

Which is the odd one out?

23

20

15

25

Peter thinks that 20 is the odd one out. Is he right?

Sally thinks that 15 is the odd one out. Is she right?

Mathematics at Bathwick St. Mary Primary School

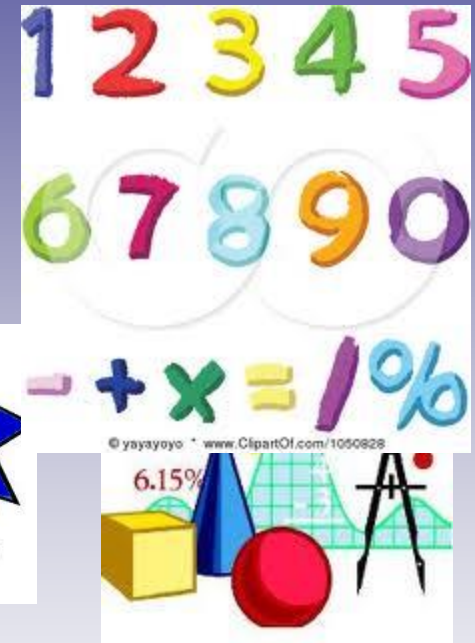
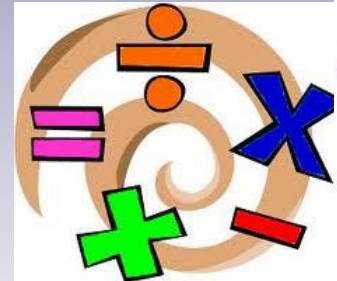
AIMS

- **To inform you about the Maths national curriculum in kS2 classes**
- **To tell you about Maths learning and progression at School**
- **To show you ideas for helping at home with Maths**

Years 1-6

Aims of the new curriculum for KS1 and KS2:

- To become fluent in the fundamentals of mathematics and to be able to recall and apply knowledge rapidly and accurately
- To reason mathematically
- To solve problems by applying knowledge



- There is an expectation that children will master specific targets by the end of each year.

What is covered at lower KS2? (Y3/4)

- Numbers- place value, addition, subtraction, multiplication and division
- Fractions and decimals
- Measurements
- geometry - positions, directions and shapes
- statistics

Targets to be met at the end of each year:

e.g. Year 3 -

- count in multiples of 4,8,50,100
- Compare and order numbers to 1000
- Add and subtract using formal columnar addition and subtraction methods
- Know 2x, 3x,4x,5x,8x,10 tables
- Count in tenths
- Add and subtract fractions with the same denominator
- Measure perimeter
- Know 12hr and 24hr clock
- Tell time to the minute.
- Identify parallel and perpendicular lines

Year 4-

- Count in multiples of 6,7,9,25,and 100
- Use negative numbers
- Know Roman numerals
- Add and subtract formally to 4 digits
- Know ALL x tables to 12x
- Use columnar multiplication
- Use equivalent fractions
- Use decimal equivalents
- Round decimals to 1.d.p.
- Find area
- Convert time from digital to analogue

What is covered at Upper KS2? (y5/6)

- Numbers- place value, addition, subtraction, multiplication and division
- Fractions, decimals and percentages
- Measurements
- geometry - positions, directions and shapes
- Statistics
- Ratio and proportion
- Algebra

Targets to be met at the end of each year:

e.g. Year 5.

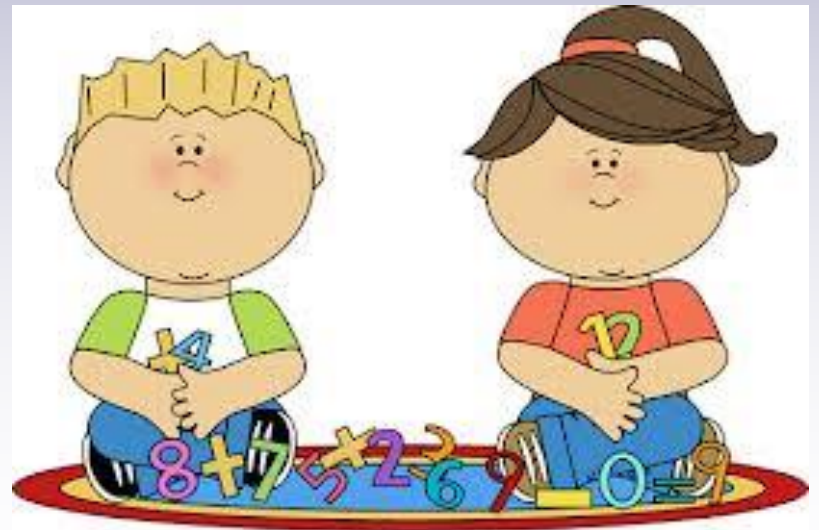
- Read, write and order to 1 million
- Add and subtract large numbers
- Identify factor and multiples
- Know prime, cube and square numbers
- Use formal multiplication
- Use short division
- Recognise mixed numbers and improper fractions
- Use percentages
- Order decimals to 3.d.p.
- Multiply fractions
- Know how to convert from metric to imperial measures

