

AK Keeping Up With the Kids – Maths

Thursday 15th October 2015





Aims of session

- To provide an overview of the new National Curriculum for Maths
- To inform you of the changes to SATs
- To share our approach to teaching calculation skills
- To raise awareness of Maths resources available, to support your child's learning
- To enable you to feel more confident about supporting children with maths at home

The New National Curriculum HEADLINES

- Children to know by heart their tables to 12x12, by the end of year 4.
- Greater emphasis on formal written calculation methods; long multiplication and division.
- Earlier and more challenging requirement for fractions and decimals.
- The new Curriculum is 70% Number and Calculation
- Use of calculators to be restricted until the end of Key Stage 2.
- Greater emphasis on the use of large numbers, algebra, ratio and proportion at an earlier age than previously.
- Roman numerals have been introduced from year 3.
- Greater focus on interpretation of data.

The New National Curriculum AIMS

To ensure that children

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



The New National Curriculum EXPECTATIONS

NO LEVELS - Emerging/Developing/Expected/Exceeding/Maste

"The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. *Pupils who grasp* concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content."

National Curriculum for Maths, September 2014

Year Group Objectives Number, Calculation & FDP

Number & Place Value

I can read, write, order and compare numbers up to at least 10,000,000 (ten million) and say the value of each digit.

I can round any number to a required degree of accuracy.

I can use negative numbers in context when looking at temperature or money, counting in jumps forwards and backwards through 0.

I can solve number and practical problems that involve ordering and comparing numbers up to 10,000,000 (ten million) rounding to a required degree of accuracy, using negative numbers and calculating intervals across zero.

Addition & Subtraction

I can mentally calculate using a mix of the four operations.

I can solve problems with more than one step and operation and explain why I used them.

I can solve addition and subtraction word and practical problems.

I can use estimation to check answers to calculations and determine an appropriate degree of accuracy.

Multiplication & Division I can multiply numbers of up to 4 digits by a two-digit number using a formal written method. I can divide numbers of up to 4 digits by a two-digit number using a formal written method of long division, showing remainders, fractions or rounding as appropriate. I can divide numbers of up to 4 digits by a two-digit number using a formal written method of short division, showing remainders, fractions or rounding as appropriate. I can mentally calculate using a mix of the four operations and increasingly large numbers. I can identify common factors, multiples and prime numbers. I can use the order of importance of the four operations when answering questions. I can solve addition and subtraction multi-step problems. deciding which operations and methods to use and explaining why they were suitable. I can solve problems involving addition, subtraction, multiplication and division.

I can use estimating to check answers and problem solving.

NE BRIGHT * REACH FOR

Fractions

 \square

I can use common factors and multiples to simplify fractions and express fractions in the same denomination.	
I can compare and order fractions including those bigger than 2.	
I can add and subtract fractions with different denominators and mixed numbers.	
I can multiply simple pairs of proper fractions, writing the answer in the simplest form such as $1/4 \times 1/2 = 1/8$.	
I can divide proper fractions by whole numbers such as $1/3 \div 2 = 1/6$.	
I can link a fraction with division and work out decimal fractions such as 0.378 is 3/8 as a simple fraction.	
I can explain the place value of any digit in a number with up to 3 decimal places and multiply or divide these by 10, 100 or 1000.	
I can multiply numbers less than 10 with up to 2 decimal places by whole numbers.	
I can use written division methods for numbers with up to 2 decimal places.	
I can solve problems which require answers to be rounded to specified degrees of accuracy.	
I can use equivalences between simple fractions, decimals and percentages to help me solve problems.	

Year Group Objectives Other Elements

Measurement

I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to three places if I need to.

I can use, read, write and convert between standard units. I can convert measurement of length, mass, volume and time from a smaller unit to a larger unit and vice versa. I can do this using decimal notation up to the three decimal places.

I can convert between miles and kilometres.

I can recognise that shapes with the same areas can have different perimeters and vice versa.

I can recognise when it is possible to use formulae to find the areas or volumes of shapes.

