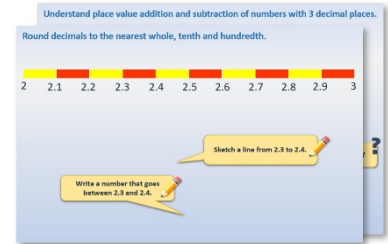


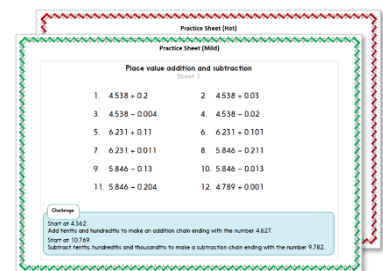
## Decimals: Multiply and divide by 10, 100 and 1000

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

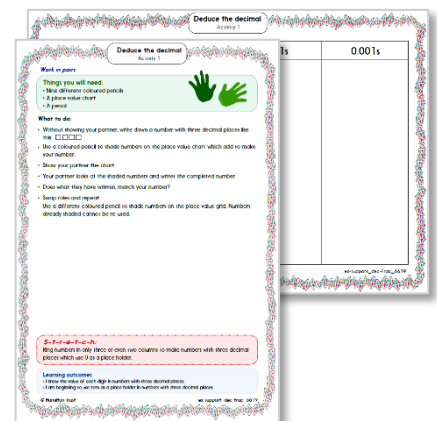
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



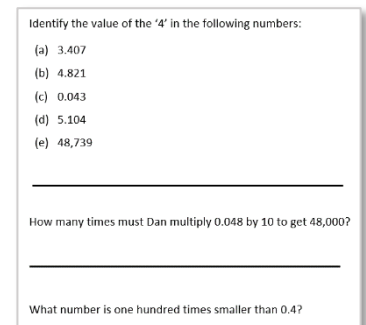
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.



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?

$429.9 \times 10 = 4299$

What did you need to do? ?

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

## 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.  $34.6 \times 10$

2.  $34.6 \times 100$

3.  $6.74 \times 10$

4.  $6.74 \times 100$

5.  $483 \div 10$

6.  $483 \div 100$

7.  $56.1 \div 10$

8.  $56.1 \times 100$

9.  $83.4 \times \boxed{\phantom{000}} = 834$

10.  $83.4 \div \boxed{\phantom{000}} = 8.34$

11.  $47.2 \div \boxed{\phantom{000}} = 4.72$

12.  $47.2 \times \boxed{\phantom{000}} = 4720$

**Practice Sheet Hot**  
**Multiplying and dividing by 10, 100 and 1000**

1.  $456.8 \times 10$

2.  $4568 \div 10$

3.  $2.76 \times 10$

4.  $843 \div 100$

5.  $47.3 \times 100$

6.  $783 \div 100$

7.  $45.62 \times 100$

8.  $783.4 \div 10$

9.  $45.74 \times 1000$

10.  $3620 \div 1000$

11.  $348.2 \times \boxed{\phantom{000}} = 3482$

12.  $34,820 \div \boxed{\phantom{000}} = 34.82$

**Challenge**

Complete the following calculations.

