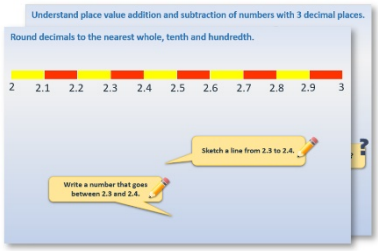
Year 6: Week 2, Day 4
Short multiplication

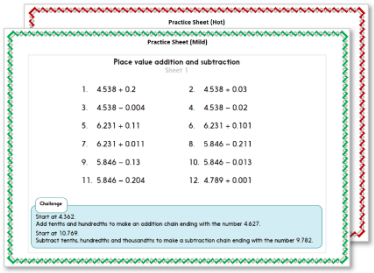
Each day covers one maths topic. It should take you about 1 hour or just a little more.

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



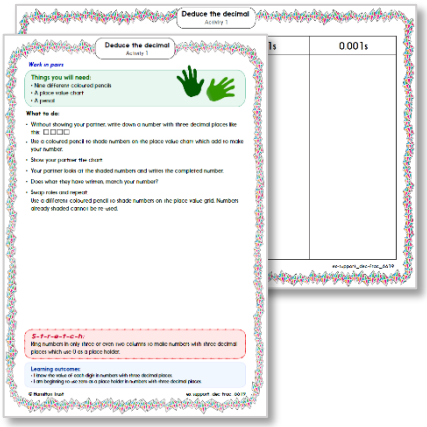
---

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



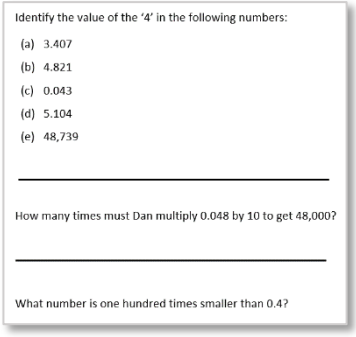
---

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 x 326.

x	300	20	6	
3	900	60	18	978

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

$$\begin{array}{r} 3\,2\,6 \\ \times \quad 3 \\ \hline 1 \\ \hline 9\,7\,8 \end{array}$$

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.