I can calculate the areas of parallelograms and triangles.

I can calculate, estimate and compare volumes of cubes and cuboids using standard units, including cubic centimetres (cm³), and cubic metres (m³). I can extend this to other units e.g. mm³ and km³.

Properties of Shape

I can draw 2-D shapes using dimensions and angles I am given.

I can recognise, describe and build simple 3-D shapes, including making nets.

I can compare and classify geometric shapes based on their properties and sizes. I can also find unknown angles in any triangles, quadrilaterals or regular polygons.

I can illustrate and name parts of circles, including radius, diameter and circumference. I know that the diameter is twice the radius.

I can recognise angles where they meet at a point, are on a straight line or are vertically opposite. I can then find any missing angles.

Position & Direction

I can describe positions in all four quadrants on a full coordinate graph.

I can draw and translate simple shapes on the coordinate plane and reflect these in the axis.

Statistics

I can interpret and construct pie charts and line graphs. I can use these to solve problems.

I can calculate and interpret the mean as an average.



Ratio & Proportion

can solve problems that involve the relative sizes of two hings where the missing number can be found by multiplying r dividing by whole numbers.	
can solve problems involving the calculation of ercentages. I can also use percentages for comparisons.	
can solve problems involving shapes where the scale actor is known or can be found.	
can solve problems involving unequal sharing and rouping. I can use my knowledge of fractions and nultiples to do this.	
Algebra	
can use simple formulae.	
can use simple formulae. can create and describe linear number sequences.	
can use simple formulae. can create and describe linear number sequences. can record missing number problems algebraically.	
can use simple formulae. can create and describe linear number sequences. can record missing number problems algebraically. can find pairs of numbers which complete an equation with wo unknowns.	

I can create a list of possibilities of the combination of two variables.



AK Star Challenge

Learning Objective (LO): same for all



WOW- problem or investigation to broaden the understanding and apply the maths problem – sometimes through coaching/ explanation

Overall- this is a personalised learning journey at AKPS!

Curriculum Overview



Steps



Number & Place Value

Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.

I can read, write, order and compare numbers to at least 10,000,000 (ten million) and say the value of each digit.

Round any whole number to a required degree of accuracy. I can round any number to a required degree of accuracy.

Use negative numbers in context, and calculate intervals across zero. I can use negative numbers in context when looking at temperature or money: counting in jumps forwards and backwards through 0.

Solve number and practical problems that involve ordering and comparing numbers to 10,000,000, rounding to a required degree of accuracy, using negative numbers and calculating intervals across zero.

I can solve number and practical problems that involve ordering and comparing numbers to 10,000,000, rounding to a required degree of accuracy, using negative numbers and calculating intervals across zero.

Addition & Subtraction

Perform mental calculations with mixed operations to carry out calculations involving the four operations.

I can mentally calculate using a mix of the four operations.

Solve multi-step problems in contexts, deciding which operations and methods to use and why.

Fractions

Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.

I can use common factors and multiples to simplify fractions and express fractions in the same denomination.

Compare and order fractions, including fractions > 1. I can compare and order fractions including those bigger than 2.

Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.

I can add and subtract fractions with different denominators and mixed numbers.

Multiply simple pairs of proper fractions, writing the answer in its simplest form e.g. $1/4 \times 1/2 = 1/8$.

I can multiply simple pairs of proper fractions, writing the answer in the simplest form such as $1/4 \times 1/2 = 1/8$.

Divide proper fractions by whole numbers e.g. $1/3 \div 2 = 1/6$. I can divide proper fractions by whole numbers such as $1/3 \div 2 = 1/6$.

Associate a fraction with division and calculate decimal fraction equivalents e.g. 0.375 for a simple fraction e.g. 3/8. I can link a fraction with division and work out decimal fractions such as 0.378 is 3/8 as a simple fraction.

Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.

I can explain the place value of any digit in a number with up to 3 decimal places and multiply or divide these by 10, 100 or 1000.

