Springfield School
Maths Progression of Skills

- Data Handling
- Geometry
- Measurement
- Money
- Number and Calculation
- Time

Devised by Springfield Teachers for assessment, target setting and planning.

Data Handling Throughout number work at all levels, pupils are collecting and then recording mathematical information. At Springfield School the collection of data is an extension of this work. We hope to develop organisational skills so that pupils can present any recorded information. Some pupils will extend their work to interpretation of tables and simple graphs.	
Progression Steps	**Description**
1	Pupils encounter tactile, olfactory, auditory and visual stimuli related to number/data collection e.g. exploring different fruit when creating a pictogram of favourite fruit.
2	Pupils experience tactile, olfactory, auditory and visual stimuli related to number/data collection.
3	Pupils respond to tactile, olfactory, auditory and visual stimuli related to number/data collection.
4	Pupils sort items e.g. putting paintbrushes in one pot and glue sticks in another.
5	Pupils categorise items e.g. transport, food and drink. Pupils sort by colour.
6	Pupils create groups of one and two e.g. making pairs of objects.
7	Pupils create groups to 3. Pupils record answers to simple questions using pictures e.g. the weather.
8	Pupils create groups to 5. Pupils categorise and sort symbols and photographs.
9	Pupils create groups to 10. Pupils recognise the odd one out in a group of objects or pictures, where this is obvious. Pupils create a pictogram.
10	Pupils recognise the odd one out in a group of objects or pictures, where there is a subtle difference. Pupils estimate how many in a group up to 10 e.g. how many biscuits on the plate. Pupils can count the total in each category.
11	Pupils estimate how many in a group up to 20. Pupils create a tally chart.
12	Pupils estimate how many in groups beyond 20. Pupils extract information from tally charts and pictograms. Pupils can sort categories by quantity. Pupils can collect their own data.
13	Pupils create bar charts and answer questions about the data. Pupils can sort objects by more than one category e.g. Carroll and Venn diagrams.
14	Pupils can suggest a way to display data that has been collected. Pupils can create and extract information from tables.
15	Pupils can answer comparison questions about bar charts and tally charts. Pupils can extract information from a simple line graph.
16	Pupils can answer two step questions about bar charts and tally charts Pupils can construct a simple line graph.
17	Pupils can understand and use simple scales in bar charts and pictograms. Pupils understand graphs which show change through time.
18	Pupils construct time graphs using continuous and discreet data. Pupils can answer two step and comparison questions about graphs, tables and charts.

Geometry: Shape and Space

Pupils are encouraged to experience, explore and learn about geometry from KS1 to KS4. Geometry includes shapes, space and measure and is part of our Maths theme curriculum in KS1 – KS3. Geometry is taught through IEPs, maths lessons, theme lessons, PE and through other learning activities such as playtime. Geometry is taught in a multisensory way through the school to ensure that all of the pupils' educational needs and learning styles are met.

Progression Steps	Description
1	Pupils encounter tactile, olfactory, auditory and visual stimuli related to shape and space. For example, textured shapes, shape songs, tracking lights and massage (body awareness).
2	Pupils experience tactile, olfactory, auditory and visual stimuli related to shape and space.
3	Pupils respond to tactile, olfactory, auditory and visual stimuli related to shape and space.
4	Pupils change the state of pliable material and dismantles parts of an object. Pupils handle shapes and explore their properties and function e.g. rolling a ball.
5	Pupils can sort by colour and object e.g. separating cars and bricks.
6	Pupils can match 2D shapes and explore properties of a range of materials e.g. rip, tear, twist and squash.
7	Pupils can identify the shape which is 'different' from a group of 2D shapes. Pupils copy a simple pattern e.g. clapping or coloured bricks.
8	Pupils can copy a 2-step pattern, for example, sheep, cow, sheep, cow. Pupils can identify simple 2D shapes (triangle, circle, square and rectangle).
9	Pupils can continue a 2-step pattern by identifying the next step. Pupils explore the properties of 2D shapes and identify a 'straight' and 'curved' edge.
10	Pupils identify properties of most 2D shapes (including pentagon and hexagon), for example, number of sides and corners. Pupils continue a 3-step pattern.
11	Pupils comparing properties of 2D shapes, identifying similarities and differences. Pupils explore 3D shapes and begin to sort these. Pupils continue a 3-step pattern with a repeat, e.g. blue, blue, red.
12	Pupils can create a simple pattern using a range of 2D shapes. Pupils can identify: cone, cube and sphere.
13	Pupils can identify properties of 3D shapes including faces, edges and vertices. Pupils can identify and describe pyramids, cylinders and prisms.
14	Pupils can sort 2D and 3D shapes according to properties e.g. has 3 faces or 4 straight edges. Pupils can create a pattern using 3D shapes.
15	Pupils can create and describe a range of patterns. Pupils can identify shapes in their environment and on a picture.
16	Pupils carry out an investigation to identify 3D shapes which: roll and slide.
17	Pupils can build a 3D shape, using an existing net. They can then describe the 2D shapes used to create the 3D shape. For example, squares to create a cube.