Year 6

- Read, write and order to 10million
- Use long multiplication and long division
- Add and subtract fractions
- Divide fractions
- Multiply and divide decimals
- Use scaling to solve problems (ratio and proportion)
- Use algebraic formulae
- Calculate the area of parallelograms and triangles
- Use pie charts
- Calculate angles in a circle or line

The Daily Lesson from Years 1-6

- Mental starter
- Main Introduction and Group Activity
- Independent/Group Activity
- Plenary



Ways of Learning

- VISUAL
- AUDITORY
- KINESTHETIC
- MENTAL
- WRITTEN
- Paired/ group or individual

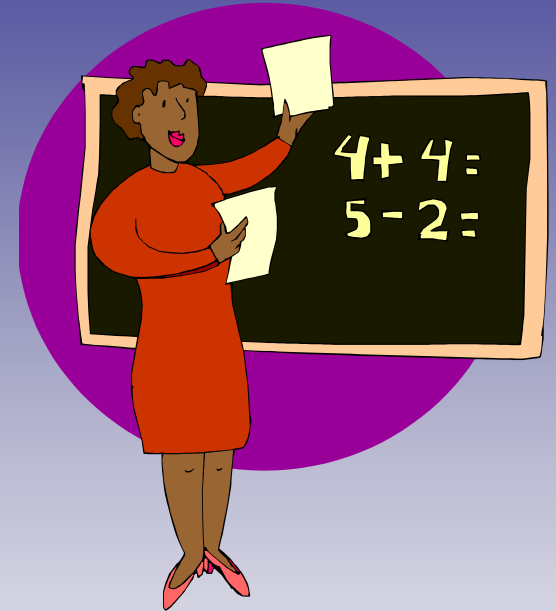


Written Calculations at Bathwick



Subtraction
multiplication

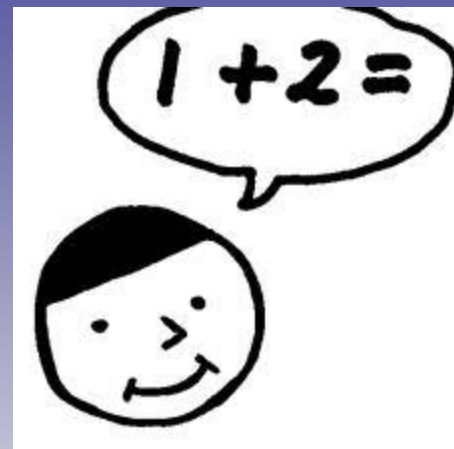
addition
division



Essential to have number knowledge: bonds and times tables

Addition

1. Hands on addition
2. Pictorial addition
3. The empty number line
4. Partitioning
5. Expanded method in columns
6. Column method



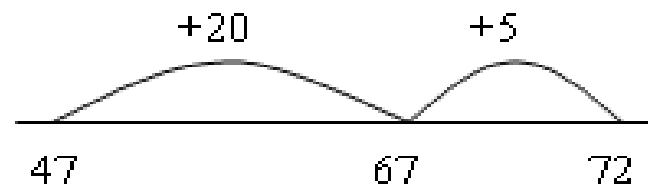
The empty number line

$$47 + 25 = \square$$

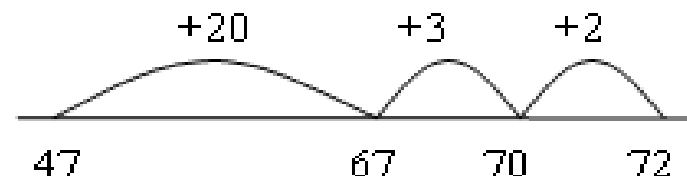
My sunflower is 47cm tall.

It grows another 25cm.