Multinly one-diait numbers with up to two decimal places by

Properties of Shape

Draw 2-D shapes using given dimensions and angles. I can draw 2-D shapes using dimensions and angles I am given.

Recognise, describe and build simple 3-D shapes, including making nets.

I can recognise, describe and build simple 3-D shapes, including making nets.

Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.

I can compare and classify geometric shapes based on their properties and sizes. I can also find unknown angles in any triangles, quadrilaterals or regular polygons.

Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.

I can illustrate and name parts of circles, including radius, diameter and circumference. I know that the diameter is twice the radius.

Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

I can recognise angles where they meet at a point, are on a straight line or are vertically opposite. I can then find any missing angles.

Position & Direction

Describe positions on the full coordinate grid (all four quadrants). I can describe positions in all four quadrants on a full coordinate graph.

Assessment at AK 2015 2016

- Across the whole school, we are continually assessing your children against the New National Curriculum objectives. We are looking for learning as it happens.
- Any formal tests used during the process help us make our overall teacher assessment in February and June when we formally report to parents.
- Regular pupil progress meetings take place to ensure children are on track and to identify any need for support.

KS1 SATS Test Changes 2016 Test Administration: May 2016



- New arithmetic paper approximately 20 minutes
- Reasoning paper approximately 35 minutes
- Scaled scores in KS1 SATs will be used to inform teacher assessment and identify if the child has met the expected standard for the end of KS1.

KS2 SATS Test Changes 2016

Test Administration: w/c 9 May 2016

- No mental maths test
- New Arithmetic paper 1 approx 30 questions in 30 minutes (Formal methods as in calculation policy)
- Paper 2 (40 mins) Problem solving (no calculator)
- Paper 3 (40 mins) Problem solving (no calculator)
- Children will be given a raw score (number of raw marks awarded), a scaled score (with an average of 100) and confirmation of whether or not they attained the national standard



KS1 SATS Example

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Arithmetic Paper





Reasoning Paper



- Sita cuts a pizza into four equal slices.
- She eats one slice.

16

What fraction of the pizza does she eat?



- He wants to collect 100 cards altogether.
- Last week he collected 50 cards.



cards

- This week he collects 30 cards.
- How many more cards does he need?

KS2 SATS Example



Arithmetic Paper



Reasoning Paper x 2

Maria bakes cakes and sells them in bags.



£

She uses this formula to work out how much to charge for one bag of cakes.

Cost = number of cakes × 20p + 15p for the bag

How much will a bag of 12 cakes cost?

1 00

2 marks

Olivia buys a bag of cakes for £5.15

Show your method

Our Aims

Our overall aim is that when children leave Ashton Keynes

C of E Primary School they will:

have a secure knowledge of number facts and be fluent in the four operations;

be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages;

be able to solve a wide range of problems, including those which require efficient mental and written methods;

confidently use appropriate mathematical vocabulary to present a mathematical justification, argument or proof.





Calculation Policy – Y1 Addition (On AKPS website – Resources- School Policies)



Year | Addition

Statutory Requirements

Pupils should be taught to:

- read, write and interpret mathematical statements involving addition (+) and equals (=) signs
- represent and use number bonds within 20
- add one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems such as $7 = \Box + 2$.

Concrete Objects	Pictures/Marks
Finding the total of a group of items e.g. counters,	Using simple drawings to record and calculate the
teddies, dinosaurs etc	total.
	e.g. Lisa has 5 lollies and Tim has 2 lollies. How many lollies do they have altogether?
Number Lines	100 Squares
Using prepared number lines to record `jumps' and	Finding a starting point on the hundred square and
drawing own number lines to solve calculations.	moving to the right to count on in ones or moving
e.g. 7 + 4 0 1 2 3 4 5 6 7 8 9 10 11 12	down to add tens.



Mental strategies for addition

- Recall of number bonds.
- Using near doubles.
- Partitioning (splitting a number up) and recombining (putting it back together again).
- Counting on and counting back in steps of 1, 10, 100 or 1000.
- Adding the nearest multiple of 10, 100 or 1000 and adjusting e.g. add 10 then take away 1 in order to add 9 to a number.
- Using the relationship between addition and subtraction.



