



NUMERACY & MATHEMATICS POLICY & PROGRESSION PATHWAY PROGRAMME

SGOIL NAN LOCH



OCTOBER 2019



Numeracy and Mathematics



Programme & Policy

“Education Scotland’s ‘Curriculum for Excellence (CfE) Statement for Practitioners (Aug 2016) stated that the two key resources which support practitioners to plan learning, teaching and assessment are: Experiences and Outcomes and Benchmarks” (Educational Scotland)

A Numeracy and Mathematics programme has been drawn up to ensure a pathway through the skills from Early to Second Level. Staff will plan learning, teaching and assessment using the Experiences and Outcomes, the benchmarks and this programme to ensure they are offering a progressive pathway through numeracy and mathematics.

How to use this programme.

1. Identify which Experiences and Outcomes you will be covering through discrete and interdisciplinary learning. The Experiences and Outcomes which link to each topic have been bundled to make planning easier and ensure pace, but may be adjusted for your topic if necessary.
2. Identify the correct level for your group of pupils and use the learning intentions and success criteria from the skills pathways detailed below as a basis for planning activities incorporating breadth, challenge and application.
3. Learning Intentions to be taken from the Es & Os and Benchmarks (WHAT you want the pupils to learn); Success Criteria to be taken from the Skills Pathways (HOW you want them to learn it).

Benchmarks – Numeracy and Mathematics

Benchmarks in each curriculum area are designed to be concise and accessible, with sufficient detail to communicate clearly the standards expected for each curriculum level. Teachers and other practitioners can draw upon the Benchmarks to assess the knowledge, understanding, and skills for learning, life and work which children are developing in each curriculum area

- Benchmarks have been developed to provide clarity on the national standards expected within each curriculum area at each level. They set out clear lines of progression in literacy and English and numeracy and mathematics, and across all other curriculum areas from Early to Fourth Levels (First to Fourth Levels in Modern Languages). Their purpose is to make clear what learners need to know and be able to do to progress through the levels, and to support consistency in teachers’ and other practitioners’ professional judgements. Teachers’ professional judgements will be collected and published at national, local and school levels. It is important that these judgements are robust and reliable. This can only be achieved through effective moderation of planning learning, teaching and assessment.
- Skills development is integrated into the Benchmarks to support greater shared understanding. An understanding of skills and how well they are developing will enable learners to make links between their current learning and their future career options and employment.
- Benchmarks draw together and streamline a wide range of previous assessment guidance (including significant aspects of learning, progression frameworks and annotated exemplars) into one key resource to support teachers’ and other practitioners’ professional judgement of children’s and young people’s progress across all curriculum areas.
- Benchmarks have been designed to support professional dialogue as part of the moderation process to assess where children and young people are in their learning. **They will help to support holistic assessment approaches across learning. They should not be ticked off individually for assessment purposes.**
- Benchmarks numeracy should be used to support teachers’ professional judgement of achievement of a level. Benchmarks support teachers and other practitioners to understand standards and identify children’s and young people’s next steps in learning. Evidence of progress and achievement will come from a variety of sources including:
 - ✓ observing day-to-day learning within the classroom, playroom or working area;
 - ✓ observation and feedback from learning activities that takes place in other environments, for example, outdoors, on work placements;

- ✓ coursework, including tests;
- ✓ learning conversations; planned periodic holistic assessment and
- ✓ information from standardised assessment.

Achievement in Numeracy and Mathematics:

Achievement of a level is based on teacher professional judgement, well informed by a wide range of evidence. Benchmarks should be used to review the range of evidence gathered to determine if the expected standard has been achieved and the learner has:

- ✓ achieved a **breadth** of learning across the knowledge, understanding and skills as set out in the Experiences and Outcomes for the level;
- ✓ responded consistently well to the level of **challenge** set out in the Experiences and Outcomes for the level and has moved forward to learning at the next level in some aspects; and
- ✓ demonstrated **application** of what they have learned in new and unfamiliar situations.

It is not necessary for learners to demonstrate mastery of every individual aspect of learning within Benchmarks at a particular level before moving on to the next level. However, it is important that there are no major gaps in children's and young people's learning when looking across the major organisers in each curriculum area.

Breadth, Challenge and Application in Mathematics

Breadth in Numeracy and Mathematics

Learners demonstrate breadth in numeracy and mathematics when they:

- work confidently with an increasing number of connected experiences and outcomes
- identify the mathematical ideas and concepts required to interpret questions
- use an increasing range of mathematical language and notation, formula and equations
- use an increasing range of mathematical tools.

Opportunities for breadth can be provided by planning a range of activities to bring together and use mathematical knowledge and understanding. For example, using money as a context for learning about number or using knowledge of decimal fractions within area and perimeter calculations.

Application in Numeracy and Mathematics

Learners demonstrate application of their numeracy and mathematics when they:

- make connections and apply knowledge, understanding and skills across the numeracy and mathematics experiences and outcomes
- use numeracy and mathematical skills in other curricular areas
- understand and explain how numeracy and mathematics impacts on the world of learning, life and work

Learners should be provided with opportunities to use a wide range of mathematical skills to experience tasks in new and unfamiliar contexts. Learners should also have planned opportunities to use their mathematical skills in other curriculum areas. For example, designing and creating a new board game or working out the electrical consumption of a house and calculating the most effective way to save money, given a variety of options.

In Sgoil nan Loch we use our local environment and interdisciplinary topics to provide further opportunities for breadth and application in mathematics.

Challenge in Numeracy and Mathematics

Learners are provided with challenge in numeracy and mathematics when they can:

- approach increased complexity of questions involving more steps and operations
- work with open ended questions and tasks
- use an extended range of mathematical knowledge in tasks
- interpret increasingly complex numerical information and use this to draw conclusions, assess risk, make reasoned evaluations and informed decisions
- communicate understanding by articulating ideas, approaches and processes with increasing clarity, both orally and in written form

Challenge can be provided through planning an appropriate range of opportunities within tasks and activities. These tasks and activities should increase in complexity and require a greater number of processes to complete them. For example, learners sorting a range shapes and objects using their own criteria or working out the cost and risks of various forms of loans and justifying choices. Using open ended tasks allows learners the opportunity to clearly explain their approach to the question.

Development of Skills

In the Numeracy and Mathematics Principles and Practice paper, it is stated that:

“From the early years through to the senior stages, children and young people will demonstrate progress in their skills in interpreting and analysing information, simplifying and solving problems, assessing risk and making informed choices. They will also show evidence of progress through their skills in collaborating and working independently as they observe, explore, experiment with and investigate mathematical problems.

The experiences and outcomes encourage learning and teaching approaches that challenge and stimulate children and young people and promote their enjoyment of mathematics. To achieve this, Sgoil nan Loch teachers will use a skilful mix of approaches, including:

- planned active learning which provides opportunities to observe, explore, investigate, experiment, play, discuss and reflect
- modelling and scaffolding the development of mathematical thinking skills
- learning collaboratively and independently
- opportunities for discussion, communication and explanation of thinking
- developing mental agility
- using relevant contexts and experiences, familiar to young people
- making links across the curriculum to show how mathematical concepts are applied in a wide range of contexts, such as those provided by science and social studies
- using technology in appropriate and effective ways

- building on the principles of Assessment is for Learning, ensuring that young people understand the purpose and relevance of what they are learning
- developing problem-solving capabilities and critical thinking skills.

Mathematics is at its most powerful when the knowledge and understanding that have been developed are used to solve problems. Problem solving will be at the heart of all our learning and teaching. We should regularly encourage children and young people to explore different options: ‘what would happen if...?’ is the fundamental question for teachers and learners to ask as mathematical thinking develops.”

The following programme takes all of these principles into account and provides a clear, coherent pathways of progression across levels of Numeracy and Mathematics. The table below shows each area of Numeracy and Mathematics and the expectations within and across levels. This Experiences and Outcomes have then been matched to each of the topics and areas to be covered within Numeracy and Mathematics, in order to achieve the level.

We have used the South Ayrshire Skills Pathways as a basis for our progression pathway.

The three main areas of Numeracy and Mathematics, as highlighted in the Benchmarks, have been colour-coded:

- Number, Money and Measure
- Shape, Position and Movement
- Information Handling

Monitoring, Tracking & Assessment:

Teachers from similar stages plan together and meet throughout the year to discuss learning and teaching strategies. There are transition processes in place between Nursery, P1, and also between stages. This includes a formal meeting between teachers and the completion of a hand-on sheet. This informs teachers of levels achieved, work covered and next steps. This information is used for the next stage in planning. Assessment is carried out through: teacher observations; check-ups; self and peer assessment; formal assessments (SNSAs & MCNG). Moderation occurs through specific moderation topics, as part of LQAG and Hub cluster work, and ongoing moderation discussions where standards are shared and agreed.

**Numeracy and Maths
Early Level Skills Progression**

Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→
<p>Estimation and Rounding</p>	<p>Bundle E1 I am developing a sense of size and amount by observing, exploring, using and communicating with others about things in the world around me. <i>MNU 0-01a</i></p>	<p>Recognises the number of objects in a group, without counting (subitising) and uses this information to estimate the number of objects in other groups.</p>	<p>I am beginning to show an interest in numbers. Place objects or pairs 'in order'. Regular dot patterns to at least 3 without having to count.</p>	<p>I recognise 'how many?' in regular dot patterns to 5, without having to count (subitising).</p>	<p>Recognise 'how many?' in regular dot and irregular dot patterns to 5 and beyond. Use my knowledge of dot patterns to estimate larger amounts.</p>
		<p>Checks estimates by counting.</p>	<p>Explore amounts, size and measure during play.</p>	<p>Estimate 'how many?' (0-5 and beyond) and then check my answer by counting.</p>	<p>Estimate 'how many?' (5 and beyond) and then check my answer by counting.</p>
		<p>Demonstrates skills of estimation in the contexts of number and measure using relevant vocabulary, including less than, longer than, more than and the same.</p>	<p>I am beginning to show an interest in numbers. Use appropriate mathematical vocabulary to describe amount and measure.</p>	<p>Talk about more and less to compare quantities. Use the language of measurement and comparison appropriately during play activities (e.g. big, bigger, long, longer, heavy, and heavier).</p>	<p>Use the terms, "smaller/smallest" and "bigger/biggest" when comparing numbers. Understand the meaning of "one more", and "one less". Estimate length, weight, amount etc. appropriately in convenient non-standard units.</p>
<p>Number Processes</p>	<p>Bundle E2 I have explored numbers, understanding that they represent quantities, and I can use them to count, create sequences and describe order. <i>MNU 0-02a</i> I use practical materials and can</p>	<p>Explains that zero means there is none of a particular quantity and is represented by the numeral 0.</p>	<p>I am beginning to show an interest in numbers. Know that zero means there is none left.</p>	<p>Understand that zero means there is none of a particular quantity.</p>	<p>Recognise the numeral 0 and understand that this means there is none of a particular quantity.</p>
		<p>Recalls the number sequence forwards within the range 0 - 30, from any given number.</p>	<p>Say numbers during play activities.</p>	<p>I can count on using a (floor) number track, knowing that I can start from 0 or other numbers. Say numbers in the correct order to 5 and beyond if appropriate.</p>	<p>Recite numbers forwards from 0 to 30 and beyond if appropriate. I can count on from a number other than 0 in the correct sequence.</p>

**Numeracy and Maths
Early Level Skills Progression**

Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→
	<p>'count on and back' to help me understand addition and subtraction, recording my ideas and solutions in different ways. <i>MNU 0-03a</i></p>	Recalls the number sequence backwards from 20.	Recite backwards from 5-0 within a play context.	Recite backwards from 10-0 in a variety of contexts.	Recite backwards from 20 to 0.
		Identifies and recognises numbers from 0 to 20.	<p>I am beginning to show an interest in numbers.</p> <p>Talk about numerals in my everyday play.</p>	Recognise numerals that are important to me.	<p>Estimate, count, name and recognise quantities to ten and beyond if appropriate.</p> <p>Recognise numerals to 10/20 and beyond.</p>
		Orders all numbers forwards and backwards within the range 0 – 20.	Use numbers that correspond to amount during counting songs to/from 5.	Use numbers that correspond to amount during counting songs to/from 10.	Order numbers to 5/10/20 and beyond. Understand and use horizontal, vertical and other number lines such as clocks and dials.
		Identifies the number before, the number after and missing numbers in a sequence within 20.		Say which numbers come before / after a given number within 0-10.	Identify missing digits from a 0-10 sequence. Identify numbers before, after and between and say when numbers are missing in a sequence.
		Uses one-to-one correspondence to count a given number of objects to 20.	<p>I am beginning to show an interest in numbers.</p> <p>I am beginning to touch items as I count them.</p>	I can touch and count items accurately and consistently in a range of contexts to 5.	Use 1-1 correspondence to count objects up to 20.
		Identifies 'how many?' in regular dot patterns, for example, arrays, five frames, ten frames, dice and irregular dot	<p>I am beginning to show an interest in numbers.</p> <p>Recognise regular dot patterns to 3 without having to count.</p>	I recognise 'how many?' in regular dot patterns to 5, without having to count (subitising).	<p>Recognise 'how many?' in regular dot and irregular dot patterns to 5.</p> <p>I can use my knowledge of dot patterns to estimate larger amounts.</p>

**Numeracy and Maths
Early Level Skills Progression**

Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→
		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).	I am beginning to show an interest in numbers.	I know the last number I say is the amount I have counted.	I know the last number I say is the amount I have counted. I can count a specific quantity from a group of items knowing that the arrangement doesn't matter.
		Uses ordinal numbers in real life contexts, for example, 'I am third in the line'.	Describe order using 1 st , 2 nd , 3 rd etc within a relevant context.	Describe order using 1 st , 2 nd , 3 rd etc within a relevant context.	Describe, understand and use 1st, 2nd, 3rd..., first, second, third...
		Uses the language of before, after and in-between.		Say which numbers come after a given number within 0-10.	Say numbers before, after and in-between in sequences up to 20.
		Counts on and back in ones to add and subtract.	Count on and back in ones within a relevant context.	Count on and count back in ones using items within a play context.	Understand the meaning of "one more", and "one less". Understand that if you add you get more and if you take away you have less.
		Doubles numbers to a total of 10 mentally.		Identify dot patterns that represent the same amounts during games.	I know doubles and near doubles to ten.