How tall is it now?



or



Partitioning

- $47+76 = 47+70+6 = 117+6=123$
- $47+76 = 40+70+7+6=110+13=123$

- $47 = 40 + 7$
- $\underline{+76} = \underline{70 + 6}$
- $110 + 13 = 123$

Expanded method in columns

$$487 + 546 = \square$$

There are 487 boys and 546 girls in a school. How many children are there altogether?

$$\begin{array}{r} 500 + 40 + 6 \\ + \underline{400 + 80 + 7} \\ \underline{900 + 120 + 13} = 1033 \end{array}$$

Column Method

$$12\ 786 + 2\ 568 = \square$$

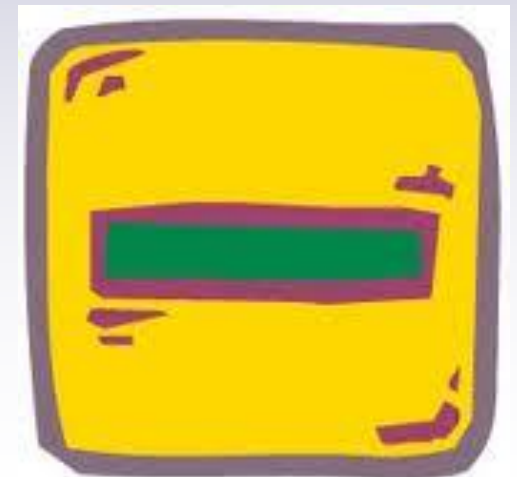
12 786 people visited the museum last year. The numbers increased by 2 568 this year. How many people altogether visited this year?

$$\begin{array}{r} 12\ 786 \\ +\ 2\ 568 \\ \hline 15\ 354 \\ \hline \end{array}$$

1 1 1

Subtraction

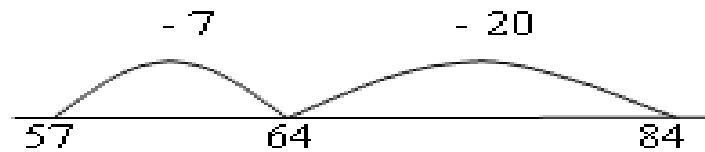
1. Hands on subtraction
2. Pictorial subtraction
3. Using the empty number line
4. Counting up (Complimentary addition)
5. Partitioning
6. Column subtraction



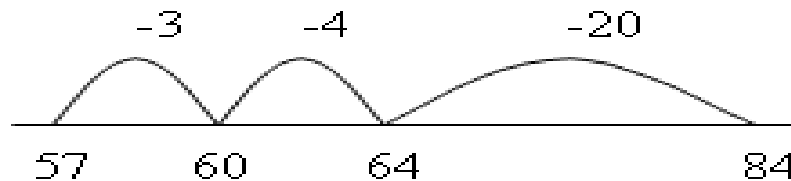
The empty number line

$$84 - 27 = \square$$

I cut 27cm off a ribbon measuring 84cm. How much is left?



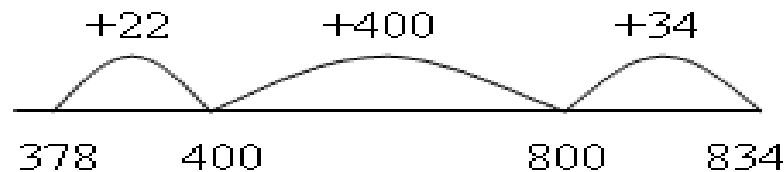
or



Counting up - Complimentary addition

$$834 - 378 = \square$$

The library owns 834 books.
378 are out on loan. How many
are on the shelves?

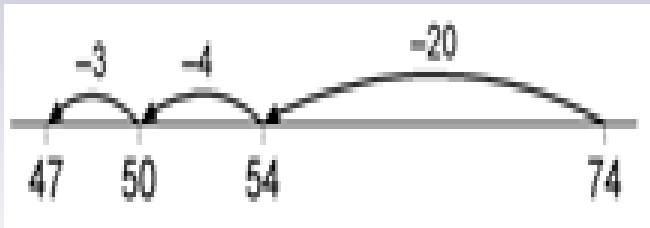


$$\begin{array}{r} 22 \quad (400) \\ 400 \quad (800) \\ 34 \quad (834) \\ \hline 456 \end{array}$$

