

How to Help your Child with Maths



A Quick Guide to the New Curriculum Year 4

Year 4

What topics are they taught?

Please see the target tracker statement sheets for individual objectives!

Topics taught in Year 4:

- **Number and place value calculations (addition and subtraction)**
- **Calculations (multiplication and division)**
- **Measurement**
- **Fractions**
- **Geometry - shape**
- **Statistics**
- **Geometry - position and direction**



To help your child develop a good understanding of number we ask you to use every opportunity to explore mathematical ideas in everyday life.

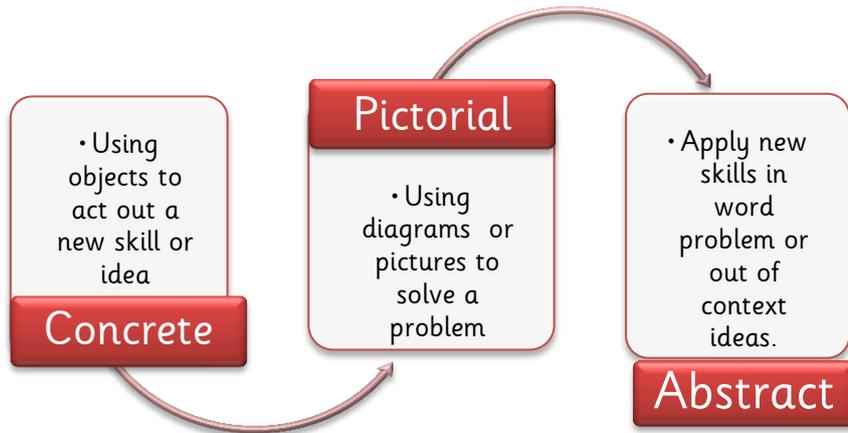
For example:

- Play fun board games with your children like dominoes, snakes and ladders, snap, connect 4, uno, battleships, Cranium, Guess Who?
- Practice all the multiplication tables or play multiplication songs (up to 12 multiplication table).
- If you are following recipe, ask...If this recipe is for 4 people, how much ingredients do we need for 8?
- Encourage your child to handle money. Ask questions...If there is 10% off, how much is the new price? Compare money off deals e.g. buy one get one half price and ask...How much cheaper is the deal?
- Encourage children to have savings and to manage their own money.
 - When planning DIY ask...How many tins of paint will we need? How long/wide do the new curtains need to be?
 - Other ideas...If the film starts at 7.45pm and is 120 minutes long, when will it finish?
- Explore bus time tables...What bus do you need to get to arrive at school on time?
- Keep a Maths folder or book including any activities, games or practice that you do together at home!



LEARNING

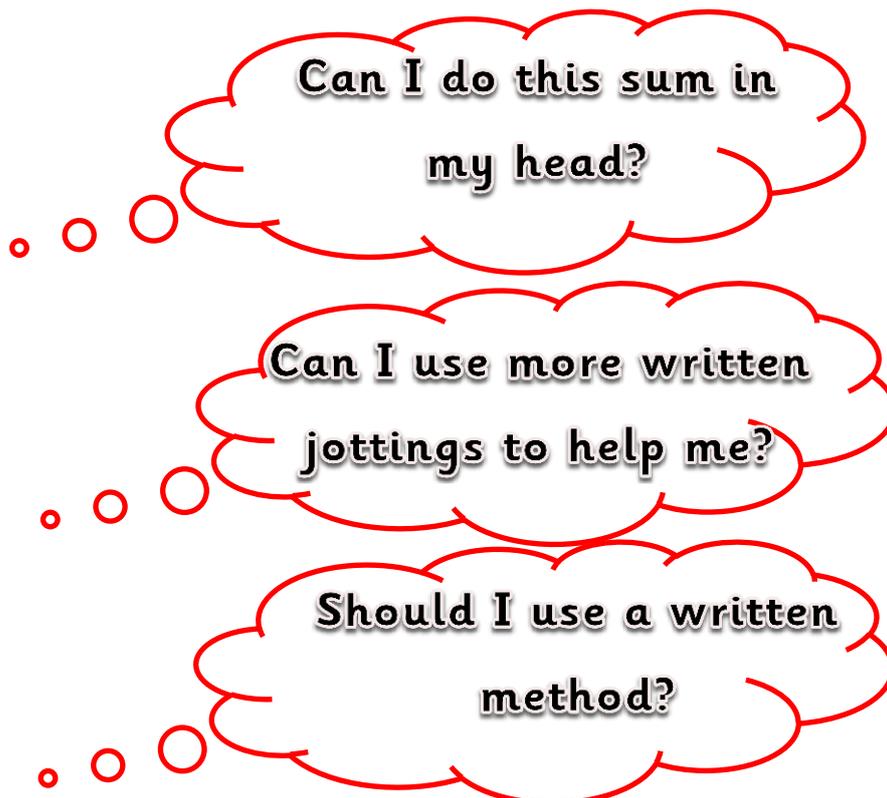
At Highworth, we use three steps (or representations) necessary for pupils to develop understanding of each mathematical concept.