18	Pupils can find the line of symmetry in 2D shapes and can sort symmetrical and non-symmetrical shapes.

Geometry: Position and Direction Pupils are encouraged to experience, explore and learn about geometry from KS1 to KS4. Geometry includes shapes, space and measure and is part of our Maths theme curriculum in KS1 – KS3. Geometry is taught through IEPs, maths lessons, theme lessons, PE and through other learning activities such as playtime. Geometry is taught in a multisensory way through the school to ensure that all of the pupils' educational needs and learning styles are met.	
Progression Steps	**Description**
1	Pupils encounter tactile, olfactory, auditory and visual stimuli related to position and direction. For example, massage on the body (crossing midline), tracking movement of lights, movement of body, gross motor movement across textured material and tactile object moving up and down arms.
2	Pupils experience tactile, olfactory, auditory and visual stimuli related to position and direction.
3	Pupils respond to tactile, olfactory, auditory and visual stimuli related to position and direction.
4	Pupils build with blocks, construct using solid objects e.g. stacking cups and show understanding of object permanence.
5	Pupils understand the vocabulary 'stop', 'go', 'on' and 'off' and follow instructions containing these key words.
6	Pupils understand the vocabulary 'in', 'out' and 'under' and follow instructions containing these key words. Pupils search and look towards an object which is 'next to' them.
7	Pupils understand the vocabulary 'fast' and 'slow' and follow instructions containing these key words. For example, moving cars fast and slow or stop and go in PE.
8	Pupils respond to 'forwards' and 'backwards' instructions, either by moving or using objects.
9	Pupils can describe the location of objects, using simple prepositional language (this can be through the use of symbols/signing/speech etc.)
10	Pupils can give details of the position of an object in a picture and can copy a simple model.
11	Pupils can describe the position of 2 objects in relation to each other, for example, the bucket is next to the cup
12	Pupils can give directions to others or program a robot using specific language: 'forwards', 'backwards', 'left' and 'right'.
13	Pupils can describe the movement of objects or themselves, e.g. describing a beebots directions using symbols.
14	Pupils understand the meaning of a whole turn and can demonstrate this through turning objects and themselves.
15	Pupils understanding the meaning of a half turn and a quarter turn, they can demonstrate this through the use of objects, clocks and turning themselves.

16	Pupils understand the vocabulary 'clockwise' and 'anticlockwise' when moving themselves, objects and identifying the movement of the hands on a clock.
17	Pupils describe the position of an object on a simple map and create a set of directional instructions to reach a target e.g. a coloured grid.
18	Pupils can identify right angles by using an object to fit into an existing angle. Pupils recognise that rectangles and squares have right angles.
19	Pupils relate right angles to a quarter turn and can identify this on a clock face. Pupils state how many right angles are in a half turn and whole turn.
20	Pupils can give position of objects on a 2D grid.
21	Pupils can plot co-ordinates on a 2D grid.

Measurement The theme of measurement will involve experiencing, describing and comparing objects through practical activities to help develop pupils' understanding of key vocabulary and concepts, including length, size, height, weight and volume. Once they have secured this knowledge pupils will be taught about standard and non-standard measurements, as well as, being encouraged to use their knowledge in a variety of everyday situations, for example, cooking.	
Level	**Description**
1	Pupils encounter tactile, olfactory, auditory and visual stimuli related to measurement.
2	Pupils experience tactile, olfactory, auditory and visual stimuli related to measurement.
3	Pupils respond to tactile, olfactory, auditory and visual stimuli related to measurement.
4	Pupils explore capacity through filing/emptying containers and they explore weight through lifting and carrying objects. Pupils are also introduced to temperature, size, height and length through exploratory activities.
5	Pupils understand the vocabulary 'full' and 'empty' and can label containers.
6	Pupils can identify 'hot', 'cold', 'big' and 'small' objects from a choice of two, where the difference is great.
7	Pupils can sort big and small objects into groups. Pupils can identify an objects container, based on size and shape.
8	Pupils use the vocabulary 'big' and 'small' and can identify 'big' and 'small' objects from a large selection and where the difference is not great.
9	Pupils understand the terms 'heavy' and 'light' and can identify objects which are 'heavy' and 'light' from a choice of two. Pupils understand the terms 'long' and 'short' and can identify objects using this vocabulary. They order up to 3 objects by length, height and size.
10	Pupils can order a large selection of objects by length, size and height. Pupils can name items which are 'hot' and 'cold'. Pupils explore the use of balance scales.
11	Pupils use the vocabulary: heavy, light, long, short, tall, big, small, full and empty. Pupils can find an object 'heavier', 'lighter', 'hotter', 'colder', 'longer' or 'shorter' than another. Pupils can identify containers which hold the most/least (using vocabulary appropriate to them).
12	Pupils can measure objects using non-standard units e.g. cubes or hand spans.
13	Pupils can balance scales to compare objects and to measure objects using non-standard units. Pupils can measure capacity using non-standard units e.g. cubes or cups of water. Pupils can order a large selection of objects by mass, volume and temperature.
14	Pupils understand the purpose of standard measuring tools, such as a ruler, scales and thermometer.
15	Pupils compare and describe length, size, height, mass, volume and temperature. Pupils can use standard measuring tools, with support to read the measurement.
16	Pupils can use standard units to measure mass (grams and kilograms), length (centimetres and metres), temperature (degrees) and measure capacity

