



Progression and Support Document Early Level – Pathway 3

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 Practitioner Statement

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.

Bundling Advice

There are many possible ways to bundle Numeracy and Mathematics Experiences and Outcomes depending on the skills that are being explored and the contexts for learning that are relevant to the children that the learning is being planned for.

The following is **one example** of how to bundle the Experiences and Outcomes according to the skills in this pathway. Choosing bundles of outcomes based on relevant contexts for learning is always the best practice and should be explored whenever possible. It can also be appropriate to bundle Numeracy and Mathematics across curricular areas if there is a clear opportunity to do so. There is exemplification of one of these bundles for further clarification and to demonstrate the learning opportunities that link these particular Experiences and Outcomes as a bundle in this instance.

These bundles can be approached in whichever order is most appropriate. Some of the Experiences and Outcomes have not been bundled as links between outcomes were too tenuous. Bundling without clear and strong links is not beneficial and it may be the case that some Experiences and Outcomes are better taught discretely.

There should be an element of number work/manipulating number every day, regardless of any other Numeracy and Mathematics learning that is planned for. This will provide regular opportunities to reinforce and challenge learning across the key numeracy outcomes which are indicated in **bold** below. At the beginning of a new pathway, the regular number work/manipulation of number will be based on reinforcement of the skills from the previous pathway. As the learning progresses, introduction of learning to develop the new skills within the current pathway should be introduced and progressed.

| Bundling of Experiences and Outcomes Early Level Pathway 3 | Opportunities across the curriculum |
|---|--|
| Estimation and rounding MNU 0-01a Number and number processes MNU 0-02a & MNU 0-03a | |
| Patterns & relationships MTH 0-13a Properties of 2D shapes & 3D objects MTH 0-16a Angle, symmetry & transformation MTH 0-19a | |
| Money MNU 0-09a Data & analysis MNU 0-20a , 0-20b & 0-20c | |
| Measurement MNU 0-11a (length, weight and volume & capacity) | |
| Angle, symmetry & transformation MTH 0-17a | |
| Fractions MNU 0-07a | |
| Time MNU 0-10a & 0-10b | |

As stated above, this is only one possible way to bundle the Experiences and Outcomes for this pathway. Different contexts for learning across the curriculum will raise opportunities to bundle in different ways. Consideration should be given to bundling in relevant contexts and to using opportunities across the curriculum to reinforce Numeracy and Mathematics skills. There is also cross over where topics already covered could be brought into another bundle, i.e. using properties of shapes in Venn diagrams or sorting items in data handling by measurements such as length, weight, capacity etc.

Bundling within Numeracy and Mathematics

The following explains why these experiences and outcomes were chosen to be bundled together.

