Progression and Support Document
Early Level – Pathway 1

Rationale

This series of Progression and Support documents, including Pathways and Bundling Advice provides a progression of skills through a level. Regular reinforcement of concepts and promotion of Numeracy Across Learning is encouraged. The Pathways are not intended to be prescriptive or restrictive. Practitioners should identify when opportunities occur within contexts across the curriculum and plan for this to demonstrate relevance. The overall aim is to provide a shared standard of expectations and to ensure progression and depth within planning.

The Progression and Support documents focus on the skills required to achieve concepts within an outcome and detail the mental agility strategies associated with the learning within each experience and outcome. Suggestions for formative assessment and summative assessment are provided and some possible resources are listed, but this list is by no means exhaustive.

It is hoped that these Progression and Support documents provide a clear framework and the necessary support so that practitioners can feel confident in planning engaging, well-paced and suitably challenging learning experiences, which involve a variety of methodologies. Ultimately our goal is to raise attainment for all our learners and these documents are just one part of that journey. All our learners should be given opportunities that will allow them to become confident and numerate, build their skills in a variety of contexts and allow them to reach their own targeted positive destinations.

Many of the documents consulted in the process of creating the Support and Progression documents can be found on the Education Scotland website. These include:

- Numeracy and Mathematics: Experiences and Outcomes
- Mathematics: Principles and Practice
- Numeracy Across Learning: Principles and Practice
- National Numeracy and Mathematics Progression Framework
- Numeracy and Mathematics Benchmarks
- CfE Statement for Practitioners

In addition to this, current planning documents that are being used across the authority, progression documents from other local authorities across Scotland and a variety of resources were consulted.

How to Use Progression and Support Documents to Support Planning

The following annotation explains how the Progression and Support Documents can be used to support planning.

The Experience and Outcome.

The benchmark(s) to be achieved by the **end** of the level.

Topic & CfE Outcome - Multiples, factors and primes Having explored the patterns and relationships in multiplication and division, I can investigate and identify the multiples and factors of numbers. **MTH 2-05a**			
Benchmarks - Identifies multiples and factors of whole numbers and applies knowledge and understanding of these when solving relevant problems in number, money and measurement.			
Mental Strategies	**Skills**	**Possible Resources**	**Assessment**
Recall Recite and recall all multiplication facts and corresponding division facts Recognise the link between 2, 4 and 8 times tables Recognise the link between 3, 6 and 9 times tables Recognise the link between 2, 5 and 10 times tables	**I can use the term 'multiple' correctly** **I can recognise number patterns involving multiples of the 2 – 10 times tables, e.g.** **2, 4, 6, 8…** **5, 10, 15…** • I can recite my 2, 4 and 8 times-tables • I can recall individual multiplication and division facts in my 2, 4 and 8 times-tables • I can recite my 5 and 10 times-tables • I can recall individual multiplication and division facts in my 5 and 10 times-table • I can recite my 3, 6 and 9 times-tables • I can recall individual multiplication and division facts in my 3, 6 and 9 times-tables • I can recite the 7 times-table • I can use the link between times-tables to help me recall my facts, e.g. doubling and halving • I can find the lowest common multiple of up to 3 numbers	HAM Teaching Cards MD 1.7a, MD 1.7b, MD 1.7c (Revision) TJ Level C Ch 13 Ex 2 pg 152 TJ 2a Ch 17 Ex 1 pgs 168 – 169 http://www.mathsisfun.com/numbers/math-trainer-multiply.html http://www.topmarks.co.uk/Flash.aspx?f=carrollv7	**Write** HAM Question Bank MD 1.7a, MD 1.7b & MD 1.7c **Do** Call out multiples of 2, 4 or 8 and, for each, ask children to write a times-tables fact with that answer on their mini-whiteboards. Discuss the different facts written for each number, e.g. 24 could be 3 × 8, 6 × 4, etc. Encourage children to explain how and why these facts are related. i.e. that multiplication is commutative. **Do** One child sits on a chair and the others line up facing the child's on the chair. Call out a multiple, e.g.24, the first to respond with a correct fact using the multiple wins the seat.

