**Year 3 Learning Outcomes**

**Autumn**

**Adding and subtracting across 10**

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| 1 | Pupils add 3 addends |
| 2 | Pupils use a ‘First.. Then… Now” story to add 3 addends |
| 3 | Pupils explain that addends can be added in any order |
| 4 | Pupils add 3 addends efficiently |
| 5 | Pupils add 3 addends efficiently by finding two addends that total 10 |
| 6 | Pupils add two numbers that bridge through 10 |
| 7 | Pupils subtract two numbers that bridge through 10 |

**Numbers to 1,000**

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| 1 | Pupils explain that 100 is composed of ten tens and one hundred ones |
| 2 | Pupils explain that 100 is composed of 50s 25s and 20s |
| 3 | Pupils use known facts to find multiples of ten that compose 100 |
| 4 | Pupils will use known facts to find a two-digit number and a one- or two-digit number that compose 100 |
| 5 | Pupils use known facts to find correct complements to 100 |
| 6 | Pupils use known facts to find complements to 100 accurately and efficiently |
| 7 | Pupils represent a three-digit number which is a multiple of ten using their numerals and names |
| 8 | Pupils use place value knowledge to write addition and subtraction equations |
| 9 | Pupils bridge 100 by adding or subtracting in multiples of ten |
| 10 | Pupils use knowledge of addition and subtraction of multiples of ten bridging the hundreds boundary to solve problems |
| 11 | Pupils count across and on from 100 |
| 12 | Pupils represent a three-digit number up to 199 in different ways |
| 13 | Pupils bridge 100 by adding or subtracting a single-digit number |
| 14 | Pupils find ten more or ten less than a given number |
| 15 | Pupils cross the hundreds boundary when adding and subtracting any two-digit multiple of ten |
| 16 | Pupils become familiar with a metre ruler (marked and unmarked intervals, 1 x 1m, 10 x 10cm, 100 x 1cm) |
| 17 | Pupils measure length and height from zero using whole metres and cm |
| 18 | Pupils measure length and height from zero using cm |
| 19 | Pupils convert between m and cm (include whole m to cm, cm to whole m and cm and vice versa) |
| 20 | Pupils become familiar with a ruler in relation to cm and mm (marked and unmarked intervals, knowing 1cm = 10mm) |
| 21 | Pupils measure length from zero using mm / whole cm and mm |
| 22 | Pupils convert between cm and mm (include whole cm to mm, mm to whole cm and mm and vice versa) |
| 23 | Pupils estimate a length/height, measure a length/height and record in a table |
| 24 | Pupils use knowledge of place value to represent a three-digit number in different ways |
| 25 | Pupils represent a three-digit number up to 1000 in different ways |
| 26 | Pupils use knowledge of the additive relationship to solve problems |
| 27 | Pupils count in hundreds and tens on a number line |
| 28 | Pupils identify the previous, next and nearest multiple of 100 on a number line for a three-digit multiples of ten |
| 29 | Pupils position three-digit numbers on number lines |
| 30 | Pupils estimate the position of three-digit numbers on unmarked number lines |
| 31 | Pupils compare one-, two- and three-digit numbers |
| 32 | Pupils compare two three-digit numbers |
| 33 | Pupils order sets of three-digit numbers |
| 34 | Pupils use known facts to add or subtract multiples of 100 within 1000 |
| 35 | Pupils write a three-digit multiple of 10 as a multiplication equation |
| 36 | Pupils partition three-digit numbers in different ways |
| 37 | Pupils use known facts to solve problems involving partitioning numbers |
| 38 | Pupils use known facts to add or subtract to/from multiples of 100 in tens |
| 39 | Pupils use known facts to add or subtract to/from multiples of 100 in ones |
| 40 | Pupils add/subtract multiples of ten bridging 100 |
| 41 | Pupils add/subtract to/from a three-digit number in ones bridging 100 |
| 42 | Pupils find 10 more or less across any hundreds boundary |
| 43 | Pupils use knowledge of adding or subtracting to/from three-digit numbers to solve problems |
| 44 | Pupils count forwards and backwards in multiples of 2, 20, 5, 50 and 25 |
| 45 | Pupils use knowledge of counting in multiples of 2, 20, 5, 50 and 25 to solve problems |
| 46 | Pupils become familiar with different weighing scales up to 1kg (intervals of 100g, 200g, 250g and 500g) |
| 47 | Pupils become familiar with the tools to measure volume and capacity up to 1 litre (intervals of 100ml, 200ml, 250ml and 500ml) |
| 48 | Pupils measure mass from zero up to 1kg using grams |
| 49 | Pupils measure mass from zero above 1kg using whole kg and grams |
| 50 | Pupils measure volume from zero up to 1 litre using ml |
| 51 | Pupils measure volume from zero above 1 litre using whole litres and ml |
| 52 | Pupils estimate mass in grams and volume in ml |
| 53 | Pupils estimate a mass/volume, measure a mass/volume and record in a table |