100 Square – adding 1s and 10s

10	0	Sq	Juo	are	2			tw	inkl
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Expanded Column Addition Stage 2 Stage 1 30 + 2237 40 + 6 + 70 + 8

146 +13 (7+6)70 (30+40)300 (200+100)

383

Compact Column Addition

146 + 383



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"If I have 3 bones and Mr. Jones takes away 2, how many fingers will he have left?"



Calculation Policy – Y1 Subtraction

(On AKPS website - Resources- School Policies)

Year | Subtraction

Statutory Requirements

Pupils should be taught to:

- read, write and interpret mathematical statements involving subtraction (-) and equals (-) signs
- represent and use related subtraction facts within 20
- subtract one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 \Box = 9$.

<u>Concrete Objects</u> Finding the difference between two groups of items e.g. counters, teddies, dinosaurs etc	Pictures/Marks Using simple drawings to record and calculate the difference. (************************************
Number Lines – counting on Using prepared number lines to record 'jumps' and drawing own number lines to solve calculations. e.g. II – 7 – 4 0 1 2 3 4 5 6 7 8 9 10 11 12 Start at 7 and jump up to II. How many jumps have you made?	Number Lines - counting back Using prepared number lines to record backwards 'jumps' below the line and drawing own number lines to solve calculations. e.g. 9 - 5 - 4 O 1 2 3 4 5 6 7 8 9 10 Start at 9 and jump back 5. Where have you landed?
IOO Squares Finding a starting point on the hundred square and moving to the left to count back in ones or moving up to subtract tens.	





Mental Strategies for Subtraction

- Recall of addition and subtraction facts.
- Finding a small difference by counting up.
- Partitioning (splitting a number up) and recombining (putting it back together again).
- Counting on and counting back in steps of 1, 10, 100 or 1000.
- Subtracting the nearest multiple of 10, 100 or 1000 and adjusting e.g. take away 10 then add 1 in order to take away 9 from a number.
- Using the relationship between addition and subtraction.

Number line – counting back



Number line – counting on (finding the difference) 141 - 89 = 52 +41+10 100 141 89 90

Partitioning/W (when not bridging 10)

57 - 13 = <u>44</u> 50 - 10 = 40 7 - 3 = 4

Expanded Column Subtraction

Stage 1 60 + 8 40 + 6 -20 + 2 Stage 2 287 145 -2 (7-5) 40 (80-40) 100 (200-100)142

Compact Column Subtraction Exchange, not borrow

342 - 127 = 215

3³/₄¹2 - 127 215



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"Aren't there enough problems in the world already?"





Calculation Policy – Y1 Multiplication







Mental Strategies for Multiplication

- Using knowledge of **doubling** and **halving**
- Using recall of times tables facts
- Using closely related facts
 - e.g. 13 x 11 = (13 x 10) + (13 x 1)
- Multiplying by 10, 100 or 1000
- Partitioning numbers e.g. 23 x 4 = (20 x 4) + (3 x 4).
- Using knowledge of factors

you'll know how many meals I eat.

