# Maths Vocabulary 

> Help Booklet


Year 3

| Number \& Place Value |  |  |
| :---: | :---: | :---: |
| Vocabulary | Description | Question Type |
| acute angle | An angle of less than $90^{\circ}$. | Circle the pentagon with exactly four acute angles. |
|  | Finding the total value of two or more numbers. Denoted by the symbol ' + '. | Write in the missing number. $1+10+\square=100$ |
| analogue clock | A clock that uses an hour hand to show the hour and a minute hand to show minutes to and past the hour. | The time is $\square$ past 5. <br> This can also be written as $\square$ minutes past 5 . |
|  | Maths that deals with the properties of numbers and how to calculate using the four operations. | $222=100+$ $\square$ $-100=150$ |
|  | A pictorial representation to help children understand multiplication and division. Typically shown as rows of dots, for example $2 \times 4$ would be shown as two rows of four dots. | Write 2 multiplication facts and 2 division facts for each group of peas. |
| arrow cards 10 | Used to help children understand partitioning and recombining in place value. Each card shows a arrow cards hundreds, tens or ones number. |  |


|  <br> bar chart | A chart that displays information using blocks of different heights displayed on axes. | The children in Vijay's class vote for their favourite day out. <br> Here are their results. <br> Our favourite day out |
| :---: | :---: | :---: |
| base ten blocks | Wooden or plastic cubes, rods and flats used to support children in understanding place value. Each small cube represents 1: a rod represents 10, a flat represents 100 and a large cube represents 1000. Also known as Dienes. | William is making 543, can you work out the Base 10 pieces covered by the splodg? |
| $7+9=7+(3+6)$ <br> $7+3=10$ <br> bridging through ten <br> $10+6=16$ | A mental method of adding two numbers whose total is greater than ten. Pupils are taught to count on to the next ten, and then add the remainder of the number to ten. For example, take $7+9$ : bridging from 7 to 10 requires 3 , which leaves 6 (from the original 9). $10+6=16$. | $14+15+16=$ |
|  | The term used when measuring how much fluid a container can hold. Measured in millilitres and litres. | Vijay has a jug with some water in. <br> How many more millilitres must he add to make 1 litre? |
| cardinal numbers | Numbers used to count a set of objects and give information about quantity - one, two, three, four and cardinal numbers so on | No specific questions for year 3. |
| Carroll diagram | A way of sorting and presenting information in a table that uses columns and rows. | Here is a Carroll diagram for sorting numbers. <br> Write these five numbers in the correct places on the diagram. |


|  <br> chart | Another term for a graph or other way of presenting information. | Three children measure the height of their sunflowers. <br> Here are the results. <br> How tall is Lauren's sunflower? |
| :---: | :---: | :---: |
| clockwise, anticlockwise | A way of indicating the direction of a turn. Clockwise involves a turn to the right as if following the hands of a clock; anticlockwise involves a turn to the left, against the direction of a clock's hands | Starting Shape for <br> Each Instruction <br> Half Turn <br> Clockwise Whole Turn <br> Anti-Clockwise Three Quarter <br> Turn Clockwise <br>    <br>    |
| HTO <br> 123 <br> +231 column method | A method of calculation where the numbers to be added or subtracted are set out above one another in columns. The calculation is done by 'regrouping' or 'exchanging' numbers from column to column. | $546+423=$ |
| commutativity | Addition and multiplication have the property of commutativity. This means that when two numbers are added or multiplied, this can be done in any order and the same answer will be obtained. $3+2=5$ and $2+3=5.4$ $\times 6=24$ and $6 \times 4=24$. Subtraction and division are not commutative. | Circle the groups on the array and circle the groups in a different way on the second array. Write sentences for what you see. $\qquad$ $\div$ $\qquad$ $\qquad$ $\times$ $\qquad$ $=$ $\qquad$ $\qquad$ $\div$ $\qquad$ |
| complementary addition | Also known as the 'jump method'. A method of addition using a number line where children are taught to start with the largest number in the calculation and count on along the number line to find the total. | $234+5=$ |
| concrete materials | Anything which children may use to help them carry out practical maths activities, e.g. counters to help with addition, cubes and rods for place value or playdough to make 3D shapes. |  |
|  | A 3D shape with one face, one edge and one curved surface which ends in an apex or point. | A <br> B <br> c <br> D <br> E <br> Which shape has exactly 5 faces? <br> Write the letter. |