Mental strategies that are associated with the learning taking place in the Experience and Outcome.

This column lists the skills that are to be achieved in this section of the Experience and Outcome. The **bold type** is the overall skills that should be developed and the bullet points are the skills broken down further.

Some possible scheme based resources that could be used. This is not exhaustive. Best practice is to use a **Concrete – Pictorial – Abstract** approach that will involve a variety of resources and methodologies.

Suggested formative and summative assessments that could be used. Again, this is not exhaustive and assessment should take place when relevant and in the most appropriate style for the learner.

Renfrewshire Council
Numeracy and Mathematics Progression and Support - Early Level Pathway 1

Topic & CfE Outcome - Estimation and rounding
I am developing a sense of size and amount by observing, exploring, using and communicating with others about things in the world around me
MNU 0-01a

Benchmarks
- Recognises the number of objects in a group, without counting (subitising) and uses this information to estimate the number of objects in other groups.
- Checks estimates by counting.
- Demonstrates skills of estimation in the contexts of number and measure using relevant vocabulary, including less than, longer than, more than and the same.

Mental Strategies	Skills	Possible Resources	Assessment
Recall Use vocabulary such as bigger, smaller, less than, more than and 'the same' to compare groups of, or individual items e.g. objects, pictures, sounds etc. **Skills** (mentally, with jottings and materials if needed) Sort and create groups of objects by size, number or other properties Ability to look at two or more amounts and, without counting, state which has more or less	**I can compare and talk about amounts of objects** **I can create marks and pictures to represent numbers and amounts** • I can match pairs of objects and recognise and talk about what makes 'two' • I can talk about amounts in play • I am beginning to use a range of materials when making marks and pictures about numbers and amounts • I can discuss what the marks and pictures mean	HAM Teaching Cards NC 0.5, NC 0.6 (Select activities to the appropriate level) S.E.A.L. Approaches as per Emergent planner	**Do** Give the children a load of 'washing' to sort in the house corner. Make sure you include items that can pair such as gloves, mittens, socks etc. **Say, Make, Write and Do** Provide the children with a lady-bird template. Put different numbers of spots on the ladybirds. Work with children to sort them out so all the two-spot ladybirds are together etc. **Do** Provide the children with a selection of dot pattern cards and ask the children to match the cards. This could also be played as a 'Snap' style game. **Write** When children are about to visit another class or group, ask them to write a 'letter' to the adult explaining how many children will be in their group. **Say, Write and Do** In the play areas in the playroom, ensure that there are opportunities for the children to write down numbers, i.e. taking orders in a shop or café, answering phones and taking phone numbers etc. Observe this play.

Topic & CfE Outcome - Number and number processes - including addition, subtraction, multiplication, division and negative numbers
I have explored numbers, understanding that they represent quantities, and I can use them to count, create sequences and describe order.
MNU 0-02a

Benchmarks
- Explains that zero means there is none of a particular quantity and is represented by the numeral 0.
- Recalls the number sequence forwards within the range 0 - 30, from any given number.
- Recalls the number sequence backwards from 20.
- Identifies and recognises numbers from 0 to 20.
- Orders all numbers forwards and backwards within the range 0 - 20.
- Identifies the number before, the number after and missing numbers in a sequence within 20.
- Uses one-to-one correspondence to count a given number of objects to 20.
- Identifies 'how many?' in regular dot patterns, for example, arrays, five frames, ten frames, dice and irregular dot patterns, without having to count (subitising).
- Groups items recognising that the appearance of the group has no effect on the overall total (conservation of number).
- Uses ordinal numbers in real life contexts, for example, 'I am third in the line'.
- Uses the language of before, after and in-between.

