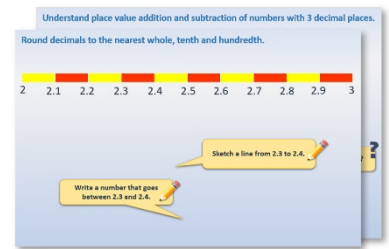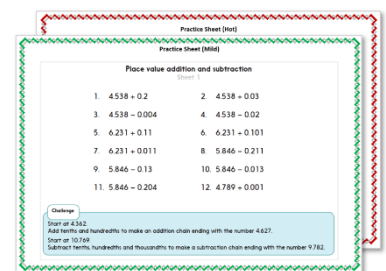# Year 4: Week 3, Day 4
Times tables

Each day covers one maths topic. It should take you about 1 hour or just a little more.
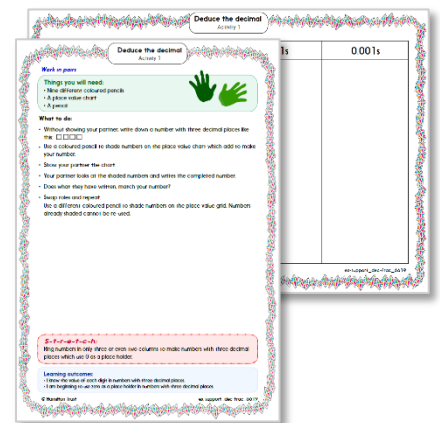
1. Start by reading through the **Learning Reminders**.
   They come from our *PowerPoint* slides.

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. I Think you've cracked it? Whizzed through the Practice Sheets? Have a go
   at the **Investigation**…

Learning Reminders

Know multiplication and division facts for the 9 times table.

We can use our hands to show the 9 times table!

Hold out your hands, with palms facing toward you. Fold down the **second finger** from the left (including thumb).

You have **1 thumb** standing up before the folded down finger, and **8 fingers** after it, 1 ten and 8 ones making 18. That's **two** 9s!

Put your second finger back up and fold down your **third finger.** This gives the answer to **three 9s,** can you see it?

Put your third finger back up and fold down your **fourth finger.** This gives the answer to **four 9s!** Carry on and find 5, 6, 7, 8 and 9 nines.

Know multiplication and division facts for the 9 times table.

> Let's look at the multiples of 9.

> Up to 90, what happens to the 1s and the 10s each time?

> What happens when we find the **digit sum** for each multiple?
> For example 2 + 7, or 5 + 4?

> What's a good way to remember 11 × 9 and 12 × 9 ?

9
18
27
36
45
54
63
72
81
90
99
108

Learning Reminders

Know the 11 times table.

$1 \times 11 = 11$

$2 \times 11 = 22$

$3 \times 11 = 33$

$4 \times 11 = 44$

$5 \times 11 = 55$

$6 \times 11 = 66$

$7 \times 11 = 77$

$8 \times 11 = 88$

$9 \times 11 = 99$

$10 \times 11 = 110$

$11 \times 11 = 121$

$12 \times 11 = 132$

Let's look at the 11× table.

Can you see any patterns? The 11 times table is pretty easy!

If we know $10 \times 11 = 110$ we can add 11 to find 11×11 and then 11 more to find 12×11.

Learning Reminders

Know the 12 times table.

$1 \times 12 = 12$

$2 \times 12 = 24$

$3 \times 12 = 36$

$4 \times 12 = 48$

$5 \times 12 = 60$

$6 \times 12 = 72$

$7 \times 12 = 84$

$8 \times 12 = 96$

$9 \times 12 = 108$

$10 \times 12 = 120$

$11 \times 12 = 132$

$12 \times 12 = 144$

Let's try the 12× table.

We can add 12 each time...

...or can use our 10s and 2s.

For example, 7×12. We know $7 \times 10 = 70$ and $7 \times 2 = 14$ so $7 \times 12 = 70 + 14 = 84$.