**Spring**

**Right Angles**

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| 1 | Pupils rotate two lines around a fixed point to make different sized angles |
| 2 | Pupils draw triangles and quadrilaterals and identify vertices |
| 3 | Pupils learn that a right angle is a ‘square corner’ and identify them in the environment |
| 4 | Pupils learn that a rectangle is a 4-sided polygon with four right angles |
| 5 | Pupils learn that a square is a rectangle in which the four sides are equal length |
| 6 | Pupils cut rectangles and squares on the diagonal and investigate the shapes they make |
| 7 | Pupils join four right angles at a point using different right-angled polygons |
| 8 | Pupils investigate and draw other polygons with right angles |

**Manipulating the additive relationship and securing mental calculation**

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| 1 | Pupils add 3 addends |
| 2 | Pupils add two 3-digit numbers using adjusting |
| 3 | Pupils add a pair of 2- or 3-digit numbers using redistribution |
| 4 | Pupils subtract a pair of 2- or 3-digit numbers, bridging a multiple of 10, using partitioning |
| 5 | Pupils subtract a pair of 2-digit numbers, crossing a ten or hundreds boundary, by finding the difference between them |
| 6 | Pupils subtract a pair of three-digit multiples of 10 within 1000 by finding the difference between them |
| 7 | Pupils evaluate the efficiency of strategies for subtracting from a 3-digit number |
| 8 | Pupils explain why the order of addition and subtraction steps in a multi-step problem can be chosen |
| 9 | Pupils accurately and efficiently solve multi-step addition and subtraction problems |
| 10 | Pupils understand and can explain that both addition and subtraction equations can be used to describe the same additive relationship (2-digit numbers) |
| 11 | Pupils understand and can explain that both addition and subtraction equations can be used to describe the same additive relationship (3-digit numbers) |
| 12 | Pupils use knowledge of the additive relationship to rearrange equations |
| 13 | Pupils use knowledge of the additive relationship to identify what is known and what is unknown in an equation |
| 14 | Pupils use knowledge of the additive relationship to rearrange equations before solving |

**Column addition**

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| 1 | Pupils identify the addends and the sum in column addition |
| 2 | Pupils use their knowledge of place value to correctly lay out column addition |
| 3 | Pupils add a pair of 2-digit numbers using column addition |
| 4 | Pupils add using column addition |
| 5 | Pupils use their knowledge of column addition to solve problems |
| 6 | Pupils add a pair of 2-digit numbers using column addition with regrouping in the ones column |
| 7 | Pupils add a pair of 2-digit numbers using column addition with regrouping in the tens column |
| 8 | Pupils add using column addition with regrouping |
| 9 | Pupils use known facts and strategies to accurately and efficiently calculate and check column addition |
| 10 | Pupils use their knowledge of column addition to solve problems |

**2,4,8 times tables**

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| 1 | Pupils represent counting in fours as the 4 times table |
| 2 | Pupils use knowledge of the 4 times table to solve problems |
| 3 | Pupils explain the relationship between adjacent multiples of four |
| 4 | Pupils explain the relationship between multiples of 2 and multiples of 4 |
| 5 | Pupils use knowledge of the relationships between the 2 and 4 times tables to solve problems |
| 6 | Pupils represent counting in eights as the 8 times table |
| 7 | Pupils explain the relationship between adjacent multiples of eight |
| 8 | Pupils explain the relationship between multiples of 4 and multiples of 8 |
| 9 | Pupils use knowledge of the relationships between the 4 and 8 times tables to solve problems |
| 10 | Pupils explain the relationship between multiples of 2, 4 and multiples of 8 |
| 11 | Pupils use knowledge of the relationships between the 2, 4 and 8 times tables to solve problems |
| 12 | Pupils use knowledge of the divisibility rules for divisors of 2 and 4 to solve problems |
| 13 | Pupils use knowledge of the divisibility rules for divisors of 8 to solve problems |
| 14 | Pupils scale known multiplication facts by 10 |
| 15 | Pupils scale division derived from multiplication facts by 10 |

**Column subtraction**

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| 1 | Pupils identify the minuend and the subtrahend in column subtraction |
| 2 | Pupils explain the column subtraction algorithm |
| 3 | Pupils subtract from a 2-digit number using column subtraction with exchanging from tens to ones |
| 4 | Pupils subtract from a 3-digit number using column subtraction with exchanging from hundreds to tens (1) |
| 5 | Pupils subtract from a 3-digit number using column subtraction with exchanging from hundreds to tens (2) |
| 6 | Pupils evaluate the efficiency of strategies for subtraction |

