Mathematics at St John's

Mrs Slack - Maths Lead - Year 5 Class Teacher

True or false?

All the numbers in the two times table are even.

There are no numbers in the three times table that are also in the two times table.

Always, sometimes, never?

Is it always, sometimes or never true that an even number that is divisible by 3 is also divisible by 6.

Which is correct?

Which of these number sentences is correct?

$3 + 6 \times 2 = 15$

$6 \times 5 - 7 \times 4 = 92$

$8 \times 20 \div 4 \times 3 = 37$

Aims

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Number – number and place value

Number – addition and subtraction

Number – multiplication and division

Number – fractions (including decimals and percentages)

Ratio and proportion

Algebra

Measurement

Geometry – properties of shapes

Geometry – position and direction

Statistics

Number bonds within 20	
1	1+0
2	2+0 1+1
3	3+0 2+1
4	4+0 3+1 2+2
5	5+0 4+1 3+2
6	6+0 5+1 4+2 3+3
7	7+0 6+1 5+2 4+3
8	8+0 7+1 6+2 5+3 4+4
9	9+0 8+1 7+2 6+3 5+4
10	10+0 9+1 8+2 7+3 6+4 5+5
11	11+0 10+1 9+2 8+3 7+4 6+5
12	12+0 11+1 10+2 9+3 8+4 7+5 6+6
13	13+0 12+1 11+2 10+3 9+4 8+5 7+6
14	14+0 13+1 12+2 11+3 10+4 9+5 8+6 7+7
15	15+0 14+1 13+2 12+3 11+4 10+5 9+6 8+7
16	16+0 15+1 14+2 13+3 12+4 11+5 10+6 9+7 8+8
17	17+0 16+1 15+2 14+3 13+4 12+5 11+6 10+7 9+8 8
18	18+0 17+1 16+2 15+3 14+4 13+5 12+6 11+7 10+8
19	19+0 18+1 17+2 16+3 15+4 14+5 13+6 12+7 11+8 10+9
20	20+0 19+1 18+2 17+3 16+4 15+5 14+6 13+7 12+8 11+9 10+10

+	1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10	11
2	3	4	5	6	7	8	9	10	11	12
3	4	5	6	7	8	9	10	11	12	13
4	5	6	7	8	9	10	11	12	13	14
5	6	7	8	9	10	11	12	13	14	15
6	7	8	9	10	11	12	13	14	15	16
7	8	9	10	11	12	13	14	15	16	17
8	9	10	11	12	13	14	15	16	17	18
9	10	11	12	13	14	15	16	17	18	19
10	11	12	13	14	15	16	17	18	19	20

Fluency

Is it simply fast and accurate?

What else do you know?

$900 + 600 = 1500$

$19 + 6 = 25$

$9 + 16 = 25$

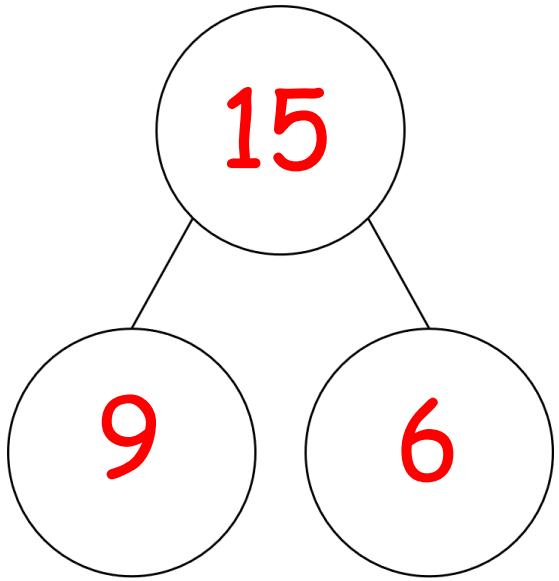
$6 + 9 = 15$

$9 + 6 = 15$

$15 - 9 = 6$

$15 - 6 = 9$

$$\begin{array}{r} 49 \\ +\ 26 \\ \hline 75 \end{array} \qquad \begin{array}{r} 65 \\ -\ 29 \\ \hline 36 \end{array}$$



Multiplication Chart

x	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

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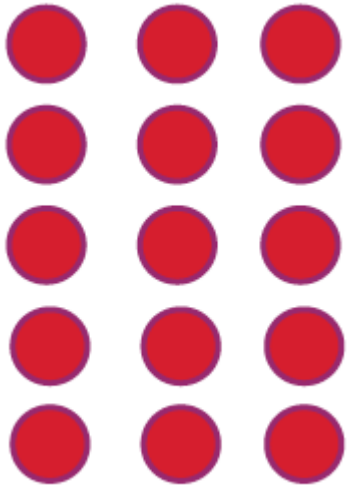


7^2

5^3

$\frac{1}{4} = \frac{}{48}$

$\frac{2}{9} \cdot \frac{1}{27} =$

List the factors of 42.

