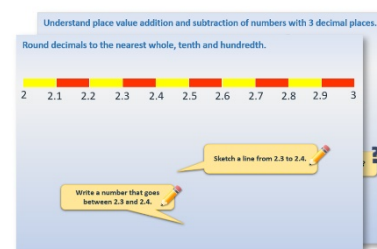


Year 6: Week 2, Day 4

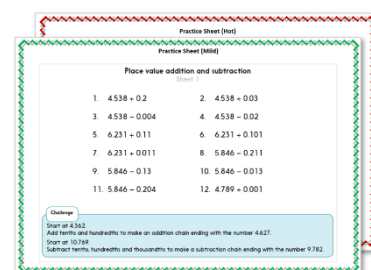
Short multiplication

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

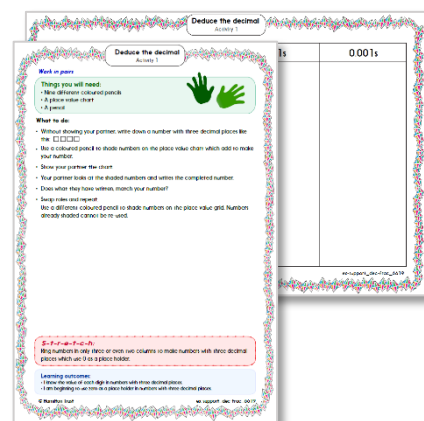
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



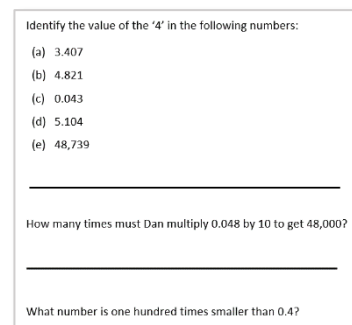
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.



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 short multiplication to multiply 3- and 4-digit numbers by 1-digit numbers.

Remind yourself how to use the grid method to find 3×326 .

x	300	20	6	
3	900	60	18	978

Now let's use short multiplication to find 3×326 .

$$\begin{array}{r} 326 \\ \times 3 \\ \hline 978 \end{array}$$

Step 1

3 times 6 is 18. We write the 8 in the 1s column and the 1 ten in the 10s column above the line like we do for addition.

Step 2

Next, find 3×20 , 2 tens. That's 6 tens, plus the 1 ten we had from multiplying the 1s, so that's 7 tens; so we write 7 in the 10s column.

Step 3

Then we find 3×300 . That's nine 100s, which we write in the 100s column.

Learning Reminders

Use short multiplication to multiply 3- and 4-digit numbers by 1-digit numbers.

Find 5×2326

$$\begin{array}{r} 2326 \\ \times \quad 5 \\ \hline \end{array}$$

Where does each pair of coloured digits come from?

Remember to leave a line for the 'carry' digits, as in addition.

Step 1
 6×5 is 30.

Step 2
 20×5 is, 10 tens, plus the 3 tens we had from multiplying the 1s, so that's 13 tens.

Step 3
 300×5
That's 15 hundreds, plus the 1 hundred we had from multiplying the 10s. So, that's 16 hundreds.

Step 4
 2000×5
That's 10 thousands, plus the 1 thousand we had from multiplying the 100s. So, that's 11 thousands.

1 1 6 3 0

Practice Sheet Mild

Multiplication practice

Use a written method to work out the answers, but watch out for a few where you could use a mental method instead.

1. 3×472

2. 5×635

3. 4×222

4. 4×572

5. 3×299

6. 8×427

7. 7×684

8. 3×2513

9. 6×7238

10. 4×4025

11. 8×4582

12. 5×3200

13. 6×7438

14. 8×7869

15. 7×9786

Challenge

Which two products have a difference of 2500? Which have a difference of 100?
(You may have to use some estimation to find these two)

Practice Sheet Hot

Multiplying 4-digit numbers by 1-digit numbers

Use a written method to work out these multiplications.

