WB: 5/1/26

Year 6 Maths Challenge

Last term (Y6 Autumn term)

Write the numbers in numerals.

two million, eighty-three thousand and twelve
two million, eight hundred and three thousand and twenty
two million, eight hundred and twenty-three thousand and twelve

Write 500,000 in words.

Write the number "three and a half million" in numerals.

Previous learning. . .Using ratio language

- Complete the sentences.

For every ______ red counters, there are ______ blue counters.

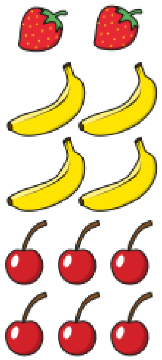
The ratio of red counters to blue counters is ______ : ______

For every ______ blue counters, there are ______ red counters.

The ratio of blue counters to red counters is ______ : ______

We are currently learning. . .Ratio

- Write the ratio of:
  - bananas to strawberries
  - cherries to strawberries
  - strawberries to bananas to cherries
  - cherries to strawberries to bananas



We are learning next. . .Ratio symbol

- The ratio of red counters to blue counters in a box is 1 : 2

  - What fraction of the counters are blue?
  - What fraction of the counters are red?
  - What is the same about the ratio and the fractions? What is different?

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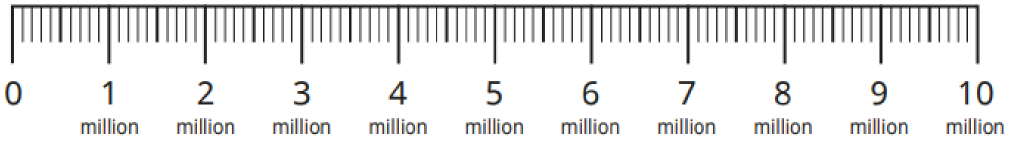
Year 6 Maths Challenge

Last term (Y6 Autumn term)

Here is a number line.



Draw arrows to show the positions of these numbers on the number line.

1,500,000	five and a half million	6,200,000	8,950,000

Which numbers can you place more accurately than others?

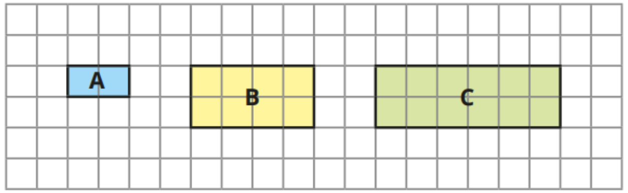
Previous learning...Ratio and fractions

- The bar model shows the ratio 2 : 3 : 4

P	P	Y	Y	Y	B	B	B	B

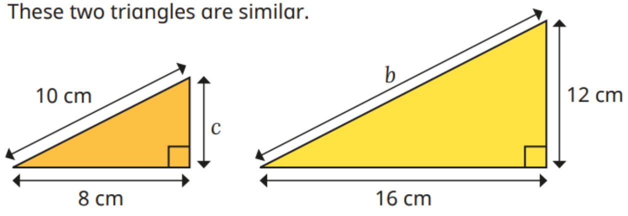
  - What fraction of the bar is pink?
  - What fraction of the bar is yellow?
  - What fraction of the bar is blue?

We are currently learning...Similar shapes

- 

  - Explain why shapes A and B are similar.
  - Explain why shapes A and C are **not** similar.

- These two triangles are similar.



  - Find the lengths of *b* and *c*.

We are learning next... Scaling recipes

- Here are some ingredients for cupcakes.

  Tom wants to make 10 cupcakes.

  Explain to a partner how to work out what ingredients Tom will need.

  How much of each ingredient will Tom need to make the different numbers of cupcakes?

Cupcakes (makes 5)

100 g flour

2 eggs

40 g sugar

15 cupcakes	20 cupcakes	25 cupcakes

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Year 6 Maths Challenge

Last term (Y6 Autumn term)

Which is the greater number in each pair?

- 62,800 60,820
- 247,612 247,162
- 8,642,371 8,643,271

Explain how you know.

Previous learning…1-step function machines

- Mo has made a function machine.

input □ → + 7 → □ output

If the input is 5, the output is 12

- If the input is 7, what is the output?
- If the input is 4,023, what is the output?

input □ → − 5 → □ output

Input	5	23	5.1	23.2	0	−3	−5
Output							

We are currently learning…2-step function machines

- Here is a 2-step function machine.

input □ → × 2 → + 1 → □ output

- If the input is 5, what is the output?
- If the input is 10, what is the output?