Name

 $10 \times 7 = 70$

11 x 7 = 77

12 x 7 = 84

Multiplication Booklet

Cracking times tables/ speed tables/ magic maths

Class	1×2=2	1 X 3 = 3	1 × 4 = 4	1x5=5	1x6=6
	2 x 2 = 4	2 x 3 = 6	2 x 4 = 8	2 x 5 = 10	2 x 6 = 12
A- MNA	3 x 2 = 6	3 x 3 = 9	3 x 4 = 12	3 x 5 = 15	3 x 6 = 18
\times w_{χ}	4 x 2 = 8	4 x 3 = 12	4 x 4 = 16	4 x 5 = 20	4 x 6 = 24
	5 x 2 = 10	5 x 3 = 15	5 x 4 = 20	5 x 5 = 25	5 x 6 = 30
limes	6 x 2 = 12	6 x 3 = 18	6 x 4 = 24	6 x 5 = 30	6 x 6 = 36
111100	7 x 2 = 14	7 x 3 = 21	7 x 4 = 28	7 x 5 = 35	7 x 6 = 42
T ()	8 x 2 = 16	8 x 3 = 24	8 x 4 = 32	8 x 5 = 40	8 x 6 = 48
lable	9 x 2 = 18	9 x 3 = 27	9 x 4 = 36	9 x 5 = 45	9 x 6 = 54
	10 x 2 = 20	10 x 3 = 30	10 x 4 = 40	10 x 5 = 50	10 x 6 = 60
Deserved	11 x 2 = 22	11 x 3 = 33	11 x 4 = 44	11 x 5 = 55	11 x 6 = 66
Recora	12 x 2 = 24	12 x 3 = 36	12 x 4 = 48	12 x 5 = 60	12 x 6 = 72
1		~		- · · ·	1 - 1 1
2.995	S-Z-Z	S-D-X		\$\$ \$\$ \$	\$\$~\$~\$
7 Times Table	8 Times Table	9 Times Table	10 Times Table	11 Times Table	12 Times Table
7 Times Table 1 x 7 = 7	8 Times Table 1 × 8 = 8	9 Times Table 1 x 9 = 9	10 Times Table 1 × 10 = 10	11 Times Table 1 × 11 = 11	12 Times Table 1 × 12 = 12
7 Times Table 1 x 7 = 7 2 x 7 = 14	8 Times Table 1 × 8 = 8 2 × 8 = 16	9 Times Table 1 x 9 = 9 2 x 9 = 18	10 Times Table 1 × 10 = 10 2 × 10 = 20	11 Times Table 1 × 11 = 11 2 × 11 = 22	12 Times Table 1 x 12 = 12 2 x 12 = 24
7 Times Table 1 × 7 = 7 2 × 7 = 14 3 × 7 = 21	8 Times Table 1 × 8 = 8 2 × 8 = 16 3 × 8 = 24	9 Times Table 1 x 9 = 9 2 x 9 = 18 3 x 9 = 27	10 Times Table 1 × 10 = 10 2 × 10 = 20 3 × 10 = 30	11 Times Table 1 × 11 = 11 2 × 11 = 22 3 × 11 = 33	12 Times Table 1 x 12 = 12 2 x 12 = 24 3 x 12 = 36
7 Times Table 1 × 7 = 7 2 × 7 = 14 3 × 7 = 21 4 × 7 = 28	8 Times Table 1 × 8 = 8 2 × 8 = 16 3 × 8 = 24 4 × 8 = 32	9 Times Table 1 × 9 = 9 2 × 9 = 18 3 × 9 = 27 4 × 9 = 36	10 Times Table 1 × 10 = 10 2 × 10 = 20 3 × 10 = 30 4 × 10 = 40	11 Times Table 1 × 11 = 11 2 × 11 = 22 3 × 11 = 33 4 × 11 = 44	12 Times Table 1 × 12 = 12 2 × 12 = 24 3 × 12 = 36 4 × 12 = 48
