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|  | Recall:  Children should be able to derive and recall: | | Mental calculation skills:  Working mentally, with jottings if needed, children should be able to: | |
| **Addition and subtraction Year 1** | * number pairs with a total of 10, e.g. 3 + 7, or what to add to a single-digit number to make 10, e.g. 3 + = 10 * addition facts for totals to at least 5, e.g. 2 + 3, 4 + 3 * addition doubles for all numbers to at least 10, e.g. 8 + 8 | | * add or subtract a pair of single-digit numbers, e.g. 4 + 5, 8 – 3 * add or subtract a single-digit number to or from a teens number, e.g. 13 + 5, 17 – 3 * add or subtract a single-digit to or from 10, and add a multiple of 10 to a single-digit number, e.g. 10 + 7, 7 + 30 * add near doubles, e.g. 6 + 7 | |
| Multiplication and Division **Year 1** | * doubles of all numbers to 10, e.g. double 6 * odd and even numbers to 20 | | * count on from and back to zero in ones, twos, fives or tens | |
| **Addition and subtraction Year 2** | * addition and subtraction facts for all numbers up to at least 10, e.g. 3 + 4, 8 – 5 * number pairs with totals to 20 * all pairs of multiples of 10 with totals up to 100, e.g. 30 + 70, or 60 + = 100 * what must be added to any two-digit number to make the next multiple of 10, e.g. 52 + = 60 * addition doubles for all numbers to 20, e.g. 17 + 17 and multiples of 10 to 50, e.g. 40 + 40 | | * add or subtract a pair of single-digit numbers, including crossing 10, e.g. 5 + 8, 12 – 7 * add any single-digit number to or from a multiple of 10, e.g. 60 + 5 * subtract any single-digit number from a multiple of 10, e.g. 80 – 7 * add or subtract a single-digit number to or from a two-digit number, including crossing the tens boundary, e.g. 23 + 5, 57 – 3, then 28 + 5, 52 – 7 * add or subtract a multiple of 10 to or from any two-digit number, e.g. 27 + 60, 72 – 50 * add 9, 19, 29, … or 11, 21, 31, … * add near doubles, e.g. 13 + 14, 39 + 40 | |
| Multiplication and Division Year 2 | * doubles of all numbers to 20, e.g. double 13, and corresponding halves * doubles of multiples of 10 to 50, e.g. double 40, and corresponding halves * multiplication facts for the 2, 5 and 10 times-tables, and corresponding division facts * odd and even numbers to 100 | | * double any multiple of 5 up to 50, e.g. double 35 * halve any multiple of 10 up to 100, e.g. halve 90 * find half of even numbers to 40 * find the total number of objects when they are organised into groups of 2, 5 or 10 | |
| **Addition and Subtraction** Year 3 | * addition and subtraction facts for all numbers to 20, e.g. 9 + 8, 17 – 9, drawing on knowledge of inverse operations * sums and differences of multiples of 10, e.g. 50 + 80, 120 – 90 * pairs of two-digit numbers with a total of 100, e.g. 32 + 68, or 32 + = 100 * addition doubles for multiples of 10 to 100, e.g. 90 + 90 | | * add and subtract groups of small numbers, e.g. 5 – 3 + 2 * add or subtract a two-digit number to or from a multiple of 10, e.g. 50 + 38, 90 – 27 * add and subtract two-digit numbers e.g. 34 + 65, 68 – 35 * add near doubles, e.g. 18 + 16, 60 + 70 | |
| Multiplication and Division Year 3 | * multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables, and corresponding division facts * doubles of multiples of 10 to 100, e.g. double 90, and corresponding halves | | * double any multiple of 5 up to 100, e.g. double 35 * halve any multiple of 10 up to 200, e.g. halve 170 * multiply one-digit or two-digit numbers by 10 or 100, e.g. 7 × 100, 46 × 10, 54 x 100 * find unit fractions of numbers and quantities involving halves, thirds, quarters, fifths and tenths | |
| **Addition and Subtraction** Year 4 | * sums and differences of pairs of multiples of 10, 100 or 1000 * addition doubles of numbers 1 to 100, e.g. 38 + 38, and the corresponding halves * what must be added to any three-digit number to make the next multiple of 100, e.g. 521 + = 600 * pairs of fractions that total 1 | | * add or subtract any pair of two-digit numbers, including crossing the tens and 100 boundary, e.g. 47 + 58, 91 – 35 * add or subtract a near multiple of 10, e.g. 56 + 29, 86 – 38 * add near doubles of two-digit numbers, e.g. 38 + 37 * add or subtract two-digit or three-digit multiples of 10, e.g. 120 – 40, 140 + 150, 370 – 180 | |