|  | digital clock | A clock that tells the time using numbers only |  |
| :---: | :---: | :---: | :---: |
|  | division | Division in maths is the process of breaking a number up into equal parts, finding out how many equal parts can be made and whether there is a remainder. For example, dividing 15 by 3 means splitting 15 into 3 equal groups of 5 or 5 equal groups of 3. Division is represented by the symbol' $\div$ ' or sometimes '/' | $39 \div 3=$ $\square$ |
| $\begin{array}{r} 16 \div 4 \\ =4 \end{array}$ | division fact |  | $16 \div 4=$ $\square$ |
| $10 \div(5)$ | divisor | The number of groups that a number is divided into in a division calculation E.g. in the calculation $10 \div 5$, the divisor divisor is 5 | No specticic questions to year 3 . |
|  | edge | The place on a 3D shape where two faces or surfaces meet |  |
| $\begin{gathered} 10+2 \\ = \\ 8+4 \end{gathered}$ | equation | A calculation where both sides are equal. equation For example: $10+2=$ $8+4$ | $16+26=\square+27$ |
|  | equivalent fractions | Two or more fractions that are equal. They represent the same amount, but have been divided into different numbers of equal parts. For example, $1 / 3$ is the same as $2 / 6$ and $4 / 12$. <br> $1 / 3$ is the same as $2 / 6$ and $4 / 12$. |  |


|  | estimate | Sometimes called an 'educated guess'. Estimating is roughly guessing a number of objects or the answer to a calculation based on existing knowledge |  |
| :---: | :---: | :---: | :---: |
| $\begin{aligned} & 246 \\ & 810 \end{aligned}$ | even numbers | Numbers that are divisible by two with no remainder. Even numbers always end with $0,2,4,6$ or 8 |  |
| $43=40+3$ $26=20+6$ | expanded notation | Writing calculations where the numbers have been partitioned. For example, $43+26$ could be written as $40+3+20+6$ |  |
|  | face | Any flat surface of a 3D shape. Faces can be many different shapes. |  |
| $\square$ | finding the difference | A way of carrying out subtraction calculations by finding the numerical difference between two numbers. For example, to solve the calculation 47 4, we can find the difference between 34 and 47. Most often taught by using a number line to count on from the smaller to the method. |  |
|  | fraction | A fraction is a number that represents part of a whole. It is represented using a numerator and denominator, e.g. fraction $1 / 2,3 / 4$ | Sarah has a bag of 24 marbles <br> $\frac{1}{3}$ of the marbles are red <br> How many marbles are red? |
|  | geometry | The study of shape, position and movement. Includes aspects such as 2D and 3D shapes, angles, symmetry, geometry pattern, tessellation, turns and position. and position. |  |


|  | A pictorial way of representing and comparing information. Types taught in primary school include block graphs, bar charts, pictograms, pie charts and line graphs. | How many pupils? <br> This question is about pupils in class 7 Y . <br> The graph shows how many of these pupils were at school each day. <br> (a) On which days were only 25 pupils at school? |
| :---: | :---: | :---: |
| greater than (>) and less than (<) | Symbols used to compare numbers. The wide end of the symbol always faces the larger number, e.g. $25>10$. Also known as inequality symbols or comparison symbols. | Here are some signs. <br> Write the correct sign in each box. |
| $13 \times 9=$ <br> grid method | The grid method is a written technique used to teach children multiplication. It involves partitioning numbers into tens and units before they are multiplied, and placing them in a grid. The numbers are then multiplied two by two and the results are added together to give a total answer. | $56 \times 5=$ |
| hexagon | A 2D shape with six sides and six vertices. | Use the dots to draw a different hexagon. <br> You may use a ruler |
| horizontal | A horizontal line runs from left to right. It can join equivalent points on two opposite sides of a shape. | Match the image to the correct statement. <br> A <br> 1 <br> 4 horizontal lines 4 vertical lines <br> 2 <br> 2 horizontal lines <br> 3 <br> 3 horizontal lines 2 vertical lines <br> 4 <br> 2 horizontal lines 0 vertical lines |
|  | See whole number. Integers can be positive or negative. 0 is also an integer but is neither positive nor negative |  |
| inverse operation | The operation opposite to a given operation. Addition is the inverse of subtraction and multiplication is the inverse of division. So for the calculation $4+3=7$, the following calculations also apply: $3+4=7$ (commutativity), $7-4=3$ and $7-3=$ 4. For the calculation $3 \times 2=6$, we can also say $2 \times 3=6$ (commutativity), $6 \div$ $2=3$ and $6 \div 3=2$. | Use the inverse operation to complete the calculations below. <br> A. $+432=566$ <br> B. $+$ $\square$ $=\quad 93$ <br> C. $\square$ <br> D. $\square$ $-36=46$ |