**Numeracy and Maths
Early Level Skills Progression**

Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→
		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.		I know the last number I say is the quantity I have counted.	I know the last number I say is the quantity I have counted (1- 20 and beyond).
		Partitions quantities to 10 into two or more parts and recognises that this does not affect the total.			Investigate number stories to ten by partitioning a quantity using concrete resources.
		Adds and subtracts to 10.		Understand if you add you get more and if you take-away you get less.	Understand the concepts of addition and subtraction using concrete materials. Uses a range of strategies to add/subtract mentally within at least 10.
		Uses appropriately the mathematical symbols +, - and =.			Recognise "+" as the addition sign and "=" as the equals sign. Recognise "-" as the subtraction sign and "=" as the equals sign.
		Solves simple missing number problems.			Demonstrate and record ideas and solutions to addition in different ways. Solve subtraction word problems including those which contain the language difference between, how many left, how many more. Solve missing number calculations.

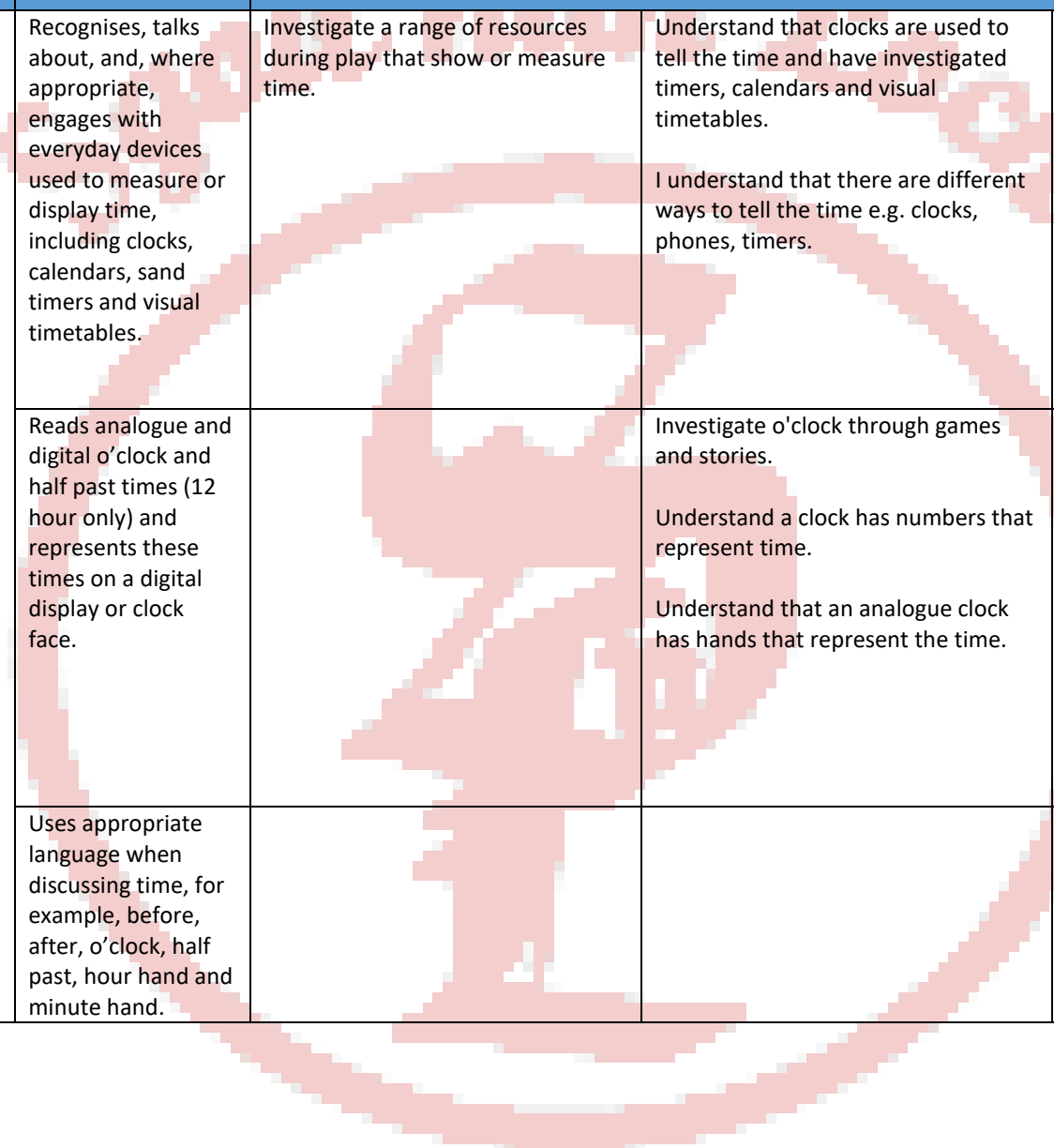
Numeracy and Maths
Early Level Skills Progression

Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→
Fractions, Decimals and Percentages	Bundle E3 I can share out a group of items by making smaller groups and can split a whole object into smaller parts. MNU 0-07a	Splits a whole into smaller parts and explains that equal parts are the same size.	Understand what it means to share in my everyday life.	Split whole items in equal parts eg; halves, quarters Within a relevant context.	Split a whole object into equal parts. Split a whole object into a specified number of parts. Share a group of objects with others, understanding and explaining what makes it fair.
		Uses appropriate vocabulary to describe halves.	Begin to use the language of sharing and grouping e.g. same, not the same, whole, half.	Use the language of sharing and grouping e.g. same, not the same, whole, half.	Confidently use the language of sharing and grouping e.g. same, not the same, whole, half. Use the language of fractions. Demonstrate that two halves make a whole.
		Shares out a group of items equally into smaller groups.	Understand what it means to share in my everyday life. Share by giving one to each person.	Investigate sharing and grouping and share a group of objects with others within a relevant context.	Identify the importance of equal sharing when splitting a whole object into smaller parts. Make groups of equal amounts from a larger quantity. Understand that a fraction is part of a whole.
Money	Bundle E4 I am developing my awareness of how money is used and can	Identifies all coins to £2.	Develop an awareness of money through play.	Recognise 1p, 2p and 5p through play. Explore different ways to sort coins and notes.	Recognise and use a range of coins from 1p to £2.

Numeracy and Maths
Early Level Skills Progression

Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→
	recognise and use a range of coins. MNU 0-09a	Applies addition and subtraction skills and uses 1p, 2p, 5p and 10p coins to pay the exact value for items to 10p.	Understand that money is exchanged for goods and services. Use the language of money appropriately in role play activities. eg; How much does this cost?	Use the language of money e.g. how much, change, cost, price. Explore paying amounts within a play context. Explore the giving of change within a play context. Pay an exact amount for items using 1p's (items to be bought should cost no more than 5p).	Confidently use the language of money e.g. how much, change, cost, price. Pay an exact amount for items using one coin (1p-10p). Add some coin amounts together so I can pay the exact amount for items (1p-10p for items costing up to 20p). Accurately work out how much change is needed when given a larger amount.
Time	Bundle E5 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	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.	I am developing an awareness of time e.g. EYC routines, special occasions throughout the year etc. Understand and follow the daily nursery routine and talk about times that are special to me. Investigate days of the week and seasons through outdoor play and songs.	Follow the daily routine and am aware of different parts of the day (day time, night time etc...). Recite days of the week songs. Talk about the features of the four seasons.	Understand and use time vocabulary in relation to routines and events: day, night, and morning, afternoon, before, after, yesterday, tomorrow. Order times of my day and other events in the year. Place events in time sequences and can name seasons, months and days of the week. Name and order the days of the week. I can name the seasons and can talk about them.

Numeracy and Maths
Early Level Skills Progression

Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→
		<p>Recognises, talks about, and, where appropriate, engages with everyday devices used to measure or display time, including clocks, calendars, sand timers and visual timetables.</p>	<p>Investigate a range of resources during play that show or measure time.</p>	<p>Understand that clocks are used to tell the time and have investigated timers, calendars and visual timetables.</p> <p>I understand that there are different ways to tell the time e.g. clocks, phones, timers.</p>	<p>Have a sense of how to organise time.</p> <p>Use timers and other resources to measure amounts of time.</p> <p>I am aware that time is measured in minutes.</p>
		<p>Reads analogue and digital o'clock and half past times (12 hour only) and represents these times on a digital display or clock face.</p>		<p>Investigate o'clock through games and stories.</p> <p>Understand a clock has numbers that represent time.</p> <p>Understand that an analogue clock has hands that represent the time.</p>	<p>Identify the hour and minute hands on a clock.</p> <p>Understand that a clock face moves from 1-12.</p> <p>Match analogue and digital time in hours.</p> <p>Recognise o'clock and half past on an analogue or digital clock.</p> <p>Move the hands on an analogue clock to demonstrate o'clock and half past.</p>
		<p>Uses appropriate language when discussing time, for example, before, after, o'clock, half past, hour hand and minute hand.</p>			<p>Use appropriate language when talking about time.</p>

Numeracy and Maths
Early Level Skills Progression

Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→
<p>Measurement</p>	<p>Bundle E6 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</p>	<p>Shares relevant experiences in which measurements of length, height, weight and capacity are used, for example, in baking.</p>	<p>Investigate and compare sizes and amounts.</p> <p>To share information with others using appropriate language.</p> <p>Use non-standard units to estimate and measure size and amounts.</p>	<p>Talk about a time when I have experienced something being measured (e.g. own feet, baking etc.).</p>	<p>Talk about when and why things need to be measured.</p>
		<p>Describes common objects using appropriate measurement language, for example, tall, heavy and empty.</p>	<p>I am beginning to explore mathematical concepts e.g. full and not full.</p> <p>Use appropriate language of measurement during play experiences to describe objects.</p>	<p>Use the language of measurement and comparison appropriately during play activities (e.g. big, bigger, long, longer, heavy, and heavier, more and less).</p>	<p>Use appropriate language of measurement when describing given objects and share this information with others.</p>
		<p>Compares and describes lengths, heights, weights and capacity using everyday language including longer, shorter, taller, heavier, lighter, more and less.</p>	<p>Investigated items through play and am starting to use some appropriate mathematical language to describe items.</p>	<p>Investigated a wide range of items and can confidently describe their weight/height/capacity using appropriate mathematical language..</p>	<p>Investigate a wide range of items and can confidently describe their weight/height/capacity using appropriate non-standard units.</p>
		<p>Estimates, then measures, the length, height, weight and capacity of familiar objects using a range of appropriate non-</p>	<p>Explore different objects and materials and can make choices about how I measure.</p>	<p>Explore different objects and materials and estimate what my findings may be, then can make choices about how I measure.</p>	<p>I can make decisions about how to measure items and choose appropriate non-standard units.</p> <p>I can estimate what my findings might be, then check my answer.</p>

Numeracy and Maths
Early Level Skills Progression

Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
		standard units.			
Patterns and Relationships	Bundle E7 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	Copies, continues and creates simple patterns involving objects, shapes and numbers.	I am beginning to look at patterns around me. I am exploring patterns all around me and identify them (eg: stripes, spots). Identify and describe patterns.	I can recognise and copy a simple pattern. Copy and continue repeated patterns using a variety of resources and media. Identify and describe patterns in their own and the wider environment.	Recognise, describe and create patterns using a variety of media. Create a more organised pattern using a variety of materials, sounds or movements and talk about what makes it a pattern. Identify, continue and create 2D shape patterns. Identify which part of the pattern is repeated.
		Explores, recognises and continues simple number patterns and describes them using appropriate mathematical vocabulary.			Recognise and continue simple number patterns. Count up in 1's, 2's, 5's and 10's.
		Finds missing numbers on a number line ranging from 0 to at least 20.			Identify missing numbers on a number line.
Properties of 2D Shapes and 3D Objects	Bundle E8 I enjoy investigating objects and	Recognises, describes and sorts common 2D shapes and 3D objects	I use blocks to create my own simple structures and arrangements.	I can recognise and describe common 2D shapes and 3D objects	I am beginning to see the link between 3D objects and 2D shapes.

Numeracy and Maths
Early Level Skills Progression

Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
	shapes and can sort, describe and be creative with them. MTH 0-16a	according to various criteria, for example, straight, round, flat and curved.			
			Investigate the properties of 3D objects through play.	Investigate the properties of 3D objects through play and tell others about them.	Sort shapes and objects using a range of criteria.
			Talk about shapes and objects around me.	Be creative in using 3D objects, talk about what I am making and talk about the 2D shapes I see when I print.	Describe the properties of 3D objects and use them creatively.
Angles, Symmetry and Transformation	Bundle E9 In movement, games, and using technology I can use simple directions and describe positions. MTH 0-17a	Understands and correctly uses the language of position and direction to solve simple problems in movement games and technology, for example, in front, behind, above, below, left, right, forwards and backwards.	I am beginning to understand/ use some positional language. I can follow directions that are given to me. I can use some positional language in the correct context.	I can use positional language. (E.g. in front, behind, under, beside, in, on top of) Understand directional language: in front, beside, behind, under, in, out, on top of, next to. Give and follow directions using appropriate language.	Understand and use the vocabulary of position and direction in a variety of contexts. I can follow and give instructions using: forward, backward, up, down, left, right. I can apply my knowledge of direction and movement in a problem-solving context using electronic games, remote control and programmable toys. I can understand and use symbols for direction.
	I have had fun creating a range of symmetrical pictures and patterns using a range of media. MTH 0-19a	Identifies, describes and creates symmetrical pictures with at least one line of symmetry.	I can explore symmetrical shapes and objects through play. Create a range of symmetrical pictures and patterns on my own.	I can make a symmetrical pattern using a range of different materials/resources.	I can make symmetrical shapes by folding and cutting. I can complete simple pictures to make them symmetrical. I can design and create symmetrical pictures and patterns using a range of media.

