Year Three

NUMBERS AND THE NUMBER SYSTEM **2-7 Counting, properties of numbers and number sequences**			
Count larger collections by grouping them: for example, in tens, then other numbers. (p.3)			
Describe and extend number sequences: **count on or back in tens or hundreds, starting from any two- or three-digit number;** count on or back in twos starting from any two-digit number, and recognise odd and even numbers to at least 100; count on in steps of 3, 4 or 5 from any small number to at least 50, then back again. (p.3,5,7)	Standards/numeracy 'NumberGrid' Ambleside: 'Supersequencer' PrimaryGames Give the dog a bone PrimaryGames 'Splat Square' Primary Resources 'NumberSquare'	Interactive number square. Highlight numbers, change start number, change number of columns, show multiples and primes. VERY versatile. Counting in any steps, from any number! Use negative increment for counting backwards. Positioning numbers on an empty 100 square Useful for questioning extension, generating mental image of 100 square Hundred square and/or empty 100 square with 'splats' as highlights. Useful for highlighting numbers Interactive 100 square, without the splats, just filled in boxes	www.standards.dfes.gov.uk/numeracy/publications/?pub_id=9969&top_id=0&art_id=0 http://ambleweb.digitalbrain.com/ambleweb/ambleweb/ambleweb/mentalmaths/supersequencer.html www.primarygames.co.uk/pg2/dogbone/gamebone.html www.primarygames.co.uk/pg2/splat/splatsq100.html www.primaryresources.co.uk/online/numbersquare.swf
Recognise two-digit and three-digit multiples of 2, 5 or 10, and three-digit multiples of 50 and 100. (p.7)			
8-15 Place value and ordering			
Read and write whole numbers to at least 1000 in figures and words. (p.9)	Primary Resources NumberBoard2 Standards Site Place Value Cards	Interactive place value cards, also number partitioned in written form Interactive Place value cards up to 1000. Enhances understanding of size of numbers.	www.primaryresources.co.uk/online/numberboard2.swf
Know what each digit represents, and partition three-digit numbers into a multiple of 100, a multiple of ten and ones (HTU). (p.9)	Primary Resources 'NumberBoard2'	Place value chart and arrow cards/ pointer cards used for partitioning numbers	www.primaryresources.co.uk/online/numberboard2.swf

Read and begin to write the vocabulary of comparing and ordering numbers, including ordinal numbers to at least 100. Compare two given three-digit numbers, say which is more or less, and give a number which lies between them. (p.11)			
Say the number that is 1, 10 or 100 more or less than any given two- or three-digit number. (p.13)	Standards Site ITP 'NumberGrid'	Interactive number square. Highlight numbers, change start number, change number of columns, show multiples and primes. VERY versatile.	www.standards.dfes.gov.uk/numeracy/publications/?pub_id=9969&top_id=0&art_id=0
	Turquoise Box 'Monty'	Identifying numbers on a 100 square. Illustrates the 100 square in different orientations. (Click start to change the orientation)	www.standards.dfes.gov.uk/numeracy/publications/?pub_id=509&top_id=0&art_id=0
	Primary Games Give the dog a bone	Positioning numbers on an empty 100 square Useful for questioning extension, generating mental image of 100 square	www.primarygames.co.uk/pg2/dogbone/gamebone.html
	Primary Games 'Splat Square'	Hundred square and/or empty 100 square with 'splats' as highlights	www.primarygames.co.uk/pg2/splat/splatsq100.html
	Primary Resources 'NumberSquare'	Interactive 100 square, without the splats, just filled in boxes	www.primaryresources.co.uk/online/numbersquare.swf
Order whole numbers to at least 1000, and position them on a number line. (p.15)			
16-19 Estimating and rounding			
Read and begin to write the vocabulary of estimation and approximation. Give a sensible estimate of up to about 100 objects. (p.17)			
Round any two-digit number to the nearest 10 and any three-digit number to the nearest 100. (p.19)			
20-23 Fractions			
Recognise unit fractions such as $^1/_2$, $^1/_3$, $^1/_4$, $^1/_5$, $^1/_{10}$ and use them to find fractions of shapes and numbers. Begin to recognise simple fractions that are several parts of a whole, such as $^3/_4$, $^2/_3$ or $^3/_{10}$. Begin to recognise simple equivalent fractions: for example, five tenths and one half, five fifths and one whole. Compare familiar fractions: for example, know that on the number line one half lies between one quarter and three quarters.	Standards Site ITP Fractions	Interactive fraction wall, generating walls with any given denominator. Displays decimal and percentage relation.	www.standards.dfes.gov.uk/numeracy/publications/?pub_id=10022&top_id=0&art_id=0