	(millilitres and litres). Pupils can record and read answers using standard units e.g. reading a measurement on a packet or weighing an object and writing the answer using their preferred method of written communication.
17	Pupils use standard units in practical activities and read scales to the nearest division e.g. measuring 100g of flour when cooking. Pupils know 1kilogram = 1000grams, 1 litre = 1000 millimetres and 1 metre=100centimetres.
18	Pupils recognise abbreviations for metric units e.g. cm=centimetres. Pupils use mixed units e.g. 1m and 25cm.
19	Pupils can solve simple problems using temperature, capacity, mass and length. For example, adding and subtracting measurements.

Money

Pupils are encouraged to experience, explore and learn about money from KS1 to KS4. As a school we believe that learning about money is a valuable life skill for our pupils to help with their independence during their school life and beyond. Money work is part of our Maths theme curriculum in KS1 – KS3 and becomes a priority within the KS4 maths curriculum. Money is taught through IEPs, maths lessons, food technology and daily living skills such as paying for lunch in the restaurant. Money is taught in a multisensory way through the school to ensure that all of the pupils' educational needs and learning styles are met.

Level	Description
1	Pupils encounter tactile, olfactory, auditory and visual stimuli related to money.
2	Pupils experience tactile, olfactory, auditory and visual stimuli related to money.
3	Pupils respond to tactile, olfactory, auditory and visual stimuli related to money.
4	Pupils handle two objects, experience 1:1 correspondence and become aware of coins, e.g. handling 2 of the same coins. Pupils can sort coins by colour
5	Pupils understand 'one', 'lots', 'same' and 'more'. They may begin to join counting activities e.g. touching coins one by one. Pupils can sort coins by shape/type.
6	Pupils are able to match sets of coins.
7	Pupils can make group of coins to 3 e.g. 1ps. Pupils can exchange a coin for an item. Pupils can recognise and find 1p's and 2p's
8	Pupils can make a group of coins to 5 e.g. 1ps. Pupils can recognise and find 1p's, 2p's and 5p's
9	Pupils can make a group of coins to 10 e.g. 1ps. Pupils can identify smaller/larger groups (using vocabulary appropriate to them). Pupils can recognise and name 1p's, 2p's, 5p's, 10p's, 20p's and 50p's
10	Pupils can make a group of coins to 20p e.g. 1ps. Pupils can recognise and name all coins. Can find the correct coins to pay for an item up to 20p.
11	Pupils can make amounts up to 30p using 1p, 2p and 10p coins. Can find the correct coins to pay for an item up to 30p.
12	Pupils can make amounts up to 50p using 1p, 2p, 10p and 5p coins. Can find the correct coins to pay for an item up to 50p.
13	Pupils can make amounts up to £1 using a 1p, 2p, 10p, 5p, 20p and 50p. Can find the correct coins to pay for an item up to £1.
14	Pupils can make amounts up to £5 using a 1p, 2p, 10p, 5p, 20p, 50p and £1. Can find the correct coins to pay for an item up to £5. Pupils can name and find all notes. Pupils can read prices involving p Pupils can add 2 prices together involving 1-digit pence prices. Pupils can work out change from 50p
15	Pupils can make amounts up to £10 using a 1p, 2p, 10p, 5p, 20p, 50p and £1. Can find the correct coins to pay for an item up to £10. Pupils can read prices involving £ and p Pupils can add 2 prices together involving 2-digit pence prices. Can find the cheaper price from 2. Pupils can work out change from £1

