Progression of skills for Mathematics

Declarative	Facts and Formulas	Relationships between facts
Procedural	Methods	Relationships between facts, procedures and missing facts.
Conditional	Strategies	Relationship between information, strategies and missing information. (Reasoning.)

Number and Place Value	EYFS	KS1		KS2			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting	To recite numbers past 5. To say one number for each item in order: 1,2,3,4,5. Counting throughout the session. To know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). To show 'finger numbers' up to 5. To verbally count beyond 20, recognising the pattern of the counting system. To verbally count from 1- 20 and beyond. Recognising the pattern of the counting system.	To count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. To identify one more and one less than a given number. To count in multiples of twos, fives and tens.	To count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.	To count from 0 in multiples of 4, 8, 50 and 100. To find 10 or 100 more of less than a given number.	To count in multiples of 6, 7, 9, 25 and 1000. To count backwards through zero to include negative numbers. To find 1000 more or less than a given number.	To count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. To interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.	To use negative numbers in context and calculate intervals across zero.

Understanding Place Value	To have a deep understanding of number to 10, including the composition of each number. To recall the composition of numbers 1-10 in different ways.		To recognise the place value of each digit in a two-digit number (tens, ones)	To recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	To recognise the place value of each digit in a four-digit number.	*To extend and apply their understanding of the number system to the decimal numbers and fractions that they have met so far.*	To use negative numbers in context and calculate intervals across zero.
Comparing and ordering numbers	To compare quantities using language: 'more than', 'fewer than'. To compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.	To use the language of: equal to, more than, less than (fewer), most, least	To compare and order numbers from 0 up to 100; use <, > and = signs.	To compare and order numbers up to 1000.	To order and compare numbers beyond 1000.	To order and compare numbers to at least 1 000 000 and determine the value of each digit.	To order and compare numbers up to 10 000 000 *accurately* and determine the value of each digit.
Identifying, representing and estimating number	Fast recognition of up to 3 objects, without having to count them individually. To subitise (recognise quantities without counting) up to 5. To instantly recognise quantities of objects for numbers up to 5.	To identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	To identify, represent and estimate numbers using different representations, including the number line.	To identify, represent and estimate numbers using different representations.	To identify, represent and estimate numbers using different representations.		
Reading and writing numbers	Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. To experiment with their own symbols and marks as well as numerals.	To read and write numbers from 1 to 20 in numerals and words. To count, read and write numbers to 100 in numerals.	To read and write numbers to at least 100 in numerals and in words.	To read and write numbers up to 1000 in numerals and in words.		To read and write numbers to at least 1 000 000 and determine the value of each digit.	To *say*, read and write, numbers up to 10 000 000 *accurately* and determine the value of each digit.

Rounding					To round any number to the nearest 10, 100 or 1000.	To round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.	To round any whole number to a required degree of accuracy.
Roman Numerals					To read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	To read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	
Solving Problems	To solve real world mathematical problems with numbers up to 5.		To use place value and number facts to solve problems.	To solve number problems and practical problems involving these ideas.	To solve number and practical problems that involve all of the above and with increasingly large positive numbers.	To solve number problems and practical problems that involve all of the above.	To solve number and practical problems that involve all of the above.

Addition and Subtraction	EYFS	KS1		KS2			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Mental and Written calculation	To experiment with their own symbols and marks as well as numerals.	To add and subtract one-digit and two-digit numbers to 20, including zero. To represent and use number bonds and related subtraction facts within 20. To read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.	To show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. To add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, add three one-digit numbers. To recall and use addition and subtraction facts to 20 and derive and use related facts up to 100. *(e.g. 10 – 7 = 3, 100 – 70 = 30)*	To add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens and a three-digit number and hundreds. To add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.	To add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate.	To add and subtract numbers mentally with increasingly large numbers. To add and subtract whole numbers with more than four digits, including using formal written methods of columnar addition and subtraction fluently.	To perform mental calculations, including with mixed operations and large numbers. To use their knowledge of the order of operations to carry out calculations involving the four operations.

Inverse Operations, Estimating and Checking Answers			To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problem	To estimate the answer to a calculation and use inverse operations to check answers.	To estimate and use inverse operations to check answers to a calculation.	To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	*To round answers to a specified degree of accuracy, for example, to the nearest 10, 20, 50 etc., but not to a specified number of significant figures.*
Solving Problems	To solve real world mathematical problems with numbers up to 5.	To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.	To solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods.	To solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction.	To solve addition and subtraction two-step problems in context, deciding which operations and methods to use and why.	To solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why.	

