Maths progression of Knowledge and Skills: Creeting St Mary Primary

This document has been designed to show how we will cover all of the relevant Mathematics knowledge and skills across the school. The contexts in which each skill is taught is left to the discretion of the teacher, in collaboration with the Maths Leader. Each class follows a yearly overview which ensures coverage of the full curriculum.

The school follows its own Creeting St Mary CEVAP School Calculation Policy to ensure consistency of approach across the school.

Progression of Skills in Maths Year 1

Pupils should be taught to:
Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
Count, read and write numbers to 100 in numerals, count in different multiples including ones, twos, fives and tens
Given a number, identify one more and one less
Identify and represent numbers using concrete objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
Read and write numbers 1 to 20 in numerals and words read, write and interpret mathematical statements involving addition (+), subtraction
(-), and equals (=) signs
Represent and use number bonds and related subtraction facts within 20
Add and subtract one-digit and two-digit numbers to 20,including zero
Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 =□ – 9
Solve one step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
Recognise, find and name a half as one of two equal parts of an object, shape or quantity
Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
Compare, describe and solve practical
problems for:
Lengths and heights (e.g. long/short, longer/shorter, tall/short, double/half)
Mass or weight (e.g. heavy/light, heavier than, lighter than)
Capacity/volume (e.g. full/empty, more than, less than, half, half full, quarter)
Time (e.g. quicker, slower, earlier, later)
Measure and begin to record the following:
Lengths and heights
Mass/weight
Capacity and volume
Time (hours, minutes, seconds)
Recognise and know the value of different denominations of coins and notes
Sequence events in chronological order using language (e.g. before, after, next, first, today, tomorrow, morning, afternoon and evening)
Recognise and use the language relating to dates, including days of the week, weeks, months and years
Tell the time to the hour and half past the hour and draw the hands on a clock face

Progression of Skills in Maths Year 2

- Can count forward and backward in steps of 2, 3, and 5 from 0, and make jumps in tens from any number
- Know what each digit means in Tens and Unit numbers such as 24.
- Can find and show numbers on a number line.
- Can order numbers up to 100 and tell you which numbers are bigger or smaller.
- Can use the greater than, less than and equals signs in maths and know what they mean
- Can read and write numbers to 100 in digits and words
- Can solve problems using number facts such as 18+2=20 and what they know about the value of digits in a number.
- Can answer addition and subtraction maths problems using objects to help
- Can solve addition and subtraction problems and work out how to answer it on paper or show how they did it in their head by explaining step by step.
- Can answer problems with addition and subtraction using number facts to 20 and other number facts up to 100
- Can add and subtract numbers such as 34 - 8 or 52 + 5 using objects or pictures to help.
- Can add and subtract two-digit numbers using objects to help
- Can add or subtract numbers such as 42 - 22 or 56 + 29 using objects or pictures to help
- Can add or subtract three numbers such as 2 + 5 + 9.
- Know that adding to numbers together can be done in any order but subtracting numbers can only be done in one order
- Can check answers or solve missing number problems by doing an inverse check.
- Know 2 and 5 and 10 times tables by heart and can tell whether a number is odd or even
- Can use multiplication (×), division (÷) and equals (=) signs when writing out times tables
- Know that the multiplication of two numbers can be done in any order, but that the division of numbers can only be done in one order
- Can solve multiplication and division problems using times table facts and objects or pictures to help
- Can find 1/3 or 1/4 or 2/4 or 3/4 of a shape, length or set of objects
- Can write simple fractions sentences such as 1/2 of 6 = 3 and know that 2/4 equals 1/2.
- Can choose, use and measure the correct unit to measure length or height in any direction (m/cm); weight (kg/g); temperature (°C); or capacity (litres/ml).
- Can compare and order lengths, weight and capacity and then record the results using symbols for greater than, less than and equals.
- Know and use the symbols for pounds (£) and pence (p) and can add together different amounts of money, such as 253p and £2.
- Can find different combinations of coins that equal the same amounts of money.
- Can solve money problems such as how much change do I get from 50p if I buy an apple for 35p?
- Can put the time of events in order