Numeracy and Maths
Early Level Skills Progression

Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→
<p>Data and Analysis</p>	<p>Bundle E10 I can collect objects and ask questions to gather information, organising and displaying my findings in different ways. MNU 0-20a</p>	<p>Asks simple questions to collect data for a specific purpose.</p>	<p>Collect objects and sort by own criteria and explain own reasoning.</p>	<p>Gather information and decide what questions need to be asked to obtain it.</p> <p>I can talk about the information I have found out.</p>	<p>Ask questions to help gather information and display findings in different ways.</p>
	<p>I can match objects, and sort using my own and others' criteria, sharing my ideas with others MNU 0-20b</p>	<p>Collects and organises objects for a specific purpose.</p>	<p>Organise and display information through everyday play activities.</p>	<p>Organise and display information in a variety of ways e.g. everyday play activities, matching/grouping and through mark making.</p>	<p>Collect, organise and display information using tally marks, Carroll diagram, tree diagram, simple pictograms and bar charts.</p>
	<p>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</p>	<p>Contributes to concrete or pictorial displays where one object or drawing represents one data value, using digital technologies as appropriate.</p>	<p>Display information by using real objects or drawing pictures.</p>	<p>Display information by using real objects, drawing pictures, drawing simple arrow diagrams, completing simple pictograms.</p>	<p>Collect information from various sources e.g. from a picture, from pupils in class.</p> <p>Organise information by matching, sorting, grouping, classifying, counting.</p> <p>Display information by completing pictograms, tables, bar graphs and Carroll diagrams.</p> <p>Interpret displayed information.</p>
		<p>Uses knowledge of colour, shape, size and other properties to match and sort items in a variety of different ways and communicates the process and justifies choice of criteria.</p>	<p>I am beginning to show an interest in collecting, sorting and matching one to one.</p> <p>Sort and match when playing and in my every day activities.</p> <p>Sort by one criteria e.g.: colour, shape or size.</p>	<p>Sort in a variety of different ways according to my own and others' criteria.</p> <p>I can match / sort using my own criteria and tell someone about it.</p>	<p>Match/sort using my own criteria and tell someone about it.</p> <p>Match/sort for others' criteria and tell someone about it.</p> <p>Sort using more than one criteria explaining to others what I am doing.</p>

**Numeracy and Maths
Early Level Skills Progression**

Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
		Applies counting skills to ask and answer questions, make relevant choices and decisions based on the data.		Use the information/graph to talk about how many and ask relevant questions.	Use the information/graphs to make comparisons and ask relevant questions.
		Interprets simple graphs, charts and signs and demonstrates how they support planning, choices and decision making in familiar situations.	<p>Recognise my own snack/cloakroom picture.</p> <p>Use and create signs/charts in the nursery environment and talk about why we use them.</p>	<p>Follow pictorial timetables.</p> <p>Use and create signs/charts in the nursery/school environment and talk about why we use them.</p>	<p>Find specific information from pictograms, bar graphs and Carroll diagrams.</p> <p>Identify and interpret displayed information and recognise the symbols used.</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
Number, money and measure	Estimation and Rounding	<p>Bundle F1 I can share ideas with others to develop ways of estimating the answer to a calculation or problem, work out the actual answer, then check my solution by comparing it with the estimate.</p> <p><i>MNU 1-01a</i></p>	<p>Uses strategies to estimate an answer to a calculation or problem, for example, doubling and rounding.</p> <p>Rounds whole numbers to the nearest 10 and 100 and uses this routinely to estimate and check the reasonableness of a solution.</p>	<p>Understand and describe whether a number is closer to 0, 10 or 20 by using a tool such as a tens frame or a number line, i.e. 8 is closer to 10 than 0.</p> <p>Estimate the position of any number up to at least 20 on a number line with decades clearly marked.</p> <p>Estimate to help me develop a sense and feeling about number and measure.</p> <p>Use different strategies to estimate how many or how much with numbers up to 20.</p> <p>Check estimates by counting.</p> <p>Estimate and count items with accuracy in a range of contexts.</p> <p>Check a solution by comparing with the estimate.</p>	<p>Explore visually and estimate the position of any number up to at least 100 on a number line with decades clearly marked.</p> <p>Explain the rule for rounding up and down and round to the nearest ten.</p> <p>Identify numbers which lie halfway between 1 and 10 as a cut off point for rounding.</p> <p>Round numbers to the nearest 10 when estimating by using a tool such as a tens frame/rekenrek e.g. 32 to 30 & 57 to 60.</p> <p>Estimate answers to 2-digit calculations using rounding and compare with solution.</p> <p>Estimate quantities to 20.</p>	<p>Round 3 digit numbers to the nearest 10 or 100 when estimating and uses skill to estimate and check the reasonableness of a solution.</p> <p>Estimate answers to 3-digit calculations using rounding and compare with the solution.</p> <p>Use different strategies to estimate an answer to a calculation or problem e.g. doubling.</p> <p>Round numbers to estimate answers in addition and subtraction.</p> <p>Explore visually and estimate the position of any 3 digit number on a number line.</p>
	Number and number processes including addition, subtraction, multiplication, division and	<p>Bundle F2 I have investigated how whole numbers are constructed, can understand the importance of zero within the system and can use my knowledge to explain the link</p>	<p>Reads, writes, orders and recites whole numbers to 1000, starting from any number in the sequence.</p> <p>Demonstrates understanding of zero as a placeholder in whole numbers to</p>	<p>Count in 10s and order decade numbers.</p> <p>Recite numbers forwards and backwards from any given number between zero and 100 in the correct sequence.</p> <p>Read any given number between 0-at least 100.</p>	<p>Partition 2 digit numbers in different ways.</p> <p>Count forwards and backwards in multiples of 2s, 10s, 5s, 3s and 4s.</p> <p>Say the next number before and after in a multiple number sequence beyond 100.</p>	<p>Understand the value of each digit up to at least 3 digits.</p> <p>Counts forwards and backwards in 2s, 5s, 10s, 50s and 100s up to 1000.</p> <p>Demonstrates understanding of the commutative law e.g. $6+3 = 3+6$ or $2 \times 4 = 4 \times 2$.</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression	→	
	negative numbers	<p>between a digit, its place and its value. <i>MNU 1-02a</i></p>	<p>1000.</p> <p>Uses correct mathematical vocabulary when discussing the four operations including, subtract, add, sum of, total, multiply, product, divide and shared equally.</p> <p>Identifies the value of each digit in a whole number with three digits, for example, $867 = 800 + 60 + 7$.</p> <p>Counts forwards and backwards in 2s, 5s, 10s and 100s.</p>	<p>Work out missing numbers on a hundred square.</p> <p>Write numbers to at least 100.</p> <p>Write numbers to 20 in words.</p> <p>Order numbers accurately and consistently.</p> <p>Count on and back from any given number on a number square.</p> <p>Recognise 0 as a place holder.</p> <p>Explain the number system is built around digits 0-9.</p> <p>Begin to understand tens and units and identify their value.</p> <p>Place a number on a number line and talk about its position.</p> <p>Count in tens within 100 from any given number.</p> <p>Count on and back in 2, 5s and 10s within numbers up to 100.</p> <p>Understand the value of each digit within a number.</p> <p>Understand that the adding or subtracting zero does not change the answer.</p>	<p>Read, write and count to at least 1000 from any number.</p> <p>Sequence to at least 1000.</p> <p>Explain and justify placing 3 digit numbers on a number line.</p> <p>To describe the value of each digit in a number to at least 1000 including zeros.</p> <p>Count on and back in 100s to 1000.</p> <p>Write 2 digit numbers in words.</p> <p>Recognise that 10 units is the same as 10 ones.</p> <p>Recognise odd and even numbers to 100.</p> <p>Counting and identifying 1 more/less, 2 more/less and make links to addition and subtraction.</p> <p>Know number facts/families of numbers to at least 100 (Part/part/whole model).</p>	<p>Demonstrate understanding of 0 as place holder to at least 1000.</p> <p>Identify, read and write, in numbers and words, whole numbers to at least 1000 and represent on a number line.</p> <p>Starting from any number in a sequence count on or back to at least 1000.</p> <p>Partitions whole numbers up to 1000 into standard component parts to aid mental calculation.</p> <p>Recognises 10 tens = 100; 10 hundreds = 1000 and can represent this using concrete materials and visually.</p> <p>Describes numbers using quantities value or place value e.g. 2164 is 2000, 100 and 64; 2 thousands, 1 hundred, 6 tens and 4 ones.</p> <p>Recognises odd and even numbers up to 1000.</p>

Numeracy and Maths
First Level Skills Progression

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →
				<p>Recognise the importance of number in everyday contexts.</p> <p>Recognise odd and even numbers to 20 and beyond.</p> <p>Partition a 2 digit number into tens and ones.</p> <p>Recognise the difference between order name and number name.</p>

		<p>Bundle F3</p> <p>I can use addition, subtraction, multiplication and division when solving problems, making best use of the mental strategies and written skills I have developed.</p> <p>MNU 1-03a</p>	<p>Uses multiplication and division facts to solve problems within the number range 0 to 1000.</p> <p>Multiplies and divides whole numbers by 10 and 100 (whole number answers only).</p> <p>Applies knowledge of inverse operations (addition and subtraction; multiplication and division).</p> <p>Solves two step problems.</p> <p>Demonstrates understanding of the commutative law, for example, $6 + 3 = 3 + 6$ or $2 \times 4 = 4 \times 2$.</p> <p>Applies strategies to determine multiplication facts, for example, repeated addition, grouping, arrays and multiplication facts.</p> <p>Solves addition and subtraction problems with three digit whole numbers.</p> <p>Adds and subtracts multiples of 10 or 100</p>	<p>Recall doubles to at least 20.</p> <p>Add and subtract to 20 or beyond, using concrete material as appropriate.</p> <p>Link addition and subtraction number bonds to 20: e.g. $8 + 9 = 17$, $9 + 8 = 17$, $17 - 8 = 9$, $17 - 9 = 8$</p> <p>Within a range of contexts, describe how to solve a variety of adding tasks, including bridging 10 mentally.</p> $6+3=\underline{\quad}$ $4+\underline{\quad}=9$ $\underline{\quad}+3=10$ <p>Describe how to solve a variety of subtraction tasks.</p> $11-2=\underline{\quad}$ $8-\underline{\quad}=5$ $\underline{\quad}-5=3$ <p>Understand and use mathematical language: digit, add, sum of, plus, total, more than, altogether, subtract, take away, minus, less than, difference between, how many more than and equals.</p> <p>An important strategy for children to develop at this stage is the ability to count on and back and keep track of their counts from any given number to 20 or beyond.</p> <p>Understand the concept of multiplication as repeated</p>	<p>Using pictures, jottings and models to record addition and subtraction calculations.</p> <p>Know the importance of an array pattern and that equal groups can be put into an array.</p> <p>Describe how to solve a variety of addition and subtraction tasks; using knowledge of doubles, near doubles and inverse operations. From this, see that 4×3 has the same total and place on the number line as 3×4 but they look different.</p> <p>Add/subtract two-digit numbers.</p> <p>Exchange ones for tens using concrete material.</p> <p>Create and solve a range of word problems including those with more than one step and applies the correct operations to complete the calculation.</p> <p>Recognise that when subtracting mentally the difference between two numbers can be found by counting on from the smaller number.</p> <p>Understand concept of division as a means of sharing a total amount, using concrete materials to share equally to find the number in each group or set.</p>	<p>Applies a range of strategies to solve addition and subtraction problems with up to at least 3 digit whole numbers and justifying choice of strategy.</p> <p>Use strategies to add mentally within 1000 including money.</p> <p>Add multiples of 10 and 100 to a 3 digit number.</p> <p>Use strategies to subtract mentally within 100 using concrete materials.</p> <p>Explore subtraction to 1000.</p> <p>Subtract multiples of 10 from a 3 digit number.</p> <p>Apply subtraction and addition knowledge and skills to practical problems.</p> <p>Make word problems within addition and subtraction.</p> <p>Solves problems mentally by multiplying and dividing whole numbers within a range of numbers 0 – 1000.</p> <p>Apply a range of strategies to determine division and multiplication facts.</p> <p>Extend the concept of multiplication and the associated language.</p> <p>Increase mental agility when recalling 2, 4 and 8 times tables.</p>
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			<p>to or from any whole number to 1000.</p> <p>Applies strategies to determine division facts, for example, repeated subtraction, equal groups, sharing equally, arrays and multiplication facts.</p>	<p>addition using concrete materials to make groups or sets of objects to find a total amount.</p> <p>Link multiplication using repeated addition.</p> <p>Multiply by counting in groups.</p> <p>Show understanding of the 2 times tables and link it with doubles.</p> <p>Recognise the x sign.</p> <p>Use concrete materials to represent multiplication arrays.</p> <p>Count and order in 2s, 5s and 10s.</p> <p>Identify patterns in multiplication tables.</p> <p>Use a calculator to multiply by the 2, 5 or 10 times tables to check my answers.</p> <p>Understand the concept of division and the associated language: sharing and grouping.</p>	<p>Link the connection between multiplication and division using concrete materials.</p> <p>Apply a range of strategies to determine division and multiplication facts.</p> <p>Recognise the division sign \div.</p> <p>Explore the patterns of 2 and 4 and 8 times tables. (N.B. for some children you may have to come back to the 8 times table at a later stage).</p> <p>Recite the facts of the 2, 4 and 8 times tables with increasing accuracy.</p> <p>Link the connection between multiplication, addition and division.</p> <p>Build up and record the 10 then 5 times table.</p> <p>Linking the 5 times table by halving the 10 times table.</p> <p>Carry out practical tasks using concrete materials to reinforce understanding of table facts for the 2, 3, 4, 5, 6, 8 and 10 times tables.</p> <p>Recite the facts of the 2, 3, 4 and 6 times tables with increasing accuracy.</p>	<p>Carry out practical tasks using concrete materials to reinforce understanding of table facts for the 2, 4 and 8 times tables.</p> <p>Multiply and divide mentally by 2, 4 and 8, showing rapid recall, to questions phrased in a variety of ways e.g. six twos, 3 times 2, 5 multiplied by 2, multiply 4 by 3, divide 20 by 4, 12 divided by 4.</p> <p>Double multiples of 10 to 990.</p> <p>Understand the link between 3, 6 and 9 times tables.</p> <p>Carry out practical tasks using concrete materials to reinforce understanding of able facts for the 3, 6 and 9 times tables.</p> <p>Recite the facts of the 3, 6 and 9 times tables with increasing accuracy.</p> <p>Multiply and divide mentally by 3, 6 and 9, showing rapid recall, to questions phrased in a variety of ways e.g. ten threes, 3 times 2, 3 multiplied by 2, multiply 6 by 3, divide 9 by 3, 12 divided by 3.</p>
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**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →
			<p>Explore the link between multiplication and division.</p> <p>Find a half of an object or a number.</p>	<p>Multiply and divide mentally by 2, 3, 4, 5, 6 and 10, showing rapid recall, to questions phrased in a variety of ways e.g. six twos, 3 times 2.</p> <p>Discuss and identify patterns and links within and between multiplication tables.</p> <p>Multiply single digits horizontally and vertically.</p> <p>Multiply 2 digit numbers by 2, 3, 4, 5, 6 and 10 without carrying.</p> <p>Apply my knowledge and skills to written problem solving tasks.</p> <p>Double multiples of 10 to 100 using partitioning.</p> <p>Use a calculator to check my answers (multiplying and dividing).</p> <p>Apply knowledge of multiplication by 2, 3, 4, 5, 6, 8 and 10 and related division facts to solve problems, including those related to money and fractions.</p> <p>Discuss and identify patterns and links within and between multiplication tables.</p> <p>Link multiplication and division facts for the 3 and 6 times tables.</p> <p>Carry out practical tasks using concrete materials to reinforce understanding of table facts for the 7 times tables.</p> <p>Recite the facts of the 7 times tables with increasing accuracy.</p> <p>Multiply and divide mentally by 7, showing rapid recall, to questions phrased in a variety of ways e.g. ten sevens, 7 times 2, 3 multiplied by 7, multiply 6 by 7, divide 28 by 7, 70 divided by 7.</p> <p>Use a calculator to check my answers.</p> <p>Divide one and two digit numbers with remainders.</p> <p>Understand the concept of remainder using concrete materials to group and share.</p> <p>Link multiplication and division facts 2, 4 and 8 times tables.</p> <p>Link multiplication and division facts for 2, 3, 4, 5, 6, and 10 times tables.</p> <p>Apply knowledge of multiplication by 2, 4 and 8 and related division facts to solve problems, including those related to money and fractions.</p> <p>Apply knowledge of multiplication by 5 and 10 and related division facts to</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →
				<p>Understand that dividing by 4 is finding $\frac{1}{4}$.</p> <p>solve problems, including those related to money and fractions.</p> <p>Discuss and identify patterns and links within and between multiplication tables.</p> <p>Link multiplication and division facts for the 3, 6 and 9 times tables.</p> <p>Link multiplication and division facts for the 7 times table.</p> <p>Understand that dividing by 8 is finding $\frac{1}{8}$.</p>