Mental Strategies	Skills	Possible Resources	Assessment
Recall Number songs/rhymes/stories, e.g. 1, 2, 3, 4, 5 once I caught a fish alive, 1, 2 buckle my shoe, 10 little Indians etc Numbers in the environment, i.e. signs around the nursery or school Understand the language of daily routines that are related to number, e.g. registration, lunches, birthday Understand signs or instructions, e.g. 4 can play, one at a time, with a partner etc	**I can notice and talk about numbers that are around and are special** **I can join in actively with counting rhymes and songs** • I can show an awareness of and start to talk about numbers in the environment, recognising numbers which have personal meaning, talking about larger numbers in context • I can join in with counting on and back in rhymes and songs • I can touch, count and move objects being counted in rhyme • I can act out own and others' number rhymes	HAM Teaching Cards NC 0.1, NC 0.2 S.E.A.L. Approaches as per Emergent planner	**Say and Do** Use paint or chalk to make big numbers on the wall or ground outside. Children can trace over these with water or copy them, or try to obliterate them. Discussion and instruction such as, Can you tell me the number you are copying? Find and rub out the number 1 etc should be used as well as giving the children freedom to do with the numbers what they choose. **Say and Do** Children choose a favourite number to press into rolled-out dough. Cookie cutters or wooden numbers are good for this. Staff can discuss the numbers that have been chosen in the group and discuss them with the children. Why did you pick that number? Is that number the same as your age? **Say and Do** Display five pictures of the jellyfish, frogs, compare bears etc. from the water tray on nearby shelving and involve children in placing the toys back on the pictures, matching one to a picture, to check whether any are missing.

Topic & CfE Outcome - Number and number processes - including addition, subtraction, multiplication, division and negative numbers
I use practical materials and can 'count on and back' to help me to understand addition and subtraction, recording my ideas and solutions in different ways. **MNU 0-03a**

Benchmarks
- Counts on and back in ones to add and subtract.
- Doubles numbers to a total of 10 mentally.
- When counting objects, understands that the number name of the last object counted is the name given to the total number of objects in the group.

Mental Strategies	Skills	Possible Resources	Assessment
Recall Say number forward word sequences up to 10 and backwards from 5 (Extend this range for learners that are ready to do so)	**I can count on, on an unnumbered track** **I can count back on an unnumbered track** • I can match one step to one square on the track going forwards, talking about where they are on the track • I can work out how to get to a particular place on the track starting from any place • I can match one step to one square on the track going backwards, talking about the position on the track • I can work out how to get to a particular place on a number track, starting from any place	HAM Teaching Cards NC 0.10 S.E.A.L. Approaches as per Emergent planner	**Do** Using a number track, place items at different places. Ask the children to send the programmable robot to the item on the track. Model the activity first. **Say and Do** Put a soft toy on any space on the track and ask a child to stand on the same space. Secretly show the child a number card 0-5. The child moves that number of spaces and the other children have to count and tell how many space they have moved. If the child is correct they can 'keep' the teddy for the duration of the activity.

Topic & CfE Outcome - Money
I am developing my awareness of how money is used and can recognise and use a range of coins. **MNU 0-09a**

Benchmarks
- Identifies all coins to £2.
- Applies addition and subtraction skills and uses 1p, 2p, 5p and 10p coins to pay the exact value for items to 10p.

Mental Strategies	Skills	Possible Resources	Assessment
Skills Explore counting money using counting strategies if the children are ready to do so	**I can use money in play** • I know that money has a value and can be exchanged for goods and services • I know that when I pay for something, I sometimes get some money back (change) • I recognise that there are different kinds of coins and notes • I am beginning to explore ways of paying other than with coins and notes	HAM Teaching Cards UM 0.1	**Say and Do** Provide the children with coins or larger representations of coins so that they can see the features more easily. Get them to match/sort the coins so that all the same coins are grouped. **Say and Do** Bury coins in the sand tray. The children are shown the coins that they are looking to find in the hidden treasure tray. The winning pirate is the pirate that collects all the coins that they have been asked to look for. Use this as an opportunity to discuss the coins and what they are for. Are there other ways to pay for things? Can you see any numbers on the coins?