- Can tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
- Know there are 60 minutes in an hour and 24 hours in a day.
- Can describe the properties of some 2-D shapes, including the number of sides they have and facts about their symmetry
- Can describe the properties of some 3-D shapes, including the number of edges, faces and vertices they have
- Can order combinations of mathematical objects in patterns and sequences
- Can describe position, direction and movement, including describing turns as quarter, half and three-quarter turns in clockwise and anti-clockwise directions
- Can read and construct picture graphs, tally charts and tables
- Can sort objects into categories and tell you how many objects are in each category and show which category has the most.

Progression of Skills in Maths Year 3

- Can count from 0 in steps of 4, 8, 50 and 100.
- Can find 10 or 100 more or less than a given number.
- Know what each digit means in Hundred Tens and Unit numbers such as 204
- Can compare and order numbers up to 1000.
- Can identify and estimate numbers in different units such as length (mm and m) and weight (g and kg).
- Read and write numbers up to 1000 in numerals and in words.
- Can estimate the answer to a question before working it out and then use inverse operations to check the answer when finished
- Can solve problems such as missing numbers (for example, 452 - ? = 122)
- Add & subtract:
    - 3 digit numbers & ones e.g 432 - 7.
    - 3 digit numbers & tens e.g 432 - 70
    - 3 digit numbers & hundreds e.g 432 - 300
- Know 3, 4 and 8 times tables
- Can multiplication and division questions of 2 digit by 1 digit such as 16 x 5 or 45 divided by 9.
- Can count up and down in tenths
- Can find a fraction (such as 2/5 or 3/4) of a set of objects
- Know how to find fractions of a number or shape - such as 3/5 ,1/4 or 4/6.
- Can show that some fractions have the same value - such as 1/2, 3/6 and 5/10 or 1/3 and 3/9.
- Can compare and order unit fractions, and fractions with the same denominators.

- Can add and subtract fractions with the same denominator (for example, 5/7 + 1/7 = 6/7).
- Can measure and record time passing in seconds, minutes and hours
- Can measure the perimeter of a 2-D shape such as a square or triangle
- Can work on money problems, adding and subtracting amounts of money and working out how much change is left.
- Can tell and write the time from a clock with numbers or Roman numerals or using 12 and 24 hour clocks.
- Can tell the time accurately to the nearest minute.
- Know and 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.
- Can draw 2-D shapes and make 3-D shapes using modelling materials
- Can recognise and describe 3-D shapes even when they have been turned about in different ways
- Know an angle is used to measure how far something turns.
- Can tell whether an angle is greater than or less than a right angle.
- Know when a line is horizontal or vertical or when two lines are perpendicular or parallel

Progression of Skills in Maths Year 4

- Can count in multiples of 6, 7, 9, 25 and 1000
- Can find 1000 more or less than a given number
- Can count backwards to negative numbers below zero.
- Know what each digit means in Thousands, Hundreds Tens and Unit numbers such as 2024.
- Can order and compare numbers above 1000
- Can makes estimates of a range of things
- Can round a number to the nearest 10, 100 or 1000.
- Can solve number and practical problems that involve rounding, ordering and exploring negative numbers
- Can read Roman numerals to 100 (I to C).
- Can add and subtract numbers with up to 4 digits using written methods
- Can estimate an answer and check they answer using inverse operations
- Can solve longer addition and subtraction problems and explain all the steps
- Know all times table up to the 12 times tables
- Know what the outcome is when multiplying a number by 1 or by zero
- Can multiply three numbers together, such as 3 x 6 x 9.
- Know what factor pairs are and how to multiply numbers in any order