Numeracy and Maths
First Level Skills Progression

Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
Fractions, Decimals and Percentages	<p>Bundle F4 Having explored fractions by taking part in practical activities, I can show my understanding of:</p> <ul style="list-style-type: none"> • how a single item can be shared equally • the notation and vocabulary associated with fractions • where simple fractions lie on the number line. <p style="color: blue; font-size: small;">MNU 1-07a</p>	<p>Explains what a fraction is using concrete materials, pictorial representations and appropriate mathematical vocabulary.</p> <p>Demonstrates understanding that the greater the number of equal parts, the smaller the size of each share.</p> <p>Uses the correct notation for common fractions to tenths, for example, $\frac{1}{2}$, $\frac{2}{3}$ and $\frac{5}{8}$.</p> <p>Compares the size of fractions and places simple fractions in order on a number line.</p> <p>Uses pictorial representations and other models to demonstrate understanding of simple equivalent fractions, for example,</p>	<p>Understand a fraction as being part of a whole.</p> <p>Share objects equally.</p> <p>Show halves and quarters of an object through practical activities e.g. cutting, colouring.</p> <p>Recognise that four quarters are equal to one whole.</p> <p>Recognise that two quarters are equal to one half.</p> <p>Understand that the denominator tells how many equal parts the whole has been divided into and the numerator tells how many of the equal parts are used.</p> <p>Use materials to partition and re-partition amounts to show fractions that are equivalent.</p> <p>Read, write and use the terms half and quarter and their notation $\frac{1}{2}$ and $\frac{1}{4}$.</p>	<p>Use concrete materials to investigate breaking a whole into parts (halves, fifths, quarters and tenths).</p> <p>Recognise and use the format of a fraction.</p> <p>Understand and can demonstrate how a whole is represented, e.g. 3 thirds = 1 whole, 4 quarters = 1 whole.</p> <p>Place $\frac{1}{2}$ and $\frac{1}{4}$ on a number line.</p> <p>Identify numbers halfway between whole numbers on a number line e.g. 1 $\frac{1}{2}$.</p> <p>Estimate and developing an awareness that the greater the number of equal parts, the smaller the size of each share (using diagrams and concrete materials).</p> <p>Record and write tenths on a number line.</p>	<p>Recognise all simple fractions to tenths and the associated notation.</p> <p>Understand and use the terms numerator and denominator.</p> <p>Compare the size of common fractions through practical activities.</p> <p>Demonstrates understanding that the greater the denominator the smaller the size.</p> <p>Relate the spoken fraction to the written fraction and vice versa.</p> <p>Understand that $\frac{2}{2} = 1$, $\frac{4}{4} = 1$.</p> <p>Identify where common fractions are located on a number line.</p> <p>Order fractions with the same denominator.</p> <p>Recognise and use correct notation for common fractions up to at least tenths, where the numerator is more than one e.g. $\frac{3}{4}$, $\frac{2}{5}$ and $\frac{3}{10}$.</p> <p>Uses pictorial representations and other models to demonstrate understanding of simple equivalent fractions, for example, $\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$.</p>
	Through exploring how groups of items can be	$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$	Confidently use concrete materials to show understanding of collections of	Confidently use concrete materials to show understanding of collections of items which can be shared equally.	Confidently use concrete materials to show understanding of collections of item relationships shared equally

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
		<p>shared equally, I can find a fraction of an amount by applying my knowledge of division.</p> <p><i>MNU 1-07b</i></p>	<p>Explains the role of the numerator and denominator.</p> <p>Uses known multiplication and division facts and other strategies to find unit fractions of whole numbers, for example, $\frac{1}{2}$ or $\frac{1}{4}$.</p>	<p>items can be shared equally into halves and quarters.</p> <p>Progress to pictorial representations when understanding secure.</p> <p>Use concrete materials to work out halves of numbers up to 20 and begin to recall them (link to doubles).</p>	<p>Progress to pictorial representations when understanding secure.</p> <p>Begin to explore the relationship between division and simple fractions through the use of concrete materials and use this knowledge to identify fractions of quantities.</p> <p>Find a quarter and half of one and two digit numbers by dividing by two (within 2x table).</p>	<p>into fifths and tenths.</p> <p>Progress to pictorial representations when understanding secure.</p> <p>Understand the relationship between division and simple fractions and use this knowledge to identify fractions of quantities.</p> <p>Mentally find a fraction of an amount by applying division knowledge (2, 3, 5, 10, 4) e.g. fractions of a whole numbers: 1/4 of 16.</p>
		<p>Through taking part in practical activities including use of pictorial representations, I can demonstrate my understanding of simple fractions which are equivalent.</p> <p><i>MTH 1-07c</i></p>	<p>Find half/quarters and simple fractions which are equivalent through practical activities e.g. folding a shape in half or half of food etc.</p> <p>Recognise 2 halves make a whole.</p> <p>Recognise $\frac{1}{2} = \frac{2}{4}$.</p> <p>Progress to pictorial representations when understanding is secure.</p>	<p>Progress to pictorial representations when secure.</p> <p>Can use simple fractional notation, in word and mathematical form (include numerator and denominator).</p> <p>Can estimate halfway.</p> <p>Use knowledge of quarter to help investigate $\frac{3}{4}$ of the way along an object and relate to halves.</p>	<p>Use knowledge of equal parts to recognise 1/3, 1/5 of an object, e.g. recognise that each part of an object that is split into 3 parts is 1/3 and that each part split into 5 parts is 1/5.</p> <p>Compare simple fractions through practical activities, including equivalent fractions.</p> <p>Explore the link between $\frac{1}{4}$ and $\frac{2}{8}$.</p> <p>Explore the link between 1/5 and 2/10.</p> <p>Explore the link between halves and eighths.</p> <p>Explore the link between halves and tenths.</p> <p>Use strips to compare and order simple fractions, match and record those which are equivalent.</p>	

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
					<p>Use this knowledge to identify where simple fractions lie on an empty number line.</p> <p>Link understanding of fractions to money, e.g. 50p is half and 25p is quarter of £1.</p>	
	<p align="center">Money</p>	<p>Bundle F5 I can use money to pay for items and can work out how much change I should receive. <i>MNU 1-09a</i></p>	<p>Identifies and uses all coins and notes to £20 and explores different ways of making the same total.</p> <p>Uses a variety of coin and note combinations, to pay for items and give change within £10.</p> <p>Applies mental agility number skills to calculate the total spent in a shopping situation and is able to calculate change.</p>	<p>Identify and order all coins and notes from the least value to most (1p, 2p, 5p, 10p, 20p, 50p, £1, £2, £5, £10, £20).</p> <p>Use mental strategies in money calculations to the value of 20p.</p> <p>Explore different ways of making the same total.</p> <p>Using 1p, 2p, 5p, 10p and 20p coins to pay for items.</p> <p>Mentally (and otherwise) calculate change from at least 20p.</p> <p>Record amount using “p” as notation for pence and £ for pounds.</p>	<p>Recognise and use all coins and notes up to at least £1.</p> <p>Know the equivalent value of coins and notes at least to the value of £1.</p> <p>Use coins and notes to pay for items at least to the value of £1.</p> <p>Mentally (and otherwise) calculate change from £1.</p> <p>Identify the value of each digit in amounts.</p> <p>Count in 20p’s and 50p’s.</p> <p>Understand that amounts under £1 can be written in decimal notation using a separator, e.g. £0.07=7p.</p> <p>Pay for goods using the least number of coins and know that there must always be two digits after the separator.</p> <p>Record amount using £ and p.</p>	<p>Know the role of £ and p signs and the need decimal places in written amounts of money.</p> <p>Use rounding to estimate totals.</p> <p>Mentally (and otherwise) calculate total cost and change involving £s and p, within at least £10 (using notes and coins).</p> <p>Convert from pounds and pence to pence and vice versa.</p> <p>Know that the calculator displays will not place a zero in the 100 place.</p> <p>Recognise and use all coins and notes up to £20.</p> <p>Identify and make equivalences for £5, £10 and £20 notes.</p>

Numeracy and Maths
First Level Skills Progression

Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
			<p>Add and subtract money to at least £1.</p> <p>Record amounts using coins up to £5.</p> <p>Use mental strategies in money calculations.</p>		
	<p>I have investigated how different combinations of coins and notes can be used to pay for goods or be given in change.</p> <p style="color: blue;"><i>MNU 1-09b</i></p>	<p>Records amounts accurately in different ways using the correct notation, for example, 149p = £1.49 and 7p = £0.07.</p> <p>Demonstrates awareness of how goods can be paid for using cards and digital technology.</p>	<p>Find different coins to total the same amounts of change up to at least 20p.</p> <p>Pay for goods starting with the larger denominations.</p> <p>Use equivalences of money to make the same amount e.g. 10p + 10p = 20p.</p>	<p>Find different coins to total the same amounts of change within £10.</p> <p>Pay for goods starting with the larger denominations.</p> <p>Use equivalences of money to make the same amount.</p>	<p>Find different coins and notes to total the same amounts of change within at least £10.</p> <p>Record amounts accurately in different ways using the correct notation e.g. 149p = £1.49 and 7p = £0.07.</p> <p>Demonstrate awareness of how goods can be paid for using cards and digital technology.</p>
Time	<p>Bundle F6</p> <p>I can tell the time using 12 hour clocks, realising there is a link with 24 hour notation, explain how it impacts on my</p>	<p>Tells the time using half past, quarter past and quarter to using analogue and digital 12 hour clocks.</p> <p>Records 12 hour times using am and pm and is</p>	<p>Understand that time can be measured in hours and minutes.</p> <p>Explain that the short hands of the clock point to hours and the long hand point to minutes.</p>	<p>Understand that there are 24 hours in a day.</p> <p>Understand that there are 15 minutes in a quarter of an hour.</p>	<p>Explain that there are 60 seconds in one minute, 60 minutes in one hour, 24 hours in one day.</p> <p>Explain how many days are in each month, week and year.</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
		<p>daily routine and ensure that I am organised and ready for events throughout my day.</p> <p>MNU 1-10a</p>	<p>able to identify 24 hour notation, for example, on a mobile phone or computer.</p> <p>Knows the number of seconds in a minute, minutes in an hour, hours in a day, days in each month, weeks and days in a year.</p>	<p>Understand that there are 60 minutes in an hour.</p> <p>Understand that there are 30 minutes in half an hour.</p> <p>Identify times and record analogue and digital time for o'clock and half past times.</p> <p>Read, record and match times on analogue and digital clocks using the language of time such as o'clock and half past.</p> <p>Understand the terms earlier, later.</p> <p>Know the time and sequence of key events throughout the day.</p> <p>Organise and prepare for key events through the day.</p>	<p>Show, tell and write the time for quarter to and quarter past using analogue and digital displays.</p> <p>Explain that a day is split into am and pm.</p> <p>Read a simple timetable.</p> <p>Record 12 hour time using am and pm.</p> <p>Read and write 5 minute or smaller time intervals using analogue and digital 12 hour clock.</p>	<p>Identify 24 hour notation, for example on a mobile phone or computer.</p> <p>Know how to read times and calculate; quarter of an hour, 10 minutes and 5 minutes before and after.</p> <p>Match digital and analogue times.</p> <p>Record time in a variety of formats.</p>
		<p>I can use a calendar to plan and be organised for key events for myself and my class throughout the year.</p> <p>MNU 1-10b</p>	<p>Records the date in a variety of ways, using words and numbers.</p> <p>Uses and interprets a variety of calendars and 12 hour timetables to plan key events.</p> <p>Orders the months of the year and relates these to the appropriate seasons.</p>	<p>Name and sequence the months of the year.</p> <p>Identify the month after/before.</p> <p>Identify and order seasons of the year.</p> <p>Associate familiar events to certain months of the year.</p> <p>Identify the ordinal number of each month of the year.</p> <p>Begin to read from a calendar.</p>	<p>Sequence and relate time to months and seasons.</p> <p>Read a calendar and identify key events.</p> <p>Know the months for key festivals and events.</p> <p>Know that 2 weeks/14 days is a fortnight.</p> <p>Explain that there are 52 weeks in a year.</p>	<p>Identify the number of days in a month.</p> <p>Understand time equivalences 365/366 day = year.</p> <p>Record the date in a variety of ways using words and numbers.</p> <p>Understand and use a variety of calendars and 12 hour timetables to plan key events.</p>