CALCULATION

Talk to your child about how you work things out. Ask your child to explain their thinking. The work your child is doing at school may look very different to the kind of 'sums' you remember. This is because children are encouraged to work mentally, where possible, using personal jottings to help support their thinking. Even when children are taught more formal written methods (from Year 3 onwards), they are only encouraged to use these methods for calculations they cannot solve in their heads.

As part of a child's learning in calculation, they need to be taught how to select the best method according to the numbers. The hierarchy of thinking should be:



Year 4

Addition +

In Year 3, your child was taught to add 2 and 3 digit numbers using a number line or the compact column method. In Year 4, children will add numbers with up to 4 digits. They will continue to use the compact column method, adding units first and carrying underneath the calculation. They may also solve problems involving money and measures.

Compact Column

	Th	H	T	U	
+	3	5	1	7	Remember this number is 500 not 5.
	3	9	6		
	3	9	1	3	Start with the units
			1	1	
					Carry any numbers underneath.

Key vocabulary:

add, more, plus, and, make, altogether, total, equal to, equals, double, most, count on, number line, sum, tens, units, partition, addition, column, tens boundary, hundreds boundary, increase, vertical, 'carry', expanded, compact, thousands, hundreds, digits, inverse

Key Skills for Addition at Year 4:

- Select appropriate method: mental, jottings, written—and explain why.
- Add any two 2 digit numbers by partitioning or counting on.
- Know by heart/quickly derive number bonds to 100 (eg 32 + 68) and to £1 (64p + 36p)
- Add to the next hundred, pound and whole number. (E.g. 234 + 66 = 300, 3.4 + 0.6 = 4)
- Perform place value additions without a struggle. (E.g. 300 + 8 + 50 + 4000 = 4358)
- Add multiples and near multiples of 10, 100 and 1000.
- Add £1, 10p, 1p to amounts of money
- Use place value and number facts to add 1-, 2-, 3-and 4-digit numbers where a mental calculation is appropriate'. (E.g. 4004 + 156 by knowing that 6+4=10 and that 4004+150= 4154 so total is 4160)
- Perform inverse operations to check.
- Solve 2-step problems in context.
- Continue to practise a wide range of mental addition strategies e.g. Round and adjust, near doubles, numbers bonds, partitioning and recombining.

Subtraction

Year 4

In Year 3, your child was taught to they move onto subtraction using a number line or the compact column subtraction method. In Year 4, your child will be taught to subtract with up to 4-digit numbers. They will continue to use the compact column method, 'taking' or 'stealing' where appropriate. They may also solve problems involving money and measures.

Compact Column

$$\begin{array}{r} \text{Th H T U} \\ 2754 \\ - 1562 \\ \hline 1192 \end{array}$$

Use vocabulary 'steal' or 'take' not 'borrow'.

Encourage mental subtraction or use of column subtractions to take away accurately.

Key Skills for Subtraction at Year 4:

- Mentally subtract any pair of two digit numbers.
- Subtract 3 digit numbers from 3 digit numbers using counting on, e.g. $426 - 278$ by jumping along a line from 278 to 426.
- Practise mental subtraction strategies, e.g. Round and adjust ($37 - 9$), using place value.
- Use counting on in the context of money and also when subtracting from numbers ending in zeros e.g. $4000 - 372$.
- Count backwards through zero, using negative numbers.