16	Pupils can make amounts up to £20 using a 1p, 2p, 10p, 5p, 20p, 50p and £1. Can find the correct coins to pay for an item up to £20. Pupils can add 2 prices together involving £ and p prices. Pupils can work out change from £5 Pupils can work out if they have enough money to pay for an item.
17	Pupils can add 2 prices together and work out the correct money to pay for an item. Pupils can work out if they have enough money to pay for 2 items. Pupils can work out change from £10

Number

The use of multi-sensory methods supports pupils to develop their understanding of number. Number focuses on developing understanding of value through the use of key Mathematical vocabulary, as well as, Mathematical resources and stimuli. Pupils will be given the opportunity to encounter, experience, explore and respond to quantities, sequences and patterns related to number. They will then use their knowledge and skills to count and learn number sequences and will be introduced to calculations. To support pupils to complete complex calculations they will be taught how to use a calculator. Pupils will also develop problem solving skills to help them in everyday situations.

Progression Steps	Description
1	Pupils encounter tactile, olfactory, auditory and visual stimuli related to number.
2	Pupils experience tactile, olfactory, auditory and visual stimuli related to number.
3	Pupils respond to tactile, olfactory, auditory and visual stimuli related to number.
4	Pupils handle two objects, experience 1:1 correspondence and become aware of counting activities, e.g. tracking counting.
5	Pupils understand 'one', 'lots', 'same' and 'more'. They may begin to join counting activities e.g. touching objects one by one.
6	Pupils recognise value to 2 and are able to match sets of objects.
7	Pupils recognise value to 3.
8	Pupils recognise value to 5.
9	Pupils recognise value to 10. Pupils can identify smaller/larger groups (using vocabulary appropriate to them). Pupils begin to use numerals to record.
10	Pupils recognise value to 20. Pupils consistently use numerals to record.
11	Pupils recognise value to 50. Pupils show an understanding of number lines and can identify missing numbers.
12	Pupils recognise value to 100 and understand 'zero'. Pupils move backwards and forwards on a number line. Pupils use number lines to 50.
13	Pupils recognise value to 200. Pupils use number lines and number squares to 100.
14	Pupils recognise value to 500. Pupils understand place value of two-digit numbers.
15	Pupils recognise value to 1000. Pupils understand place value to three-digit numbers and partition two-digit numbers.
16	Pupils partition three-digit numbers and understand 0 as a place holder.
17	Pupils understand place value of four-digit numbers. Pupils understand negative numbers. Pupils identify the operation to use to solve a problem and use place value and number facts. Pupils round numbers to the nearest 10, 100 or 1000.
18	Pupils understand number lines with positive and negative numbers. Pupils partition four-digit numbers.

Ordinal Numbers	
Level	**Description**
9	Pupils recognise ordinal numbers 1st-3rd and show an understanding of 'last'.
10	Pupils recognise ordinal numbers to 10th and use ordinal numbers 1st-3rd and 'last'.
11	Pupils use ordinal numbers to 10th.

Addition	
Level	**Description**
6	Pupils complete 1:1 matching and can match equal sets.
7	Pupils can 'add one' to a group of up to 3.
8	Pupils can 'add one' to a group of up to 5.
9	Pupils can 'add one' to a group of up to 10.
10	Pupils understand that addition means combining 2 groups and can add with objects up to 10.
11	Pupils can add with objects to 20.
12	Pupils understand the signs '+' and '=' and can complete addition calculations with two single digit numbers.
13	Pupils add multiples of 10 to a single digit number. Pupils begin to answer simple addition problems using actual or pictorial resources. Pupils use number lines or number squares to support addition.
14	Pupils add a two-digit number to a one-digit number and solve missing number problems.
15	Pupils add two-digit numbers and three one-digit numbers. Pupils complete columnar addition and/or use a calculator to complete these calculations.
16	Pupils add three-digit numbers using columnar addition and/or a calculator.
17	Pupils add up to four-digit numbers using columnar addition and/or a calculator.

Subtraction	
Level	**Description**
7	Pupils 'take away one' with objects up to 3.
8	Pupils 'take away one' with objects up to 5.
9	Pupils 'take away one' with objects up to 10.
10	Pupils understand subtraction is taking away from a group and can take away a given amount from a group of up to 5 objects.
11	Pupils take away a given amount from a group of up to 10 objects.
12	Pupils understand the signs '-' and '=' and can complete subtraction calculations with single digit numbers.
13	Pupils begin to answer simple subtraction problems using actual or pictorial resources. Pupils use number lines/number squares to support subtraction.
14	Pupils subtract one-digit numbers from two-digit numbers and solve missing number problems.
15	Pupils subtract two-digit numbers from two-digit numbers and complete columnar subtraction and/or use a calculator to complete these calculations.
16	Pupils subtract three-digit numbers using columnar subtraction and /or a calculator.