Numeracy and Maths
First Level Skills Progression

Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →
			<p>Identify time equivalents e.g. 7 days, 12 months and 4 seasons.</p> <p>Read and write the abbreviated date using a calendar e.g. 9/3/17.</p> <p>Understand the layout of a calendar month and identify a particular day and date.</p> <p>Interpret the information on a calendar.</p> <p>Record important key events in personal and school events e.g. birthday.</p> <p>Calculate time durations using calendar e.g. how many days to the holiday.</p>
	<p>I have begun to develop a sense of how long tasks take by measuring the time taken to complete a range of activities using a variety of timers.</p> <p style="color: blue;">MNU 1-10c</p>	<p>Selects and uses appropriate timers for specific purposes.</p>	<p>Compare and discuss length of time e.g. compare lunch time to interval time.</p> <p>Understand the terms earlier and later.</p> <p>Understand the concept of a minute and be able to use an appropriate timer e.g. watch, clock, sand timer, egg timer, stopwatch.</p> <p>Understand the concept of a minute and be able to select an appropriate timer e.g. watch, clock, sand timer, egg timer, stopwatch.</p> <p>Estimate and measure time in seconds and minutes.</p> <p>Estimate and measure times in minutes and seconds.</p> <p>Use clock to measure duration of hours and minutes.</p> <p>Use relevant experiences to estimate time durations in appropriate units and then compare estimate with actual measurement.</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression	→	
	Measurement	<p>Bundle F7 I can estimate how long or heavy an object is, or what amount it holds, using everyday things as a guide, then measure or weigh it using appropriate instruments and units.</p> <p>MNU 1-11a</p>	<p>Uses knowledge of everyday objects to provide reasonable estimates of length, height, mass and capacity.</p> <p>Makes accurate use of a range of instruments including rulers, metre sticks, digital scales and measuring jugs when measuring lengths, heights, mass and capacities using the most appropriate instrument for the task.</p> <p>Records measurements of length, height, mass and capacity to the nearest standard unit, for example, millimetres (mm), centimetres (cm), grams (g), kilograms (kg), millilitres (ml), litres (l).</p> <p>Compares measures with estimates.</p> <p>Uses knowledge of relationships between units of measure to make simple conversions, for</p>	<p>Length Find measurements in non-standard units e.g. hand span, feet, cubes.</p> <p>Recognise the need for standard units of measuring length.</p> <p>Use the term metre, centimetre and the abbreviation m, cm.</p> <p>Use a metre stick appropriately and accurately to measure length and height of objects.</p> <p>Estimate lengths with increasing accuracy in metres and half metres.</p> <p>Mass Measure mass in non-standard units by using cubes.</p> <p>Recognise the need for a standard unit of measure in mass.</p> <p>Understand, recognise and use the term kilogram, and the abbreviation kg.</p> <p>Use a variety of scales and balances to weigh everyday objects.</p> <p>Understand and use the terms: more than, less than, about, same as, when finding the mass of objects.</p>	<p>Length Convert m to cm, understanding that 1 metre = 100 centimetres.</p> <p>Measure using cm and m including in quarter metres.</p> <p>Identify the appropriate use and measure accurately using a variety of measuring equipment e.g. metre stick, measuring tape, ruler and can select most appropriate instrument.</p> <p>Mass Understand, recognise and use the terms kilogram and grams and that 1 kilogram = 1000 grams and half a kg = 500g.</p> <p>Estimate and weigh everyday objects using kg.</p> <p>Estimate and weigh objects using kilograms, grams and half kilograms.</p> <p>Put objects in order of weight/mass.</p> <p>Read a variety of simple scales accurately on measuring devices where each graduation is labelled.</p> <p>Identify and measure appropriately using a variety of equipment e.g. 2-pan balance, kitchen scales, bathroom scales.</p> <p>Volume & Capacity</p>	<p>Length Uses knowledge of everyday objects to provide reasonable estimates of length and height.</p> <p>Record the measurement of length in a number of ways including 1m, ½ m ¼ m and cm.</p> <p>Compare and order lengths of objects using cm and m.</p> <p>Read scales accurately organised in simple graduations.</p> <p>Understand, recognise and use the terms millimetres, centimetres, metres and kilometres and the abbreviation mm, cm, m and km and compares the measures with estimates.</p> <p>Mass Record the measurement of weight in a number of ways.</p> <p>Estimate objects in kg/g and weigh to check estimates.</p> <p>Understand that 1kg=100grams and half a kg =500g.</p> <p>Convert units of measure e.g. kg to g.</p> <p>Read scales on measuring devices to the nearest graduation.</p> <p>Add and subtract mass with 2 digits.</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression	→	
			<p>example, 1 m 58 cm = 158 cm.</p> <p>Reads a variety of scales on measuring devices including those with simple fractions, for example, $\frac{1}{2}$ litre.</p>	<p>Put objects in order of mass.</p> <p><u>Volume & Capacity</u></p> <p>Understand the concept of volume/capacity using a variety of containers in the environment, making comparisons using language such as: holds more/most, holds less/least, holds about, holds the same and holds equal amounts.</p> <p>Undertake practical activities and report on investigations.</p> <p>Recognise the need for standard units for measuring volume/capacity.</p> <p>Use the term litre and identify on packaging.</p>	<p>Measure using litres and half litres and can recognise abbreviation L/ half litre.</p> <p>Measure accurately using a variety of measuring equipment e.g. digital capacity and measuring jugs etc. and can select the most appropriate instrument.</p> <p>Organise a range of containers in order of capacity.</p>	<p><u>Volume & Capacity</u></p> <p>Use knowledge of everyday objects to provide reasonable estimates of capacity.</p> <p>Understand, recognise and use the terms millilitres and litres and the abbreviation l, ml and compare the measures with estimate.</p> <p>Read and record amounts of liquids in ml and l.</p> <p>Recognise that 1000ml =1L and 500ml =half a litre.</p>
		<p>I can estimate the area of a shape by counting squares or other methods.</p> <p>MNU 1-11b</p>	<p>Uses square grids to estimate then measure the areas of a variety of simple 2D shapes to the nearest half square.</p> <p>Creates shapes with a given area to the nearest half square using square tiles or grids.</p> <p>Recognises that different shapes can have the same area</p>	<p>Explain that space covered by a flat shape is its area.</p> <p>Estimate and measure area using comparison and non-standard units e.g. counters squares etc.</p> <p>Find and draw the area of a shape by counting squares using the language of 'about 15 squares'.</p>	<p>Recognise the need for standard units to measure area.</p> <p>Use square grids to estimate then measure the areas of a variety of simple 2D shapes to at least the nearest square.</p> <p>Use squared paper to draw a shape when given a set area to the nearest square.</p> <p>Use previous knowledge to estimate area of shapes – greater than, less than.</p>	<p>Use squared paper to draw and estimate a shape when given a set area to the nearest half square.</p> <p>Recognise that the different shapes can have same area (conservation of area).</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
			(conservation of area).	Make comparisons between the areas of shape using these non-standard units of measure.		
	<p>Mathematics – its impact on the world, past, present and future</p>	<p>Bundle F8 I have discussed the important part that numbers play in the world and explored a variety of systems that have been used by civilisations throughout history to record numbers. MTH 1-12a</p>	<p>Investigates and shares understanding of the importance of numbers in learning, life and work.</p> <p>Investigates and shares understanding of a variety of number systems used throughout history.</p> <p>Please note that the importance of number in the world should be highlighted daily and the connections made across all curricular areas.</p>	<p>Understand the importance of maths in the world around me through other curricular areas:</p> <ol style="list-style-type: none"> 1. Time e.g. Daily Routine 2. Money e.g. tuck, lunch, pocket money 3. Currency e.g. structured play 4. Measure e.g. Months of year, days of week <p>Identify contexts where numbers play an important role in the world e.g.</p> <ol style="list-style-type: none"> 1. Counting (how many?) 2. Comparing (which has more?) 3. Measuring (length, time etc.) 4. Giving information (bus timetable, house number, date of birth, visit to the shop) <p>Describe that a number system is:</p>	<p>Understand the importance of maths in the world around me through other curricular areas:</p> <ol style="list-style-type: none"> 1. Time e.g. target setting, timed activities 2. Money e.g. everyday use of money 3. Currency e.g. holidays, topic work 4. Measure e.g. practical examples <p>Identify links between roles within the workforce and the skills being taught in school.</p>	<p>Understand the importance of maths in the world around me through other curricular areas:</p> <ol style="list-style-type: none"> 1. Time e.g. PE/health 2. Money e.g. Fair trade 3. Currency – Modern languages 4. Measure e.g. Global Citizenship <p>Identify the importance of the use of numbers in the world.</p> <p>Investigate the variety of different systems that have been used by civilisations throughout history to record numbers e.g. tally marks, roman numerals and hieroglyphics.</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
				<ol style="list-style-type: none"> 1. A way of counting things 2. A way of identifying the quantity of something 		
	<p>Patterns and relationships</p>	<p>Bundle F9 I can continue and devise more involved repeating patterns or designs, using a variety of media. MTH 1-13a</p> <p>Through exploring number patterns, I can recognise and continue simple number sequences and can explain the rule I have applied. MTH 1-13b</p>	<p>Counts forwards and backwards in 2s, 5s and 10s from any whole number up to 1000.</p> <p>Describes patterns in number, for example, in the multiplication tables and hundred square.</p> <p>Continues and creates repeating patterns involving shapes, pictures and symbols.</p>	<p>Describe, continue and make patterns using 2D shape, colour, animals etc.</p> <p>Describe and continue simple number sequences to at least 20.</p> <p>Recognise missing numbers in a sequence from 1-100.</p> <p>Identify odd and even numbers up to at least 20 and continue a given pattern.</p> <p>Find a pattern in problem solving activities.</p>	<p>Describe, continue and make complex patterns.</p> <p>Find patterns in times tables.</p> <p>Describe and continue simple number sequences to at least 100. e.g. 10, 15, 20, 25.....</p> <p>Find a pattern in more complex problem solving activities.</p> <p>Explain how a number pattern works and prove what makes it happen.</p> <p>Apply found rule to extend the pattern.</p>	<p>Describe, continue and make more complex patterns, involving shapes, pictures, movements, number and symbols, using a variety of variables including patterns within multiplication tables.</p> <p>Describes, continues and creates number patterns using addition, subtraction, doubling, halving, counting in jumps and known multiples and is able to explain rule applied.</p> <p>Find patterns in problem solving activities.</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
			<p>Describes, continues and creates number patterns using addition, subtraction, doubling, halving, counting in jumps (skip counting) and known multiples.</p>		<p>Use my knowledge of pattern to create a number pattern of my own.</p> <p>Count forwards and backwards in 2s, 3s, 4s, 5s, 6s and 10s.</p> <p>Identify odd and even numbers to 100 and describe the rule.</p>	<p>Continue to apply knowledge of number facts to identify and create more complex patterns and sequences</p> <p>Identify odd and even numbers to 1000 and describe the rule.</p> <p>Describe a number pattern beginning with a starting number and saying how much the numbers go up or down by.</p>
	<p>Expressions and equations</p>	<p>Bundle F10</p> <p>I can compare, describe and show number relationships, using appropriate vocabulary and the symbols for equals, not equal to, less than and greater than.</p> <p>MTH 1-15a</p> <p>When a picture or symbol is used to replace a number in a number statement, I can find its value using my knowledge of number facts and explain my thinking to others.</p> <p>MTH 1-15b</p>	<p>Understands and accurately uses the terms 'equal to', 'not equal to', 'less than', 'greater than', and the related symbols ($=$, \neq, $<$, $>$) when comparing quantities.</p> <p>Applies understanding of the equals sign as a balance, and knowledge of number facts, to solve simple algebraic problems where a picture or symbol is used to represent a number, for example, $\blacklozenge + 17 = 30$ and $\blacklozenge \times 6 = 30$.</p>	<p>Identify the number before/after/greater than/less than and the signs.</p> <p>Translate a word problem into a number sentence.</p> <p>Recognise that the equals sign signifies balance in a number sentence.</p> <p>Demonstrate that contexts can help us to make sense of missing number statements.</p> <p>Find missing numbers in statements/word problems, with totals to at least 20; where symbols are used for unknown numbers e.g. $4 + * = 7$ by using a variety of strategies and can explain how I got the answer.</p>	<p>Compare two numbers up to at least 100, identify which one is bigger or smaller and use the symbols for more than $>$ and less than $<$.</p> <p>Complete a statement by adding a number or symbol to make it true e.g. $30 > ?$.</p> <p>Can use commutative and associative properties to simplify calculations e.g. $6+4 = 3+7$.</p> <p>Begin to solve more complex algebraic problems where a picture or symbol is used to represent a number.</p> <p>Explain and use the function machine to find the missing numbers or work out the number operation up to at least 100.</p>	<p>Use the 'equal to', 'not equal to', 'less than', greater than' and their related symbols ($= \neq < >$) when comparing sets of quantities and statements.</p> <p>Compare two numbers, identify which one is smaller and bigger and use symbols for more than $>$ or less than $<$ as appropriate.</p> <p>Complete a more complex equation using $+ - \times \div$ symbols.</p> <p>Applies understanding of the equals sign as balance, and knowledge of number operations to solve simple algebraic problems where a picture or symbol is used to represent a number, e.g. $\blacklozenge + 17 = 30$ and $\blacklozenge \times 6 = 30$.</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
				Record number relationships-part, part, whole models, fact families.		
Shape, position and movement	Properties of 2D shapes and 3D objects	<p>Bundle F11 I have explored simple 3D objects and 2D shapes and can identify, name and describe their features using appropriate vocabulary. MTH 1-16a</p>	<p>Names, identifies and classifies a range of simple 2D shapes and 3D objects and recognises these shapes in different orientations and sizes.</p> <p>Uses mathematical language to describe the properties of a range of common 2D shapes and 3D objects including side, face, edge, vertex, base and angle.</p> <p>Identifies 2D shapes within 3D objects and recognises 3D objects from 2D drawings.</p>	<p>Identify and name the 2D shape names in words: e.g. square, rectangle, triangle, circle, hexagon, pentagon and octagon.</p> <p>Recognise, identify and compare the properties of 2D shapes: edges and vertices.</p> <p>Recognise, name and sort 3D objects: e.g cylinder, cube, cuboid, sphere and cone.</p> <p>Discuss properties of 3D shapes: faces, edges and vertices.</p> <p>Recognise these shapes in different annotations.</p>	<p>Identify and name 3D objects including: square based pyramids and triangular prism including those found in the wider world.</p> <p>Recognise, identify, classify and compare, using mathematical language, the properties of 2D shapes & 3D objects: sides & corners, vertices, edges.</p> <p>Sort 3D objects according to different criteria.</p> <p>Make 3D objects using kit models.</p>	<p>Further explore the properties of different pyramids and prisms including triangular based prism.</p> <p>Identify that a quadrilateral is a 4 sided shape.</p> <p>Identify 2D shapes within 3D objects and 3D shapes from 2D drawings.</p> <p>State the properties of common 3D objects.</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
		<p>I can explore and discuss how and why different shapes fit together and create a tiling pattern with them.</p> <p align="right">MTH 1-16b</p>	<p>Identifies examples of tiling in the environment and applies knowledge of the features of 2D shapes to create tiling patterns incorporating two different shapes.</p>	<p>Through active play, explore tiling of 2D shapes (ensuring no spaces).</p> <p>Sketch/draw simple 2D shapes.</p> <p>Identify simple examples of tiling within the environment.</p>	<p>Discuss and explore the properties of a range of 2D shapes and identify 2D shapes which will tile.</p> <p>Continue and complete tiling patterns with a range and combination of 2D shapes.</p> <p>Design and create tiling patterns with 2D shapes.</p> <p>Predict and explore why certain shapes do or don't tile.</p>	<p>Identify examples of tiling in the environment and apply knowledge of features of 2D shapes to create tiling patterns incorporating at least two different shapes.</p> <p>Create a tiling pattern using 2 or more 2D shapes by drawing, printing or using technology.</p> <p>Fit together lots of the same 2D shape or simple 3D objects so there are no gaps.</p>
	<p align="center">Angles, Symmetry and Transformation</p>	<p>Bundle F12</p> <p>I can describe, follow and record routes and journeys using signs, words and angles associated with direction and turning.</p> <p align="right">MTH 1-17a</p>	<p>Uses technology and other methods to describe, follow and record directions using words associated with angles, directions and turns including, full turn, half turn, quarter turn, clockwise, anticlockwise, right turn, left turn, right angle.</p> <p>Knows that a right angle is 90°.</p> <p>Knows and uses the compass points, North, South, East and West.</p> <p>Uses informal methods</p>	<p>State the purpose of a compass and discuss where and when they can be used.</p> <p>Follow and give oral directions for a route, forwards and backwards, turning right and left.</p> <p>Follow written instructions for a simple route, recording journey.</p> <p>Apply knowledge of movement and direction in a problem solving context using programmable toys and websites.</p>	<p>State the compass points N, S, E and W.</p> <p>Demonstrate how to turn a quarter, half and full turn, clockwise and anti-clockwise.</p> <p>Write instructions for a route including quarter turns.</p> <p>Use technology to describe, follow and record directions for a route turning through right angles, full, ¼ and ½ turns.</p> <p>Use positional language including N, S, E and W.</p> <p>Apply movement/direction knowledge in more complex</p>	<p>Use compass points to give directions.</p> <p>State that a right angle is equal 90°.</p> <p>Compare and describe angles as greater and smaller than a right angle.</p> <p>Name acute and obtuse angles.</p> <p>State that a 90° turn is equivalent to a quarter turn.</p> <p>Use a grid to create and record routes.</p> <p>Apply knowledge of movement and direction in a problem solving context using programmable toys and websites, understanding and</p>