Estimate a simple fraction. (p.21,23)			
CALCULATIONS **24-29 Understanding addition and subtraction**			
Extend understanding of the operations of addition and subtraction, read and begin to write the related vocabulary, and continue to recognise that addition can be done in any order. Use the +, - and = signs. (p.25,29)	Primary Games Speed Grid Challenge	Similar to a target board, finding pairs of numbers totalling a given number.	www.primarygames.co.uk/pg2/speedgrid/speedadd/urikaadd2res.html
Extend understanding that more than two numbers can be added; add three or four single-digit numbers mentally, or three or four two-digit numbers with the help of apparatus or pencil and paper. (p.27)	Standards Site ITP 'Number Grid'	Interactive number square. Highlight numbers, change start number, change number of columns, show multiples and primes. VERY versatile.	www.standards.dfes.gov.uk/numeracy/publications/?pub_id=9969&top_id=0&art_id=0
Extend understanding that subtraction is the inverse of addition. (p.25,29)	Standards Site ITP 'Number Line'	Very interactive teaching tool. Interactive number line (illustrating negative numbers) Useful also for illustrating subtraction as difference and inverse operations	www.standards.dfes.gov.uk/numeracy/publications/?pub_id=9994&top_id=0&art_id=0
30-31 Rapid recall of addition and subtraction facts			
Know by heart: **all addition and subtraction facts for each number to 20;** all pairs of multiples of 100 with a total of 1000 (e.g. 300 + 700). Derive quickly: all pairs of multiples of 5 with a total of 100 (e.g. 35 + 65). (p.31)	PrimaryResources 'Missing Numbers' PrimaryGames 'Speed Grid Challenge' Ambleside 'Number Bond Machine'	Missing number problems Similar to a Target Board, finding pairs of numbers totalling given number Number bonds - to 5, 10, 100 or set your own.	www.primaryresources.co.uk/online/missing.swf www.primarygames.co.uk/pg2/speedgrid/speedadd/urikares.html http://ambleweb.digitalbrain.com/ambleweb/ambleweb/ambleweb/mentalmaths/numberbond.html
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; add three or four small numbers by putting the largest number first and/or by finding pairs totalling 9, 10 or 11; partition into '5 and a bit' when adding 6, 7, 8 or 9 (e.g. 47 + 8 = 45 + 2 + 5 + 3 = 50 + 5 = 55); partition into tens and units, then recombine	PrimaryResources 'Bricks2'	Addition pyramid, possible extension of rearranging numbers to create largest total	www.primaryresources.co.uk/online/bricks2.swf