$78.43 \times \boxed{\phantom{00}} = 7843$

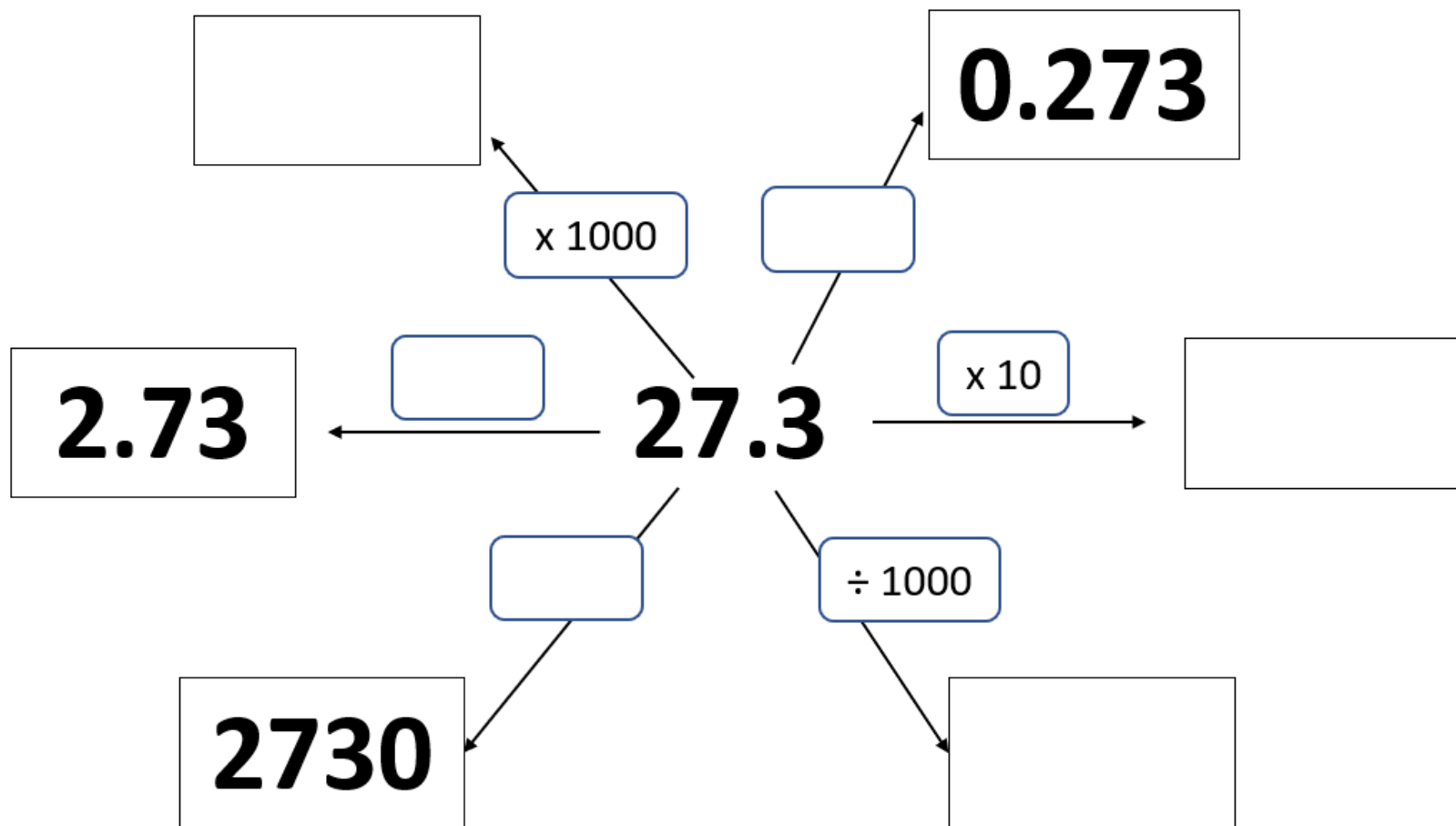
$78.43 \times \boxed{\phantom{00}} = 78,430$

