

Year Two

NUMBERS AND THE NUMBER SYSTEM

2-7 Counting, properties of numbers and number sequences

Say the number names in order to at least 100, from and back to zero. (p.3)	Standards Site ITP 'Number Grid'	Interactive number square, allows change of number of columns and start number.	www.standards.dfes.gov.uk/numeracy/publications/itps/number_grid
Count reliably up to 100 objects by grouping them: for example, in tens, then in fives or twos. (p.3)	Standards Site ITP Count on and back	Interactive bead string.	www.standards.dfes.gov.uk/numeracy/publications/itps/count_on_and_back/
Describe and extend simple number sequences: count on or back in ones or tens, starting from any two-digit number; count in hundreds from and back to zero; count on in twos from and back to zero or any small number, and recognise odd and even numbers to at least 30; count on in steps of 3, 4 or 5 to at least 30, from and back to zero, then from and back to any given small number. (p.3,5,7)	Ambleside: 'Supersequencer' Standards Site ITP 20 cards Standards Site 'Number Grid' PrimaryGames 'Give a dog a bone' PrimaryGames 'Splat Squares' PrimaryResources Swinging Ted	Counting in any steps, from any number! Use negative increment for counting backwards. Allows the creation of 'stacks' of moveable cards: consecutive numbers and multiples Interactive number square, allows change of number of columns and start number. Positioning numbers on an empty 100 square Useful for highlighting numbers Hundred square and/or empty 100 square with 'splats' as highlights. Useful for highlighting numbers. Swinging Ted, counting in ones, identifying odd and even numbers	http://ambleweb.digitalbrain.com/ambleweb/ambleweb/ambleweb/mentalmaths/supersequencer.html www.standards.dfes.gov.uk/numeracy/publications/itps/number_grid www.primarygames.co.uk/pg2/dogbone/gamebone.html www.primarygames.co.uk/pg2/splat/splatsq100.html www.primaryresources.co.uk/online/swingingted.swf
Begin to recognise two-digit multiples of 2, 5 or 10. (p.7)	Grid Club Alien Tables Numeracy.org.uk ITP 20 cards Turquoise Box 'Multiple Machine'	Activity allowing practice of recognition of chosen multiples. Short starter or short individual practice. Allows the creation of 'stacks' of moveable cards: consecutive numbers and multiples Allows sorting of integers into multiples of 5 and 10; 5, 10 and 100; 2, 5, 10 and 100	www.gridclub.com/have_a_go/maths/alien_tables/index.shtml From the turquoise training box or from:

8-15 Place value and ordering

<p>Read and write whole numbers to at least 100 in figures and words. (p.9)</p>	<p>PrimaryResources NumberBoard2</p>	<p>Place value chart and arrow cards/ pointer cards used for partitioning numbers</p>	<p>www.primaryresources.co.uk/online/numberboard2.swf</p>
<p>Know what each digit in a two-digit number represents, including 0 as a place holder, and partition two-digit numbers into a multiple of ten and ones (TU). (p.9)</p>	<p>PrimaryResources NumberBoard2 Standards Site ITP Place Value Cards</p>	<p>Place value chart and arrow cards/ pointer cards used for partitioning numbers Place value cards used for partitioning numbers and also looking at the value of each number</p>	<p>www.primaryresources.co.uk/online/numberboard2.swf</p>
<p>Use and begin to read the vocabulary of comparing and ordering numbers, including ordinal numbers to 100. Use the = sign to represent equality. Compare two given two-digit numbers, say which is more or less, and give a number which lies between them. (p.11)</p>	<p>Standards Site ITP 20 cards Numeracy.org.uk ITP Number Line</p>	<p>Allows the creation of 'stacks' of moveable cards: consecutive numbers and multiples Interactive number line, changeable min/max, illustrates finding difference of two numbers both on the numberline and also through algorithm</p>	<p>www.standards.dfes.gov.uk/numeracy/publications/itps/number_line</p>
<p>Say the number that is 1 or 10 more or less than any given two-digit number. (p.13)</p>	<p>PrimaryGames Primary Games 'Splat Square'</p>	<p>Positioning numbers on an empty 100 square Hundred square and/or empty 100 square with 'splats' as highlights</p>	<p>www.primarygames.co.uk/pg2/bug2/bug2.html www.primarygames.co.uk/pg2/splat/splat100.html</p>
<p>Order whole numbers to at least 100, and position them on a number line and 100 square. (p.15)</p>	<p>PrimaryGames Give the dog a bone Primary Games Splat Square Count Me In Game One BBC Numbertime 'Mend the Number Square' Turquoise Box / Standards Site 'Monty'</p>	<p>Positioning numbers on an empty 100 square Requires solid understanding of the 100 square Hundred square and/or empty 100 square with 'splats' as highlights Ordering number cards and identifying one more, one less. Very similar to maths intervention type activities. Positioning numbers on an interactive 100 square. Identifying numbers on a 100 square. Illustrates the 100 squares in different orientations. (Click start to change the orientation)</p>	<p>www.primarygames.co.uk/pg2/dogbone/gamebone.html www.primarygames.co.uk/pg2/splat/splat100.html www.curriculumsupport.nsw.edu.au/maths/countmein/children.htm www.bbc.co.uk/schools/numbertime/games/mend.shtml From the turquoise training box or:</p>