(e.g. 34 + 53 = 30 + 50 + 4 + 3). (p.33)			
Find a small difference by counting up from the smaller to the larger number (e.g. 102 - 97). (p.33)	Standards Site 'NumberLine'	Very interactive teaching tool. Interactive number line (illustrating negative numbers) Useful also for illustrating subtraction as difference and inverse operations	www.standards.dfes.gov.uk/numeracy/publications/?pub_id=9994&top_id=0&art_id=0
Identify near doubles, using doubles already known (e.g. 80 + 81). (p.33)			
Add and subtract mentally a 'near multiple of 10' to or from a two-digit number by adding or subtracting 10, 20, 30 and adjusting. (p.35)			
Use patterns of similar calculations. (p.35)			
Say or write a subtraction statement corresponding to a given addition statement, and vice versa. (p.35)			
Use known number facts and place value to add/subtract mentally. (p.37,39)	PrimaryResources 'Bricks2'	Addition pyramid, possible extension of rearranging numbers to create largest total	www.primaryresources.co.uk/online/bricks2.swf
Bridge through a multiple of 10, then adjust. (p.41)			
42-45 Pencil and paper procedures (+ and -)			
Use informal pencil and paper methods to support, record or explain HTU ± TU, HTU ± HTU. Begin to use column addition and subtraction for HTU ± TU where the calculation cannot easily be done mentally. (p.43,45)			
46-51 Understanding multiplication and division			
Understand multiplication as repeated addition. Read and begin to write the related vocabulary. Extend understanding that multiplication can be done in any order. (p.47)			
Understand division as grouping (repeated subtraction) or sharing. Read and begin to write the related vocabulary. **Recognise that division is the inverse of multiplication**, and that halving is the inverse of doubling. (p.49)			
Begin to find remainders after simple division. (p.51)			
Round up or down after division, depending on the context. 51			
52-53 Rapid recall of multiplication and division facts			
Know by heart: **multiplication facts for the 2, 5 and 10 times-tables.** Begin to know the 3 and 4 times-tables. (p.53)	Primary Resources 'Counting Stick'	Use as a physical counting stick. Very easy to cover / uncover numbers / multiples	www.primaryresources.co.uk/online/numberstick.swf

	Primary Games 'Splat Square' Primary Resources Moon Maths Grid Club 'Alien Tables'	Hundred square and/or empty 100 square with 'splats' as highlights. Useful for highlighting numbers Practice at identifying multiplication facts in rather fun way. Children individually or on whiteboard during mental and oral starter Activity allowing practice of recognition of chosen multiples. Short starter or short individual practice.	www.primarygames.co.uk/pg2/splat/splatsq100.html www.primaryresources.co.uk/online/moonmaths.swf www.gridclub.com/have_a_go/maths/alien_tables/index.shtml
Derive quickly: division facts corresponding to the 2, 5 and 10 times-tables; doubles of all whole numbers to at least 20 (e.g. 17 + 17 or 17 × 2); doubles of multiples of 5 to 100 (e.g. 75 × 2, 90 × 2); doubles of multiples of 50 to 500 (e.g. 450 × 2); and all the corresponding halves (e.g. 36 ÷ 2, half of 130, 900 ÷ 2). (p.53)			
54-57 Mental calulation strategies (mult and div)			
To multiply by 10/100, shift the digits one/two places to the left. (p.55)			
Use doubling or halving, starting from known facts (e.g. 8 × 4 is double 4 × 4). (p.55)			
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Say or write a division statement corresponding to a given multiplication statement. (p.55)			
Use known number facts and place value to carry out mentally simple multiplications and divisions. (p.57)			
58-59 Checking results of calculations			
Check subtraction with addition, halving with doubling and division with multiplication. (p.59)			
Repeat addition or multiplication in a different order. (p.59)			
Check with an equivalent calculation. (p.59)			
SOLVING PROBLEMS **60-61 Making decisions**			

Choose and use appropriate operations (including multiplication and division) to solve word problems, and appropriate ways of calculating: mental, mental with jottings, pencil and paper. (p.61)			
62-65 Reasoning about numbers or shapes			
Solve mathematical problems or puzzles, recognise simple patterns and relationships, generalise and predict. Suggest extensions by asking 'What if...?' (p.63)	PrimaryResources 'Bricks2'	Addition pyramid, possible extension of rearranging numbers to create largest total (Use lower level)	www.primaryresources.co.uk/online/bricks2.swf
Investigate a general statement about familiar numbers or shapes by finding examples that satisfy it. (p.65)			
Explain methods and reasoning orally and, where appropriate, in writing. (p.65)			
66-71 Problems involving 'real life', money or measures			
Solve word problems involving numbers in 'real life', money and measures, using one or more steps, including finding totals and giving change, and working out which coins to pay. Explain how the problem was solved. (p.67,69,71)			
Recognise all coins and notes. **Understand and use £.p notation** (for example, know that £3.06 is £3 and 6p). (p.69)	PrimaryResources 'Dragable Coins' PrimaryResources 'UK Coin Game'	Dragable coins using variety of back drops. Please note: no £2 coin and coins may appear dark on screen Activity of varying levels making amounts of money using coinage	www.primaryresources.co.uk/online/movecoins.swf www.primaryresources.co.uk/online/moneynew.html
HANDLING DATA **90-93 Organising and using data**			
Solve a given problem by organising and interpreting numerical data in simple lists, tables and graphs, for example: simple frequency tables; pictograms - symbol representing two units; bar charts - intervals labelled in ones then twos; Venn and Carroll diagrams (one criterion). (p.91.93)			