7 Times Table 1 × 7 = 7 2 × 7 = 14 3 × 7 = 21 4 × 7 = 28 5 × 7 = 35	8 Times Table 1 × 8 = 8 2 × 8 = 16 3 × 8 = 24 4 × 8 = 32 5 × 8 = 40	9 Times Table 1 × 9 = 9 2 × 9 = 18 3 × 9 = 27 4 × 9 = 36 5 × 9 = 45	10 Times Table 1 × 10 = 10 2 × 10 = 20 3 × 10 = 30 4 × 10 = 40 5 × 10 = 50	11 Times Table 1 × 11 = 11 2 × 11 = 22 3 × 11 = 33 4 × 11 = 44 5 × 11 = 55	12 Times Table 1 × 12 = 12 2 × 12 = 24 3 × 12 = 36 4 × 12 = 48 5 × 12 = 60
7 Times Table 1 × 7 = 7 2 × 7 = 14 3 × 7 = 21 4 × 7 = 28 5 × 7 = 35 6 × 7 = 42	8 Times Table 1 × 8 = 8 2 × 8 = 16 3 × 8 = 24 4 × 8 = 32 5 × 8 = 40 6 × 8 = 48	9 Times Table 1 x 9 = 9 2 x 9 = 18 3 x 9 = 27 4 x 9 = 36 5 x 9 = 45 6 x 9 = 54	10 Times Table 1 × 10 = 10 2 × 10 = 20 3 × 10 = 30 4 × 10 = 40 5 × 10 = 50 6 × 10 = 60	11 Times Table 1 × 11 = 11 2 × 11 = 22 3 × 11 = 33 4 × 11 = 44 5 × 11 = 55 6 × 11 = 66	12 Times Table 1 × 12 = 12 2 × 12 = 24 3 × 12 = 36 4 × 12 = 48 5 × 12 = 60 6 × 12 = 72
7 Times Table 1 x 7 = 7 2 x 7 = 14 3 x 7 = 21 4 x 7 = 28 5 x 7 = 35 6 x 7 = 42 7 x 7 = 49	8 Times Table 1 × 8 = 8 2 × 8 = 16 3 × 8 = 24 4 × 8 = 32 5 × 8 = 40 6 × 8 = 48 7 × 8 = 56	9 Times Table 1 × 9 = 9 2 × 9 = 18 3 × 9 = 27 4 × 9 = 36 5 × 9 = 45 6 × 9 = 54 7 × 9 = 63	10 Times Table 1 × 10 = 10 2 × 10 = 20 3 × 10 = 30 4 × 10 = 40 5 × 10 = 50 6 × 10 = 60 7 × 10 = 70	11 Times Table 1 × 11 = 11 2 × 11 = 22 3 × 11 = 33 4 × 11 = 34 5 × 11 = 55 6 × 11 = 55 6 × 11 = 66 7 × 11 = 77	12 Times Table 1 × 12 = 12 2 × 12 = 24 3 × 12 = 36 4 × 12 = 48 5 × 12 = 60 6 × 12 = 72 7 × 12 = 84
7 Times Table 1 × 7 = 7 2 × 7 = 14 3 × 7 = 21 4 × 7 = 28 5 × 7 = 35 6 × 7 = 42 7 × 7 = 49 8 × 7 = 56	8 Times Table 1 × 8 = 8 2 × 8 = 16 3 × 8 = 24 4 × 8 = 32 5 × 8 = 40 6 × 8 = 48 7 × 8 = 56 8 × 8 = 64	9 Times Table 1 × 9 = 9 2 × 9 = 18 3 × 9 = 27 4 × 9 = 36 5 × 9 = 45 6 × 9 = 54 7 × 9 = 63 8 × 9 = 72	10 Times Table 1 × 10 = 10 2 × 10 = 20 3 × 10 = 30 4 × 10 = 40 5 × 10 = 50 6 × 10 = 60 7 × 10 = 70 8 × 10 = 80	11 Times Table 1 × 11 = 11 2 × 11 = 22 3 × 11 = 33 4 × 11 = 44 5 × 11 = 55 6 × 11 = 66 7 × 11 = 77 8 × 11 = 88	12 Times Table 1 × 12 = 12 2 × 12 = 24 3 × 12 = 36 4 × 12 = 48 5 × 12 = 60 6 × 12 = 72 7 × 12 = 84 8 × 12 = 96