|  | irregular shapes | 2D shapes whose sides and angles are not all equal. |  |
| :---: | :---: | :---: | :---: |
|  | mass | A measurement of the quantity of matter in an object, measured for example in grams ( g ) and kilograms (kg). The word 'weight' is used in year 1, however from year 2 onwards the word 'mass' should be used, as these are technically not the same thing. | (a) What is the mass of this parcel? |
|  | measurement | In maths, children learn about different forms of measurement including length, mass, capacity and measurement volume, time and temperature. | Two sides of the shape are the same length. <br> Use a ruler to find them. |
|  | mental method | Calculations and problem-solving carried out mentally without the need to write down any working-out. | $824-200=$ |
| $\begin{aligned} & 4 \times 5=20 \\ & 20 \div 4=5 \\ & 20 \div 5=4 \end{aligned}$ | multiple | A multiple is a number that can be divided by another number a certain number of times without a remainder. In the number sentence 4 $\times 5=20,20$ is a multiple of 4 and a multiple of 5 . | Circle all the numbers that are multiples of four. $\begin{array}{lllll} 8 & 24 & 5 & 30 & 12 \end{array}$ |
|  | multiplication | Finding how many altogether in a given number of groups of equal sizes. Represented by the symbol ' $x$ '. | A spider has 8 legs. <br> If there are $\mathbf{5}$ spiders, how many legs are there altogether? |
| $3 \times 3=9$ $\begin{aligned} & 1 \times 1=1 \\ & 2 \times 2=4 \\ & 3 \times 3=9 \end{aligned}$ | multiplication fact <br> multiplication tables | A multiplication calculation from the multiplication tables, including its answer. For example, $3 \times 3=9$. <br> The multiplication calculations for all numbers from $1 \times 1$ to $12 \times 12$. Usually grouped by the number being multiplied. Children begin by learning the $2 \times, 5 \times$ and $10 \times$ tables, and the English curriculum requires that multiplication tables and the related division facts are known by heart by the end of year 4 |  |
| $\begin{aligned} & 9+1=10 \\ & 8+2=10 \\ & 7+3=10 \end{aligned}$ | number bonds | Pairs of numbers that add up to a specific number. For example, the number bonds of 10 are $10+0,9+1$, $8+2,7+3,6+4$ and $5+5$. Children are taught these bonds early on as they help calculation skills and also show patterns that are repeated for other number bonds, for example of 20 or 100. |  |


| number facts | Basic addition, subtraction, multiplication and division facts that children should learn to recall instantly to support more complex calculations | $\square$ $\begin{aligned} & 75+\ldots=100 \\ & +75=100 \\ & 100-75=- \\ & 100=-75 \end{aligned}$ |
| :---: | :---: | :---: |
| number line | A visual representation of numbers along a horizontal line. Can start at zero or represent a set of numbers from elsewhere in the number system. Used to support counting, place value and calculation skills. | Kiz worked out the answer to $7 \times 3$ on a number line. <br> Show how Kiz could have worked out the answer on this number line. |
| number square | A set of numbers written in sequence in a square format. Often used with numbers from 1 to 100 , it is a valuable primary school teaching aid as it teaches number sequences and patterns as well as basic addition and subtraction. |  |
| numerator | The top number in a fraction. This describes how many of the equal parts are being counted. |  |
| oblong | A quadrilateral with two pairs of parallel sides and adjacent sides of different lengths. (Referred to as a rectangle in the UK.) |  |
| odd numbers | Whole numbers that are not exactly divisible by 2 . Odd numbers always end in $1,3,5,7$ or 9. | The first five odd numbers add up to 25 What do the first six odd numbers add up to? |
|  | A 2D shape with eight sides and eight vertices. | This shape is divided into equal parts. What fraction of this shape is shaded? |
|  | Putting numbers in the correct order according to size. Ascending order goes from smallest to greatest; descending order goes from greatest to smallest. Ordering also involves using the greater than, less than and equals symbols ( and =). | Write these numbers in order of size, starting with the smallest. |
| 1 st 2nd ordinal numbers 3rd | Numbers that indicate order-1st, 2nd, 3rd, etc. |  |