16-19 Estimating and rounding			
Use and begin to read the vocabulary of estimation and approximation; give a sensible estimate of at least 50 objects. (p.17)			
Round numbers less than 100 to the nearest 10. (p.19)			
20-23 Fractions			
Begin to recognise and find one half and one quarter of shapes and small numbers of objects. Begin to recognise that two halves or four quarters make one whole and that two quarters and one half are equivalent. (p.21,23)			
CALCULATIONS			
24-29 Understanding addition and subtraction			
Extend understanding of the operations of addition and subtraction. Use and begin to read the related vocabulary. Use the +, - and = signs to record mental additions and subtractions in a number sentence, and recognise the use of a symbol such as n or s to stand for an unknown number. Recognise that addition can be done in any order, but not subtraction: for example, $3 + 21 = 21 + 3$, but $21 - 3 \neq 3 - 21$. (p.25-29)	Grid Club Number Cruncher Level One BBC Numbertime 'Dartboard'	Missing number algorithm Level 2: Allows fun addition game involving doubles and single numbers to calculate addition statements	www.gridclub.com/have_a_go/maths/numbcruncher/index.shtml www.bbc.co.uk/schools/numbertime/games/dartboard.shtml
Understand that more than two numbers can be added. Begin to add three single-digit numbers mentally (totals up to about 20) or three two-digit numbers with the help of apparatus (totals up to 100). (p.27)			
30-31 Rapid recall of addition and subtraction facts			
Know by heart: all addition and subtraction facts for each number to at least 10; all pairs of numbers with a total of 20 (e.g. $13 + 7$, $6 + 14$); all pairs of multiples of 10 with a total of 100 (e.g. $30 + 70$). (p.31)	Ambleside: NumberBond Machines PrimaryGames 'Speed Grid Challenge'	Number bonds - to 5, 10, 100 or set your own. Similar to a Target Board, finding pairs of numbers totalling given number	http://ambleweb.digitalbrain.com/ambleweb/ambleweb/ambleweb/mentalmaths/numberbond.html www.primarygames.co.uk/pg2/speedgrid/speedadd/urikares.html