$6450 \div \boxed{\phantom{00}} = 64.5$

$6450 \div \boxed{\phantom{00}} = 6.45$

## 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

$78.43 \times 100 = 7843$

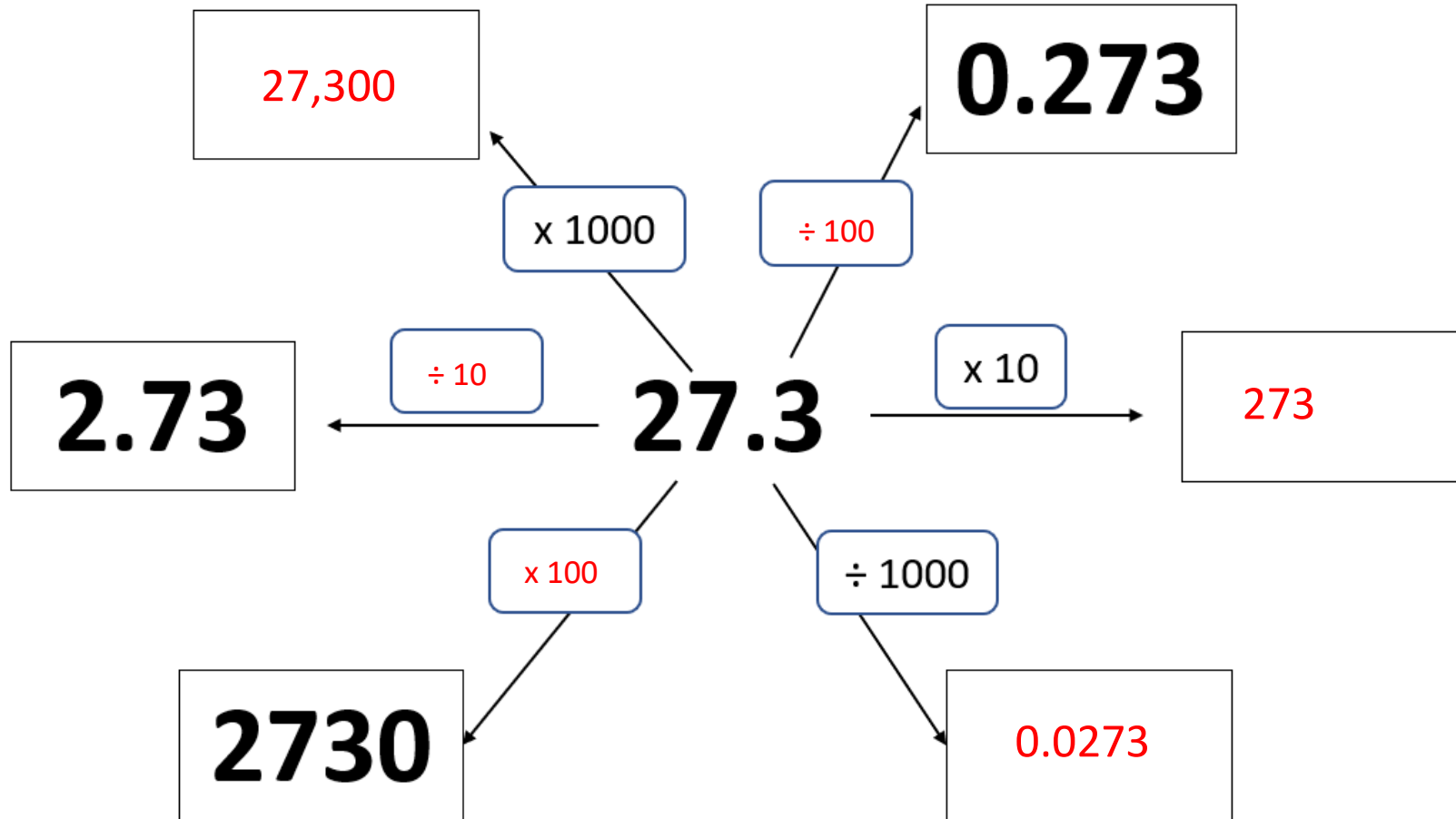
$78.43 \times 1000 = 78,430$

$6450 \div 100 = 64.5$

$6450 \div 1000 = 6.45$

## 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.

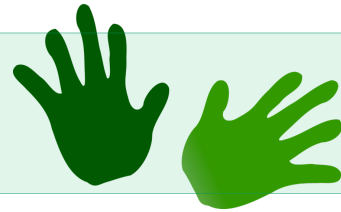
## A Bit Stuck?