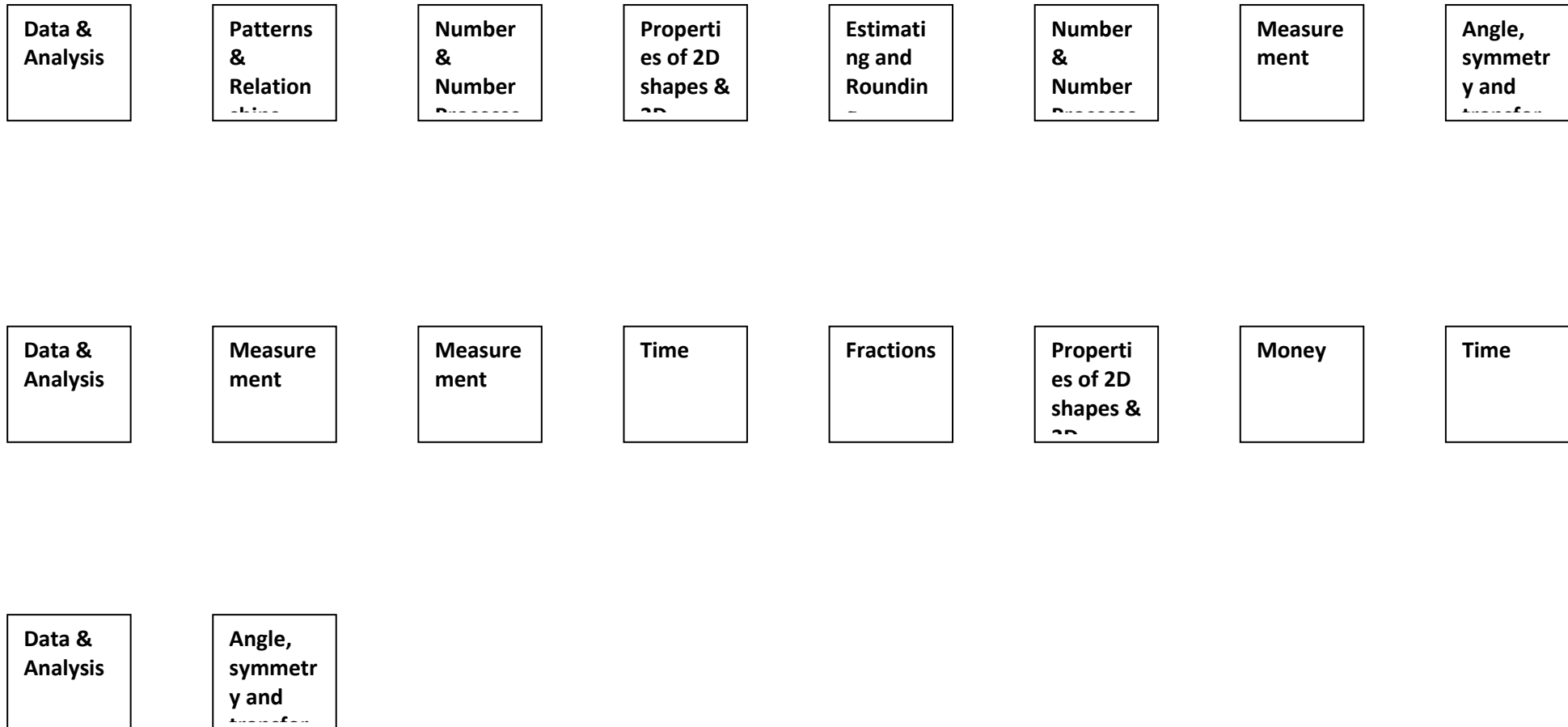
| Bundle | Reasons bundle was chosen |
|---|---|
| <p>I have spotted and explored patterns in my own and the wider environment and can copy and continue these and create my own patterns. MTH 0-13a</p> <p>I enjoy investigating objects and shapes and can sort, describe and be creative with them. MTH 0-16a</p> <p>I have had fun creating a range of symmetrical pictures and patterns using a range of media. MTH 0-19a</p> | <p>In MTH 0-16a a variety of 2D shapes and 3D objects and their properties are explored. Instead of doing this in isolation then beginning learning on MTH 0-13a and MTH 0-19a separately, there are clear and obvious links and opportunities to use the learning from MTH 0-16a in MTH 0-13a and MTH 0-19a. There may be some specific skills within the experiences and outcomes in the bundle that have to be taught without cross over which is appropriate. These skills will then be more relevant within the greater context of the bundle for the children.</p> <p>Some examples of learning that crosses between the experiences and outcomes are: Using 2D shapes and 3D objects in demonstrating patterns, first in concrete then pictorial form. Using shapes in creating symmetrical patterns. Discuss the properties of the shapes to identify them in the symmetrical shape Sorting the shapes by their own and given criteria. Is there a pattern to the grouping? What do the children notice?</p> <p>Exploring these elements within the bundle instead of separately makes the concepts more relevant and demonstrates the connections for children.</p> <p>As stated previously, there are numerous ways to bundle the experiences and outcomes, this is only one way. If there is a particular context being explored in class, i.e. social studies, science etc., it may be sensible to bundle differently.</p> |

Bundling Across the Curriculum

The following is an example of bundling experiences and outcomes from across the curriculum, within a context.

| Bundle and Context for Learning | Reasons bundle was chosen |
|---|--|
| <p>Context is a class shared story – ‘Stuck’ by Oliver Jeffers</p> <p>I enjoy exploring events and characters in stories and other texts, sharing my thoughts in different ways. LIT 0-01c</p> <p>I can match objects, and sort using my own and others’ criteria, sharing my ideas with others. MNU 0-20b</p> <p>I can collect objects and ask questions to gather information, organising and displaying my findings in different ways. MNU 0-20a</p> | <p>Naturally when discussing a text in class, characters or settings will be discussed and compared. This is an opportunity to explore sorting as you compare words to describe two different characters for example, using a Venn Diagram. Depending on the text, other sorting activities could take place, i.e. ‘Stuck’ by Oliver Jeffers – sorting the items that Floyd throws up the tree by their own or given criteria. MNU 2-20b</p> <p>Using Aiden Chamber’s Three Sharings, discuss the text then collate information based on the discussion which can then be displayed in a variety of ways, i.e. block graph of feelings about the text – What words can we use to describe how we felt when Floyd kept throwing items up the tree?, tally of connections to own life – Who has flown a kite? What would you do to solve Floyd’s problem? Take suggestions then record on a frequency table and display in a block graph. MNU 0-20a</p> <p>These are a few examples of how to plan for Numeracy and Mathematics across the curriculum by bundling relevant outcomes. As you can see, many of the discussion points would have taken place anyway. Considering the above experiences and outcomes together, extends the learning and utilises Numeracy and Mathematics in a meaningful way.</p> |

Early Level Progression and Support Pathway Three



Numeracy Experiences and Outcomes MNU 0-01a, MNU 0-02a, MNU 0-03a should be reinforced on an on-going basis.

