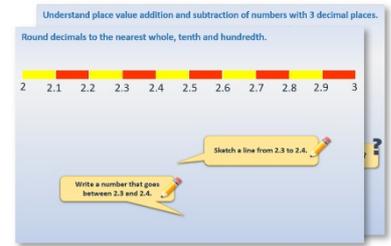


Year 6: Week 2, Day 4

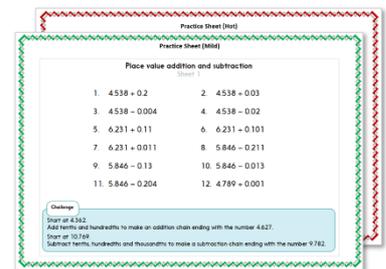
Short multiplication

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

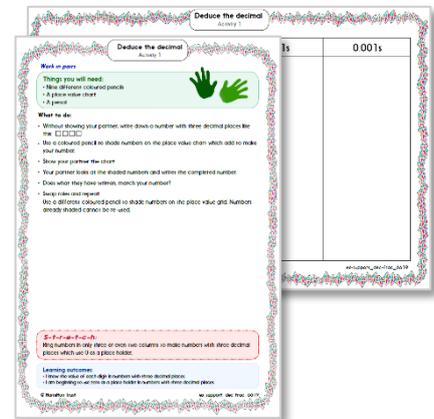
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



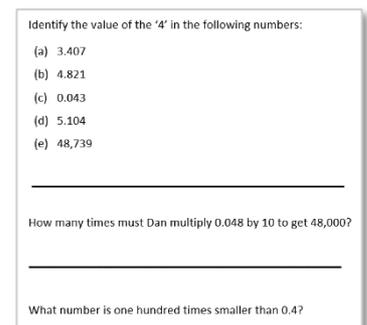
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.



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.

$$1130$$

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.

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 x 325 =

x	300	20	5	=
4				

3 x 412 =

x				=

6 x 532 =

x				=

4 x 1235 =

x	1000	200	30	5	=
4					

6 x 3152 =

x					=

3 x 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 $10x$ the number, then subtracting the number itself.**

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