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Practice Sheet Mild
Multiplication and divison practice

Complete the multiplication grid:

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16		20	22	24
3		9	12	15		21	24	27	30	33	36
4	8			20	24	28	32	36	40	44	48
5	10	15		25	30	35	40	45	50	55	
6	12	18	24	30	36	42	48	54	60		
7	14	21	28	35	42	49		63	70	77	
8	16	24	32	40		56			80	88	96
9	18			45	54	63	72	81		99	108
10	20	30	40	50	60	70	80	90	100		120
11	22	33		55	66	77	88		110		132
12	24		48	60	72	84	96	108	120		

Challenge

Use the grid to complete these division facts:

$\boxed{} \div 5 = 8$ $42 \div \boxed{} = 7$ $11 = \boxed{} \div 12$

$36 \div \boxed{} = 4$ $9 = \boxed{} \div 12$ $110 \div 11 = \boxed{}$

Practice Sheet Hot
Multiplication and divison practice

Complete the multiplication grid:

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16				
3			15						30	33	
4	8		20						40		
5	10	15		25	30	35	40	45	50	55	
6								54			
7			35						70		
8	16										
9											
10	20	30	40	50	60	70	80	90			
11											
12	24										

Challenge

Use the grid to complete these division facts:

$\boxed{} \div 5 = 8$　　　　$42 \div \boxed{} = 7$　　　　$11 = \boxed{} \div 12$

$36 \div \boxed{} = 4$　　　　$9 = \boxed{} \div 12$　　　　$110 \div 11 = \boxed{}$

Practice Sheet Answers

Multiplication and division answers (Mild) and (Hot)

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

Challenge

$40 \div 5 = 8$

$42 \div 6 = 7$

$11 = 132 \div 12$

$36 \div 9 = 4$

$9 = 108 \div 12$

$110 \div 11 = 10$

Work in pairs

Things you will need:
• A set of 0 to 12 cards
• Multiples strips
• A pencil
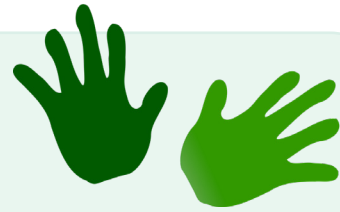
What to do:

• Choose a times table from 2, 3, 4, 5 and 10 which you think you both know fairly well, but not perfectly.

• Find the matching multiples strip.

• Shuffle a pack of 0 to 12 cards and turn face down.

• Turn them over one at a time.
  Multiply the number on the card by the number of your chosen times table.

• Cross off the answer on the multiples strip. If the answer isn't there, try again!

• See if you can get through the whole pack of cards.

• If you don't know a fact, use 'clever counting' to work it out.

• Repeat the game but for a times table which you don't know so well.

• If time, repeat, or choose another times table.

S-t-r-e-t-c-h:
Play the games without using the multiple strip. Write down each answer, then check your answers with the strip after the game.

Learning outcomes:
• I know the 2, 5 and 10 times tables.
• I am beginning to know the 3 and 4 times tables.

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Multiples of **2**	0	10	8	22	2	12	20	4	18	14	6	16	24

Multiples of **3**	9	3	24	15	6	21	30	0	12	33	18	36	27

Multiples of **4**	4	32	12	28	40	0	16	36	20	44	24	48	8

Multiples of **5**	40	5	35	0	45	20	30	10	25	55	50	60	15

Multiples of **10**	70	10	120	50	60	110	0	80	20	90	30	40	100

0 1 2 3 4

5 6 7 8 9

10 11 12

Investigation
Table digital roots

1. Choose a times table.
   Write out the multiples from the 1st to the 12th.

2. Add the digits of each answer and keep adding until you have the digital root of each multiple up to the 12th.

3. Repeat this with another times table.

4. Check that, between you, your group has covered every table from 1 to 12.

5. Compare patterns.

1 x 8 = 8	→	8	
2 x 8 = 16	→	7	
3 x 8 = 24	→	6	
4 x 8 = 32	→	5	
5 x 8 = 40	→	4	
6 x 8 = 48	→	12	→ 3
...			

Challenge

Which tables have the same patterns of digital roots? Can you spot the pattern? Together, make a hypothesis.

6. Draw the pattern of the digital roots by joining points on a circle where the circumference has 9 equally spaced marks.

7. Check your hypothesis.