The above is an overview of the Experiences and Outcomes contained in Early Level Pathway 3. It is best practice to bundle together Es & Os for teaching and learning. This can happen within the curricular area of Numeracy and Mathematics or Numeracy and Mathematics Es

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

The

benchmark

| 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 1.2-65a | | | |
| 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... <ul style="list-style-type: none"> 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 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 my 5 and 10 times-tables I can recall individual multiplication and division facts in my 5 and 10 times-tables I can recite my 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.mathsfirst.org.uk/numbers/multiplication.html http://www.topmarks.co.uk/Flash.aspx?tc=carroll7 | 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

This lists the skills that are to be achieved in this

Some possible scheme based resources that could be used. This is

Suggested formative and summative assessment

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Numeracy and Mathematics Progression and Support - Early Level Pathway 3

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 |
|--|--|--|--|
| <p>Recall Use vocabulary to compare numbers; more than, fewer than, less than, the same, equal</p> <p>1-1 correspondence when counting, i.e. matching games to encourage counting aloud (up to 20)</p> <p>Skills (mentally, with jottings and materials if needed)</p> <p>More/less comparison to 20 e.g. A set of 8 and a set of 6 – Which has more/less?</p> | <p>I can compare and talk about amounts of objects</p> <p>I can compare two quantities and recognise which is more and which is less</p> <p>I can look at an arrangement of items and recognise the number of items without having to count them</p> <ul style="list-style-type: none"> • I understand and can use the words ‘enough’, ‘not enough’ and ‘more’ appropriately in context • I can match objects one to one to find out whether there are enough or whether more is needed • I can recognise when two collections have the same number of objects • I can compare by looking at two small quantities and say which is more and which is less • I can find out in my own way which quantity is more and which is less • I can show you a quantity which is more than another given quantity • I can show you a quantity which is less than a given amount • I can find out which quantity is less and explain my reasoning • I can look at common arrangements of objects, i.e. dots on a dice face, tens frames, finger patterns and recognise the number of objects without counting | <p>HAM Teaching Cards NC 0.14, NC 0.16</p> <p>H1 Teacher’s Notes pgs 23 – 24</p> <p>H1 Wbk 1 pgs 12 – 13</p> <p>S.E.A.L. Approaches as per Emergent and Perceptual planner</p> | <p>Write TJ Assessment MNU 0-01a</p> <p>Say and Do Hide some items in a sand box. Give the children sieves and let them scoop and sieve the sand until they find some treasure. Let the children compare their collections to see who has more and who has less. You could get the children to place their items on a number track so that they can count their items.</p> <p>Say and Do Lay out a number track to 20. Put counters on any 12 spaces on the track. Let the children place a figure on the track then pick a ‘more’ or ‘less’ card or use a spinner. They move according to the card or spinner they land on. They have to state the number they are on and the number that they want to move to which is more or less. If they land on a counter they win it. Ask questions like: You are on 8. Can you tell me a number that is less than 8? Give opportunities to discuss ‘more or less’.</p> <p>Say and Do Sneaky Squirrel. Arrange ‘food’ on the floor. Count the items aloud together then one child becomes the squirrel and takes some food items. Continue until there are none left. Use questions like: We have five nuts. If the squirrel takes two, how many will be left? At this point the children do not have to see the take away sign. Embedding the process in play and games will make the step towards notation easier.</p> |

Numeracy and Mathematics Progression and Support - Early Level Pathway 3

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).