Topic & CfE Outcome - Time
I am aware of how routines and events in my world link with times and seasons, and have explored ways to record and display these using clocks, calendars and other methods. **MNU 0-10a**

Benchmarks
- Links daily routines and personal events to time sequences.
- Names the days of the week in sequence, knows the months of the year and talks about features of the four seasons in relevant contexts.
- Recognises, talks about and where appropriate, engages with everyday devices used to measure or display time, including clocks, calendars, sand timers and visual timetables.
- Reads analogue and digital o'clock times (12 hour only) and represents this on a digital display or clock face.

Mental Strategies	Skills	Possible Resources	Assessment
Recall Numbers that are on the clock (hours only) if the children are ready to do so	**I can engage in discussion about times that are special to me** **I can show that I am beginning to have a sense of how to organise time** • I can talk about what I want to do today • I can show that I understand that there are particular events that happen at particular times	HAM Teaching Cards T 0.1	**Say, Make and Do** Get the children to build models and take photographs at various stages, i.e. picture of before it was built with the pieces unbuilt, progress through the building and the final result. Later, ask the children to sequence the events. Use mistakes as opportunities to discuss the stages further. This could be repeated with cooking, science experiments, routines like getting ready to go out to play etc. **Say and Do** Take photographs or get the children to draw pictures to represent events in the day, i.e. waking up and having breakfast, going to bed, having dinner etc. You can also prepare your own visual timetable of the events that will happen in the playroom. Get the children to sequence and refer to the timetable, throughout the day.

Topic & CfE Outcome - Measurement
I have experimented with everyday items as units of measure to investigate and compare sizes and amounts in my environment, sharing my findings with others. **MNU 0-11a**

Benchmarks
- Shares relevant experiences in which measurements of lengths, heights, mass and capacities are used, for example, in baking.
- Describes common objects using appropriate measurement language, including tall, heavy and empty.
- Compares and describes lengths, heights, mass and capacities using everyday language, including longer, shorter, taller, heavier, lighter, more and less.
- Estimates, then measures, the length, height, mass and capacity of familiar objects using a range of appropriate non-standard units.

Mental Strategies	Skills	Possible Resources	Assessment
	I have explored objects which are different sizes, different weights and can hold different amounts • I can talk about the size of people and objects • I can talk about how heavy things feel • I can talk about filling and emptying containers	HAM Teaching Cards M 0.1	**Say and Do** When children play with dough, get involved yourself and set yourself some challenges. Make balls of dough all the same size and explore what happens when you roll them really thin. I wonder if they will end up the same size. Is there more dough now it's all spread out? Make balls of dough all the same size and explore what happens when you make them into snakes. I'm going to make my snake longer and longer. Oh but it's really thin now. Discussion on the differences resulting from manipulation of the dough should expose the children to the correct vocabulary, e.g. long, short, thin, thick and so on. **Say and Do** Put out a bucket balance together with a variety of soft toys. Children can play with them as they choose, perhaps using the buckets as containers, while incidentally discovering what happens when they put a heavy object in one of the buckets. Staff involvement should model the correct vocabulary and the children should be encouraged to explain what they can see in their own words. **Say and Do** Fill various containers nearly to the top with water. Encourage children to predict what will happen when you put a stone in one of them. Oh look, the water

			is nearly overflowing. I wonder if one more stone will make the water spill over the top. Discussion on pouring more in and taking water out should encourage children to explain in their own works what is happening.

Topic & CfE Outcome - Patterns and relationships
I have spotted and explored patterns in my own and the wider environment and can copy and continue these and create my own patterns.
MTH 0-13a

Benchmarks
- Copies, continues and creates simple patterns involving objects, shapes and numbers.
- Explores, recognises and continues simple number patterns.
- Finds missing numbers on a number line within the range 0 - 20.

Mental Strategies	Skills	Possible Resources	Assessment
Recall Explore vocabulary such as same, different	**I am exploring patterns all around me** **I can talk about, copy and continue patterns** • I can talk about, recognise and recreate simple patterns	HAM Teaching Cards P 0.1	**Say and Do** Children can make patterns using a variety of resources such as combs, moulds, shells and pebbles in the sand; drawing with squeezy bottles of water; and cutting and sticking assorted papers and sequins. Ask the children to talk about their patterns. **Say** Children will describe the patterns they see and make in simple, everyday language such as spotty, wavy, bumpy, pointy, round and curly. Encourage children to talk about the patterns they notice, using a wide range of language – even made-up words are acceptable. Given samples of patterns the children could be asked to spot a particular pattern have?