Multiplication and Division	EYFS	KS1		KS2			
	30 – 50 months 40 – 60 months Early Learning Goals	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and Division facts (including mental calculations)	Automatically recall number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. Instantly recall number bonds to 5 including some subtraction facts.	To count in multiples of twos, fives and tens.	To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.	To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	To recall multiplication and division facts for multiplication tables up to 12 × 12 *to aid fluency.*	To identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. To know and use the vocabulary of prime numbers, prime	To identify common factors, common multiples and prime numbers. To perform mental calculations, including with mixed operations and large numbers.
Multiplication and Division facts (including mental calculations)		*To make connections between arrays, number patterns, and counting in twos, fives and tens. Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.*	To show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental methods.	To recognise and use factor pairs and commutativity in mental calculations. To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.	factors and composite (non-prime) numbers. To establish whether a number up to 100 is prime and recall prime numbers up to 19. To recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}). To multiply and divide numbers mentally drawing upon known facts.	*To continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.*

Written Calculation			To calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.	To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.	To multiply two-digit and three-digit numbers by a one-digit number using the formal written layout.	To multiply numbers up to four digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers fluently. To divide numbers up to four digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context fluently. To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	To multiply multi-digit numbers up to four digits by a two-digit whole number using the formal written method of long multiplication. To divide numbers up to four digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
Written Calculation							To divide numbers up to four digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. Perform mental calculations, including with mixed operations and large numbers.

Solving Problems		To solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	To solve *simple* problems *in contexts, deciding which of the four operations to use and why.* These include missing number problems, involving multiplication and division, including *measuring* and positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	To solve *two-step* problems *in contexts* involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems, such as n objects are connected to m objects.	To solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. To solve problems, *including in missing number problems,* involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign *(to indicate equivalence).* To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To solve problems involving addition, subtraction, multiplication and division. To use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. To use their knowledge of the order of operations to carry out calculations involving the four operations.

Fractions, Decimals and Percentages	EYFS	KS1		KS2			
	30 – 50 months 40 – 60 months Early Learning Goals	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting				To count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by ten.	To count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	*To extend counting from year 4, using decimals and fractions including bridging zero, for example on a number line.*	

Recognising, finding, naming and comparing fractions.		To recognise, find and name a half as one of two equal parts of an object, shape or quantity. To recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	To recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of a length, number, shape, set of objects or quantity.	To recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. To compare and order unit fractions, and fractions with the same denominators.	*To make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities.* *To know that decimals and fractions are different ways of expressing numbers and proportions.* *To understand the relation between non-unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths.*	To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. To compare and order fractions whose denominators are all multiples of the same number.	To compare and order fractions, including fractions > 1.
Fraction calculations				To add and subtract fractions with the same denominator within one whole.	To add and subtract fractions with the same denominator.	To add and subtract fractions with the same denominator and denominators that are multiples of the same number.	To add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.

Fraction calculations						To recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number. To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	To multiply simple pairs of proper fractions, writing the answer in its simplest form. To divide proper fractions by whole numbers.

Equivalence			To write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence $\frac{2}{4}$ and $\frac{1}{2}$.	To recognise and show, using diagrams, equivalent fractions with small denominators.	To use factors and multiples to recognise equivalent fractions and simplify where appropriate. To recognise and show, using diagrams, families of common equivalent fractions. To recognise and write decimal equivalents of any number of tenths or hundredths. To recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$.	To read and write decimal numbers as fractions. To recognise and use thousandths and relate them to tenths, hundredths, decimal equivalents. To recognise the per cent symbol (%) 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.	To recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. To use common factors to simplify fractions; use common multiples to express fractions in the same denomination.

Comparing, ordering and rounding decimals					To learn decimal notation and the language associated with it, including in the context of measurements. To represent numbers with one or two decimal places in several ways, such as on number lines. To compare numbers, amounts and quantities with the same number of decimal places up to two decimal places. To round decimals with one decimal place to the nearest whole number.	To read, *say*, write, order and compare numbers with up to three decimal places. To round decimals with two decimal places to the nearest whole number and to one decimal place.	To identify the value of each digit in numbers given to three decimal places.
Decimal calculations					To find the effect of dividing a one or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.		To multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. To associate a fraction with division and calculate decimal fraction equivalents for a simple fraction. To multiply one-digit numbers with up to two decimal places by whole numbers *in practical contexts, such as measures and money.* To use written division methods in cases where the answer has up to two decimal places.

Solve Problems				To solve problems that involve all of the above.	To solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. To solve simple measure and money problems involving fractions and decimals to two decimal places.	To solve problems involving numbers up to three decimal places. To solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.	To solve problems which require answers to be rounded to specified degrees of accuracy. To solve problems involving the calculation of percentages and the use of percentages for comparison.

Measurement	EYFS	KS1		KS2			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Describe, Measure, Compare and Solve (All Strands)	To order two or three items by length or height. To order two items by weight or capacity. To use everyday languages to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and solve problems.	To compare, describe and solve practical problems for: lengths and heights, mass/weight, capacity and volume, time. To measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, time.	To choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. To compare and order lengths, mass, volume/capacity and record the results using >, < and =.	To measure, compare add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	To estimate, compare and calculate different measures, including money in pounds and pence.	To use all four operations to solve problems involving measure using decimal notation, including scaling.	To solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.
Converting units of measure					To convert between different units of measure *and build on their understanding of place value and decimal notation to record metric measures, including money.*	To convert between different units of metric measure. To understand and use approximate equivalences between metric units and common imperial units.	To use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. To convert between miles and kilometres.