| Mental Strategies | Skills | Possible Resources | Assessment |
|---|--|---|---|
| <p>Recall 1-1 correspondence when counting, i.e. matching games to encourage counting aloud (to 20)</p> <p>Value of a set, i.e. counting 3 as 3</p> <p>Conservation of number, i.e. knowing 3 is 3 regardless of arrangement of concrete materials or objects (to 20)</p> <p>Use vocabulary to compare numbers; more than, fewer than, less than the same, equal)</p> <p>Use ordinal numbers in given context up to 20th (awareness of ordinal numbers past 20th, e.g. dates)</p> <p>Skills (mentally, with jottings and materials if needed)</p> <p>Read and use a variety of number lines, e.g. straight, curved dials etc</p> <p>Explain answers in words, with materials, through drawings and on paper</p> | <p>I can 'touch, count and move' objects to find out how many there are</p> <p>I have started to use words to help put pictures, objects and people in order</p> <p>I can count aloud a set of objects, actions and sounds to 20, recognising an 'empty set' by using a word for 'zero' (Child may say none, nothing etc.)</p> <p>I can count and know that the arrangement of objects doesn't matter (conservation of number)</p> <p>I can match a written number to an amount up to 20, including zero</p> <ul style="list-style-type: none"> • I have begun to give each item a number name • I can 'touch, count and move' when counting a small number of items • I can use counting in play • I can use first, after, next, last, before and between to talk about order • I can order and sequence from zero without missing any numbers to 20 • I can use the number names one to twenty, in order when finding out how many there are • I can count an arrangement of objects in any order and know the total will be the same • I can keep track of which objects have been counted • I can check counting using a different item as a starting point • I can demonstrate knowledge and understanding showing that five can be five of anything (that anything can be counted) • I can match an amount with its number label to twenty • I can say aloud the number sequence forwards within the range 0 - 30, and backwards 20 - 0, from any given number. | <p>HAM Teaching Cards NC 0.3, NC 0.4, NC 0.5, NC 0.7, NC 0.8, NC 0.9, NC 0.18 (<i>Elements of cards highlighted in italics may have been used in prior learning experiences</i>)</p> <p>TJ Book A1 Counting 0 - 5 pgs 2 - 16</p> <p>TJ Book A2 Counting 0 - 10 pgs 2 - 16</p> <p>TJ Book A3 Ordering Numbers 0 - 10 pgs 2 - 4 & pgs 8 - 16</p> <p>TJ Book A7 The Numbers 11 - 20 pgs 2 - 16</p> <p>TJ Lvl A Support Pack pgs 2 - 10 No.1 pgs 11 - 22 No.2 pgs 38 - 52 No.4 pgs 54 - 67 No.5 pgs 69 - 85 No.6 pgs 87 - 102 No.7 pgs 104 - 120 No.8 pgs 122 - 135 No.9 pgs 137 - 151 No.10 pgs 153 - 163 Order 0-10</p> <p>H1 Teacher's Notes pgs 28 - 59</p> <p>H1 Wbk 2 pgs 1 - 15 H1 Wbk 3 pgs 1 - 15 H1 Wbk 4 pgs 1 - 10 S.E.A.L. Approaches as per Emergent and Perceptual planner</p> | <p>Write TJ Assessment MNU 0-02a</p> <p>Say and Do Show a set of counters and ask the child to count them. Let them arrange them in their own way. Once the child has said how many there are, rearrange the items and ask the child how many there is now? To begin with, until they are comfortable with conservation of number, they will touch the counters to check. Once they are confident they will tell you that the number is the same because you didn't add any or take any away, you just moved the same amount about.</p> <p>Say and Do Lay out a simple obstacle course. Ask the children questions such as what obstacle is first? Which obstacle is between the hoops and the bench balance?</p> <p>Say and Do Prepare two sets of dot cards, 1 - 20. Make sure that each looks different, i.e. the two cards with 3 dots have the three dots arranged differently. Children match them or play snap.</p> <p>Do Give each child with a number line or grid and a counter. Call out a number then tell the children to add 1 or add nothing or take-away 1 or challenge with greater steps. Children move their counter that many steps. Call out altogether now and children all call out the number they are on.</p> |

Numeracy and Mathematics Progression and Support - Early Level Pathway 3

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

- Uses ordinal numbers in real life contexts, for example, 'I am third in the line'.
- Uses the language of before, after and in-between.
- 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.
- Partitions quantities to 10 into two or more parts and recognises that this does not affect the total.
- Adds and subtracts mentally to 10.
- Uses appropriately the mathematical symbols +, - and =.
- Solves simple missing number problems.

| Mental Strategies | Skills | Possible Resources | Assessment |
|--|---|---|---|
| <p>Recall Names of numerals to 20</p> <p>Say number word sequences to at least 30 forwards and from 20 backwards</p> <p>Addition/Subtraction facts within 10 e.g. 1+0=1, 0+1=1, 3-1=2, 3-2=1</p> <p>Doubles to 10</p> <p>Skills (mentally, with jottings and materials if needed)</p> <p>Read and use a variety of number lines, e.g. straight, curved dials etc</p> <p>Place/identify any given digit on a number line to 20, e.g. before, after, in-between</p> <p>Explain answers in words, with materials, through drawings and on paper</p> <p>1 more than/1 less than a given number</p> <p>Count on and back from a given number, including bridging 10</p> | <p>I can order number labels from 0 to 20</p> <p>I can record understanding about numbers</p> <p>I can combine quantities working out the total in a practical context</p> <p>I have explored taking away quantities from a given amount</p> <ul style="list-style-type: none"> • I can use 'before' and 'between' when ordering number labels • I can sequence numbers in order to 20 and talk about order • I can match digits to their corresponding number names in words to 20 • I can create number labels (to 20) for collections of objects, including when there are zero objects • I can create a variety of number stories to at least 10, demonstrating knowledge and understanding of addition • I can demonstrate that adding means putting two or more quantities together and this will amount to more than the individual quantities • I can record adding in a variety of ways • I know the 'switcher' (inverse) rule of addition, i.e. 4+6 is the same as 6+4 • I can say the number sequence forwards within the range 0 - 30, from any given number. • I can say the number sequence backwards from 20. • I can use 'after' and 'between' when ordering number labels • I can create stories to show what is meant by take away, showing different ways to do so • I can demonstrate that taking away results in a lower total than what is started with • I can record taking away in a variety of ways • I can investigate the relationship between addition and subtraction • I can identify the symbols +, - and = | <p>HAM Teaching Cards NC 0.15, NC 0.16, NC 0.19, NC 0.20, NC 0.21, NC 0.22, NC 0.23, NC 0.25</p> <p>TJ Book A4 Adding 0 to 5 pgs 2 – 16</p> <p>TJ Book A5 Counting 0 – 10 pgs 2 – 16</p> <p>TJ Book A6 Subtraction 0 to 10 pgs 2 – 16</p> <p>TJ Lvl A Support Pack pgs 165 – 175 Add 0 - 5 pgs 177 – 187 Add 0 - 10 pgs 189 – 191 Sub from up to 5 pgs 192 – 198 Sub from up to 10 pg 199 Mix add/sub</p> <p>H1 Teacher's Notes pgs 64 – 108</p> <p>H1 Wbk 5 pgs 1 – 23 H1 Wbk 6 pgs 1 – 15 H1 Wbk 7 pgs 1 – 15</p> <p>S.E.A.L. Approaches as per Emergent and Perceptual planner</p> | <p>Write TJ Assessment MNU 0-03a</p> <p>Say, Write and Do Provide buckets and bean bags. Children throw the beanbags into the buckets. At the end they count the beanbags in the buckets and record this, together with their name. Use questions like: There are three beanbags in there. How many are in this bucket? How many did you get altogether? Can you record that for me?</p> <p>Say and Do Using a large floor number line, place a toy on a number. Ask the children to tell you the number then question as follows, e.g. What two numbers can make 5? What is one more than 5? What is one less? After questioning move the toy to a different number. Ask the children how many places it moved. Discuss the new number.</p> <p>Say, Make and Do Give the children 0 – 10 dot cards. Ask the children to order them. Let them try independently but guide by discussion if there are mistakes in the order. Ask a child to give you two cards that make 5 dots altogether etc</p> |