Topic & CfE Outcome - Properties of 2D shapes and 3D objects
I enjoy investigating objects and shapes and can sort, describe and be creative with them. **MTH 0-16a**

Benchmarks
- Recognises, describes and sorts common 2D shapes and 3D objects according to various criteria, for example, straight, round, flat and curved.

Mental Strategies	Skills	Possible Resources	Assessment
	I can talk about shapes and objects around me **I can create models using 3D objects and talk about what I am making** • I can match a shape to its outline, knowing when I need to turn it to make it fit • I have begun to build by placing objects on top of other objects	HAN Teaching Cards SPM 0.1	**Say and Do** Choose a collection of objects which the children have a particular interest in. Draw around the objects to create outlines then leave the objects and outlines for children to match up. You can also include an outline that doesn't have an object to match to see if the children can work out what the object is. Children can get involved and provide outlines of their own to match with objects with the adult as the facilitator. **Make and Say** Give the children a selection of blocks and 3D shapes to build with. Allow them to explore and build with the shapes. Discuss their decisions with them. Why didn't you use this shape (sphere)? Why was this a good shape for the base? You are looking for rationalisation and some vocabulary to explain their choices. Allow them to explain in their own words but also use the correct vocabulary when responding to them.

Topic & CfE Outcome - Angle, symmetry and transformation
In movement, games, and using technology I can use simple directions and describe positions. **MTH 0-17a**

Benchmarks
- Understands and correctly uses the language of position and direction, including in front, behind, above, below, left, right, forwards and backwards, to solve simple problems in movement games.

Mental Strategies	Skills	Possible Resources	Assessment
	I can use the language of position and turning to talk about where something is or to give directions • I can describe where something is in a variety of contexts	HAM Teaching Cards SPM 0.3	**Say** Choose an object you can see and give clues by saying where it is. Children try to guess your chosen object. This should have been modelled prior to being used as an assessment activity so that the language is frequently used. **Say** Pick an object to use that the children are familiar with. Place it in different places and ask the children to tell you where it is. If the children don't have appropriate vocabulary they may just point and state that it is 'over there'. Model and encourage the use of language of position to describe where the item is. **Say and Do** Set out a little scene, i.e. people waiting in a line for the bus, in a café, a race etc. Ask the children about the position of certain people in the lines, i.e. Where is the boy in the red top in the race? He is last etc. Ask the children to position particular people in a certain way, i.e. Can you put the baby first? Children may be familiar with first and last but may need extended to second etc. Use a small range at this point

Topic & CfE Outcome - Angle, symmetry and transformation
I have had fun creating a range of symmetrical pictures and patterns using a range of media. **MTH 0-19a**

Benchmarks
- Identifies, describes and creates symmetrical pictures with one line of symmetry.

Mental Strategies	Skills	Possible Resources	Assessment
	I can make a symmetrical pattern with different materials • I have investigated what happens when a wet blob painting or a string painting is folded and describe the result	HAM Teaching Cards SPM 0.4	**Make** Children can experiment with folding and wet blob pictures. This should be modelled and explored by the children several times in play before it is observed and assessed. The children should be able to say in their own words that the image is reflected.

Topic & CfE Outcome - Data and analysis
I can collect objects and ask questions to gather information, organising and displaying my findings in different ways. **MNU 0-20a**

Benchmarks
- Asks simple questions to collect data for a specific purpose.
- Collects and organises objects for a specific purpose.
- Applies counting skills to ask and answer questions and makes relevant choices and decisions based on the data.
- Contributes to concrete or pictorial displays where one object or drawing represents one data value, using digital technologies as appropriate.