Numeracy and Maths
First Level Skills Progression

Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→
		<p>to estimate, compare and describe the size of angles in relation to a right angle.</p> <p>Finds right angles in the environment and in well-known 2D shapes.</p>		<p>problem solving contexts using programmable toys and websites.</p>	<p>using symbols and numbers for navigation (relating to appropriate angles), e.g. \leftarrow \uparrow \rightarrow \downarrow, 90° turns.</p> <p>Find right angles in the environment and in 2D shapes.</p>
	<p>I have developed an awareness of where grid reference systems are used in everyday contexts and can use them to locate and describe position.</p> <p style="color: blue;">MTH 1-18a</p>	<p>Identifies where and why grid references are used.</p> <p>Describes, plots and uses accurate two figure grid references, demonstrating knowledge of the horizontal and vertical location.</p>	<p>Use the language of direction to describe and direct.</p> <p>Identify where grid references are used in everyday life, e.g. treasure map.</p>	<p>Understand the purpose of a grid and can use references to describe the positions on the grid, demonstrating knowledge of the horizontal and vertical location.</p>	<p>Identify where grid references are used in everyday life.</p> <p>Create a grid and give instruction of how to describe or find a position on the grid.</p>
	<p>I have explored symmetry in my own and the wider environment and can create and recognise symmetrical pictures, patterns and shapes.</p> <p style="color: blue;">MTH 1-19a</p>	<p>Identifies symmetry in patterns, pictures, nature and 2D shapes.</p> <p>Creates symmetrical pictures and designs with more than one line of symmetry.</p>	<p>Understand and explain the terms: line of symmetry; symmetrical.</p> <p>Recognise at least one line of symmetry in given pictures and objects in the wider environment.</p> <p>Complete a basic shape to make it symmetrical.</p> <p>Create simple symmetrical shapes and patterns using a variety of media.</p>	<p>Identify symmetry in my own and the wider environment.</p> <p>Identify a symmetrical shape, picture or pattern using a mirror.</p> <p>Complete shapes and patterns to make them symmetrical.</p>	<p>Explore reflections within shapes and pictures.</p> <p>Find lines of symmetry of more complex shapes drawn on squared grids, completing the other half.</p> <p>Explain that some shapes have more than one line of symmetry and identify these within simple shapes.</p> <p>Create and continue complex symmetrical patterns with more than 1 line of symmetry.</p>

**Numeracy and Maths
First Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
Information Handling	<p>Data and Analysis</p>	<p>Bundle F13 I have explored a variety of ways in which data is presented and can ask and answer questions about the information it contains. MNU 1-20a</p> <p>I have used a range of ways to collect information and can sort it in a logical, organised and imaginative way using my own and others' criteria. MNU 1-20b</p> <p>Using technology and other methods, I can display data simply, clearly and accurately by creating tables, charts and diagrams, using simple labelling and scale. MTH 1-21a</p>	<p>Asks and answers questions to extract key information from a variety of data sets including charts, diagrams, bar graphs and tables.</p> <p>Selects and uses the most appropriate way to gather and sort data for a given purpose, for example, a survey, questionnaire or group tallies.</p> <p>Uses a variety of different methods, including the use of digital technologies, to display data, for example, as block graphs, bar graphs, tables, Carroll diagrams and Venn diagrams.</p> <p>Includes a suitable title, simple labelling on both axes and an appropriate scale where one unit represents more than one data value in graphs.</p>	<p>Collect information from a range of sources: pictures, diagrams, pupils in class, within the environment.</p> <p>Organise and classify information using my own and others' criteria.</p> <p>Use tally marks to represent quantity and total them at the end.</p> <p>Read and interpret information from displays by counting and comparing e.g. pictographs, bar graphs.</p> <p>Complete a simple bar graph using given information.</p> <p>Record information using, tally marks, tables with row and column headings.</p> <p>Ask and answer questions about specific presented information and use this to inform choices and decisions.</p>	<p>Collect information from a range of sources: pictures, diagrams, pupils in class, within the environment, including through electronic means.</p> <p>Know that this is called a survey.</p> <p>Organise and classify information using my own and others' criteria including tally sheets with grouped tally marks, tables with row and column headings.</p> <p>Select the most effective way to gather data for a particular purpose.</p> <p>Interpret information from a simple frequency table.</p> <p>Formulate questions about and find specific information from tables and bar graphs, including bar graphs with simple graduated axes.</p> <p>Display information clearly and accurately by completing tables, block graphs, bar graphs and diagrams using ICT where appropriate ensuring headings and titles are appropriate.</p>	<p>Collect data from a task or survey and record these by using grouped tally marks of 5.</p> <p>Select and use appropriate way to collect, organise, display and interpret information for a given purpose using bar graphs, tables, diagrams and charts.</p> <p>Display information clearly and accurately using simple scales (where one unit represents more than one data value in graphs).</p> <p>Formulate questions about and find specific information from tables and bar graphs.</p> <p>Analyse the evidence outlining the main findings.</p> <p>Explain that computer spreadsheets can be used to record information and create a bar graph from this.</p>

**Numeracy and Maths
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	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
	Ideas of chance and uncertainty	<p>Bundle F14 I can use appropriate vocabulary to describe the likelihood of events occurring, using the knowledge and experiences of myself and others to guide me.</p> <p>MNU 1-22a</p>	<p>Uses mathematical vocabulary appropriately to describe the likelihood of events occurring in everyday situations including, probable, likely/unlikely, certain/uncertain, possible/impossible and fair/unfair.</p> <p>Interprets data gathered through everyday experiences to make reasonable predictions of the likelihood of an event occurring.</p>	<p>Explain that some things happen all the time, some occasionally and some never.</p> <p>Use my knowledge of everyday life to make predictions about the likelihood of an event occurring.</p> <p>Become familiar with these phrases through games.</p>	<p>Understand what terms such as more likely, least likely, possible, impossible, chance and uncertainty mean.</p> <p>In familiar contexts, make simple predictions on probability based on personal experience and prescribed information.</p>	<p>Understand concepts such as probable, likely/unlikely, certain/uncertain, possible/impossible, and fair/unfair and explore these in relation to every day events.</p> <p>Make predictions based on information gathered in a variety of ways and use appropriate vocabulary, including technology.</p>

Numeracy and Maths Second Level Skills Progression						
Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→	
Number, money and measure	Estimation and Rounding	<p>Bundle S1 I can use my knowledge of rounding to routinely estimate the answer to a problem then, after calculating, decide if my answer is reasonable, sharing my solution with others.</p> <p>MNU 2-01a</p>	<p>Rounds whole numbers to the nearest 1000, 10 000 and 100 000.</p> <p>Rounds decimal fractions to the nearest whole number, to one decimal place and two decimal places.</p> <p>Applies knowledge of rounding to give an estimate to a calculation appropriate to the context.</p>	<p>Rounding Round up to 4 digit whole numbers to the nearest 10, 100, 1000.</p> <p>Use mental strategies to add and subtract multiples of 10, discussing strategies used such as: $450 + 90 = (450 + 50) + 40 = 500 + 40 = 540$ $910 - 60 = (910 - 10) - 50 = 900 - 50 = 850$</p> <p>Apply rounding within a variety of contexts.</p> <p>Know whether to round up or down depending on the context of the problem.</p> <p>Estimating Use estimation in addition and subtraction to find approximate answers, e.g. $132 + 57$ rounded to the nearest 10 is $130 + 60 = 190$, so $132 + 57$ is approximately 190.</p> <p>Use an estimated solution to reflect on the accuracy of a calculation.</p> <p>Estimate, measure and record in different units including litres and millilitres.</p>	<p>Rounding Discuss different mental calculation strategies for addition and subtraction such as: $361 - 123 = (361 - 100) = 261 - 20 = 241 - 3 = 238$</p> <p>Round numbers from 10 000 up to and beyond 100, 000 to the nearest 10, 100, 1000, 10 000 and 100 000 then apply this to calculations</p> <p>Identify numbers which lie half way between 0 and 1 as a cut off for rounding up/down.</p> <p>Round tenths to the nearest whole number.</p> <p>Identify where different numbers lie on a number line including tenths and hundredths.</p> <p>Estimating Use estimation in addition and subtraction to find approximate answers.</p> <p>Estimate to develop a sense and feeling of number, measures and quantity.</p> <p>Use estimation in addition and subtraction to find approximate answers within 100,000.</p>	<p>Rounding Round whole numbers and decimal fractions up to one, two and three decimals places.</p> <p>Round any whole digit numbers to the nearest graduation.</p> <p>Add and subtract numbers using rounding strategies (Number Talks)</p> <p>Round numbers to make calculations more manageable using my knowledge of place value.</p> <p>Round numbers to calculate reasonable estimates.</p> <p>Apply rounding within a variety of contexts.</p> <p>Estimating Applies knowledge of rounding to give an estimate appropriate to the context.</p> <p>Discuss and share my solutions using estimation in calculations.</p> <p>Estimate and order the size of given data e.g. populations, distances etc.</p> <p>Estimate position of numbers on a number line including 3 decimals places.</p>

**Numeracy and Maths
Second Level Skills Progression**

	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
	<p>Number and number processes including addition, subtraction, multiplication, division and negative numbers</p>	<p>Bundle S2 I have extended the range of whole numbers I can work with and having explored how decimal fractions are constructed, can explain the link between a digit, its place and its value. MNU 2-02a</p>	<p>Reads, writes and orders whole numbers to 1 000 000, starting from any number in the sequence.</p> <p>Explains the link between a digit, its place and its value for whole numbers to 1 000 000.</p> <p>Reads, writes and orders sets of decimal fractions to three decimal places.</p> <p>Explains the link between a digit, its place and its value for numbers to three decimal places.</p> <p>Partitions a wide range of whole numbers and decimal fractions to three decimal places, for example, $3\cdot6 = 3$ ones and 6 tenths = 36 tenths.</p>	<p>Recognise tenths as part of a whole using concrete and visual materials.</p> <p>Describe the value of each digit in a whole number and a decimal number up to 1 decimal place.</p> <p>Name, write and record numbers up to 10,000.</p> <p>Order and sequence a range of numbers using appropriate strategies.</p> <p>Discuss different mental calculation strategies for addition and subtraction such as: $45 + 36 = (40 + 30) + (5 + 6) = 70 + 11 = 81$</p> <p>Select and apply appropriate mental strategies to add and subtract, (Number Talks Strategies) including bridging a ten such as: $68 + 7 = (68 + 2) + 5 = 70 + 5 = 75$ $92 - 9 = (92 - 2) - 7 = 90 - 7 = 83$</p> <p>Choose the most appropriate method for the number problem given.</p>	<p>Name, write and record numbers up to 6 digit numbers.</p> <p>Recognise the contexts in which decimal fractions occur.</p> <p>Understand that decimal notation is another way of recording common fractions.</p> <p>Identify where decimal fractions, involving tenths and hundredths, are located on a number line.</p> <p>Understand the relationship between tenths and hundredths in common fraction and decimal fraction notation.</p> <p>Explain the link between a digit, its place and its value.</p> <p>Order and sequence decimal and whole numbers up to 100,000.</p> <p>Convert decimal fractions to common fractions.</p> <p>Choose the most appropriate method for the number problem given.</p>	<p>Read, write, order, sequence and identify sets of decimal fractions, with up to at least 3 decimal places, on a number line.</p> <p>Understand the relationship between thousandths in common fraction and decimal fraction notation.</p> <p>Convert thousandths to decimal notation.</p> <p>Use decimal notation and knowledge of place value to record a range of numbers including thousandths e.g. $53\cdot223$ $3\cdot406$ $0\cdot003$</p> <p>Partitions a wide range of whole numbers and decimal fractions up to 3 decimal places e.g. 2.3 is two and three tenths, 4.079 is four and seventy nine thousandths.</p> <p>Order and sequence decimal fractions to thousandths.</p> <p>Read, write, record and sequences whole numbers up to 1, 000, 000.</p>