MEASURES, SHAPE AND SPACE

72-79 Measures

Read and begin to write the vocabulary related to length, mass and capacity. Measure and compare using standard units (km, m, cm, kg, g, l, ml), including using a ruler to draw and measure lines to the nearest half centimetre (see page 77).	Standards Site 'Measuring Cylinder'	Interactive Measuring Cylinder. Change scale, increments. Fill / empty cylinder. Fill / empty by desired amount of liquid or constant running.	www.standards.dfes.gov.uk/numeracy/publications/?pub_id=9992&top_id=0&art_id=0
Know the relationships between kilometres and metres, metres and centimetres, kilograms and grams, litres and millilitres. Begin to use decimal notation for metres and centimetres. (p.73)			
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Suggest suitable units and measuring equipment to estimate or measure length, mass or capacity. (p.75)			
Read scales to the nearest division (labelled or unlabelled). Record estimates and measurements to the nearest whole or half unit (e.g. 'about 3.5kg'), or in mixed units (e.g. '3m and 20cm'). (p.77)	Standards Site 'Measuring Cylinder' Standards Site 'Measuring Scales'	Interactive Measuring Cylinder. Change scale, increments. Fill / empty cylinder. Fill / empty by desired amount of liquid or constant running. Interactive measuring scales with option to change scale and interval.	www.standards.dfes.gov.uk/numeracy/publications/?pub_id=9992&top_id=0&art_id=0 www.standards.dfes.gov.uk/numeracy/publications/?pub_id=9993&top_id=0&art_id=0
Read and begin to write the vocabulary related to time. **Use units of time and know the relationships between them (second, minute, hour, day, week, month, year).** Suggest suitable units to estimate or measure time. Use a calendar. Read the time to 5 minutes on an analogue clock and a 12-hour digital clock, and use the notation 9:40. (p.79)	TeachingTime.co.uk	Matching analogue to digital activity Analogue recognition activity, stopping clock at stated time (5 minute intervals). Whole class and individual opportunities.	www.teachingtime.co.uk/draggames/sthec3.html www.teachingtime.co.uk/clock2/clockwordsres.html

80-89 Shape and Space			
Classify and describe 3-D and 2-D shapes, including the hemi-sphere, prism, semi-circle, quadrilateral... referring to properties such as reflective symmetry (2-D), the number or shapes of faces, the number of sides/edges and vertices, whether sides/edges are the same length, whether or not angles are right angles... (p.81)	Primary Resources 'Shape Reveal'	Mental and Oral possibilities similar to physically holding a shape behind a book. Children predict what the shape will be. Oral explanation possibilities	www.primaryresources.co.uk/online/shapereveal.swf
Make and describe shapes and patterns: for example, explore the different shapes that can be made from four cubes. Relate solid shapes to pictures of them. (p.83)			
Identify and sketch **lines of symmetry in simple shapes, and recognise shapes with no lines of symmetry.** Sketch the reflection of a simple shape in a mirror line along one edge. (p.85)	Primary Resources 'Reflection'	Demonstration tool allows creation of shapes/patterns and showing reflection in mirror line	www.primaryresources.co.uk/online/reflection.swf
Read and begin to write the vocabulary related to position, direction and movement: for example, describe and find the position of a square on a grid of squares with the rows and columns labelled. Recognise and use the four compass directions N, S, E, W. (p.87)	Primary Resources 'Coordinates II'	Simple coordinate plotting in 1st quadrant	www.primaryresources.co.uk/online/coordinates2.swf
Make and describe right-angled turns, including turns between the four compass points. **Identify right angles** in 2-D shapes and the environment. Recognise that a straight line is equivalent to two right angles. Compare angles with a right angle. (p.89)			