Key vocabulary:
equal to, take, take-away, less, minus, subtract, leaves, distance between, how many more, how many fewer/less than, most, least count back, how many left, how much less is..., difference, count on, strategy, partition, tens units, take and

Multiplication x

Year 4

In Year 3, your child was taught to multiply a 2 digit number by a single digit using the grid method. In Year 4, your child will continue to use the grid method to multiply 2 and 3 digits by a single digit (using all multiplication tables up to 12×12 .) Children also need to be confident in the following areas:

- Approximating or estimating before they calculate and make this a regular part of their calculating, going back to their approximation/estimate to consider the reasonableness of their answer.
 - Record an approximation/estimation to check their answer against.
- Multiply multiples of 10 and 100 by a single digit, using simple multiplication.
 - Recall all times tables up to 12×12 .

\times	4	
300	1200	
20	80	
7	28	
	1308	

Make sure you do not add the 4 in the total

Partition the number into the grid



Encourage mental addition or use of column addition to add answers accurately.

Key vocabulary:

groups of, lots of, times, array, altogether, multiply, count, multiplied by, repeated addition, column, row, sets of, equal groups, times as big as, once, twice, three times..., partition, grid method, multiple, product, tens, units, value, inverse

Key Skills for Multiplication at Year 4:

- Multiply 1 and 2 digit numbers by 10, 100 and 1000; to understand place value in decimal numbers with one place.
- Recall and recite $2x$, $3x$, $4x$, $5x$, $9x$, $10x$ times tables up to 12th multiple from previous years; include multiplying by 0 (e.g. $5 \times 0 = 0$, $7 \times 0 = 0$) or by 1 (e.g. $5 \times 1 = 5$, $\frac{1}{2} \times 1 = \frac{1}{2}$).
- Multiply 1- digit numbers by 2-digit or simple 3-digit numbers using grid method.
- Find doubles to double 100 and beyond, using partitioning.
- Begin to double amounts of money.
- Use doubling as strategy for multiplying by 2, 4, 8.
- Count in multiples of 6, 7, 9, 25 and 1000.

Division ÷

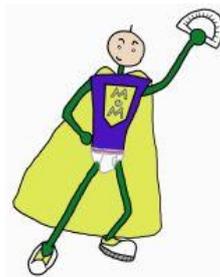
Year 4

In Year 3, your child was taught to divide will be taught to divide using a number line. In Year 4, your child will divide using known multiplication facts; consolidating their knowledge of the link between multiplication and division. They then might move onto using short division without remainders.

Short Division

$$\begin{array}{r} 43 \\ 3 \overline{) 129} \\ \underline{12} \\ 9 \\ \underline{9} \\ 0 \end{array}$$

Start with one digit numbers without remainders



When do we know children are ready for short division?

Once children are secure with division as grouping, demonstrate this using number lines, arrays etc., short division for larger 2- digit numbers should be introduced, initially with carefully selected examples requiring no calculating of remainders at all.

Key Skills for Division at Year 4:

- Use a written method to divide a 2-digit or a 3-digit number by a single-digit number.
- Give remainders as whole numbers.
- Recall multiplication and division facts for all numbers up to 12×12 .
- Use place value, known and derived facts to multiply and divide mentally, including: multiplying and dividing by 10 and 100 and 1.
- Pupils practise to become fluent in the formal written method of short division with exact answers when dividing by a one-digit number.
- Pupils practise mental methods and extend this to three-digit numbers to derive facts, for example $200 \times 3 = 600$ so $600 \div 3 = 200$.
- Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as three cakes shared equally between 10 children.

Key vocabulary:

share, share equally, one each, two each..., group, equal groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, inverse, short division, 'carry', remainder

Website links

The following web addresses are ones which we use in school as part of our teaching, plus additional ones which your child may find enjoyable. Most of the games are straightforward and your child will be able to play/consolidate their maths skills independently.

Useful online maths vocabulary dictionary:

<http://www.amathsdictionaryforkids.com/dictionary.html>

The following websites have links to numerous maths topics:

<http://www.bbc.co.uk/schools/ks2bitesize/maths/>

<http://www.topmarks.co.uk/Interactive.aspx?cat=20>

<http://www.woodlands-junior.kent.sch.uk/maths/>

<http://www.bbc.co.uk/education/dynamo/den/dynamake/make.shtml>

<http://www.crickweb.co.uk/ks2numeracy.html>

<http://uk.ixl.com/math/years>

<http://www.mathplayground.com/>

<http://www.maths-games.org/times-tables-games.html>

Look at our school website to see what websites we use in school.

<http://www.highworth.bucks.sch.uk/NEW/default.htm>

