

## Parents workshop Y5/6 - 5th October 2023

### Agenda

- **Calculation methods** - addition and subtraction, multiplication and division
- **Fractions** - multiplication and division
- **Questions**



CONCRETE -  
using physical objects  
to solve maths problems.



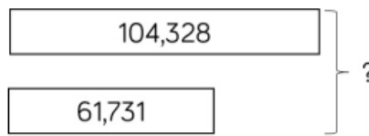
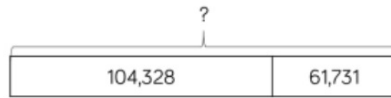
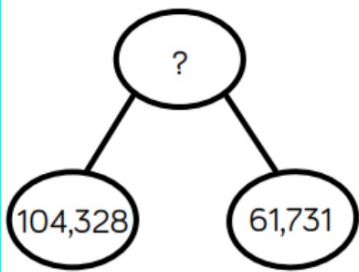
PICTORIAL -  
using drawings  
to solve maths problems.



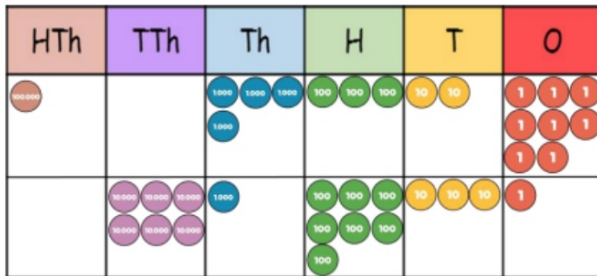
ABSTRACT -  
solving maths problems  
using only numbers.

# Addition

Skill: Add numbers with more than 4 digits



$$104,328 + 61,731 = 166,059$$

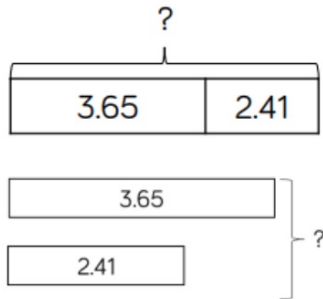
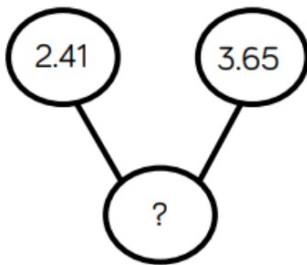


1	0	4	3	2	8
+	6	1	7	3	1
1	6	6	0	5	9
					1

- part, whole
- bar modelling
- place value grid
- number sentence
- formal method (column addition)

# Addition

Skill: Add with up to 3 decimal places



$$\begin{array}{r} 3.65 \\ + 2.41 \\ \hline 6.06 \\ 1 \end{array}$$

$$3.65 + 2.41 = 6.06$$

Ones	Tenths	Hundredths
1 1 1	0.1 0.1 0.1 0.1 0.1 0.1	0.01 0.01 0.01 0.01 0.01
1 1	0.1 0.1 0.1 0.1	0.01

Ones	Tenths	Hundredths
3	6	6
2	4	1

- part, whole
- bar modelling
- place value grid
- number sentence
- formal method (column addition)

# What Is Bar Modelling?

Bar modelling is where pictures or 'bars' are used to represent calculations and word problems.

# Why Use Bar Modelling?

Sometimes calculations and word problems are difficult to visualise in your head. Bar models help you to *see* the maths more clearly.

Once you become confident in using bar models, you can use them to help your learning in many different areas of maths.

# Using Bar Models to Solve Word Problems

A lorry driver was on a 436 mile journey.  
He stopped after 278 miles for a break.  
How many miles does he have left to travel?

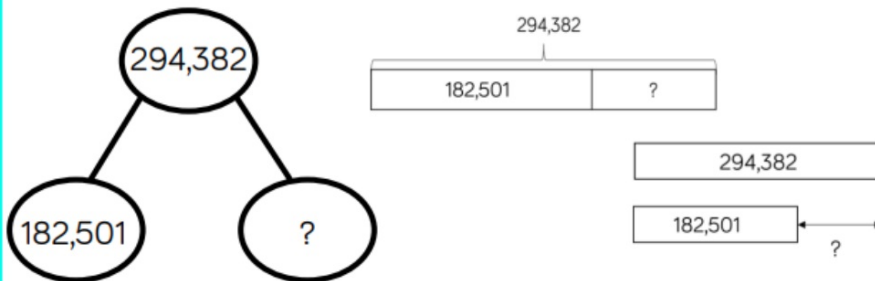


Now it's your turn!