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline  \& parallel \& Lines that are always the same distance apart and will never meet. \& \multicolumn{10}{|l|}{} \\
\hline \[
\begin{aligned}
\& 7=700 \\
\& 8=80 \\
\& 2=2
\end{aligned}
\] \& partitioning \& See also recombining. Partitioning is dividing a number into the individual values of its digits. For example, 782 can be partitioned into \(700+80+2\). We can use partitioning to help children to understand the values of these digits. \& \begin{tabular}{l}
1. \\
\(149=\)
\end{tabular} \& \[
60
\] \& \& \& \& \& 149 \&  \&  \& \\
\hline  \& perimeter \& The distance all the way around a 2D shape - the total length of its sides. \& \multicolumn{10}{|l|}{Calculate the perimeter of each shape. Type your answer in the box.} \\
\hline  \& perpendicular \& Lines that cross each other at a right angle are perpendicular. \& Draw a shape \& that \& oth \& \& \& end \& ular \& ines. \& Use a ruler. \&  \\
\hline  \& pictogram \& A chart or graph that uses pictures to represent data. They are set out the same way as bar charts but use pictures instead of bars. Each picture could represent one item or more than one. \& \begin{tabular}{l}
Look at this \\
There are 12 Show this on
\end{tabular} \& \begin{tabular}{l}
ictogr \\
y \\
2 child \\
1 ch \\
boys \\
the pi
\end{tabular} \& ber \&  \&  \& ass \& \& \&  \& \\
\hline \(6=600\)
\(2=20\)
\(7=7\) \& place value \& The value of all the digits in a number. For example, in the number 627, the 6 is worth 600 , the 2 is worth 20 and the 7 is worth 7. \& \begin{tabular}{l}
Using grids \\
The grid sho \\
(a) Show
\end{tabular} \& \begin{tabular}{l}
2 \\
\hline 200 \\
\hline 20 \\
\hline 2 \\
\hline 20 \\
\hline 20 \\
\hline 20 \\
\hline 2 \\
\hline
\end{tabular} \& ber \& \& \& \& 70
7

700
70

7 \& \begin{tabular}{c|}
\hline 800 <br>
\hline 80 <br>
\hline 8 <br>
\hline <br>
\hline 800 <br>
\hline 80 <br>
\hline 8 <br>
\hline

 \& 

\hline 900 <br>
\hline 90 <br>
\hline 9 <br>
\hline
\end{tabular} \& <br>

\hline  \& polygon \& A 2D shape with straight sides that are fully closed (they join up). A polygon can have any number of sides. Examples of polygons include triangles, squares, hexagons and so on. \& \& \& \& \& \& \& \& \& \& <br>
\hline  \& pyramid (square-based) \& A 3D shape with four triangular faces, one square face and five vertices. \& \& \& \& \& \& \& \& \& \& <br>
\hline
\end{tabular}

|  | pyramid (triangular-based) | A 3D shape with four triangular faces and four vertices. | What are the properties of a pyramid? $\qquad$ $\qquad$ |
| :---: | :---: | :---: | :---: |
|  | regular shapes | 2D shapes with closed sides, where all sides are the same length and all angles are the same | Mark the sixth vertex and join the points to draw the hexago $\begin{aligned} & x \\ & \times \\ & \times \\ & \times \\ & \times \\ & \times \\ & \times \end{aligned}$ |
| $2+2$ $2+2$ | repeated addition |  |  |
| $15-5$ $-5-5$ $=0$ | repeated subtraction | A way of teaching about division as the repeated subtraction of the same number down to zero. For example, $15 \div 5$ is the same as 15 shared into 3 groups of 5, or 15-5-5-5=0 |  |
|  | right angle | An angle of exactly $90^{\circ}$. The two lines that make a right angle are perpendicular. A right angle can also be known as a quarter turn, because is one quarter of a full turn. |  |
| 888 | sharing | Children learn early on how to share a number of objects into equal groups. This develops an early understanding of division. |  |
|  | side | One of the lines, straight or curved, which encloses a 2D shape. | One side of a square is $\mathbf{5} \mathbf{~ c m}$ long <br> What is the total length around all it sides? |
|  | standard and non-standard units | Standard units are the common units used in measurement, for example centimetres, litres or grams. Non standard units are used for measurement with younger children, to introduce them to the concept of measuring - for example, they might investigate how many cupfuls of sand fill a bucket, or how many cubes weigh the same as a book. | 2. Fill the following three containers using a spoon. Write the items in order in the table below, from largest capacity to smallest. <br> teacup, egg cup, bottle cap |
|  | statistics | The term used for teaching the collection, presentation and analysis of information or data |  |