Telling the Time	To use everyday language related to time. To order and sequence familiar events. To measure short periods of time in simple ways.	To sequence events in chronological order using language. To recognise and use language relating to dates, including days of the week, weeks, months and years. To tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	To read, tell and write the time to five minutes, including quarter past/to the hour/half hour and draw the hands on a clock face to show these times. To know the number of minutes in an hour and the number of hours in a day. To compare and sequence intervals of time.	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. To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours. To use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. To know the number of seconds in a minute and the number of days in each month, year and leap year. To compare durations of events.	To read, write and convert time between analogue and digital 12- and 24-hour clocks. To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	To solve problems involving converting between units of time.	

Money	To begin to use everyday language related to money.	To recognise and know the value of different denominations of coins and notes.	To recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. To find and use different combinations of coins that equal the same amounts of money. To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	To add and subtract amounts of money, *including mixed units*, to give change, using both £ and p in practical contexts.		To use all four operations to solve problems involving measure (length, mass, volume, money) using decimal notation including scaling.	

Perimeter, Area and Volume				To measure the perimeter of simple 2D shapes.	To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. To find the area of rectilinear shapes by counting squares.	To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. To calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2), and estimate the area of irregular shapes. To estimate volume.	To recognise that shapes with the same areas can have different perimeters and vice versa. To recognise when it is possible to use formulae for area and volume of shapes. To calculate the area of parallelograms and triangles. To calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units (for example, mm^3 and km^3).

Geometry	EYFS	KS1		KS2			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recognise 2D and 3D Shapes and their Properties	Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.	To recognise and name common 2D and 3D shapes.	To identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line. To identify and describe the properties of 3D shapes, including the number of edges, vertices and faces. To identify 2D shapes on the surface of 3D shapes.	To recognise 3D shapes in different orientations and describe them.	To identify lines of symmetry in 2D shapes presented in different orientations.	To identify 3D shapes, including cubes and other cuboids, from 2D representations.	To illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
Compare and Classify Shapes			To compare and sort common 2D and 3D shapes and everyday objects.		To compare and classify geometric shapes, including *different* quadrilaterals and triangles, based on their properties and sizes.	To distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	To compare and classify geometric shapes based on their properties and sizes

Drawing 2D Shapes and Constructing 3D Shapes				To identify horizontal and vertical lines and pairs of perpendicular and parallel lines. To draw 2D shapes and make 3D shapes using modelling materials.	To draw with increasing accuracy and develop mathematical reasoning to analyse shapes and their properties and confidently describe the relationships between them. To complete a simple symmetric figure with respect to a specific line of symmetry.		To draw 2D shapes using given dimensions and angles. To recognise, describe and build simple 3D shapes, including making nets.
Angles				To recognise angles as a property of shape or a description of a turn. To identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn To identify whether angles are greater than or less than a right angle.	To identify acute and obtuse angles and compare and order angles up to two right angles by size.	To know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles. To draw given angles and measure them in degrees. To identify: angles at a point and one whole turn (total 360°), angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) and other multiples of 90°. To use the properties of rectangles to deduce related facts and find missing lengths and angles.	To recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. To find unknown angles in any triangles, quadrilaterals, and regular polygons.

Position and Direction	EYFS	KS1		KS2			
	30 – 50 months 40 – 60 months Early Learning Goals	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Position, Direction and Movement	To use positional language. To describe their relative position such as 'behind' or 'next to'.	To describe position, direction and movement, including whole, half, quarter and three-quarter turns.	To use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).		To describe positions on a 2D grid as coordinates in the first quadrant. To plot specified points and draw sides to complete a given polygon. To describe movements between positions as translations of a given unit to the left/right and up/down.	To identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	To describe positions on the full coordinate grid (all four quadrants). To draw and translate simple shapes on the coordinate plane and reflect them in the axes.
Patterns	To use familiar objects and common shapes to create and recreate patterns and build models. To recognise, create and describe patterns.		To order and arrange combinations of mathematical objects and in patterns and sequences.				

Statistics	EYFS	KS1		KS2			
	30 – 50 months 40 – 60 months Early Learning Goals	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Interpreting data	To record, using marks that they can interpret and explain.		To interpret and construct simple pictograms, tally charts, block diagrams and simple tables.	To interpret and present data using bar charts, pictograms and tables.	To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	To complete, read and interpret information in tables, including timetables.	To interpret and construct pie charts and line graphs.
Solving problems			To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. To ask and answer questions about totalling and comparing categorical data.	To solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables.	To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	To solve comparison, sum and difference problems using information presented in a line graph.	To use pie charts and line graphs to solve problems. To calculate and interpret the mean as an average.

Raito and proportion And Algebra	EYFS	KS1		KS2			
	30 – 50 months 40 – 60 months Early Learning Goals	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Ratio and Proportion							To solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. To solve problems involving the calculation of percentages and the use of percentages for comparison. To solve problems involving similar shapes where the scale factor is known or can be found. To solve problems involving unequal *quantities*, sharing and grouping using knowledge of fractions and multiples.
Algebra							To introduce the language of algebra as a means for solving a variety of problems. To use simple formulae. To generate and describe linear number sequences. To express missing number problems algebraically. To find pairs of numbers that satisfy an equation with two unknowns. To enumerate possibilities of combinations of two variables.