17	Pupils subtract four-digit numbers using columnar subtraction and /or a calculator.

Multiplication	
Level	**Description**
9	Pupils can make groups of twos and threes.
10	Pupils can double numbers to 5.
11	Pupils can double numbers to 10 and count in 2s, 5s and 10s.
12	Pupils recognise patterns in an array and can double numbers to 20.
13	Pupils can count in 2s, 5s and 10s and can recall the 2 times table. Pupils understand and use the 'x' sign.
14	Pupils can count in 100s and recall the 5- and 10-times tables.
15	Pupils can count in 3s, 4s, 6s, 7s, 8s and 9s and recall multiples of 10 and 100.
16	Pupils recall multiplication and division facts of the times tables (1-12).
17	Pupils solve multiplication mentally and use multiplication to solve simple problems. Pupils may also use a calculator to solve multiplication calculations.
18	Pupils multiply two- and three-digit numbers by a one-digit number using the columnar method and/or using a calculator.

Division	
Level	**Description**
9	Pupils share objects, using visual clues.
10	Pupils share objects into equal groups, using visual clues.
11	Pupils share objects into equal groups and can halve numbers to 10.
12	Pupils halve numbers to 20 and have a secure understanding of 'half'.
13	Pupils have an understanding of 'quarters.
14	Pupils understand the concept of division and can find ½ and ¼ of a set.
15	Pupils understand and use the division sign. Pupils show understanding of 1/3, 1/5, 1/6 and 1/8.
16	Pupils recall division facts up to the 12 times table and show an understanding of fractions with numerators above 1.
17	Pupils use division to solve simple problems and compare unit fractions. Pupils may also use a calculator to solve division calculations.
18	Pupils divide two-digit numbers by a one-digit number and use a formal written method and/or a calculator to complete these calculations. Pupils can find a unit fraction of a quantity.

Time

Developing an understanding of time begins early at Springfield school. Pupils are learning about the passage of time through the daily routine and repeated sequences of individual activities. This can develop into the use of language describing time and clocks and calendars defining the time. The use of both analogue and digital clocks is seen as vital so that pupils may develop into using time in practical situations. A difficult area of time is measuring as a stronger understanding of seconds, minutes and hours is required.

	The concept of time
1	Pupils encounter tactile, olfactory, auditory and visual stimuli related to time.
2	Pupils experience tactile, olfactory, auditory and visual stimuli related to time.
3	Pupils respond to tactile, olfactory, auditory and visual stimuli related to time.
4	• Shows awareness of change/time passing
5	• Shows Awareness of routine - at a range of timescales • Daily routine – Good morning routine
6	• Awareness of before and after events
7	• Sequences events within a routine
8	• Sequences events within one day

Maths – Using Clocks

	Using Analogue and Digital Clocks
8	• Match O'clock Times • Identify the O'clock times amongst a choice of times • Discriminate between O'clock times and other times
9	• Read O'clock times in isolation • Discriminate between half past times and other times • Identify half past times amongst a choice including other times
10	• Read Half Past times • Discriminate between Quarter past times and other times • Identify quarter past times amongst a choice including other times
11	• Read Quarter Past times • Discriminate between quarter to times and other times • Identify quarter to times amongst a choice including other times
12	• Read quarter to times • Identify times at 5-minute intervals past the hour
13	• Read times to 5-minute intervals past the hour • Identify times at 5-minute intervals to the hour
14	• Read times at 5-minute intervals to the hour
15	• Read times at 1-minute intervals
16	• Read and identify times in practical situations – e.g. TV schedules
17	• Make calculations using times in practical situations – e.g. bus timetables

	Days, Months and Years
4	• Knows some of the correct words for days and months
5	• Recalls days in order by rote • Knows that January is the first month • Knows that December is the last month
6	• Recalls months in order by rote
7	• Places symbols or words of days in order
8	• Places symbols or words of months in correct order
9	• Can recall events that happen on specific days of the week • Can recall events that happen in certain months
10	• Can state what day it was yesterday and today
11	• Can state month before or after a given month
12	• Reading a single month on a calendar
13	• Reading a whole calendar

	Measuring Time
5	• Use a sand timer
6	• Uses an egg timer • Starts and stops a simple stop watch
13	• Knows that 60 second make a minute • Knows that seconds are short amounts of time
14	• Reads a stop watch
15	• Uses a stopwatch or timing device