**Summer**

**Unit fractions**

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| 1 | Pupils identify a whole and the parts that make it up |
| 2 | Pupils explain why a part can only be defined when in relation to a whole |
| 3 | Pupils identify the number of equal or unequal parts in a whole |
| 4 | Pupils identify equal parts when they do not look the same (i) |
| 5 | Pupils explain the size of the part in relation to the whole |
| 6 | Pupils construct a whole when given a part and the number of parts |
| 7 | Pupils identify how many equal parts a whole has been divided into |
| 8 | Pupils use fraction notation to describe an equal part of the whole |
| 9 | Pupils represent a unit fractions in different ways |
| 10 | Pupils identify parts and wholes in different contexts (i) |
| 11 | Pupils identify parts and wholes in different contexts (ii) |
| 12 | Pupils identify equal parts when they do not look the same (ii) |
| 13 | Pupils compare and order unit fractions by looking at the denominator |
| 14 | Pupils identify when unit fractions cannot be compared |
| 15 | Pupils construct a whole when given one part and the fraction that it represents |
| 16 | Pupils use knowledge of the relationship between parts and wholes in unit fractions to solve problems |
| 17 | Pupils identify the whole, the number of equal parts and the size of each part as a unit fraction |
| 18 | Pupils quantify the number of items in each part and connect to the unit fraction operator |
| 19 | Pupils calculate the value of a part by using knowledge of division and division facts |
| 20 | Pupils calculate the value of a part by connecting knowledge of division and division facts with finding a fraction of a quantity |
| 21 | Pupils find fractions of quantities using knowledge of division facts with increasing fluency |

**Non unit fractions**

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| 1 | Pupils explain that non-unit fractions are composed of more than one unit fraction |
| 2 | Pupils identify non-unit fractions |
| 3 | Pupils identify the number of equal or unequal parts in a whole |
| 4 | Pupils use knowledge of non-unit fractions to solve problems |
| 5 | Pupils use knowledge of unit fractions to find one whole |
| 6 | Pupils place fractions between 0 and 1 on a numberline |
| 7 | Pupils use repeated addition of a unit fraction to form a non-unit fraction |
| 8 | Pupils use repeated addition of a unit fraction to form 1 |
| 9 | Pupils compare using knowledge of non-unit fractions equivalent to one |
| 10 | Pupils compare non-unit fractions with the same denominator |
| 11 | Pupils compare unit fractions |
| 12 | Pupils compare fractions with the same numerator |
| 13 | Pupils add up fractions with the same denominator |
| 14 | Pupils add on fractions with the same denominator |
| 15 | Pupils add fractions with the same denominator using a generalised rule |
| 16 | Pupils subtract fractions with the same denominator |
| 17 | Pupils identify the whole, the number of equal parts and the size of each part as a unit fraction |
| 18 | Pupils explain that addition and subtraction of fractions are inverse operations |
| 19 | Pupils subtract fractions from a whole by converting the whole to a fraction |
| 20 | Pupils represent a whole as a fraction in different ways and use this to solve problems involving subtraction |

**Parallel and perpendicular sides in polygons**

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| 1 | Pupils make compound shapes by joining two polygons in different ways (same parts, different whole) |
| 2 | Pupils investigate different ways of composing and decomposing a polygon (same whole, different parts) |
| 3 | Pupils draw polygons on isometric paper |
| 4 | Pupils use geostrips to investigate quadrilaterals with and without parallel and perpendicular sides |
| 5 | Pupils make and draw compound shapes with and without parallel and perpendicular sides |
| 6 | Pupils learn to extend lines and sides to identify parallel and perpendicular lines |
| 7 | Pupils make and draw triangles on circular geoboards |
| 8 | Pupils make and draw quadrilaterals on circular geoboards |
| 9 | Pupils draw shapes with given properties on a range of geometric grids |

**Time**

[**National curriculum**](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335158/PRIMARY_national_curriculum_-_Mathematics_220714.pdf)**statutory requirements (p21)**

Pupils should be taught to:

* tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
* estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o’clock, a.m./p.m., morning, afternoon, noon and midnight
* know the number of seconds in a minute and the number of days in each month, year and leap year
* compare durations of events [for example to calculate the time taken by particular events or tasks].

Notes and guidance (non-statutory)

* Pupils use both analogue and digital 12-hour clocks and record their times. In this way they become fluent in and prepared for using digital 24-hour clocks in Year 4