|  | subtraction | Taking one number away from another; finding the difference between the two. Denoted by the symbol "-’. | Kate has a piece of ribbon one metre long. <br> She cuts off 30 centimetres. <br> How many centimetres of ribbon are left? |  |
| :---: | :---: | :---: | :---: | :---: |
|  | subtraction on a number line | See also finding the difference. Children are taught to use a number line to carry out subtraction calculations, either by counting back from the starting number or by finding the difference between the smaller and the greater number in the calculation | See finding the difference |  |
| $10+5=15$ | sum | The result of adding two numbers together. | $175+25=$ |  |
|  | tally chart | A chart used for the initial collection of data. Usually presented as a table with different categories along the top or down the side, and tallies (groups of five marks) used to show how many in each category. One vertical mark represents one item, and when five are counted the fifth mark is crossed through the first four. | This chart shows the number of children at a school. Write in the missing number on the chart. <br> In which classes are there more boys than girls? | Total <br> 28 <br> 31 <br> 29 |
|  | time interval | The length of time between two given times. | Rita takes half an hour to walk from home to the library. <br> She arrives at the library at $8: 10 \mathrm{am}$. <br> At what time did she leave home? |  |
| $1 \times 1=1$ $2 \times 2=4$ $3 \times 3=9$ | times tables | See multiplication tables. | See multiplication tables. |  |
|  | turns | A movement in a space, either clockwise or anticlockwise. A quarter turn is $90^{\circ}$, a half turn is $180^{\circ}$, a threequarter turn is $270^{\circ}$ and a full turn is $360^{\circ}$. | Turning direction <br> (a) Terry is facing north <br> He turns clockwise through three right angles. Which direction is he facing now? |  |
|  | unit fractions | A fraction where the numerator is one and the denominator is a whole number. It represents one equal unit fractions part. | Copy the diagram and write the fractions in the correct circle. <br> Unit Fractions <br> Non-Unit Fractions |  |


| vertex/vertices | The place on a 3D shape where three or more edges meet. Also used to describe the corners of a 2D shape. vertex/vertices See also corners. | How many vertices does a square-based pyramid have? |
| :---: | :---: | :---: |
| vertical | A line that runs up and down from top to bottom. It will intersect a horizontal line at right angles. | Label these lines as horizontal or vertical: <br> a) $\qquad$ b) <br> c) <br> Now, find two examples of: <br> horizontal lines in the classroom. vertical lines in the classroom. |
| whole number | A number which contains no fractions or parts of a whole such as decimal numbers. Also called an integer. |  |
| Rachel has 17 apples. She gives 9 to Sarah. How many apples does Rachel have now? $\quad$ word problem | A mathematical calculation presented in words. Pupils are taught to find the key information, work out what type of calculation is needed and then work out the answer. | Zak has more than 10 counters and fewer than 20 counters. When he groups them in threes no counters are left over. <br> How many counters could Zak have? |
| written method | A way of carrying out a calculation which is done on paper rather than entirely mentally. | Nisha writes: $538+46=585$ <br> Show why Nisha is wrong. |
| 24-hour clock | The 12-hour clock runs from 12 o'clock to 12 o'clock twice per day. The 24-hour clock runs from 00:00 (12 a.m.) through 24 hours to 23:59 (11:59 p.m.). | Fill in the gaps below. <br> a) 08:45 quarter to nine in the $\qquad$ b) $\mathbf{1 6 : 1 0}$ <br> ten past four in the $\qquad$ <br> c) $21: 40$ <br> twenty to ten at $\qquad$ d) $\qquad$ 15 <br> 3:15 p.m. |
| 2D shapes | Shapes that are flat, having only two dimensions - length (sometimes called height) and width. | 2) Circle the descriptions that match this shape: <br> I have 6 sides. I have 5 vertices. <br> All my sides are the same length. <br> I am symmetrical. |
| 3D shapes | Shapes that have a solid form, having three dimensions - length (sometimes called height), width and depth. | (a) Write numbers to complete the table below. |