# Subtraction

Skill: Subtract numbers with more than 4 digits



$$294,382 - 182,501 = 111,881$$

HTh	TTh	Th	H	T	O
<del>20000</del> <del>20000</del>	<del>90000</del> <del>90000</del> <del>90000</del> <del>90000</del>	10000 <del>10000</del> <del>10000</del>	300 300 300 300 300 300 300 300	80 80 80 80 80 80 80	<del>2</del>

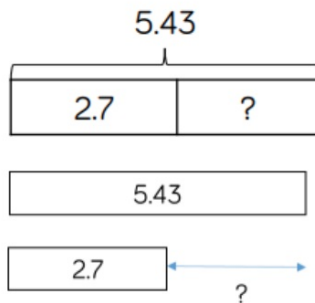
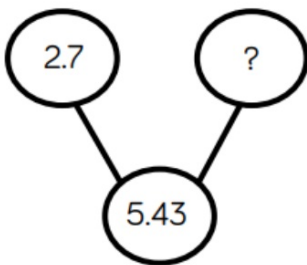
	2	9	<del>3</del>	<sup>1</sup> 3	8	2
-	1	8	2	5	0	1
	1	1	1	8	8	1

- part, whole
- bar modelling
- place value grid
- number sentence
- formal method (column subtraction)



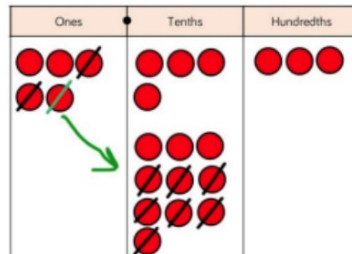
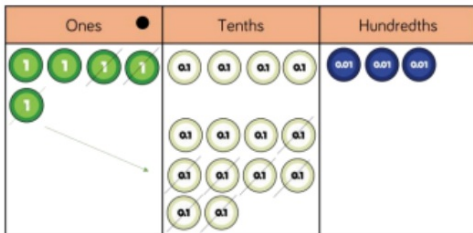
# Subtraction

Skill: Subtract with up to 3 decimal places



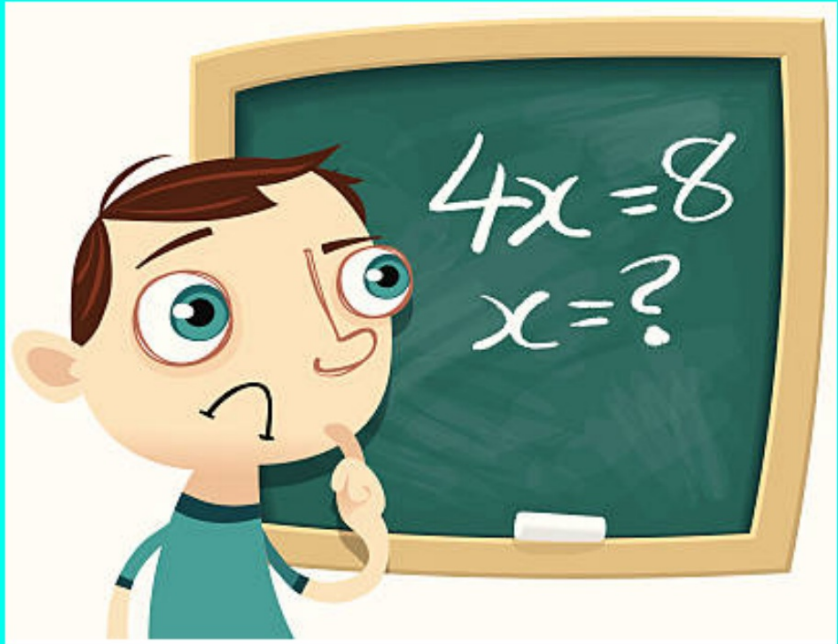
$$\begin{array}{r} 4 \text{ } 1 \\ 5.43 \\ - 2.7 \\ \hline 2.73 \end{array}$$

$$5.43 - 2.7 = 2.73$$



- part, whole
- bar modelling
- place value grid
- number sentence
- formal method (column subtraction)

Your turn again!