Find common multiples of 6 and 8.

Reasoning

Mathematical reasoning is the critical skill that enables a student to make use of all other **mathematical** skills. With the development of **mathematical reasoning**, students recognise that **mathematics** makes sense and can be understood.

Spot the mistake / Which is correct?
True or false?
What comes next?
Do, then explain
Make up an example / Write more statements / Create a question / Another and another
Possible answers / Other possibilities
What do you notice?
Continue the pattern
Missing numbers / Missing symbols / Missing information/Connected calculations
Working backwards / Use the inverse / Undoing / Unpicking
Hard and easy questions
The answer is…
Visualising

What else do you know? / Use a fact
Fact families
Convince me / Prove it / Generalising / Explain thinking
Make an estimate / Size of an answer
Always, sometimes, never
Making links / Application
Can you find?
What's the same, what's different?
Odd one out
Complete the pattern / Continue the pattern
Another and another
Ordering
Testing conditions

count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
given a number, identify one more and one less

5, 6, 7, __, ____, ____

2, 4, 6, ____, ____, ____

13 + 1 =

Spot the mistake:

5,6,8,9

What is wrong with this sequence of numbers?

True or False?

I start at 2 and count in twos. I will say 9

What comes next?

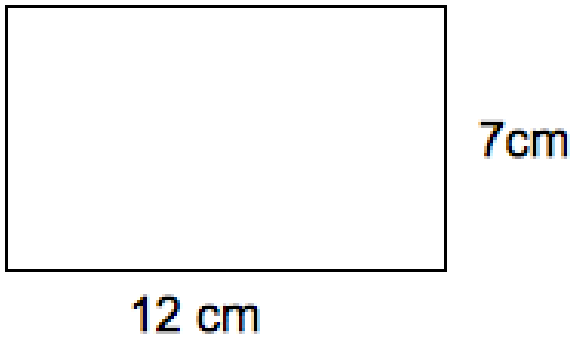
10+1 = 11

11+1= 12

12+1 = 13

.....

measure and calculate the **perimeter** of a rectilinear figure (including squares) in centimetres and metres



Testing conditions

If the width of a rectangle is 3 metres less than the length and the perimeter is between 20 and 30 metres, what could the dimensions of the rectangle lobe?
Convince me.

Find pairs of numbers with a difference of 3.

4m and 7m
5m and 8m
6m and 9m ?

Possibilities

Adult tickets cost £8 and Children's tickets cost £4. How many adult and children's tickets could I buy for £100 exactly? Can you find more than one way of doing this?

Missing numbers

10 = 5 x ☐

What number could be written in the box?

Making links

I have 30p in my pocket in 5p coins. How many coins do I have?

Complete the table.

	Round 39,476
to the nearest 10,000	
to the nearest 1,000	
to the nearest 100	

This number sentence equals 18

1	+	1	7	=	1	8

Now write a **different** number sentence that equals 18

Write **one digit** in each empty box.

	+	1		=	1	8

True or false? Year 2

All the numbers in the two times table are even.

There are no numbers in the three times table that are also in the two times table.

Always, sometimes, never? Year 3

Is it always, sometimes or never true that an even number that is divisible by 3 is also divisible by 6.

Is it always, sometimes or never true that the sum of four even numbers is divisible by 4.

Which is correct? Year 6

Which of these number sentences is correct?

3 + 6 x 2 =15

6 x 5 – 7 x 4 = 92

8 x 20 ÷ 4 x 3 = 37

Olivia buys a banana, an apple and a bag of nuts.

30p

45p

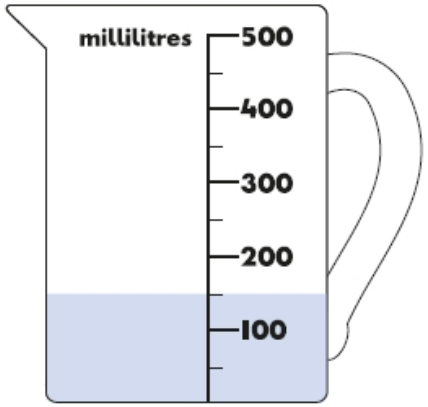
60p

She pays with three 50p coins.

What is her change?

Show your method

p



Kemi needs **450** millilitres of water.

How much **more** water does she needs to put in the jug?

millilitres