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|---|--|--|--|
| <p>Combine sets of objects together and record this in a number sentence, i.e. $1+5=6$</p> <p>Addition and Subtraction facts within 5 then 10 then 20 (focus on inverse operations to reinforce the link between addition and subtraction)</p> <p>Use the +, - and = signs</p> | | | <p>Say, Make and Do Show the children a numeral. Children make towers that are many building blocks high. Discuss the towers with the children. Tell me about this tower... How many blue blocks has your tower got? How many in the tower are red? Does anyone have a tower with the same number of blocks? How many would you have to take away to be left with none? How many more to make 10?</p> <p>Do With the children sitting in a circle and with items in the middle such as compare bears, cubes, teddies etc. From the pile, take a number of the items. Ask one of the children to make the set a double by matching until there is enough. This can be repeated in drawings as an individual task.</p> <p>Do Pick a number card to display and show that many beads on a large string. Children show the same number of beads on their own bead strings. Hide some of your beads with your hand. Children use their own bead strings to find out how many you have hidden.</p> <p>Say and Do Display a large 100 grid. Children can identify numbers that are special to them and tell you what to write, or copy the number onto paper. Display the information, with a thread link to the relevant number on the grid. Your sister will be 21 next week. Let's find 21 on the grid. You live at number 58, let's find that number.</p> |
|---|--|--|--|

Renfrewshire Council
Numeracy and Mathematics Progression and Support - Early Level Pathway 3

Topic & CfE Outcome - Fractions, decimal fractions and percentages including ratio and proportion

I can share out a group of items by making smaller groups and can split a whole object into smaller parts. **MNU 0-07a**

Benchmarks

- Splits a whole into smaller parts and explains that equal parts are the same size.
- Uses appropriate vocabulary to describe halves.
- Shares out a group of items equally into smaller groups.

| Mental Strategies | Skills | Possible Resources | Assessment |
|--|--|---------------------------------------|---|
| <p>Skills Using counting strategies to check the amount in a share and the language of comparison to describe the share</p> | <p>I know that a whole thing or collection can be shared if it is split into smaller parts or groups and I have experienced play and discussion with this concept</p> <p>I understand what a half means – creating and identifying a half of a shape or object</p> <p>I understand what a half means – finding half of a set by sharing</p> <ul style="list-style-type: none"> • I can show that shapes or objects can be shared in 2 equal parts • I can show that two halves of a shape are exactly the same size • I can find half of a shape by folding, cutting and colouring • I can find half of a number of objects by sharing in two equal groups • I can recognise the written fraction $\frac{1}{2}$ | <p>HAM Teaching Cards NC 0.24</p> | <p>Write TJ Assessment MNU 0-07a</p> <p>Say and Do With a small group of children. Give out toys or counters unfairly. Discuss why they aren't shared fairly. Children then put the toys back together and share them out so that it is fair. Try with equal and unequal amounts. How can we make sure it is fair? Discuss what you would do with 'extras'.</p> <p>Do Show the children pre-cut pizzas. Show them one that is cut in half and ask them how many people could get a fair share of the pizza. As an extension you can use pizzas split into other fractional parts. If the children are confident with halves they may be ready to try other divisions.</p> <p>Do Set up a dinner table with two teddies. Share out a whole 'pizza' (unfairly) and ask the children if you have given the bears an equal share. Get them to explain why it isn't fair. With another 'pizza', ask children to share the pizza equally for the bears. Repeat with a quantity of items, i.e. strawberries.</p> |