Partitioning

- Subtraction can be recorded using partitioning on a number line:

$$\begin{aligned}74 - 27 \\&= 74 - 20 - 7 \\&= 54 - 7 \\&= 47\end{aligned}$$



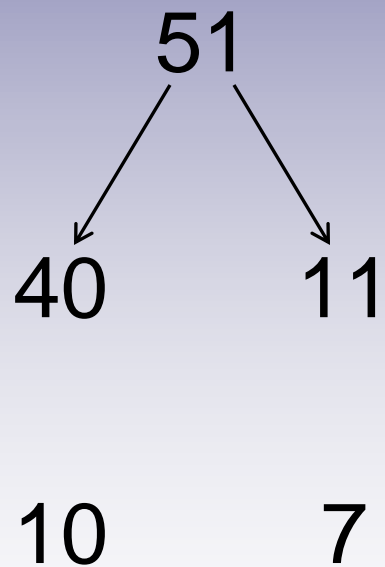
Partitioning is not just about tens and units.

- Look at this sum

$$51 - 17$$

What would you partition 51 into?

- $51 - 17 =$



Column Method

- We use exchanging from the next column to complete the sums:

$$\begin{array}{r} \overset{6}{7} \overset{14}{4} \\ - 27 \\ \hline 47 \end{array}$$

$$\begin{array}{r} \overset{6}{7} \overset{13}{4} \overset{11}{1} \\ - 367 \\ \hline 374 \end{array}$$

What about
2000- 179?

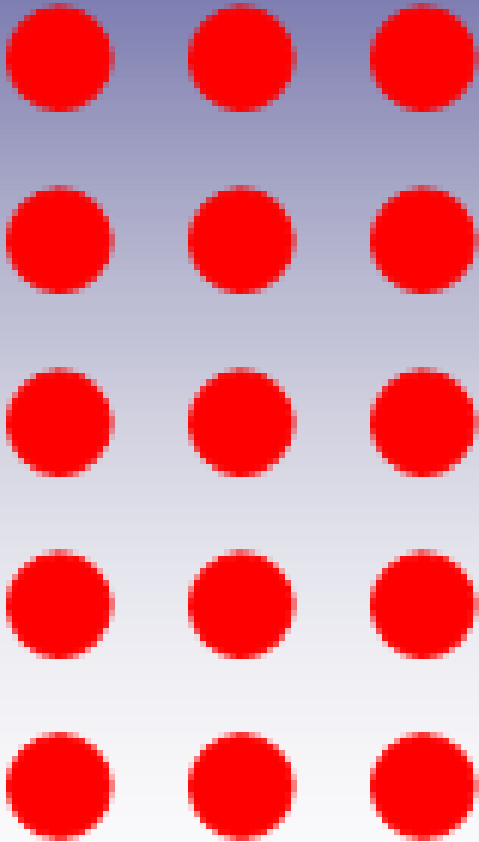
Multiplication

1. Hands on
2. Pictorial
3. Jottings with arrays
4. Number line
5. Mental multiplication using partitioning
6. Grid method
 - One digit by two digits
 - Two digits by two digits
 - Three digits by two digits

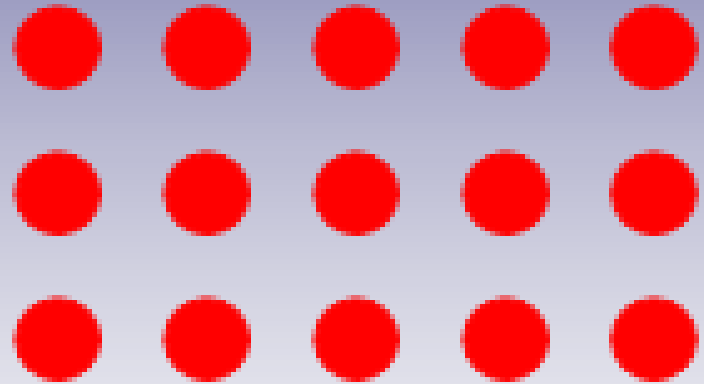


Arrays

3 x 5



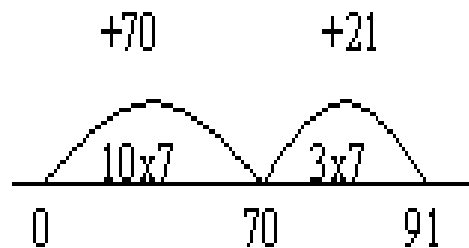
5 x 3



Mental multiplication using partitioning

$$13 \times 7 = \square$$

There are 13 biscuits in a packet. How many biscuits in 7 packets?