 $10 \times 10 = 100$

11 × 10 = 110

12 × 10 = 120

Percy

Parker

2 Times Table 3 Times Table 4 Times Table

 $10 \times 9 = 90$

11 x 9 = 99

12 x 9 = 108

10 x 8 = 80

11 x 8 = 88

12 x 8 = 96

Rainbow maths

5 Times Table 6 Times Table

10 × 11 = 110

 $11 \times 11 = 121$

12 x 11 = 132

10 x 12 = 120

11 x 12 = 132

12 × 12 = 144





Numberline - repeated addition



Arrays

4 groups of 2 = 8 4 x 2 = 8 13 rows of 4

10 x 4 = 40 3 x 4 = 12

40 + 12 = 52



Partitioning



30 x 5 = 150 6 x 5 = 30 150 + 30 = <u>180</u>

Grid method				
17 x 25				
Х	20	5		
10	200	50		
7	140	35		



Long Multiplication





"I have a fear of heights and long division."

quarte)ivision how many each? divide share qoes into 📝 group equally $\div 6 = 2^{2}$ 4 agoras

Calculation Policy – Y1 Division

(On AKPS website – Resources- School Policies)



Year | Division

Statutory Requirements

Pupils should be taught to:

- solve one-step problems involving division, by calculating the answer using concrete objects, pictorial
 representations and arrays with the support of the teacher.
- recognise, find and name a half as one of two equal parts of an object, shape or quantity
- recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

Concrete Objects Sharing items with a partner to find half, in 4 groups to find a quarter etc.	Pictures/Marks Using simple drawings to record and share.
Arrays Representing division calculations in columns and rows using repeated subtraction and division: 6-3-3=0 or $6-2-2-2=06\div 3=2 or 6\div 2=3$	Number Lines Using prepared number lines to record repeated subtraction as 'jumps' and drawing own number lines to solve calculations. e.g. $10 \div 2$ $0 \frac{1}{2} \frac{2}{3} \frac{4}{4} \frac{5}{6} \frac{6}{7} \frac{7}{8} \frac{9}{9} \frac{10}{10}$ $0 \frac{1}{2} \frac{2}{4} \frac{4}{6} \frac{5}{8} \frac{6}{10}$

Mental Strategies for Division

- Using knowledge of doubling and halving
- Using times tables facts to find division facts eg 3 x 5 = 15 so 15 ÷ 5 = 3
- Using closely related facts

eg 21
$$\div$$
 7 = 3 so 210 \div 7 = 30,

 $210 \div 70 = 3, 2.1 \div 7 = 0.3$ etc

- Dividing by 10, 100 or 1000
- Using knowledge of factors

Using a number line – repeated subtraction



Short Division - Bus Stop

$$196 \div 6$$

$$0 \ 3 \ 2 \ r4$$

$$6 \ 1^{1}9^{1}6$$

Supporting children at home



- Little and often is the key to learning number facts
- Play traditional games, eg. Snakes & Ladders, Dominoes
- Make up calculation games, using dice
- Use simple equipment to aid understanding, eg. counters, beads, straws etc.
- Encourage your child to use money and clocks
- Use online resources and games (Mathletics, Fun 4 the Brain, BBC Bitesize) to practice key facts and develop problem solving skills
- Traditional games such as battleships, draughts and chess help children to explore coordinates
- Be practical; eg. when baking show your child how to read traditional scales and practise converting measures in a recipe, telling the time in life is a key priority!
- Instant recall of times tables facts is essential in Key Stage 2. Frequent practise at home will keep these skills sharp. Singing in the car!

Mathletics





Recommended Resources

Please see our website akps.org.uk

Under Parent/Carer resources- Home Learning- Maths

- Usborne Junior Illustrated Maths Dictionary
- Maths for Mums and Dads (Askew & Eastaway)
- Mathletics (Years 2-6) cartoons, practical games/problems *Highly recommended*Funded by FoAKS*
- <u>http://www.amathsdictionaryforkids.com/</u>useful online glossary of maths terms (interactive)
- Twinkl full curriculum resources (number squares etc)
- Top marks interactive games
- BBC Bitesize KS1 and KS2 <u>http://www.bbc.co.uk/education/subjects/z826n39</u>
- Fun for the Brain (KS1 and KS2) <u>http://fun4thebrain.com/addition.html</u>









Thank you for coming!



"I CAN'T COME OUT. I HAVE TO HELP MY DAD WITH MY HOMEWORK."