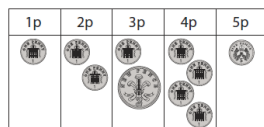
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Topic & CfE Outcome - Money

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 |
|--|--|---|--|
| <p>Recall Names of numerals to 20</p> <p>1-1 correspondence when counting e.g. matching games to encourage counting aloud</p> <p>Use vocabulary to compare numbers; more than, fewer than, less than, the same, equal</p> <p>Addition and Subtraction facts</p> <p>Skills (mentally, with jottings and materials if needed)</p> <p>Count on and back from a given number, including bridging 10</p> <p>Combine sets of objects together and record as a number sentence, i.e. $1p+5p=6p$</p> <p>Explain answers in words, with materials, through drawings and on paper</p> <p>Use +, - and = signs</p> | <p>I have explored paying amounts in money play</p> <p>I can use addition and subtraction strategies to calculate amounts of money to 10p</p> <p>I can recognise and name all coins to £2</p> <ul style="list-style-type: none"> • I have begun to order coins according to their values, using knowledge of number • I can show that coins can be swapped for others of the same total value, i.e. 2p can be $2 \times 1p$ • I can select the appropriate coin, or coins, to pay for something in play, up to 10p • I can say if too much money has been given, not enough or just the right amount when paying • I can identify all coins to £2 • I can identify the pound and pence signs | <p>HAM Teaching Cards UM 0.3</p> <p>TJ Book A3 Ordering umbers 0 - 10 pgs 5 – 7</p> <p>TJ Book A10 Money pgs 2 – 16</p> <p>TJ Lvl A Support Pack pgs 268 –290</p> <p>H1 Teacher's Notes pg 62</p> <p>H1 Wbk 4 pg 15</p> | <p>Write TJ Assessment MNU 0-09a</p> <p>Say and Do Prepare a number track to up to 10p. Demonstrate counting out pennies to the value of each number. Explore swapping the pennies for other coins of the same value. Let them self-check. Guide them if necessary. Put 7p in my head and count on one. That's 8p. You can also make mistakes for the children to find.</p>  <p>Say and Do Children put coins totalling 10p in a dish. They aim to have a different collection of coins from the other dishes. Look at the dishes and work out the value of their contents together.</p> <p>Say and Do In the shop corner, help children to price what is on offer. Give children wallets containing a selection of coins. Observe paying and change giving during play.</p> |

Numeracy and Mathematics Progression and Support - Early Level Pathway 3

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 Use ordinal numbers in a given context up to 20 th (awareness of ordinal numbers past 20 th , e.g. dates) | <p>I can show that I am beginning to have a sense of how to organise time</p> <p>I can arrange times of the day and other events in the year in order</p> <p>I can read and show o'clock time on an analogue clock (Children who are not confident with number up to twelve should not be introduced to this as it will be too abstract)</p> <p>I can match digital analogue and digital o'clock times.</p> <ul style="list-style-type: none"> • I can interpret a variety of simple visual timetables and talk about their order, i.e. visual timetable in class • I have begun to explore the four seasons and their features • I can say the months of the year and order them correctly • I am beginning to show that I recognise devices that are used to measure and show time • I can order the days of the week and talk about what happens on particular days • I know that there are seven days in a week • I know that the long hand/big hand must point directly to the 12 on the analogue clock dial to represent an o'clock time. • The short hand/small hand points to the number of hours that have happened • In digital time, the last two numbers must be '00' to show o'clock time. The first one or two numbers show the number of hours that have happened. | <p>HAM Teaching Cards T 0.3</p> <p>TJ Book A8 Information Handling and Time pgs 9 – 16</p> <p>TJ Lvl A Support Pack pgs 235 – 247</p> <p>H1 Teacher's Notes pgs 116 – 119 pgs 135 – 139</p> <p>H1 Measure Wbk pgs 3 – 6 pgs 17 – 22</p> | <p>Write TJ Assessment MNU 0-10a</p> <p>Say and Do Provide children with photographs that are clearly taken during different seasons of the year. Let the children talk about what they can see and let them arrange them in their own way.</p> <p>Do 'Show me' – call out an o'clock time for the children to show you on their individual clocks</p> <p>Do Play a matching game where the children have to match the digital time to the analogue time (o'clock). For learners that have grasped o'clock confidently, you may move onto half past. (o'clock is the minimum requirement for achieving Early Level)</p> <p>Do Analogue to digital bingo and vice versa</p> |