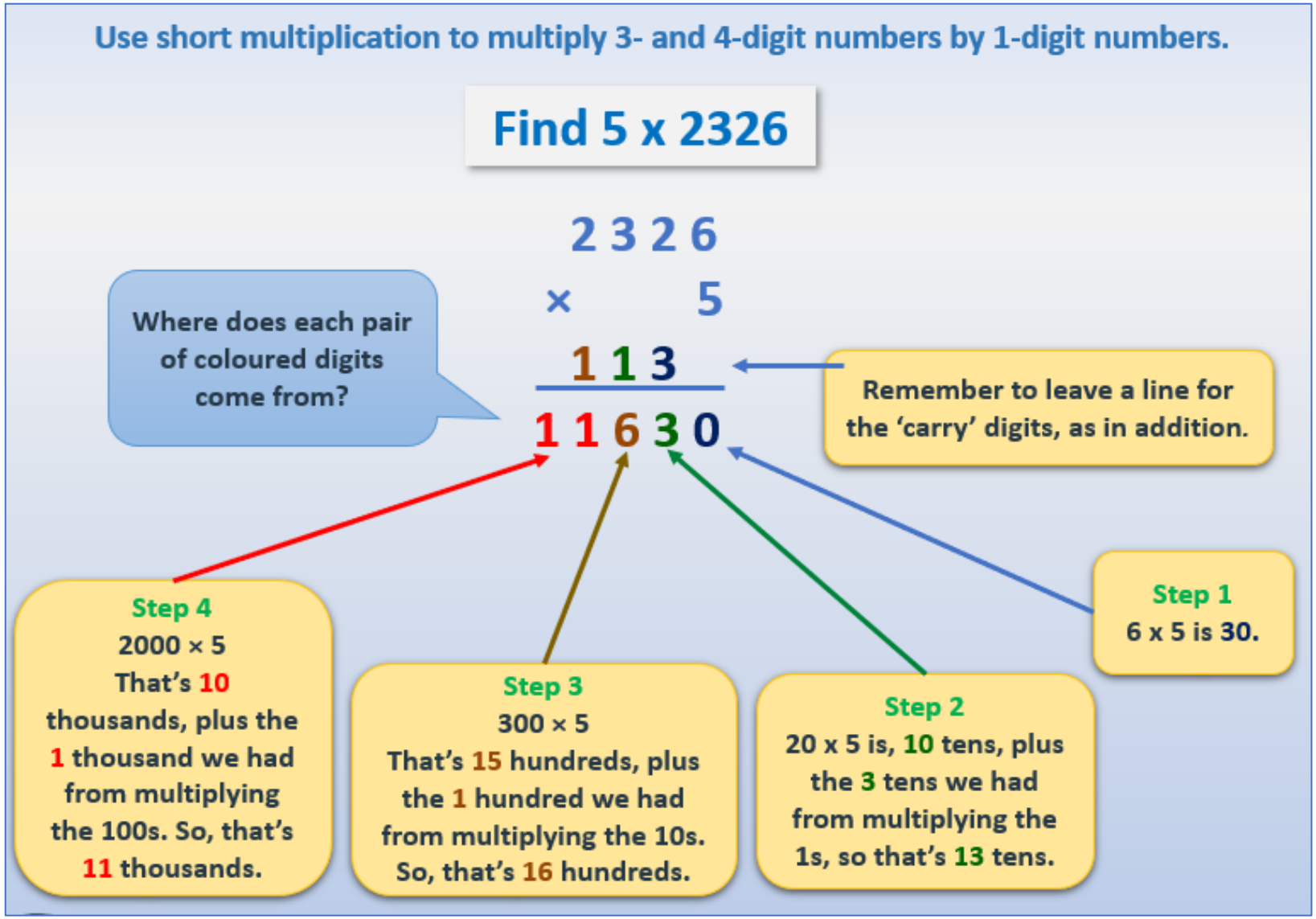
Step 2

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



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 x 4 b) 654 x 7 c) 1441 x 3

Practice Sheets Answers

Multiplication practice (mild)

1. 3 × 472 = 1416
2. 5 × 635 = 3175
3. 4 × 222 = 888
4. 4 × 572 = 2288
5. 3 × 299 = 897
6. 8 × 427 = 3416
7. 7 × 684 = 4788
8. 3 × 2513 = 7539
9. 6 × 7238 = 43,428
10. 4 × 4025 = 16,100
11. 8 × 4582 = 36,656
12. 5 × 3200 = 16,000
13. 6 × 7438 = 44,628
14. 8 × 7869 = 62,952
15. 7 × 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 × 2493 = 7479
2. 3 × 8241 = 24,723
3. 4 × 2854 = 11,416
4. 4 × 6178 = 24,712
5. 6 × 4728 = 28,368
6. 6 × 7236 = 43,416
7. 7 × 2143 = 15,001
8. 7 × 5942 = 41,594
9. 8 × 1487 = 11,896
10. 8 × 6048 = 48,384

Challenge

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

A Bit Stuck?
Greatest grid gurus!

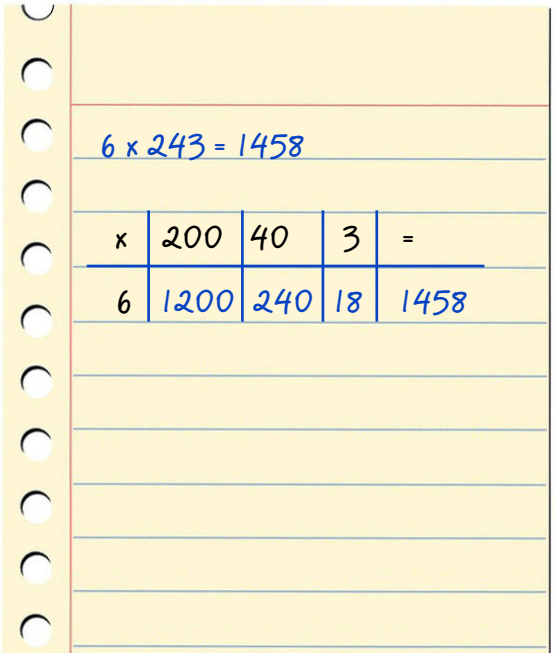
Discuss your work together, in pairs.

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.



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 x 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 x 4 gives the same product as 8 x 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 x 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:
3 6 ☐ 2 x 8 = ☐ 9 , ☐ 3 6

Fold here to hide answers:

Check your understanding

Answers

Maya says that 2578 x 4 gives the same product as 8 x 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 x 1386
Repeat with 2547 x 9, adding 2547 to the product.
Explain what happens. 2547 x 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 x 8 = 29,136