- Can multiply a two-digit or a three-digit number by a one-digit number using written methods
- Can show in drawings why a number of fractions equal each other (such as 3/5 and 6/10) and are called equivalent fractions.
- Can count up and down in hundredths and know that a hundredth is made by dividing an object by one hundred and a tenth is made by dividing an object by ten.
- Can work out the fractions of numbers such as 4/5 of 25 or 7/10 of 700.
- Can add and subtract fractions with the same denominator.
- Can tell the decimal equivalents of any number of tenths or hundredths - such as 1/10 = 0.1 and 23/100 = 0.23.
- Know what the decimal equivalents are for 1/4, 1/2 and 3/4.
- Can round decimals with one decimal place to the nearest whole number.
- Can compare numbers such as 0.26 and 0.56 to say which is bigger or lower
- Can find the coordinates of a point on a grid
- Can move (translate) a point on a grid by a given set of jumps either up/down or left/right
- Can plot points using coordinates and join up the points to create a shape
- Can group 2-D shapes based on their properties
- Can find acute and obtuse angles and order a set of given angles by size
- Can find all the lines of symmetry in 2-D shapes
- Given one half of a symmetrical shape, can complete the other half based on the position of the line of symmetry
- Can take continuous and discrete data and create a bar chart or time graph
- Can solve comparison, sum and difference problems using information in bar charts, pictograms, tables and other graphs

Progression of Skills in Maths Year 5

- Can read, write, order and compare numbers to at least 1,000,000 and know the value of each digit
- Count forwards or backwards in steps 10, 100, 1000, 10000 or 100000 for any given number up to 1000000
- Can use negative numbers in my work and can count backwards and forwards to and from negative numbers.
- Can round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- Can solve number problems and practical problems that involve numbers up to 1000000, negative numbers & rounding
- Can read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
- Can add and subtract whole numbers with more than 4 digits using written methods such as column addition and subtraction
- Round numbers to check the accuracy of solutions.
- Can solve addition and subtraction multi-step problems, deciding which operations and methods to use and why

- Can identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- Know whether a number up to 100 is prime and recall prime numbers up to 19.
- Can multiply 4 digit numbers by a one- or two-digit number using a written method, including long multiplication
- Can multiply and divide numbers mentally, drawing upon times table knowledge and other number facts.
- Can divide 4 digit numbers by a one-digit number using the written method of short division and find the remainder.
- Can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- Know what square numbers and cube numbers are, including the notation for squared (2) and cubed (3).
- Can solve multiplication and division problems using knowledge of factors and multiples, squares and cubes.
- Can compare and order fractions whose denominators are all multiples of the same number
- Can name and write equivalent fractions of a given fraction, and show these in a drawing (including tenths and hundredths).
- Know what mixed numbers and improper fractions are and can convert from one to the other (for example, 2/5 + 4/5 = 6/5 = 1 1/5).
- Can add and subtract fractions with the same denominator and denominators that are multiples of the same number.
- Use diagrams and some fraction tools to multiply proper fractions (7/10) and mixed numbers (1 7/10) by whole numbers.
- Can read and write decimal numbers as fractions (for example, 0.71 = 71/100).
- Know what thousandths are and how to use them with tenths, hundredths and decimals.
- Can round decimals with two decimal places to the nearest whole number and to one decimal place.
- Can read, write, order and compare numbers with up to three decimal places
- Can solve problems involving numbers with up to three decimal places.
- Know what the per cent symbol is (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.
- Work on problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.
- Can convert between different units of metric measure
- Can change metric units to become imperial units such as inches, pounds and pints.
- Can calculate the perimeter of multi-shape shapes in centimetres and metres.
- Can calculate the area of rectangles in square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.
- Can estimate volume (for example, using 1 cm^3 blocks to build cuboids) and capacity (for example, using water).
- Can convert between the units of time.
- Can solve more difficult problems which involve units of measurement, decimal