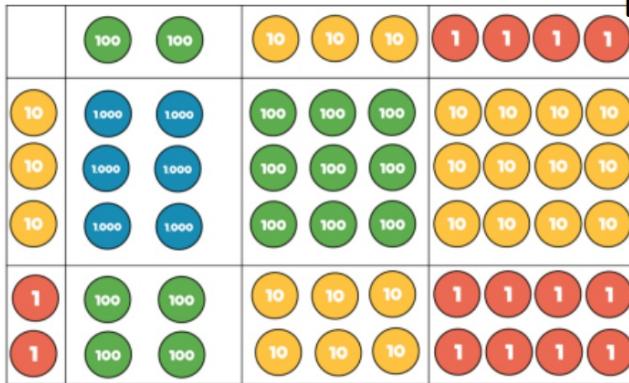
$$\begin{array}{r} \phantom{0}^8 \phantom{0}^9 \phantom{0}^9 \phantom{0}^1 \\ \cancel{9000} \\ - 5672 \\ \hline 3328 \\ \hline \end{array}$$

(exchange 1000)  
 $900 + 90 + 10 = 1000$

# Multiplication

(Secure knowledge of times tables very important)

Skill: Multiply 3-digit numbers by 2-digit numbers



long multiplication

	Th	H	T	O
		2	3	4
×			3	2
		4	6	8
<sup>1</sup> 7	<sup>1</sup> 0	2	0	
7	4	8	8	

- place value counters
- grid method
- formal method (short/long multiplication)

(short multiplication)

	Th	H	T	O
	1	8	2	6
×				3
	5	4	7	8
	2		1	

×	200	30	4
30	6,000	900	120
2	400	60	8

$$234 \times 32 = 7,488$$

# Multiplication

Skill: Multiply 4-digit numbers by 2-digit numbers

- long multiplication

TTh	Th	H	T	O
	2	7	3	9
×			2	8
2	1	9	1	2
<sub>2</sub>	<sub>5</sub>	<sub>3</sub>	<sub>7</sub>	
5	4	7	8	0
<sub>1</sub>		<sub>1</sub>		
7	6	6	9	2

1

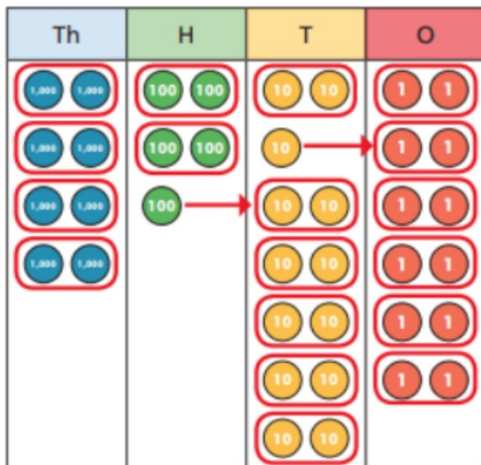
And again.....



# Division

Skill: Divide 4-digits by 1-digit (grouping)

- place value
- short division



	4	2	6	6
2	8	5	13	12

# Division

Skill: Divide multi-digits by 2-digits (long division)

- long division

		0	3	6
1	2	4	3	2
	-	3	6	
			7	2
	-		7	2
				0

- 12 × 1 = 12
- 12 × 2 = 24
- 12 × 3 = 36
- 12 × 4 = 48
- 12 × 5 = 60
- 12 × 6 = 72
- 12 × 7 = 84
- 12 × 8 = 96
- 12 × 9 = 108
- 12 × 10 = 120

$$432 \div 12 = 36$$

$$7,335 \div 15 = 489$$

		0	4	8	9	
15		7	3	3	5	
	-	6	0			
			1	3	3	5
	-		1	2	0	
				1	3	5
	-			1	3	5
						0

- 1 × 15 = 15
- 2 × 15 = 30
- 3 × 15 = 45
- 4 × 15 = 60
- 5 × 15 = 75
- 10 × 15 = 150

Last one.....





Fractions multiply - 'just do it'

$$\frac{2}{4} \times \frac{3}{6} = \frac{6}{24} = \frac{1}{4}$$

Fractions divide - 'keep-change-flip'

$$\frac{2}{5} \div \frac{2}{3}$$

$$\frac{2}{5} \times \frac{3}{2} = \frac{6}{10} = \frac{3}{5}$$

## Questions

