

## On the Boil

**Year 4** *Pupils need to continuously use mathematical language alongside manipulation of objects to understand the key concepts in Year 4.*

Domain/aspect	Autumn	Spring	Summer	Key resources, representations and games
Counting	Count forwards and backwards in multiples of 1,2,3,4,5,8,10,50 and 100.	Count forwards and backwards in multiples of 11 and 12.	Count forwards and backwards in multiples of 1,2,3,4,5,6,7,8,9,10,11, 12, 25, 50 and 100.	Counting sticks, 1p, 2p, 5p and 10p coins and money box/pot, Numicon 1,2,5,10 shapes Numicon or straws bundled into tens for counting on in tens from numbers other than 10. ITPS – counting, counting on and back, numbergrid, numberline, beadsticks, thermometer Switch game
Counting	Count forwards and backwards in 10s and 100s from any 3 digit number crossing decade and hundreds barriers	Count forwards and backwards in multiples of 10, 25, 50, 100 and 1000.		Counting sticks, Numicon, straws bundled in tens, dienes, 200 square, 1p,10p, £1 coins. Switch game
Counting	Counting in tenths, halves, quarters across tens barriers	Count up and down in tenths and hundredths crossing barriers		Counting stick, dienes, cuisiniare, numicon fraction pictures, gattegno charts
Counting		Counting forwards and backwards in 1s through zero include negative numbers.		Counting stick, number lines with negative numbers.
Number and place value	Partitioning, combining and re-combining numbers beyond 100 and up to 1000 in many different ways eg. $232 = 200 + 30 + 2$ and $232 = 230 + 2$ and $232 = 122 + 10$ .	Partitioning, combining and re-combining numbers with tenths in many different ways ie. $23.7 = 3 + 20 + 0.7$ and $23.7 = 13.7 + 10$ .	Partitioning, combining and re-combining numbers with hundredths in many different ways ie. $246.35 = 200 + 40 + 6 + 0.3 + 0.005$ or $146.3 + 100 + 0.05$	Numicon Cuisenaire Coins Zap the digit calculator game
Number and place value	Make two and three-digit numbers using structured apparatus saying value of each digit.	Make numbers including tenths using structured apparatus saying value of each digit.	Make numbers including tenths and hundredths using structured apparatus saying value of each digit.	Multi-link, counters, Numicon, Coins, Straws bundled into tens Dienes, pixie dienes, value arrow cards Nasty game,
Addition and subtraction	Rapid recall of addition and subtraction facts within 20, represented as missing number problems with = symbol in any position. Make links to finding facts to 200, 2000 etc.,			Numicon, Cuisenaire Double sided counters, tens frames, balance pans, fingers, shut the box, splat
Addition and subtraction	Use bonds to derive pairs of numbers to any multiple of 10 or 100. ie. $3 + 7 = 10$ therefore $13 + 7 = 20$ and $23 + 7 = 30$	Derive bonds to 1 etc from bonds to 10. ie. $3 + 7 = 10$ therefore $0.3 + 0.7 = 1$ .	Derive bonds to 0.1, etc from known bonds ie. $4 + 6 = 10$ therefore $0.04 + 0.06 = 0.1$	Numicon, cuisiniare, fingers, dienes, pixie dienes, coins
Addition and subtraction	Children practice selecting which mental calculation strategy is the most efficient when presented with different calculations ie. Round and adjust, find the difference, reorder, partition, count on, count back, doubles, near doubles, halves and bonds.			Bead strings, Numicon, Cuisenaire, number lines, dienes, Teaching children to calculate mentally 2010 P35-38
Multiplication and division	Doubling and halving numbers – rapid recall up to $20 + 20$	Double and halve two and three digit numbers by partitioning	Using double facts to double and halve tenths	Dienes, pixie dienes, Cuisenaire, coins, place value charts, arrow cards
Multiplication and division	Rapid recall of multiplication and related division facts – 1,2,3,4,5,8,50 and 100.	Rapid recall of 11 and 9 times tables ( if learnt in Autumn term)	Rapid recall of all multiplication facts up to $12 \times 12$	2p and 10p coins, Numicon, fingers, money pots Multiplication squares, times table charts, arrays, numberlines
Measurement	Reading the time with 12 and 24 hour clocks		Convert hours to minutes, minutes to seconds etc.,	Clocks with geared hands, circular counting bars, 5p coins, ITPs, timetables