	Standards Site ITP 'Difference'	Supports the teaching of number, allows comparison of two numbers in a visual manner	
32-41 Mental calculation strategies (+ and -)			
Use knowledge that addition can be done in any order to do mental calculations more efficiently. For example: put the larger number first and count on in tens or ones; add three small numbers by putting the largest number first and/or find a pair totalling 10; partition into '5 and a bit' when adding 6, 7, 8 or 9, then recombine (e.g. $16 + 8 = 15 + 1 + 5 + 3 = 20 + 4 = 24$); partition additions into tens and units, then recombine. (p.33)	BBC Numbertime 'Snakes and Ladders' Count Me In 'Game 2 and 3'	Interactive snakes and ladders game. One player option allows use with whole class. Great opportunity for effective questioning. Game 2: Screen showing 10 butterflies, x fly away, how many remain. Grid partitioned into five and a bit Game 3: Domino showing five plus x to make a total	www.bbc.co.uk/schools/numbertime/games/snakes.shtml www.curriculumsupport.nsw.edu.au/maths/countmein/children.htm www.curriculumsupport.nsw.edu.au/maths/countmein/children.htm
Find a small difference by counting up from the smaller to the larger number (e.g. $42 - 39$). (p.33)	Standards Site ITP 'Number Line' Standards Site ITP 'Difference'	Interactive numberline, changeable min/max, illustrates finding the difference of two numbers both on the number line and also through algorithm Comparison of numbers through counters then an animation to reflect the comparison of these numbers on a number line	www.standards.dfes.gov.uk/numeracy/publications/itps/number_line
Identify near doubles, using doubles already known (e.g. $8 + 9$, $40 + 41$). (p.33)			
Add/subtract 9 or 11: add/subtract 10 and adjust by 1. Begin to add/subtract 19 or 21: add/subtract 20 and adjust by 1. (p.35)	Standards Site ITP 'Number Grid'	Interactive number square, allows change of number of columns and start number	www.standards.dfes.gov.uk/numeracy/publications/itps/number_grid/
Use patterns of similar calculations. (p.35)			
State the subtraction corresponding to a given addition, and vice versa. (p.35)			
Use known number facts and place value to add/subtract mentally. (p.37,39)			
Bridge through 10 or 20, then adjust. (p.41)			
46-51 Understanding multiplication and division			
Understand the operation of multiplication as repeated addition or as describing an array , and begin to understand division as grouping (repeated subtraction) or sharing. Use and begin to read the related vocabulary. Use the \times , \div and $=$ signs to record mental calculations in a number sentence, and recognise the use of a symbol such as n	Standards Site Grouping Count Me In	Excellent modelling of division through grouping. Through effective questioning can model process form physically sorting objects to informal recording of grouping on a number line. Game 4: Children calculate total number of	www.standards.dfes.gov.uk/numeracy/publications/itps/grouping/ www.curriculumsupport.nsw.edu.au/mat

or s to stand for an unknown number. (p.47,49)	Game 4: Arrays	counters from partially covered array of counters	https://countmein/children.htm
Know and use halving as the inverse of doubling. (p.47,49)	Turquoise Box 'Function Machine'	Interactive function machine	From the turquoise box or from: www.standards.dfes.gov.uk/numeracy/publications/ict_resources/12878/
<u>52-53 Rapid recall of multiplication and division facts</u>			
Know by heart: multiplication facts for the 2 and 10 times-tables; doubles of all number to 10 and the corresponding halves. Begin to know: multiplication facts for the 5 times-table. (p.53)	BBC Numbertime 'Dartboard'	Fun activity to find doubles of numbers up to 10	www.bbc.co.uk/schools/numbertime/games/dartboard.shtml
Derive quickly: division facts corresponding to the 2 and 10 times-tables; doubles of all numbers to at least 15 (e.g. $11 + 11$ or 11×2); doubles of multiples of 5 to 50 (e.g. 20×2 or 35×2); halves of multiples of 10 to 100 (e.g. half of 70). (p.53)			
<u>54-57 Mental calculation strategies (mult and div)</u>			
Use known number facts and place value to carry out mentally simple multiplications and divisions. (p.57)			
<u>58-59 Checking results of calculations</u>			
Repeat addition in a different order. (p.59)			
Check with an equivalent calculation. (p.59)			
<u>SOLVING PROBLEMS</u>			
<u>60-61 Making decisions</u>			
Choose and use appropriate operations and efficient calculation strategies (e.g. mental, mental with jottings) to solve problems. (For examples see pages 62-71.) (p.61)			
<u>62-65 Reasoning about numbers or shapes</u>			
Solve mathematical problems or puzzles, recognise simple patterns and relationships, generalise and predict. Suggest	Turquoise Box 'Unit the Robot'		From the turquoise Box