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	<p>Bundle S3 Having determined which calculations are needed, I can solve problems involving whole numbers using a range of methods, sharing my approaches and solutions with others.</p> <p style="text-align: right; color: blue;">MNU 2-03a</p> <p>I have explored the contexts in which problems involving decimal fractions occur and can solve related problems using a variety of methods.</p> <p style="text-align: right; color: blue;">MNU 2-03b</p>	<p>Uses multiplication and division facts to the 10th multiplication table.</p> <p>Multiplies and divides whole numbers by multiples of 10, 100 and 1000.</p> <p>Multiplies whole numbers by two digit numbers.</p> <p>Divides whole numbers and decimal fractions to two decimal places, by a single digit, including answers expressed as decimal fractions, for example, $43 \div 5 = 8.6$.</p> <p>Multiplies and divides decimal fractions to two decimal places by 10, 100 and 1000.</p> <p>Multiplies decimal fractions to two decimal places by a single digit.</p> <p>Adds and subtracts</p>	<p>Add/Subtract Interprets and solves problems in mental and written (word problems) calculations, sharing chosen approach with others.</p> <p>Add and subtract multiples of 10 and 100 using secured number bonds: $50 + 70$; $130 - 50$</p> <p>Mentally add or subtract 10 to or from any 2 or 3 digit number, including crossing 100 and explaining method ($96 + 10$, $23.2 - 10$ etc.)</p> <p>Add and Subtract maths calculations using a range strategies, e.g. $271 + 89$</p> <p>Add and Subtract decimals numbers in a variety of context without bridging through a variety of contexts : e.g. money, weight etc. ($2.1 + 7.4 =$)</p> <p>Multiplication/Division Use strategies to recognise all multiplication facts for all tables to at least 10.</p> <p>Derive quickly and accurately multiplication and related division facts $7 \times 8 = 56$, $8 \times 7 = 56$, $56 \div 7 = 8$, $56 \div 8 = 7$ (Commutative Law)</p>	<p>Add/Subtract Interprets and solves problems in mental and written (word problems) calculations, sharing chosen approaches with others.</p> <p>Develop further strategies to add and subtract a range of numbers including decimals.</p> <p>Add and Subtract more complex mental and written calculations- involving several exchanges e.g. $4010 - 1762$, $2001 - 479$, $3000 - 326$</p> <p>Add and Subtract decimal numbers (to 1.d.p) involving bridging e.g. $1.5 + 8.9$</p> <p>Multiplication/Division Develop further strategies to multiply 2 and 3 digit numbers accurately in a variety of contexts.</p> <p>Divide 3 digit numbers by 2 digit numbers mentally and in written form.</p> <p>Solve word problems related to division expressed as a decimal.</p> <p>Use the correct rule to multiply and divide any number (including decimals) by 10, 100 and 1000.</p> <p>Multiply and divide tens, units, tenths and hundredths by a single</p>	<p>Add/Subtract Interprets and solves multi-step problems in mental and written (word problems) calculations, sharing chosen approach with others selecting the most efficient approach.</p> <p>Adds and subtracts 10, 100 and 1000 mentally to and from whole number and decimal fractions with 2 decimal places.</p> <p>Add and subtract integers within context. E.g. thermometres.</p> <p>Add and subtract whole numbers and decimals fractions up to 2 decimals places.</p> <p>Use a calculator to check answers using inverse operations.</p> <p>Multiplication/Division Multiply and divide whole numbers and decimals fractions with at least 2 decimal places by multiples of 10.</p> <p>Find the most efficient strategy to solve multiplication and division problems.</p> <p>Divide a whole number and decimal fractions to 2 decimal places by a single digit including answers expressed as decimal fractions e.g. $43 \div 5 = 8.6$.</p>

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			<p>multiples of 10, 100 and 1000 to and from whole numbers and decimal fractions to two decimal places.</p> <p>Adds and subtracts whole numbers and decimal fractions to two decimal places, within the number range 0 to 1 000 000.</p>	<p>Understand and use the terms: multiple, factor, product.</p> <p>Respond quickly to oral questions phrased in a variety of ways: nine sevens, 6 times 7, 5 multiplied by 9, multiply 9 by 6, divide 38 by 9, find the product of 5 and 3, one seventh of 35?</p> <p>Investigate how a number being odd or even will help to work out its divisibility.</p> <p>Divide 2 and 3 digit numbers by a single digit including remainders.</p> <p>Multiply and divide by 10, 100 and 1000 using the appropriate method with whole numbers.</p> <p>Multiply a single digit by a multiple of 10. E.g. 6×70.</p> <p>Multiply 2 digit numbers by 1 and 2 digit numbers mentally (e.g. 19×17).</p> <p>Operational Connections Check answers using inverse operations orally, in written form and using a calculator.</p> <p>Mentally derive pairs of decimals (tenths) that total 1 e.g. $0.4 + 0.6 = 1$.</p>	<p>digit, with and without exchanging, recognising the importance of the decimal point.</p> <p>Operational Connections Check answers using inverse operations orally, in written form and using a calculator.</p> <p>Mentally derive pairs of decimals (hundredths) that total 1, e.g. $0.45 + 0.55 = 1$.</p> <p>Add and subtract tens, units, tenths and hundredths recognising the importance of the decimal point.</p> <p>Use mental strategies to add and subtract decimal fractions involving units and tenths, including bridging tenths: e.g. $0.7 + 0.5$ $1.2 + 1.9$ $3.5 - 1.6$</p> <p>Solve problems involving decimals to tenths and hundredths, including those related to money. Identify a calculation that approximates a given calculation.</p>	<p>Interpret answers to division problems displayed on a calculator, e.g. given the display 20.83333 on answering, "There are 24 biscuits in a packet. How many packets can be made from 500 biscuits?" decide whether the answer to the problem is 20 or 21.</p> <p>Operational Connections Uses knowledge of inverse operations in problem solving.</p> <p>Confidently add and subtract to 2 decimal places with and with exchanging, recognising the importance of the decimal point.</p> <p>Confidently use the rule to multiply and divide any number by 10, 100 and 1000, e.g. $0.02 \times 1000 = 20$ $53.1 \div 100 = 0.531$</p> <p>Solve addition, subtraction, multiplication and division problems involving a range of numbers with different decimal places e.g. $5.58 + 7.6$.</p> <p>Solve multi-step problems involving the four operations in different contexts.</p>

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				<p>Recognises where decimal fractions are used in everyday life and applies this knowledge to record and convert amounts e.g. 501p = £5.01.</p> <p>Solve real life problems involving decimal fraction using a variety of methods.</p> <p>Understand that the decimal point never moves.</p> <p>Understand a decimal fraction as being part of a whole number.</p> <p>Begin to understand and order decimal fractions.</p> <p>Mentally derive pairs of decimals (units and tenths) that total 10 e.g. $3.4 + 6.6 = 10$.</p>		
		<p>Having explored the need for rules for the order of operations in number calculations, I can apply them correctly when solving simple problems.</p> <p align="right">MTH 2-03c</p>	<p>Applies the correct order of operations in number calculations when solving multi-step problems.</p>	<p>Investigate the need for rules for the order of operations in number calculations e.g. $3 + 3 \times 10 = 33$ because multiplication comes before addition, but could be answered incorrectly as 60.</p> <p>Understand that calculations involving multiple operations are carried out in the following order: divide, multiply, add, subtract.</p> <p>Solve calculations involving multiple operations with divide, multiply, add, subtract.</p>	<p>Investigate the need for rules for the order of operations in number calculations, e.g. $5 + 4 \times 10 = 45$ because multiplication comes before addition, but could be answered incorrectly as 90.</p> <p>Inserting brackets to given calculations to ensure they are correct e.g. $5+3 \times 2=11$ becomes $5 + (3 \times 2) = 11$</p> <p>Solve calculations involving multiple operations with brackets, divide, multiply, add, subtract.</p>	<p>Understand that calculations involving multiple operations are carried out in the following order: brackets, other, divide, multiply, add, subtract known as BODMAS.</p> <p>Solve calculations including word based problems involving multiple operations through the BODMAS approach.</p>

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		<p>I can show my understanding of how the number line extends to include numbers less than zero and have investigated how these numbers occur and are used.</p> <p align="right">MNU 2-04a</p>	<p>Identifies familiar contexts in which negative numbers are used.</p> <p>Orders numbers less than zero and locates them on a number line.</p>	<p>Use brackets in calculations to show my thinking e.g. $7+4+3+6 = (7+3) + (4+6)$</p> <p>Discus negative numbers in everyday life.</p> <p>Understand that there are numbers less than zero.</p> <p>Identify the difference between positive and negative numbers using concrete and visual materials.</p>	<p>Order numbers less than zero.</p> <p>Add negative and positive numbers to an empty number line</p> <p>Understand the concept of negative numbers in real life contexts including temperature, bank statements, sea level, golf scores, personal finance etc.</p> <p>Locate and order numbers less than zero on a horizontal and vertical number line.</p> <p>Perform number process calculations involving negative numbers.</p> <p>Use negative co-ordinates in different contexts.</p>
	<p>Multiples, factors and primes</p>	<p>Bundle S4 Having explored the patterns and relationships in multiplication and division, I can investigate and identify the multiples and factors of numbers.</p> <p align="right">MTH 2-05a</p>	<p>Identifies multiples and factors of whole numbers and applies knowledge and understanding of these when solving relevant problems in number, money and measurement.</p>	<p>Extend times tables indefinitely, exploring patterns and relationships up to the 10 times table.</p> <p>Explain and use the terms multiple, factor and product.</p> <p>Identify factors and multiples in tables up to at least 10.</p> <p>Apply knowledge of multiples and factors to solve problems within a variety of contexts, e.g. fractions of a quantity.</p>	<p>Further explore number sequences and patterns and describe these using appropriate vocabulary (e.g. factors and multiples of 24).</p> <p>Identify multiples of whole numbers.</p> <p>Identify factors of all tables.</p> <p>Use factors in multiplication and division problems.</p> <p>Identify multiples/products of a whole number and apply this knowledge and understanding within money, measure and number.</p> <p>Explore 1 and 2 digit prime numbers.</p>
	<p>Fractions, Decimals and Percentages</p>	<p>Bundle S5 I have investigated the everyday contexts in which</p>	<p>Expresses fractions in their simplest form.</p>	<p>Know that zero holds a place as a decimal (e.g. 2.01).</p>	<p>Compare and order commonly used fractions.</p> <p>Calculate percentages of a quantity/amount.</p> <p>Add and subtract fractions.</p>

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	<p>simple fractions, percentages or decimal fractions are used and can carry out the necessary calculations to solve related problems.</p> <p style="text-align: right; color: #4F81BD;">MNU 2-07a</p> <p>I can show the equivalent forms of simple fractions, decimal fractions and percentages and can choose my preferred form when solving a problem, explaining my choice of method.</p> <p style="text-align: right; color: #4F81BD;">MNU 2-07b</p> <p>I have investigated how a set of equivalent fractions can be created, understanding the meaning of simplest form, and can apply my knowledge to compare and order the most commonly used fractions.</p>	<p>Creates equivalent fractions and uses this knowledge to put a set of most commonly used fractions in order.</p> <p>Uses knowledge of equivalent forms of common fractions, decimal fractions and percentages, for example, $\frac{3}{4} = 0.75 = 75\%$, to solve problems.</p> <p>Calculates simple fractions of a quantity and uses this knowledge to solve problems, for example, find $\frac{3}{5}$ of 60.</p> <p>Calculates simple percentages of a quantity, and uses this knowledge to solve problems in everyday contexts, for example, calculates the sale price of an item with a discount of 15%</p>	<p>Recognise where fractions and decimals are used in everyday life e.g. food label etc.).</p> <p>Use fraction walls, number lines, fractions wheels to find and compare fractions.</p> <p>Recognise that a fraction is part of a whole and that each part is equal.</p> <p>Determine that a decimal is different way to represent tenths.</p> <p>Understand, recognise and use the terms “equivalent”, “equal to”, “simplify” and “simplest form”.</p> <p>Understand the concept of a percentage, the meaning of “per cent” and the symbol %.</p> <p>State that 100% means one whole.</p> <p>Understand the link between percentages, fractions and decimals.</p> <p>I can find fractions of a quantity/amounts using concrete materials (with a numerator of 1 and denominator of 1-10). E.g. $\frac{1}{8}$ of 64 = 8.</p>	<p>Identify and record fractions of whole numbers.</p> <p>Calculate and record improper fractions.</p> <p>Apply knowledge of multiples and factors to solve problems.</p> <p>Identify a percentage as a fraction with a denominator of 100.</p> <p>Use mental and written methods to find percentages of quantities.</p> <p>Convert simple fractions into decimals and order on a number line.</p> <p>Convert tenths and hundredths to decimal notation. $\frac{12}{100} = 0.12$</p> <p>Convert decimal fractions to fractions and vice versa e.g. $1.5 = 1\frac{1}{2}$</p> <p>Solve problems using equivalences, justifying the method used.</p> <p>Work with decimals to 2 places linked to money.</p> <p>Multiply or divide the numerator or denominator by the same number to make equivalent fractions.</p> <p>Understand the link between hundredths and percentages.</p>	<p>Find any fraction of a quantity/amount.</p> <p>Work confidently with decimals up to 2 decimal places.</p> <p>Convert between improper fractions and top heavy fractions.</p> <p>Show the links and convert between fractions, decimals and percentages then compare and order both all forms.</p> <p>Use knowledge of equivalent fractions, decimal fractions and percentages to solve problems and justify choice of method.</p> <p>Calculate the percentage of any given number, e.g. 72% of 120.</p> <p>Creates equivalent fractions and uses this knowledge to put a set of all fractions in order.</p> <p>Apply my knowledge of number to ratio.</p> <p>Simplify fractions with increasing confidence.</p> <p>Identify where a decimal fraction sits on a number line between 2 marked decimals.</p>