Numeracy and Mathematics Progression and Support - Early Level Pathway 3

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 |
|-------------------|---|---|--|
| | <p>I can make comparisons between two objects and say which is longer, heavier or holds more</p> <p>I can explore and make choices about how I measure</p> <ul style="list-style-type: none"> • I can talk about the amount in a container, using a variety of language including 'full' and 'empty' • I can compare amounts in similar containers and talk about it • I can compare the length of items, choosing smaller items as units of measure (cubes for non-standard measure) and talk about my findings. • I can compare the weights of items, using a balance and talk about my findings • I have begun to compare spaces by exploring what can be fitted into a space | <p>HAM Teaching Cards M 0.2, M 0.3</p> <p>TJ Book A12 Measure and Patterns pgs 2 – 12 + section of pg 16</p> <p>TJ Lvl A Support Pack pgs 311 – 319</p> <p>H1 Teacher's Notes length pgs 111 – 115 pgs 128 – 134 pg 140</p> <p>weight pgs 120 – 124</p> <p>capacity pgs 125 – 127</p> <p>H1 Measure Wbk length pgs 1 – 2 pgs 11 – 16 pg 23</p> <p>weight pgs 7 – 8</p> <p>capacity pgs 9 – 10</p> | <p><u>Write</u> TJ Assessment MNU 0-11a</p> <p><u>Say and Do</u> Ask children to put lumps of play-doh in a pan balance until it balances. Ask one child to make a sausage with one lump and another to make a cake. Discuss whether they will still balance if put back on the pans.</p> <p><u>Say, Make, Write and Do</u> Help each child draw around and then cut out their shoe. Get the children to compare their cut out with others. How long is it in cubes? How many counters does it take to cover it? Using the pan balance investigate the weight. Does it weight more or less than 1kg? There is also scope to use this data for sorting and information handling.</p> <p><u>Do and Say</u> Fill different size and shaped containers with the same volume of liquid. Discuss that even though the containers are different, the same amount of liquid is in each container. Children can measure the amount to prove this. (Non-standard measures i.e. 2 cups etc)</p> |

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 |
|-------------------|---|--|---|
| | <p>I can recognise, describe and create patterns</p> <p>I can talk about, copy and continue patterns</p> <ul style="list-style-type: none"> • I can make my own patterns and talk about them • I can talk about some number patterns, e.g. odds and evens, skip counting in twos etc. | <p>HAM Teaching Cards P 0.3, SPM 0.2</p> <p>TJ Book A12 Measure and Patterns pgs 13 – 16 + section of pg 16</p> <p>TJ Lvl A Support Pack pgs 320 – 321</p> <p>H1 Teacher's Notes pgs 25 – 26</p> <p>H1 Wbk 1 pgs 14 – 15</p> | <p><u>Write</u> TJ Assessment MNU 0-13a</p> <p><u>Say, Make and Do</u> Make a pattern and discuss it with the children. Ask a child to repeat the pattern under the one you have made. Ask a child to make a new pattern. You should repeat it but make a mistake so that the children can explore what is the correct pattern. You can repeat this with numerals. Let the children explore patterns independently with you facilitating discussion about the patterns and any mistakes that arise.</p> |

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Numeracy and Mathematics Progression and Support - Early Level Pathway 3

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 |
|-------------------|---|---|---|
| | <p>I can talk about shapes and objects around me</p> <p>I have begun to see the link between 3D objects and 2D shapes</p> <ul style="list-style-type: none"> • I can point to shapes in my environment and describe them in my own words • I can use experience with 3D objects to talk about what they are useful for • I can match a 3D object to its 2D 'footprints' • I have explored some of the 2D shapes made by printing 3D objects • I can name simple 2D shapes (rectangle, square, triangle, circle etc.) • I have begun to talk about the properties of 2D shapes • I have begun to use the names of simple 3D objects and talk about their properties | <p>HAM Teaching Cards SPM 0.5</p> <p>TJ Book A9 2D and 3D Shapes pgs 2 – 16</p> <p>TJ Lvl A Support Pack pgs 249 – 266</p> <p>H1 Teacher's Notes 3D objects pgs 143 – 147 2D shape pgs 151 – 157</p> <p>H1 Shape Wbk 3D objects pgs 1 – 4 2D shape pgs 7 – 15</p> | <p><u>Write</u> TJ Assessment MTH 0-16a</p> <p><u>Do</u> Children can play a dominoes game where one half of the domino which has a 2D shape on it must match to the 3D object that has the 2D shape as a face.</p> <p><u>Do</u> The children can play a matching game with 2D shapes, 3D objects or a combination of both. This can also be played as SNAP!</p> <p><u>Say and Do</u> Children sit in a circle and the teacher holds a feely bag containing shapes in it. In the middle of the circle are a group of shapes to match the ones in the bag. The teacher describes the properties of a shape. Each child will get the chance to listen to the description and select the shape that they think is being described. You can split this into 2D shape, 3D objects or include a mixture of both. This can also be turned into a game for two groups where the children line up and listen to a description. They wait until they think they know what the shape is and run to a hoop which is a small distance away and contains relevant shapes, and collects the shape.</p> <p><u>Say and Write</u> Children select a shape. They create a poster that shows different things that are also that shape. The teacher will ask them to talk about their shape in their group or in front of the class, depending on which is more appropriate.</p> |