- Complete the tables for the function machines.

input □ → + 2 → × 3 → □ output

Input	3	4	5	10
Output				

input □ → × 3 → + 2 → □ output

Input	3	4	5	10
Output				

What do you notice?

We are learning next…Formulae

- Fay makes a sequence of patterns with stars and circles.

Complete the table to show the number of circles and stars in the patterns.

Number of stars	1	2	3	5		
Number of circles	2				18	30

If s = number of stars and c = number of circles, which formula describes Fay's pattern?

$s = 2 + c$ $c = s + 2$ $c = 2s$ $s = 2c$ $2s = c + 2$

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Year 6 Maths Challenge

Last term (Y6 Autumn term)

- List all the prime numbers that are less than 20
- Which of these numbers are prime and which are composite?

30	31	32	33	34
35	36	37	38	39

Previous learning...Form equations

- If a is a number, how do you write "3 times the value of a"?
- How do you write "4 more than the number x"?
- If 4 more than the number x is equal to 26, how can you write this as an equation?
- Tom thinks of a number and calls it x.

  Which expression represents 5 more than Tom's number?

  $5x$ | $x + 5$ | $x - 5$ | $x \div 5$

  Double Tom's number is 64

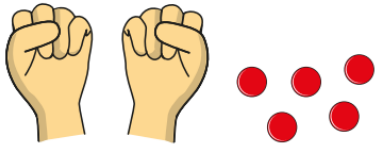
  Which equation shows this information?

  $x + 2 = 64$ | $x \div 2 = 64$ | $2x = 64$ | $x - 2 = 64$

We are currently learning...Solve 2-step equations

- Tommy has 17 counters.

  He puts the same number of counters (c) in each hand and has some left over.

  Which equation shows this?

  $c + 2 = 5$ | $2c = 17$ | $2c + 5 = 17$ | $2c + 17 = 5$

  Solve the equation to work out how many counters Tommy has in each hand.

- Kay thinks of a number.

  She multiplies the number by 2 and then adds 5

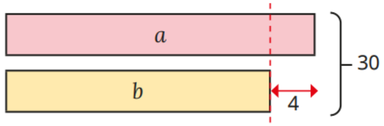
  She gets the answer 29

  What number did Kay think of?

We are learning next... Solve problems with 2 unknowns

- The sum of a and b is 30

  The difference between a and b is 4

  Use the bar model to work out the values of a and b.

- Here is some information about two numbers, x and y.

  $x + y = 10$

  $x - y = 2$

  - Label the information on the bar model.

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Year 6 Maths Challenge

Last term (Y6 Autumn term)

- Here are some number cards.

1	4	8	9	16
27	37	49	64	

Which numbers are square?

Which numbers are cube?

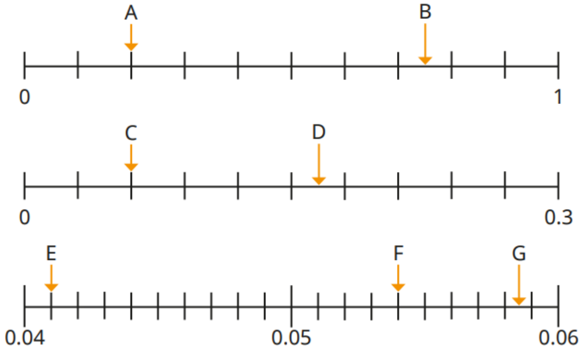
Which numbers are both square and cube?

Which numbers are prime?

Previous learning. . .Place value within 1

- Complete the number sentences.
  - 0.2 + 0.06 + 0.009 = ______
  - 0.4 + ______ + 0.001 = 0.451
  - ______ = 0.006 + 0.1 + 0.03
  - 0.6 + 0.003 = ______

- What decimal numbers are the arrows pointing to?



We are currently learning. . .Rounding decimals

- Complete the table.

Number	3.472	2.196	0.804
Previous integer	3		
Next integer	4		
Previous tenth	3.4		
Next tenth	3.5		
Previous hundredth	3.47		
Next hundredth	3.48		

We are learning next. . .Add and subtract decimals

503.6 + 25.35

56.95 – 32.8

31.67 + 1.319

249.45 – 18.3

0.468 – 0.28

5.71 – 0.815

16.904 – 7.85