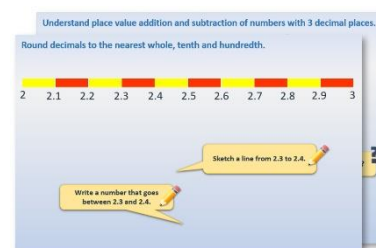


Year 4: Week 1, Day 4

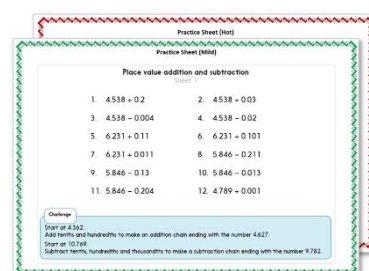
Written multiplication

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

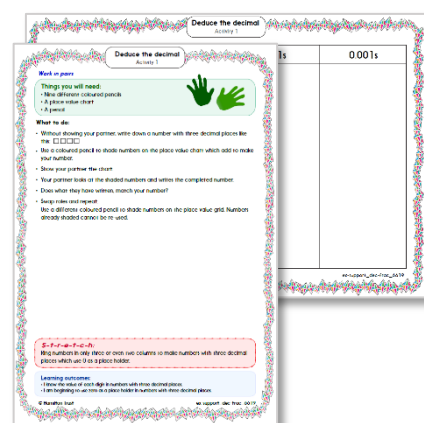
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



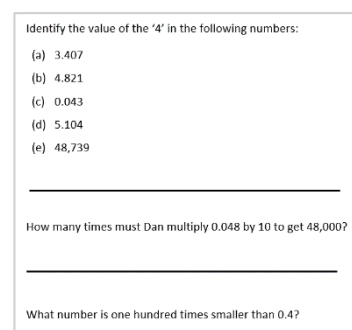
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.



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

Use partitioning to multiply 3-digit numbers by 1-digit numbers.

We're going to use the grid method to work out 3×134 .



First we **partition 134**.
Put the 100s, 10s and 1s
in the top line of the grid
and the 3 at the left side.

$\times$	100	30	4	
3	300	90	12	402

What is 100×3 ?

30×3 ?

4×3 ?

Finally add
 $300 + 90 + 12$.

Learning Reminders

Use partitioning to multiply 3-digit numbers by 1-digit numbers.

Let's work out 423×6 using the grid method.

$\times$	400	20	3	
6	2400	120	18	2538

What is 400×6 ?

20×6 ?

3×6 ?

Finally add
 $2400 + 120 + 18$.

$$\begin{array}{r} 423 \\ \times 6 \\ \hline 2400 \\ 120 \\ 18 \\ \hline 2538 \end{array}$$

We can also set out 3-digit multiplication this way – it is called the **ladder method**.

The three multiplications are just the same and the numbers are then neatly set out for the addition!

Learning Reminders

Use partitioning to multiply 3-digit numbers by 1-digit numbers.

We're going to find 543×7
using **the grid method** and
then the **ladder method**.

$\times$	500	40	3	
7	3500	280	21	3801

What is 500×7 ?

40×7 ?

3×7 ?

Finally add
 $3500 + 280 + 21$.

The **partitioning** is
more obvious when
we use **grid method**.

Finally use **column
addition** to add
 $3500 + 280 + 21$.

The **addition at the
end** can be easier
with **ladder method**.

$$\begin{array}{r} 543 \\ \times 7 \\ \hline 3500 \\ 280 \\ 21 \\ 1 \\ \hline 3801 \end{array}$$

Practice Sheet Mild

Partitioning to multiply

Solve these using the grid method, or the ladder method - you choose!

$$3 \times 121$$

$$352 \times 4$$

$$3 \times 235$$

$$244 \times 6$$

$$5 \times 113$$

$$6 \times 531$$

$$454 \times 5$$

$$4 \times 512$$

$$423 \times 3$$

$$4 \times 345$$

Challenge

Find the missing numbers:

x	300		7	
		240	56	=

Practice Sheet Hot

Practising the ladder method

Solve these using the ladder method.

$$324 \times 3$$

$$437 \times 5$$

$$4 \times 582$$

$$6 \times 206$$

$$132 \times 8$$

$$365 \times 6$$

$$463 \times 4$$

$$8 \times 508$$

$$3 \times 213$$

$$5 \times 145$$

Challenge

Will 354×6 have a larger or smaller answer than 654×3 ? How do you know?

Will 315×4 have a larger or smaller answer than 415×3 ? How do you know?

Practice Sheet Answers

Partitioning to multiply (mild)

$3 \times 121 = 363$

$352 \times 4 = 1408$

$3 \times 235 = 705$

$244 \times 6 = 1464$

$5 \times 113 = 565$

$6 \times 531 = 3186$

$454 \times 5 = 2270$

$4 \times 512 = 2048$

$423 \times 3 = 1269$

$4 \times 345 = 1380$

Challenge

x	300	30	7
8	2400	240	56
	= 2696		

Practising the ladder method (hot)

$324 \times 3 = 972$

$437 \times 5 = 2185$

$4 \times 582 = 2328$

$6 \times 206 = 1236$

$132 \times 8 = 1056$

$365 \times 6 = 2190$

$463 \times 4 = 1852$

$8 \times 508 = 4064$

$3 \times 213 = 639$

$5 \times 145 = 725$

Challenge

354 x 6 will have a **larger** answer than 654 x 3.

315 x 4 will have a **smaller** answer than 415 x 3.

A Bit Stuck? Grid genius

Work in pairs, but record your work on your own sheet.

Things you will need:

- A pencil



What to do:

- Use the grid method to work out the answer to the multiplications:

3×12

x	10	2	
3			

5×13

x	10	3	
5			

4×15

x	10	5	
4			

- Next choose at least two multiplications and draw your own grid to keep track of your steps. Now you are a grid genius!

7×13

6×14

8×12

5×15

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

Use the grid method to work out 3×24 and 4×24 . Remember that to work out 3×20 , we can multiply the answer to 3×2 by 10.

Learning outcomes:

- I can use the grid method to multiply numbers from 11 to 15 by 1-digit numbers.
- I am beginning to multiply numbers 21 to 25 by 1-digit numbers.

Check your understanding

Questions

Use grid method to complete each of these:

$$424 \times 6 =$$

$$3 \times 848 =$$

What do you notice? Why does this happen?

Use grid AND ladder to solve 354×6 .

Say which method you prefer and why.

Write the missing numbers:

x	300		
4		160	24

What is the final product?

Fold here to hide answers

Check your understanding

Answers

Use grid method to complete each of these:

$$424 \times 6 = 2544$$

x	400	20	4
6	2400	120	24

$$3 \times 848 = 2544$$

x	800	40	8
3	2400	120	24

What do you notice? Why does this happen? The answers are the same since 848 is double 424 and it is being multiplied by 3 which is half of 6.

Use grid AND ladder to solve 354×6 . 2124.

Say which method you prefer and why. Children should be referring to aspects such as place value, clarity of what the method shows, possible number of steps etc., rather than just saying "It's easier!"