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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 |
|-------------------|--|---|---|
| | <p>I can use the language of position and turning to talk about where something is or to give directions</p> <ul style="list-style-type: none"> • I can talk about where things are in relation to other things, i.e. the teddy is on the table, the box is under the sheet etc. • I can give directions to someone else and follow others' directions • I can program a floor robot to make a journey | <p>HAM Teaching Cards <i>SPM 0.3</i></p> <p>TJ Book A11 Position and Movement pgs 2 – 16</p> <p>TJ Lvl A Support Pack pgs 292 – 304</p> <p>H1 Teacher's Notes pgs 148 – 150</p> <p>H1 Shape Wbk pgs 5 – 6</p> <p>H1 Teacher's Notes pgs 58 – 59</p> <p>H1 Wbk 4 pg 10</p> | <p>Write TJ Assessment MTH 0-17a</p> <p>Say, Make and Do Children are asked to design an obstacle course. They can be given construction materials to do so. They have to explain what has to be done to complete the course correctly, e.g. over the box then around the cone etc. You could choose one to set out in the gym hall and get the children to be robots and controllers. The controller directs the robot through the course.</p> <p>Do On a floor mat with a programmable robot. Give the child a starting point and a finish point. Put some 3D items on the mat as obstacles. Ask the child to programme the robot to arrive at the finish point.</p> |

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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 |
|-------------------|---|---------------------------------------|---|
| | <p>I can make a symmetrical pattern with different materials</p> <ul style="list-style-type: none"> • I can make symmetrical patterns and recognise that both sides need to be the 'same' | <p>HAM Teaching Cards SPM 0.4</p> | <p><u>Write</u> TJ Assessment MTH 0-19a</p> <p><u>Make and Do</u> Provide peg boards and pegs. You can use this in several ways. You can have half of the design complete for the child to make symmetrical or ask the children to prepare half for their partner to complete. Also you can provide a picture of a symmetrical design for the child to replicate.</p> <p><u>Say</u> Show the children an image on the smart board and ask them if it has symmetry. Ask them to explain why it does or does not have symmetry in their own words. If it does not have symmetry, ask them what they could change to make it symmetrical.</p> |

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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 |
|-------------------|---|---|---|
| | <p>I can ask questions to help gather information and display findings in different ways</p> <ul style="list-style-type: none"> I can ask questions as part of gathering the information needed I can use a variety of diagrams (Carroll and tree, block graph, pictogram) to sort and display information I can make choices about how to display findings | <p>HAM Teaching Cards MSI 0.4</p> <p>TJ Book A8 Information Handling and Time pgs 5 – 8</p> <p>H1 Teacher's Notes pgs 59 – 60</p> <p>H1 Wbk 4 pgs 11 – 12</p> | <p><u>Write</u> TJ Assessment MNU 0-20a</p> <p><u>Say, Make and Do</u> If your school has Golden Time, children can pick their activity by writing their name on a Post-it and adding it to a picture of the activity that they wish to take part in. The results can be discussed and the post-it notes be used to make a pictogram or a block graph. Discussion could be based on which is the better graph of the two to represent the data. Was there a better way to collect the data?</p> |

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Topic & CfE Outcome - Data and analysisI 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 |
|---|--|---|--|
| <p>Recall Use vocabulary to compare numbers; more than, fewer than, less than, the same, equal</p> <p>Skills (mentally, with jottings and materials if needed)</p> <p>Explain answers in words, with materials, through drawings and on paper</p> | <p>I can sort when playing and in everyday activities</p> <p>I can sort in a variety of different ways according to my own and others' criteria</p> <ul style="list-style-type: none"> • I can talk about sorting • I can say why something does or does not belong when sorting | <p>HAM Teaching Cards MSI 0.2</p> <p>TJ Book A8 Information Handling and Time pgs 2 – 4</p> <p>TJ Lvl A Support Pack pgs 222 – 228</p> <p>H1 Teacher's Notes pgs 12 – 23</p> <p>H1 Wbk 1 pgs 1 – 11</p> | <p>Write TJ Assessment MNU 0-20b</p> <p>Say and Do Show the children a selection of items that have been grouped for a specific reason and ask the children why they think they have been grouped together. You can do this with the children as the items! i.e. all the girls with white socks are asked to stand together (without you pointing out that is why they are standing together). You may find that other similarities are suggested and can be explored, i.e. They all have a red cardigan? Millie doesn't have a red cardigan though and she is in the group so it can't be that. Add someone that doesn't fit the criteria in a group and see if the children can discuss why they should not be in the group.</p> |

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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 |
|-------------------|--|--|--|
| | <p>I can create and 'read' signs and charts</p> <ul style="list-style-type: none"> • I can make my own signs for the environment in play • I can look at signs, charts and graphs and extract information that I need | <p>HAM Teaching Cards MSI 0.3</p> <p>TJ Book A8 Information Handling and Time pgs 5 – 8</p> <p>TJ Lvl A Support Pack pgs 229 – 234</p> <p>H1 Teacher's Notes pgs 61 – 63</p> <p>H1 Wbk 4 pgs 13 – 15</p> | <p><u>Write</u> TJ Assessment MNU 0-20c</p> <p><u>Say, Make and Write</u> Ask the children to design signs to show how many children can play at each area in the class.</p> |

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.