extensions by asking 'What if?' or 'What could I try next?' (p.63)			
Investigate a general statement about familiar numbers or shapes by finding examples that satisfy it. (p.65)			
Explain how a problem was solved orally and, where appropriate, in writing. (p.65)			
<u>66-71 Problems involving 'real life', money or measures</u>			
Use mental addition and subtraction, simple multiplication and division, to solve simple word problems involving numbers in 'real life', money or measures, using one or two steps. Explain how the problem was solved. (p.67,69,71)	PrimaryResources 'Draggable Coins' Turquoise Box 'Toy Shop'	Dragable coins using variety of back drops. Please note: no £2 coin and coins may appear dark on screen Strategy game, initially for whole class teaching	www.primaryresources.co.uk/online/movecoins.swf From the turquoise box or from: www.standards.dfes.gov.uk/numeracy/publications/ict_resources/12896/
Recognise all coins and begin to use £.p notation for money (for example, know that £4.65 indicates £4 and 65p). Find totals, give change, and work out which coins to pay. (p.69)	PrimaryResources 'Draggable Coins'	Dragable coins using variety of back drops. Please note: no £2 coin and coins may appear dark on screen	www.primaryresources.co.uk/online/movecoins.swf
<u>HANDLING DATA</u>			
<u>90-93 Organising and using data</u>			
Solve a given problem by sorting, classifying and organising information in simple ways, such as: in a list or simple table; in a pictogram; in a block graph. Discuss and explain results. (p.91,93)	Turquoise Box 'Handy Graph'	User friendly bar chart creator	From the turquoise box or from: www.standards.dfes.gov.uk/numeracy/publications/ict_resources/12880/
<u>MEASURES, SHAPE AND SPACE</u>			
<u>72-79 Measures</u>			
Use and begin to read the vocabulary related to length, mass and capacity. (p.73)			
Estimate, measure and compare lengths, masses and capacities, using standard units (m, cm, kg, litre); suggest suitable units and equipment for such measurements. (p.73,75)			
Read a simple scale to the nearest labelled division,	Standards Site	Interactive measuring scales. Change scale and	www.standards.dfes.gov.uk/numeracy/p

<p>including using a ruler to draw and measure lines to the nearest centimetre, recording estimates and measurements as '3 and a bit metres long' or 'about 8 centimetres' or 'nearly 3 kilograms heavy'. (p.77)</p>	<p>'Measuring Scales' Standards Site 'Measuring Cylinder'</p>	<p>interval to suite. Very interactive Interactive measuring cylinder. Change scale and interval to suite. Very interactive</p>	<p>ublications/itps/measuring_scales/ www.standards.dfes.gov.uk/numeracy/publications/itps/measuring_cylinder/</p>
<p>Use and begin to read the vocabulary related to time. Use units of time and know the relationships between them (second, minute, hour, day, week). Suggest suitable units to estimate or measure time. Order the months of the year. Read the time to the hour, half hour or quarter hour on an analogue clock and a 12-hour digital clock, and understand the notation 7:30. (p.79)</p>	<p>BBC Dynamo 'Clockwise'</p>	<p>Level 1: o'clock Level 2: ½ past, ¼ to and past Level 3: 5 minute intervals</p>	<p>www.bbc.co.uk/education/dynamo/den/clock/index.htm</p>
<p>80-89 Shape and Space</p>			
<p>Use the mathematical names for common 3-D and 2-D shapes, including the pyramid, cylinder, pentagon, hexagon, octagon Sort shapes and describe some of their features, such as the number of sides and corners, symmetry (2-D shapes), or the shapes of faces and number of faces, edges and corners (3-D shapes). (p.81)</p>	<p>Primary Resources 'Shape Reveal' PrimaryResources 'SimpleShapeSort'</p>	<p>Interactive version of guess the 2D shape appearing from behind the book. 2D shapes and 2D shapes with rotation Sorting grid using category of number of sides.</p>	<p>www.primaryresources.co.uk/online/shapereveal.swf www.primaryresources.co.uk/online/simpleshapesort.swf</p>
<p>Make and describe shapes, pictures and patterns using, for example, solid shapes, templates, pinboard and elastic bands, squared paper, a programmable robot... Relate solid shapes to pictures of them. (p.83)</p>			
<p>Begin to recognise line symmetry. (p.85)</p>	<p>PrimaryResources 'ShapeCounters'</p>	<p>Using the butterfly back drop, create symmetrical patterns</p>	<p>www.primaryresources.co.uk/online/pattern.swf</p>
<p>Use mathematical vocabulary to describe position, direction and movement: for example, describe, place, tick, draw or visualise objects in given positions. (p.87,89)</p>			
<p>Recognise whole, half and quarter turns, to the left or right, clockwise or anti-clockwise. Know that a right angle is a measure of a quarter turn, and recognise right angles in squares and rectangles. Give instructions for moving along a route in straight lines and round right-angled corners: for example, to pass through a simple maze (p.87,89)</p>	<p>Turquoise Box '2D shapes' PrimaryResources 'SimpleShapeSort'</p>	<p>Sorting 2D shapes into three sets classifying through right angles Using third grid, classify shapes</p>	<p>From the turquoise box or from: www.standards.dfes.gov.uk/numeracy/publications/ict_resources/12882/ www.primaryresources.co.uk/online/simpleshapesort.swf</p>