| Multiplication and Division Year 4 | * multiplication facts to 10 × 10 and the corresponding division facts * doubles of numbers 1 to 100, e.g. double 58, and corresponding halves * doubles of multiples of 10 and 100 and corresponding halves * fraction and decimal equivalents of one-half, quarters, tenths and hundredths, e.g. 310 is 0.3 and 3100 is 0.03 * factor pairs for known multiplication facts | | * double any two-digit number, e.g. double 39 * double any multiple of 10 or 100, e.g. double 340, double 800, and halve the corresponding multiples of 10 and 100 * halve any even number to 200 * find unit fractions and simple non-unit fractions of numbers and quantities, e.g. 38 of 24 * multiply and divide numbers to 1000 by 10 and then 100 (whole-number answers), e.g. 325 × 10, 42 × 100, 120 ÷ 10, 600 ÷ 100, 850 ÷ 10 * multiply a multiple of 10 to 100 by a single-digit number, e.g. 40 × 3 * multiply numbers to 20 by a single-digit, e.g. 17 × 3 * identify the remainder when dividing by 2, 5 or 10 * give the factor pair associated with a multiplication fact, e.g. identify that if 2 x 3 = 6 then 6 has the factor pair 2 and 3 | |
| **Addition and Subtraction** Year 5 | * sums and differences of decimals, e.g. 6.5 + 2.7, 7.8 – 1.3 * doubles and halves of decimals, e.g. half of 5.6, double 3.4 * what must be added to any four-digit number to make the next multiple of 1000, e.g. 4087 + = 5000 * what must be added to a decimal with units and tenths to make the next whole number, e.g. 7.2 + = 8 | | * add or subtract a pair of two-digit numbers or three-digit multiples of 10, e.g. 38 + 86, 620 – 380, 350+ 360 * add or subtract a near multiple of 10 or 100 to any two-digit or three-digit number, e.g. 235 + 198 * find the difference between near multiples of 100, e.g. 607 – 588, or of 1000, e.g. 6070 – 4087 * add or subtract any pairs of decimal fractions each with units and tenths, e.g. 5.7 + 2.5, 6.3 – 4.8 | |
| Multiplication and Division Year 5 | * squares to 10 × 10 * division facts corresponding to tables up to 10 × 10, and the related unit fractions, e.g. 7 × 9 = 63 so one-ninth of 63 is 7 and one-seventh of 63 is 9 * percentage equivalents of one-half, one-quarter, three-quarters, tenths and hundredths * factor pairs to 100 | | * Multiply and divide two-digit numbers by 4 or 8, e.g. 26 × 4, 96 ÷ 8 * multiply two-digit numbers by 5 or 20, e.g. 320 × 5, 14 × 20 * multiply by 25 or 50, e.g. 48 × 25, 32 × 50 * double three-digit multiples of 10 to 500, e.g. 380 × 2, and find the corresponding halves, e.g. 760 ÷ 2 * find the remainder after dividing a two-digit number by a single-digit number, e.g. 27 ÷ 4 = 6 R 3 * multiply and divide whole numbers and decimals by 10, 100 or 1000, e.g. 4.3 × 10, 0.75 × 100, 25 ÷ 10, 673 ÷ 100, 74 ÷ 100 * multiply pairs of multiples of 10, e.g. 60 × 30, and a multiple of 100 by a single digit number, e.g. 900 × 8 * divide a multiple of 10 by a single-digit number (whole number answers) e.g. 80 ÷ 4, 270 ÷ 3 * find fractions of whole numbers or quantities, e.g. 23 of 27, 45 of 70 kg * find 50%, 25% or 10% of whole numbers or quantities, e.g. 25% of 20 kg, 10% of £8 * find factor pairs for numbers to 100, e.g. 30 has the factor pairs 1 × 30, 2 × 15, 3 × 10 and 5 × 6 | |
| Addition and Subtraction Year 6 | * addition and subtraction facts for multiples of 10 to 1000 and decimal numbers with one decimal place, e.g. 650 + = 930, – 1.4 = 2.5 * must be added to a decimal with units, tenths and hundredths to make the next whole number, e.g. 7.26 + = 8 | | * add or subtract pairs of decimals with units, tenths or hundredths, e.g. 0.7 + 3.38 * find doubles of decimals each with units and tenths, e.g. 1.6 + 1.6 * add near doubles of decimals, e.g. 2.5 + 2.6 * add or subtract a decimal with units and tenths, that is nearly a whole number, e.g. 4.3 + 2.9, 6.5 – 3.8 | |
| Multiplication and Division Year 6 | * squares to 12 × 12 * squares of the corresponding multiples of 10 * prime numbers less than 100 * equivalent fractions, decimals and percentages for hundredths, e.g. 35% is equivalent to 0.35 or 35100 | * multiply pairs of two-digit and single-digit numbers, e.g. 28 × 3 * divide a two-digit number by a single-digit number, e.g. 68 ÷ 4 * divide by 25 or 50, e.g. 480 ÷ 25, 3200 ÷ 50 * double decimals with units and tenths, e.g. double 7.6, and find the corresponding halves, e.g. half of 15.2 * multiply pairs of multiples of 10 and 100, e.g. 50 × 30, 600 × 20 * divide multiples of 100 by a multiple of 10 or 100 (whole number answers), e.g. 600 ÷ 20, 800 ÷ 400, 2100 ÷ 300 * multiply and divide two-digit decimals such as 0.8 × 7, 4.8 ÷ 6 * find 10% or multiples of 10%, of whole numbers and quantities, e.g. 30% of 50 ml, 40% of £30, 70% of 200 g * simplify fractions by cancelling * scale up and down using known facts, e.g. given that three oranges cost 24p, find the cost of four oranges * identify numbers with odd and even numbers of factors and no factor pairs other than 1 and themselves | |