$$0.09 \times 10 = 0.9 \quad 7000 \div 1000 = 0.7$$

Fold here to hide answers

Check your understanding

Answers

Divide 47,310 by 10 repeatedly until you get a number that is less than 100.
Write that number. **47.31**

Each time the number is divided by 10, the digits move one place value column to the right:

47,310

4731

473.1

47.31

Fill the empty boxes:

$$0.15 = 1.5 \square \div 10 \quad 5209 = \square 52.09 \times 100 \quad \square 470 \div 100 = 4.7 \quad 10.08 = \square 10,080 \div 1000$$

Write the next two numbers in each sequence.

0.41 4.1 **41 410 (Multiplying by 10)**

2.05 20.5 **205 2050 (Multiplying by 10)**

43,020 4302 **430.2 43.02 (Dividing by 10)**

True or false?

$$4030 \div 100 = 43$$

False – should be 40.3

$$1.09 \times 100 = 190$$

False – should be 109

$$0.09 \times 10 = 0.9$$

True

$$7000 \div 1000 = 0.7$$

False – should be 7