### 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

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□□□□

- 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:***

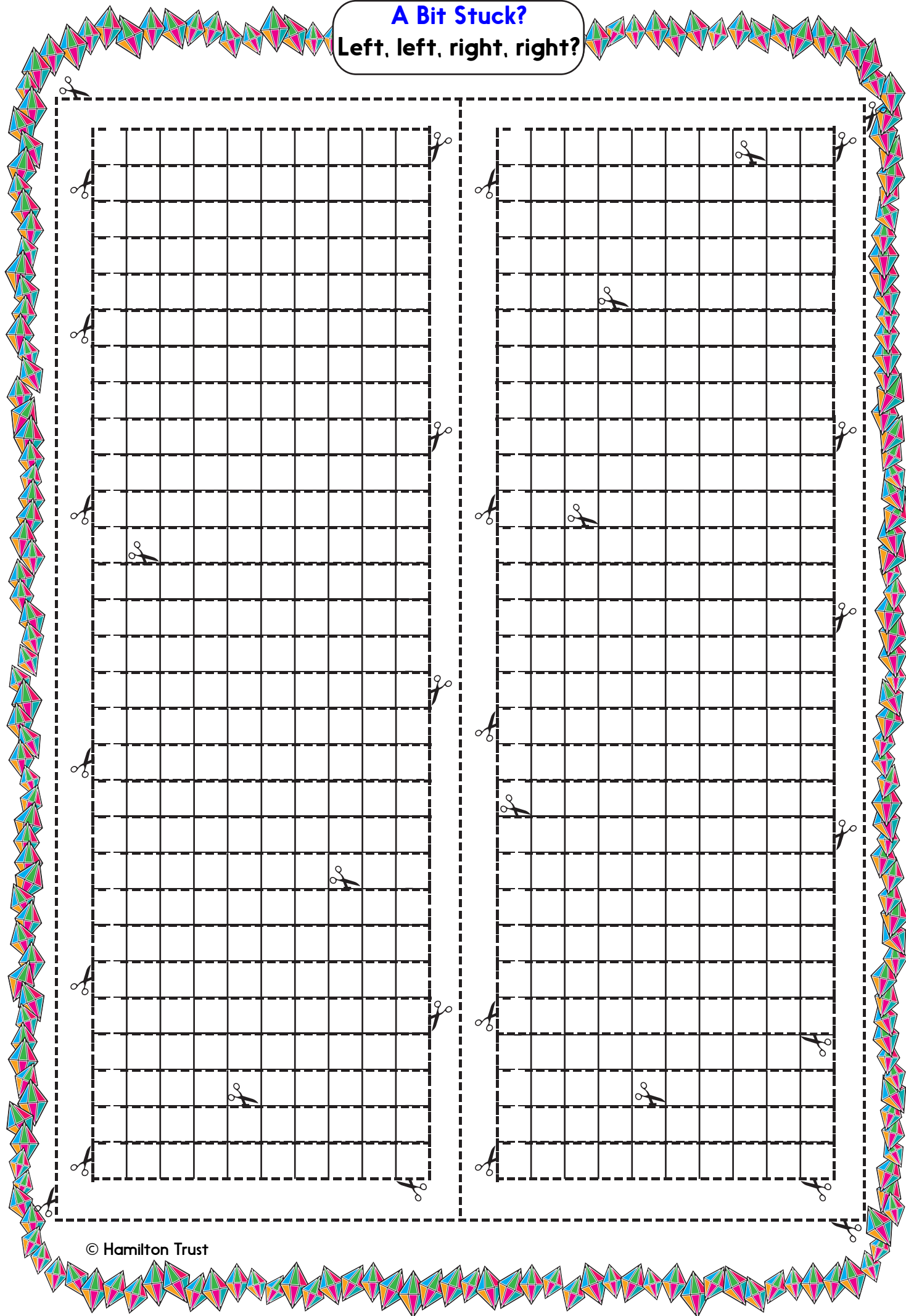
Multiply 0.25, 0.09 and 1.03 by 100.

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

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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:

$$0.15 = 1.5 \boxed{\phantom{00}} 10 \quad 5209 = \boxed{\phantom{0000}} \times 100 \quad \boxed{\phantom{00}} \div 100 = 4.7 \quad 10.08 = \boxed{\phantom{0000}} \div 1000$$

Write the next two numbers in each sequence.

0.41 4.1              

2.05 20.5              

43,020 4302              

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:

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

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**