Grid method

- One digit by two digits
- Two digits by two digits
- Three digits by two digits

$$6 \times 124 = \square$$

124 books were sold. Each book cost £6. How much money was taken?

$$\begin{array}{r|rrr} & 100 & 20 & 4 \\ \hline 6 & 600 & 120 & 24 \\ \hline & & & = 744 \end{array}$$

$$72 \times 34 = \square$$

A cat is 72cm long. A tiger is 34 times longer. How long is the tiger?

$$\begin{array}{r|rr} & 70 & 2 \\ \hline 30 & 2100 & 60 \\ \hline 4 & 280 & 8 \\ \hline & & = 288 \\ & & \hline & & 2448 \end{array}$$

Column multiplication

$$\begin{array}{r} 237 \\ \times \quad 4 \\ \hline 948 \\ \begin{array}{cc} 1 & 2 \end{array} \end{array}$$

$$\begin{array}{r} 56 \\ \times 27 \\ \hline 1120 \\ 392 \\ \hline 1512 \\ \hline 1 \end{array}$$

$$\begin{array}{l} 56 \times 20 \\ 56 \times 7 \end{array}$$

Division

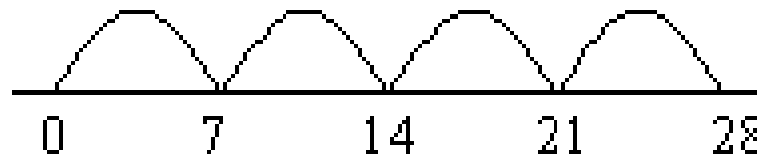
1. Sharing and grouping using objects
2. Jottings on pictures/number line
3. Empty number line
4. Mental division using partitioning
5. Expanded method for HTU (Chunking)
6. Short division



The empty number line

$$28 \div 7 = \square$$

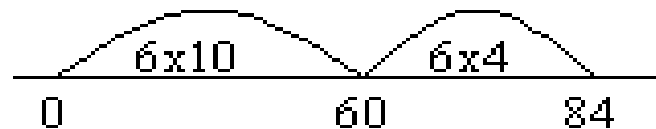
A chew bar costs 7p. How many can I buy with 28p?



Mental division using partitioning

$$84 \div 6 = \square$$

I need 6 drawing pins to put up a picture. How many pictures can I put up with 84 pins?



Short and long Division

$$\begin{array}{r} 27 \\ 3 \overline{) 81} \end{array}$$

$$\begin{array}{r} 23 \\ 24 \overline{) 560} \\ \underline{-480} \\ 80 \\ \underline{-72} \\ 8 \end{array}$$

Answer: 23 R 8

We want children to ask themselves:

- *Can I do this in my head?*
- *Can I do this in my head using drawings or jottings?*
- *Do I need to use an expanded/compact written method?*
- *(Do I need a calculator?)- No longer used in KS2 tests but still taught in y5/6.*





TESTS



KS2

- 1 arithmetic paper on number only (30minutes)
- 2 tests for mathematical fluency, solving problems and reasoning. (40minutes each)
- Levels are no longer given.
- A SATS meeting for parents will be held nearer the time.

How you can help at home.

- Crucial that children practice times tables and number bonds.
- Look for number in everyday activities.

Make Maths fun to do... Play games: snakes and ladders, darts, dominoes and other games that depend on numbers, counting, calculation and scoring. 'Battleships' is a fun way to use co-ordinates.



Cooking is great for helping your child get to know simple weights and measures. An old-fashioned set of balance scales is ideal. This is a good way to introduce the idea of ratios and proportions, too. Measure in both grammes and ounces.

How you can help at home...

- **POCKET MONEY**. Help her to add it up week by week, and work out whether they can afford a particular toy or treat. Shop using money and calculate change.

TIME. Look at clocks, both digital and analogue. Estimate how long a certain activity will take to do and see if you are right! Work out how long it is until the next mealtime. Play games: how long is a minute, starting from now?

- **HOBBIES**. If your child is car-mad, talk about relative engine sizes, fuel economy, speed and performance. Watch and play sports that involve scoring, timing, counting, measuring.



CALENDARS AND DATES. Give your child a calendar to record special occasions. Count the days in each month. Learn the poem 30days hath September etc.

A positive Attitude from Parents.

- Good role models .
- Don't say 'I am no good at Maths' or 'I wasn't any good at maths at school' or 'Ask your Dad as he is better than me' – this is especially important for girls.
- It is ok to make mistakes.

Parent Booklets

- There is a parent booklet available for **each year group** with some targets, questions and activities that you can refer to.
- Include calculation progressions for addition, multiplication, subtraction and division.