1. 3×2493

2. 3×8241

3. 4×2854

4. 4×6178

5. 6×4728

6. 6×7236

7. 7×2143

8. 7×5942

9. 8×1487

10. 8×6048

Challenge

Which will have a total closest to 4321?

a) 1234×4

b) 654×7

c) 1441×3

Practice Sheets Answers

Multiplication practice (mild)

1. $3 \times 472 = 1416$
2. $5 \times 635 = 3175$
3. $4 \times 222 = 888$
4. $4 \times 572 = 2288$
5. $3 \times 299 = 897$
6. $8 \times 427 = 3416$
7. $7 \times 684 = 4788$
8. $3 \times 2513 = 7539$
9. $6 \times 7238 = 43,428$
10. $4 \times 4025 = 16,100$
11. $8 \times 4582 = 36,656$
12. $5 \times 3200 = 16,000$
13. $6 \times 7438 = 44,628$
14. $8 \times 7869 = 62,952$
15. $7 \times 9786 = 68,502$

Challenge

Product number 4 and product number 7 have a difference of 2500.
Product number 10 and product number 12 have a difference of 100.

Multiplying 4-digit numbers by 1-digit numbers (hot)

1. $3 \times 2493 = 7479$
2. $3 \times 8241 = 24,723$
3. $4 \times 2854 = 11,416$
4. $4 \times 6178 = 24,712$
5. $6 \times 4728 = 28,368$
6. $6 \times 7236 = 43,416$
7. $7 \times 2143 = 15,001$
8. $7 \times 5942 = 41,594$
9. $8 \times 1487 = 11,896$
10. $8 \times 6048 = 48,384$

Challenge

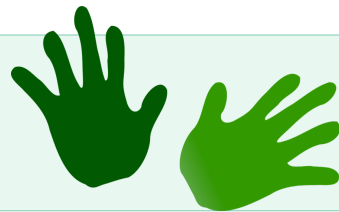
c) $1441 \times 3 = 4323$
since $7 \times 654 = 4578$
and $4 \times 1,234 = 4936$

A Bit Stuck? Greatest grid gurus!

Discuss your work together, in pairs.

Things you will need:

- A pencil
- Grids with the multiplications



What to do:

- Use the grid method to work out the multiplications on the sheet.
- Start by partitioning the 3-digit or 4-digit number. Write the numbers in the correct places on the grid along the top.
- Write the 1-digit multiplier on the grid.
- Multiply the numbers and write the answers.
- Add the answers and complete the number sentence.
- You can use the place value grid to help you multiply by 10, 100 and 1000.

$6 \times 243 = 1458$				
x	200	40	3	=
6	1200	240	18	1458

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

Use the digits 1, 2, 3, 4 and 5 in any order that you wish to make a 4-digit by 1-digit multiplication, e.g. 5×1342 . Find the answer using the grid method. The person who has the answer closest to 10,000 wins.

Learning outcomes:

- I can use the grid method to multiply 3-digit numbers by 1-digit numbers.
- I am beginning to use the grid method to multiply 4-digit numbers by 1-digit numbers.

A Bit Stuck?

Greatest grid gurus!

1000s	100s	10s	1s

A Bit Stuck?
Greatest grid gurus!

X

=

A Bit Stuck?
Greatest grid gurus!

$4 \times 325 =$

x	300	20	5	=
4				

$3 \times 412 =$

x				=

$6 \times 532 =$

x				=

$4 \times 1235 =$

x	1000	200	30	5	=
4					

$6 \times 3152 =$

x					=

$3 \times 2341 =$

x					=

Check your understanding

Questions

Maya says that 2578×4 gives the same product as 8×1289 .
Is she correct? Demonstrate why/why not.

Multiply 1386 by 9. Write the product.
Add the same number (1386) to the product.
What do you notice?
Repeat with 2547×9 , adding 2547 to the product.
Explain what happens.
Could you use this to make finding the product easier?

Write the missing digits in this multiplication:
 $36\square2 \times 8 = \square9,\square36$

Fold here to hide answers:

Check your understanding

Answers

Maya says that 2578×4 gives the same product as 8×1289 .
Is she correct? Demonstrate why/why not.
Maya is correct, the product of each is 10,312. Comparing the two questions, 4 has been doubled and 2578 halved, which results in the same product.

Multiply 1386 by 9. Write the product. 12,474
Add the same number (1386) to the product. 13,860
What do you notice? This is the same as 10×1386
Repeat with 2547×9 , adding 2547 to the product.
Explain what happens. $2547 \times 9 = 22,923$; adding 2547 gives 25,470.
Could you use this to make finding the product easier? You can find the answer to 9 times any number by finding $10 \times$ the number, then subtracting the number itself.

Write the missing digits in this multiplication:
 $3642 \times 8 = 29,136$