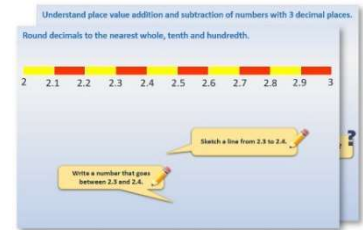


Week 12, Day 3

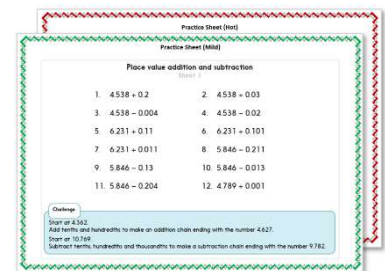
Recognise and use square numbers and cube numbers

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

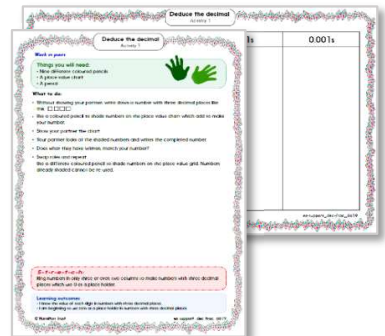
1. Start by carefully reading through the **Learning Reminders**.



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

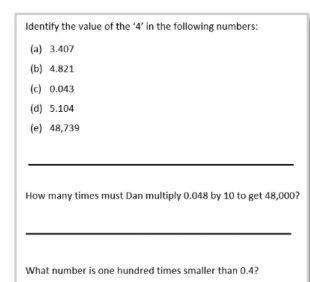


3. Finding it tricky? That's OK... have a go with a grown-up at **A Bit Stuck?**



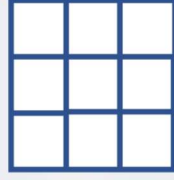
4. Think you've cracked it? Whizzed through the Practice Sheets?
Have a go at the **Investigation...**

5. Have I mastered the topic? Tackle the questions to **Check your understanding**.
Fold the page to hide the answers!



Learning Reminders

Recognise and use square numbers and cube numbers.

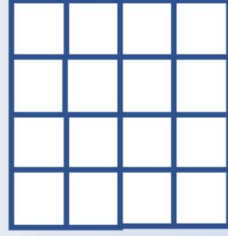


The area of this square is 9cm^2 .

We can write 3×3 like this:

$$3^2$$

This means 3 multiplied by itself.
It's like the little 2 we write after cm to show that each centimetre is squared.



The area of this square is 16cm^2 .

$$3^2 = 9$$

$$4^2 = 16$$

$$5^2 = 25$$

How will this sequence continue? Try it out before looking at the next page!

Learning Reminders

Recognise and use square numbers and cube numbers.

If you ring the square numbers on a times tables grid you get some interesting patterns...

The square numbers form a diagonal line.

Multiplication grid

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

The square numbers are alternately odd and even!

Learning Reminders

Recognise and use square numbers and cube numbers.



The cube is 3cm by 3cm by 3cm.

We can find the number of 1cm in this cube by multiplying 3 by 3 by 3....

$3 \times 3 \times 3 = 27$. We can write *this as*: $3^3 = 27$. The small '3' means cubed.

We write 4 cubed as 4^3 . $4^3 = 4 \times 4 \times 4 = 64$.

We write 5 cubed as 5^3 . $5^3 = 5 \times 5 \times 5 = 125$

Cube numbers get big very quickly!

Practice Sheet Mild

Square and cube numbers

1. Ring all the square numbers. **Clue:** There are nine!

9	25	30	4	21	45	81	100
3	36	16	49	13	64	52	15

2. $2^3 = 2 \times 2 \times 2 =$
 $3^3 = 3 \times 3 \times 3 =$
 $4^3 =$
 $5^3 =$

Challenge

Calculate square numbers up to 15^2 .

Practice Sheet Hot

Square and cube numbers

Carry on marking this person's homework. Write the correct answers for any wrong answers at the side.

1. $2^2 = 4$ ✓

2. $3^2 = 6$ ✗ $3^2 = 3 \times 3 = 9$

3. $5^2 = 25$

4. $4^2 = 8$

5. $10^2 = 100$

6. $9^2 = 18$

7. $7^2 = 48$

8. $6^2 = 36$

9. $8^2 = 64$

10. $2^3 = 8$

11. $3^3 = 9$

12. $5^3 = 125$

13. $4^3 = 64$

14. $7^3 = 21$

15. $8^3 = 512$

16. $10^3 = 100$

17. $6^3 = 216$

18. $9^3 = 629$

Challenge

Calculate square numbers up to 20^2 .