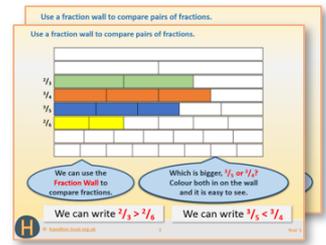


Year 5: Week 3, Day 2

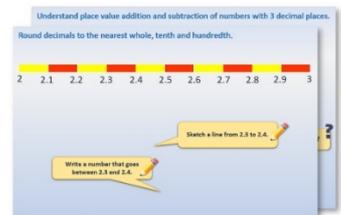
Short multiplication

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

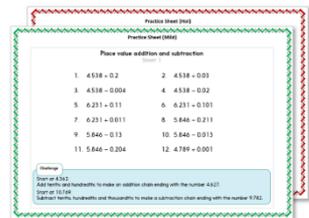
1. If possible, watch the **PowerPoint presentation** with a teacher or another grown-up.



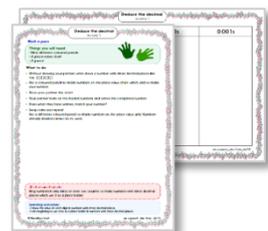
OR start by carefully reading through the **Learning Reminders**.



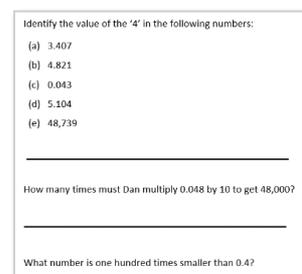
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.



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

Use short multiplication to multiply 3-digit by 1-digit numbers.

Use the **grid method** or **short multiplication** to calculate 3×235 .



\times	200	30	5	
3	600	90	15	705

1. **Multiply the 1s: 5×3**
 2. **Multiply the 10s: 30×3**
 3. **Multiply the 100s: 200×3**
- Don't forget to add any 'carry' digits!

$$\begin{array}{r} 235 \\ \times \quad 3 \\ \hline 11 \\ \hline 705 \end{array}$$

Learning Reminders

Use short multiplication to multiply 4-digit by 1-digit numbers.

$$3 \times 4235$$

x	4000	200	30	5	
3	12,000	600	90	15	12,705

We need an extra column!

$$\begin{array}{r} 4235 \\ \times \quad 3 \\ \hline 12705 \end{array}$$

Add the four numbers.

Multiply the 1s first, then the 10s, then the 100s, then the 1000s. Remember to leave a line for any 'carry' digits during addition.

Learning Reminders

Use short multiplication to multiply 4-digit by 1-digit numbers; Use rounding to approximate.



Use the grid method or short multiplication to work out 6×3241 .
First, *estimate* the answer.

Does your answer look sensible? 

$$6 \times 3241 = 19,446$$

The answer must be more than 18,000 (6×3000) but quite a bit less than 24,000 (6×4000). Knowing the **range** of the answer helps us see if we've made a mistake with place value.
Now go ahead and calculate the answer... 



Use the grid method or short multiplication to work out 5734×4 .
First, *estimate* the answer...

Does your answer look sensible? 

$$5734 \times 4 = 22,936$$

The answer must be between 20,000 (4×5000) and 24,000 (4×6000).
Now go ahead and calculate the answer. 

Practice Sheet Mild

Multiplication Challenge

Estimate before doing the calculations!

1. Which of these gives the closest answer to 2000?
a) 431×5 b) 678×3 c) 473×6
2. Which of these gives the closest answer to 4000?
a) 842×4 b) 851×5 c) 654×7
3. Which of these gives an answer between 5000 and 6000?
a) 787×6 b) 925×5 c) 723×8

Challenge

Make up a puzzle like this for a partner or classmate to solve.

Practice Sheet Hot

Multiplication Challenge

Estimate before doing the calculations!

- Which of these gives the closest answer to 20,000?
a) 4361×5 b) 7036×3 c) 2973×6
- Which of these gives the closest answer to 40,000?
a) 9892×4 b) 8051×5 c) 5754×7
- Which of these gives the closest answer to 60,000?
a) 9451×7 b) 7444×8 c) 7023×9
- Which of these gives an answer between 25,000 and 30,000?
a) 5137×6 b) 6205×4 c) 3629×8

Challenge

Make up a puzzle like this for a partner or classmate to solve.

Practice Sheet Answers

Multiplication challenge (mild)

1. b
2. b
3. c

Multiplication challenge Sheet 2 (hot)

1. b
2. b
3. b
4. c

A Bit Stuck? Multiplication splits

Try this activity with a partner, but record your calculations on your own sheet.

What to do:

- Use the grid method to work out the answers to these multiplications.

$$3 \times 125$$

×	100	20	5	
3				

$$5 \times 323$$

×	300	20	3	
5				

$$4 \times 435$$

×	400	30	5	
4				

- Next choose at least two multiplications and draw your own grids to keep track of your steps.

7×123

6×214

8×142

5×415

Things you will need:

- A pencil



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

Which of these multiplications will have the biggest answer?

Which will have the smallest answer?

8×243

6×411

2×534

Learning outcomes:

- I can use the grid method to multiply 3-digit numbers by 1-digit numbers.
- I am beginning to estimate the answers.

Check your understanding

Questions

Does 2340×8 give the same answer as 4320×4 ?

Explain how you are certain that your answer is correct.

Choose a strategy for each of these three multiplications.

Explain why it is not sensible to use the same method for all three.

(i) $340 \times 5 =$

(ii) $421 \times 7 =$

(iii) $350 \times 9 =$

x

Using the digits 3, 5, 6, 7 and 9, how close can you get to an answer of 20,000?

Fold here to hide answers

Check your understanding

Answers

Does 2340×8 give the same answer as 4320×4 ?

Explain how you are certain that your answer is correct.

Answers are 18,720 and 17,280 respectively.

You need to double 2340 and multiply by 4 to get the same answer as 2340×8 ; $4680 \times 4 = 18,720$.

Choose a strategy for each of these three multiplications.

Explain why it is not sensible to use the same method for all three.

(i) $340 \times 5 = 1700$ Solve by partitioning: multiply 300 by 5, then 40 by 5, and add.

(ii) $421 \times 7 = 2947$ Solve as short multiplication.

(iii) $350 \times 9 = 3150$ Multiply by 10, then subtract 350.

Other strategies possible, these are examples. The important thing is that children make a sensible choice based upon reviewing the numbers to be multiplied.

x

Using the digits 3, 5, 6, 7 and 9, how close can you get to an answer of 20,000? $6597 \times 3 = 19,791$

Children could use a 'trial and improvement' (not trial and error) strategy.