numbers and scales.
- Can reflect or translate a shape on a grid.
- Can identify 3-D shapes, including cubes and other cuboids, from 2-D drawings.
- Know that angles are measured in degrees and can estimate and compare acute, obtuse and reflex angles.
- Can draw a given angle (such as 47°), and then measure them in degrees (°).
- Know one whole turn - or a set of angles all around a point - measure a total of 360°.
- Know that a straight line - or angles that add up to a straight line - measure 180°.
- Can identify multiples of 90° (right angles).
- Can find the missing lengths and angles of a rectangle.
- Know regular shapes have equal sides and angles and irregular shapes do not have equal sides and angles
- Can solve problems using a line graph to find the answers.
- Can find the information I need from a timetable or large table of data

Progression of Skills in Maths Year 6

- Can work with numbers up to 10 000 000 and know what each digit represents
- Can round a whole number as requested - for example to the nearest 10 or 1000 or 100000.
- Understand and use negative numbers, for example - working out how much is between -7 and +8
- Can solve number and practical problems that involve large numbers, rounding and negative numbers.
- Know how to use simple formulae such as n - 10 = 2
- Can create a sequence of numbers that follow a rule
- Can use a letter (such as n or x) to show a missing number - such as 10 - x = 5.
- Can find pairs of numbers that satisfy an equation with two unknowns
- Can list possible answers to missing numbers such as listing the possible answers of a and b in a + 6 = b – 10
- Can use common factors to simplify fractions and use common multiples to express fractions in the same denomination
- Can compare and order fractions, including fractions greater than 1
- Add and subtract fractions with different denominators and mixed numbers
- Can multiply fractions such as 1/4 × 1/2 = 1/8.
- Know how to divide proper fractions by whole numbers (for example, 1/3 ÷ 2 = 1/6).
- Can change a fraction into a decimal - for example, I can change 3/8 to 0.375 by dividing 1 by 8 and multiplying by 3.
- Can multiply and divide numbers by 10, 100 and 1000 and know what each digit means up to three decimal places.
- Can multiply numbers such as 1.45 by a one digit number - for example 1.45 x 7.
- Use written division methods in cases where the answer has up to two decimal places.
- Can solve problems which include rounding to a required accuracy such as the

nearest 10, 100 or 10000.

- Know the decimal value, percentage and fraction of a range of values - such as 0.5, 50 per cent and 1/2.
- Can multiply 4 digit numbers by a two-digit number (for example 4307 x 34) using the written method of long multiplication.
- Can divide 4 digit numbers by a two-digit number using the written method of long division - and tell you the remainder.
- Can choose to divide 4 digit numbers by a two-digit number using the written method of short division if this is possible.
- Can identify common factors, common multiples and prime numbers
- Know that addition, subtraction, multiplication and division should be carried out in a specific order when looking at problems
- Can solve addition and subtraction multi-step problems, deciding where to add or subtract.
- Can solve problems involving addition, subtraction, multiplication and division.
- Solve problems about different units of measures with three decimal places.
- Can convert measurements of length, weight, volume and time up to three decimal places in length (for example 0.345kg = 345g).
- Can convert between miles and kilometres.
- Know that even though shapes may have the same area, the perimeter may be different - or shapes with the same perimeter may have different areas.
- Can use formulae for area and volume of shapes.
- Can calculate the area of parallelograms and triangles
- Can work with the volume of cubes and cuboids using cubic centimetres (cm^3) and cubic metres (m^3), and other units too such as mm^3 and km^3.
- Can use the four quadrants in a coordinate grid.
- Can draw and translate shapes using coordinates or reflect a shape on the grid.
- Can accurately draw 2-D shapes using given dimensions and angles
- Can recognise, describe and build 3-D shapes, including making nets.
- Can classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.
- Know the parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
- Can work with angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
- Can interpret and construct pie charts and line graphs and use these to solve problems.
- Can calculate the mean as an average