Mental Strategies	Skills	Possible Resources	Assessment
Skills Ability to look at two or more amounts and, without counting, state which has more or less	**I can ask questions to help gather information and display findings in different ways** • I can talk about what information needs to be collected		At this stage the children will have had limited experience of this but they could discuss how the nursery knows how many boys and girls are in the nursery each day and so on. They may use self-registration or have to move their picture to show they have had a snack etc. Make children aware of the reasons that these are in place.

Topic & CfE Outcome - Data and analysis
I can match objects, and sort using my own and others' criteria, sharing my ideas with others. **MNU 0-20b**

Benchmarks
- Uses knowledge of colour, shape, size and other properties to match and sort items in a variety of different ways.
- Interprets simple graphs, charts and signs and demonstrates how they support planning, choices and decision making.

Mental Strategies	Skills	Possible Resources	Assessment
Recall Use vocabulary such as bigger, smaller, less than, more than and 'the same' to compare groups of, or individual items, e.g. objects, pictures, sounds etc **Skills** (mentally, with jottings and materials if needed) Sort and create groups of objects by size, number or other properties) Ability to look at two or more amounts and, without counting, state which has more or less	**I can sort when playing and in everyday contexts** **I can sort in a variety of different ways according to own and others' criteria** • I can make decisions about how to sort during play • I can sort using other people's criteria, for example when making things or tidying up • I can show recognition of what does and does not belong when sorting	HAM Teaching Cards MSI 0.1	**Say and Do** For this activity you will need toys of distinct different colours, a dice with coloured faces and mats to match the colours of the toys. Children take turns to roll the dice, say the colour, and put one of the creatures in that colour on the matching coloured mat. They go on until all the creatures are sorted. If appropriate, count the creatures on each mat – the mat with most creatures wins the game. **Do** When tidying up an activity, ask particular children to collect particular things, i.e. Claire get all the blue cones please, Matthew can you find all the yellow bean bags. **Do** Set up a shop area. The children have to fill the shelves but make sure the identical items are stacked on the shelves or in boxes together.

Topic & CfE Outcome - Data and analysis
I can use the signs and charts around me for information, helping me plan and make choices and decisions in my daily life. **MNU 0-20c**

Benchmarks
- Interprets simple graphs, charts and signs and demonstrates how they support planning, choices and decision making.

Mental Strategies	Skills	Possible Resources	Assessment
Recall Numbers in the environment, i.e. signs around the nursery or school Understand the language of daily routines related to number, e.g. registration, lunches, birthday Understand signs or instructions, e.g. 4 can play, one at a time, with a partner etc	**I can create and 'read' signs and charts** • I can spot signs and charts in the environment • I show understanding that signs and charts give information	HAM Teaching Cards MSI 0.3	**Do** Make a simple chart where children indicate which fruit or biscuit they want at snack time. Show pictures of the different choices, and children put their name card (or photo card) on the relevant picture. **Say** Around the learning area there will be signs to show how many children are allowed at a particular task at once. Observe to see that this is being acknowledged by the child. It is possible that the child may just be strong willed and not following the rules so take opportunities to ask how many children can play at a given station.

Strategies

By the **END** of Early Level, Learners should understand when to use and be able to apply the following strategies. Knowledge of, understanding and application of these strategies should be built **across** the level.

* Emphasise the use of estimation and rounding in calculations

* 1-1 correspondence when counting (touching, matching)

* Order numbers to 20 (forwards and backwards)

* Use number lines to calculate 1 more/less than within 20

* Share a group of items and discuss who has more/less

* Rounding – using doubles knowledge to add near doubles

* Subitise – Recognise a small number of objects without counting e.g. on a dice – knowing 4 dots is 4, dominoes, pictorial sums

* Number bonds to 10 (using materials)

* Commutative Law e.g. 3+4 is the same as 4+3 sometimes known as "Switchers"

* Associative Law e.g. 6+3+7 is the same as 6+10 – knowing to associate and add two numbers first before adding the third.

* Emphasise the importance of using mental maths skills and recall in a variety of contexts, e.g. Money

* Explore and use correctly a variety of mathematical language related to addition and subtraction.