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		MTH 2-07c		<p>Identify one whole as 10 tenths etc.</p> <p>Identify equivalent fractions.</p> <p>Use the rule to find equivalent fractions by multiplying.</p> <p>Use the rule to simplify fractions by dividing, stating the fraction in its simplest form.</p> <p>Convert common percentages to fractions and decimals and vice versa, e.g. $50\% = \frac{50}{100} = \frac{1}{2} = 0.5$</p> <p>Identify simple decimal and fraction equivalences e.g. $0.1 = 1/10$ etc.</p> <p>Identify where decimal fractions sit on a number line.</p> <p>Compare and order commonly used fractions.</p>	<p>Calculate commonly used percentages of a quantity e.g. 75%, 50%, 25%, 20%, 10%, 1%.</p> <p>Identify a range of equivalent fractions by simplifying or multiplying by a common factor.</p> <p>Calculate decimal and percentage equivalents of common fractions. Identify and compare where decimals sit on a number line.</p>	
	Money	<p>Bundle S6 I can manage money, compare costs from different retailers, and determine what I can afford to buy.</p> <p>MNU 2-09a</p>	Carries out money calculations involving the four operations.	<p>Investigate and use effective mental strategies to perform a range of money calculations using the 4 main number operations.</p> <p>Use knowledge of place value to solve problems involving money.</p>	<p>Work with money calculations involving decimals.</p> <p>Compare prices within a shop/catalogue to look for the best buys in a variety of sources.</p> <p>Solve problems about money using knowledge of place value and</p>	<p>Compare costs from different retailers and determine, according to budget, what can be purchased.</p> <p>Carries out calculations involving the four operations.</p> <p>Discuss hidden costs, e.g. VAT and postage etc. (within real life context).</p>

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	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
				<p>Begin to calculate change from at least £20 mentally using an empty number line to understand the process.</p> <p>Calculate equivalent values within £5, £10 and £20</p>	<p>relating problems to real life experiences (word problems).</p> <p>Investigate and calculate calculations involving discounting – money taken off the original price of an item.</p> <p>Investigate Hire Purchase – paying for an item over a set period of time, e.g. £120 per month over 36 months).</p>	<p>Convert from Sterling into foreign currencies and vice versa.</p> <p>Calculate and work with exchange rates, e.g. £300 into Euros at a rate of 1.12.</p>
		<p>I understand the costs, benefits and risks of using bank cards to purchase goods or obtain cash and realise that budgeting is important.</p> <p>MNU 2-09b</p>	<p>Demonstrates understanding of the benefits and risks of using bank cards and digital technologies.</p>	<p>Investigate organisations which provide a service for keeping and investing people’s money.</p> <p>Describe the features of a debit and credit card and ways of using and keeping them safely.</p> <p>Identify how to budget and work with a budget, e.g. enterprise project.</p>	<p>Describe in more detail the features of debit and credit cards. (APR, Loans, % repayments).</p> <p>Develop a basic budget based on incomings and outgoings.</p> <p>Describe why it is important to budget.</p>	<p>Understand the costs, benefits and risks of using bank cards and digital technologies to purchase goods or obtain cash.</p> <p>Understand the importance of budgeting when planning to make a purchase over a period of time.</p> <p>Read a bank statement and keep financial records in order.</p> <p>Select and understand the best savings account based on rate of interest etc.</p> <p>Understand and investigate income tax as a % of earning.</p>
		<p>I can use the terms profit and loss in buying and selling activities and can make simple calculations for this.</p>	<p>Compares costs and determines affordability within a given budget.</p> <p>Calculates profit and loss accurately, for</p>	<p>Describe that profit is when we make money and loss in when we lose money.</p> <p>Round an amount to the next nearest pound to pay for something and calculate the</p>	<p>Research the market before attaching prices to goods.</p> <p>Work within a budget to make a profit.</p>	<p>Use the terms profit and loss in buying and selling activities and solve the related calculations.</p> <p>Monitor expenditure to ensure that a profit is achieved and not a loss.</p>

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	MNU 2-09c	example, when working with a budget for an enterprise activity.	exact change. Recognise and calculate gross and net profit and the difference between them. Use technology to record expenditure and incomings through an entries activity.		
Time	<p>Bundle S7 I can use and interpret electronic and paper-based timetables and schedules to plan events and activities, and make time calculations as part of my planning.</p> <p style="text-align: center;">MNU 2-10a</p> <p>I can carry out practical tasks and investigations involving timed events and can explain which unit of time would be most appropriate to use.</p> <p style="text-align: center;">MNU 2-10b</p> <p>Using simple time periods, I can give a good estimate of how long a journey should take, based on my knowledge of the link between time,</p>	<p>Calculates durations of activities and events including situations bridging across several hours and parts of hours using both 12 hour clock and 24 hour notation.</p> <p>Knows the relationships between commonly used units of time and carries out simple conversion calculations, for example, changes 1 $\frac{3}{4}$ hours into minutes.</p> <p>Reads and records time in both 12 hour and 24 hour notation and converts between the two. Selects the most appropriate unit of time for a given task</p>	<p>Show and tell the time in minutes to and minutes past the hour using analogue and digital displays.</p> <p>Read times to the nearest minute.</p> <p>Interpret a timetable made up of 12/24 hour time.</p> <p>Calculate durations in hours and minutes, bridging an hour.</p> <p>Use a calendar to determine days, dates and durations in days, weeks and months.</p> <p>Plan events and activities using timetables and calendars.</p> <p>Order units of time e.g. longest to shortest.</p> <p>Calculate the length of time (+/-) in hours and minutes bridging an hour.</p> <p>Read, write and tell the time using 12 and 24-hour times using the appropriate notation and</p>	<p>Calculate durations in hours and minutes, bridging more than one hour, counting on and back.</p> <p>Calculate starting and finishing times by counting on and back in hours and minutes.</p> <p>Measure time in seconds and in minutes.</p> <p>Use, interpret and create electronic and paper-based 12/24-hour timetables and schedules to plan events and activities.</p> <p>Convert time in fractions of an hour to minutes, e.g. 1 $\frac{3}{4}$ hours in minutes.</p> <p>Select the appropriate unit of time to measure an event and justify our choice of unit by using our knowledge of time.</p> <p>Read, write and tell the time using 12 and 24-hour times using the appropriate notation and vocabulary and convert between the two.</p>	<p>Calculate more complex time durations in order to use and interpret timetables and calendars.</p> <p>Calculate time durations bridging across several hours in both 12 and 24 hour notation.</p> <p>Investigate time by calculating amounts, making estimates and making comparisons.</p> <p>Investigate international time differences.</p> <p>Use watches, stop clocks and sand timers to time events in seconds, tenths and hundredths using digital stopwatch.</p> <p>Read, write and tell the time using 12 and 24-hour times using the appropriate notation and vocabulary and convert between the two.</p> <p>Calculate speed at rate per hour.</p> <p>Connect speed, distance and time to estimate how long a journey would take.</p> <p>Solve speed, distance and time problems.</p>

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		speed and distance. MNU 2-10c	and justifies choice. Chooses the most appropriate timing device in practical situations and records using relevant units, including hundredths of a second. Uses and interprets a range of electronic and paper-based timetables and calendars to plan events or activities and solve real life problems. Estimates the duration of a journey based on knowledge of the link between speed, distance and time.	vocabulary and convert between the two. Estimate how long a journey might take and then compare it to the actual time. Compare journeys using simple time calculations. Investigate and interpret calendars stating days/weeks of the year.	Estimate and select shorter and longer routes in a range of problem solving contexts. Use 24-hour timetables (both paper and electronic) to calculate durations and intervals.

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Measurement		<p>Bundle S8 I can use my knowledge of the sizes of familiar objects or places to assist me when making an estimate of measure. MNU 2-11a</p> <p>I can use the common units of measure, convert between related units of the metric system and carry out calculations when solving problems. MNU2-11b</p> <p>I can explain how different methods can be used to find the perimeter and area of a simple 2D shape or volume/capacity of a simple 3D object. MNU 2-11c</p>	<p>Uses the comparative size of familiar objects to make reasonable estimations of length, mass, area and capacity.</p> <p>Estimates to the nearest appropriate unit, then measures accurately: length, height and distance in millimetres (mm), centimetres (cm), metres (m) and kilometres (km); mass in grams (g) and kilograms (kg); and capacity in millilitres (ml) and litres (l).</p> <p>Converts between common units of measurement using decimal notation, for example, 550 cm = 5.5 m; 3.009 kg = 3009 g.</p> <p>Chooses the most appropriate measuring device for a given task and carries out the required calculation, recording results in</p>	<p>Estimate and order length, weight/mass, area and volume/capacity using familiar objects.</p> <p>Estimate, measure and draw different distances and units e.g. km, m, cm, mm etc.</p> <p>Estimate and weigh objects in grams.</p> <p>Accurately measure in length, weight and capacity, e.g., ml, l, mm, cm, m, km, g, kg through practical activities.</p> <p>Use the comparative size of a familiar object to make reasonable estimates.</p> <p>Understand the equivalence of length.</p> <p>Select appropriate measuring devices to measure the length, width and height of different items/objects using mm and cm.</p> <p>Convert m/cm to cm; cm to m/cm, e.g. 3m 40cm = 340cm; 265cm = 2m 65cm.</p> <p>Apply knowledge of conversion when carrying out calculations in length (X or / 10, 100, 1000).</p>	<p>Estimate, measure and order length, weight/mass, area, volume/capacity using familiar objects in different units.</p> <p>Estimate to the nearest appropriate unit.</p> <p>Choose the appropriate unit of measure when estimating the weight, length and capacity of objects.</p> <p>Choose the appropriate device to measure, e.g. trundle wheel for length of playground.</p> <p>Show an awareness of the equivalence of tenths and hundredths to the appropriate unit of measurement in length, e.g. 47cm = 0.47m 2m 4cm = 204cm = 2.04m</p> <p>Convert between different units of measure e.g. mm to m etc.</p> <p>Order weights written in different units.</p> <p>Read scales accurately.</p> <p>Understand the equivalence of tenths and hundredths to the appropriate unit of measurement in weight/mass.</p>	<p>Estimate reasonably, measure, order and apply length, weight/mass, area, volume/capacity and temperature using comparative size of familiar objects.</p> <p>Measure and draw shapes using cm, mm.</p> <p>Fully understand the equivalence of tenths, hundredths and thousandths to the appropriate unit of measurement in length, weight, mass, volume and capacity.</p> <p>Convert between all forms of length e.g. metres to kilometres, cm to mm, e.g. 4.75km = 4750m = 4750cm = 47500mm.</p> <p>Add and subtract lengths in kilometres and metres, cm and mm.</p> <p>Solve problems relating to length, weight, capacity.</p> <p>Chooses the most appropriate measuring device for a given task, reading scales accurately, carrying out required calculation and recording results in the correct unit.</p> <p>Show an awareness of imperial units of length, and weight, e.g. miles and stones.</p> <p>Converts between kg to g in decimal notation. 3.009kg = 3kg 9g and apply</p>

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	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression	→	
			<p>the correct unit.</p> <p>Reads a variety of scales accurately.</p> <p>Show an understanding of units of measurement used in everyday life for example miles or stones.</p> <p>Demonstrates understanding of the conservation of measure, for example, draw three different rectangles each with an area of 24cm^2.</p> <p>Calculates the area of squares, rectangles and right-angled triangles in square millimetres (mm^2), square centimetres (cm^2) and square metres (m^2).</p> <p>Draws squares and rectangles accurately with a given perimeter or area.</p> <p>Calculates the volume of cubes and</p>	<p>Show an awareness of common imperial units e.g. Miles.</p> <p>Convert kilograms and grams- recognise that $1/4\text{kg}$ is 250g etc.</p> <p>Use and read scales to weigh objects and weigh out materials in grams and kg and apply to everyday activities e.g. cooking. Recognise 2kg and 30 grams is 2030 grams.</p> <p>Weigh an item on scales using a variety of intervals.</p> <p>Order items using the same unit of weight.</p> <p>State that $1\text{l} = 1000\text{ml}$, $1/2\text{l} = 500\text{ml}$ etc.</p> <p>Calculate the volume of simple shapes using cubes.</p> <p>Identify the interval of measurement in millilitres on a variety of measuring containers, e.g. 500ml, 100ml, 50ml, 25ml, 10ml.</p> <p>Use and read scales on a variety of measuring containers to find volume/capacities of liquid in litres and millilitres and apply these to everyday contexts.</p>	<p>Convert kilograms and grams and grams to kilograms including decimal notation. e.g. $4750\text{g} = 4.75\text{kg}$ $5\text{g} = 0.005\text{kg}$ $6.024\text{kg} = 6024\text{g}$ $0.02\text{kg} = 20\text{g}$</p> <p>Identify and record weight/mass in whole kilograms, tenths, hundredths and thousandths of a kilogram in both fraction and decimal forms.</p> <p>Solve problems relating to weight/mass.</p> <p>Convert litre to millilitres and litres to millilitres.</p> <p>State that $1\text{cm}^3 = 1\text{ml}$ and that $1\text{ litre} = 1000\text{ml} = 1000\text{cm}^3$</p> <p>Perform calculations based on more than and less than in relation to volume.</p> <p>Measure and estimate using cubic centimetres (cm^3).</p> <p>Create solid shapes of particular volume/capacities using centimetre cubes.</p> <p>Use the term “cubic centimetre” for cm^3 and, if appropriate, “cubic metre” for m^3 when finding volume/capacity of 3D objects.</p>	<p>this knowledge when solving problems.</p> <p>Order items using different units of weight by conversion.</p> <p>Show an awareness of imperial units of volume e.g. pint, gallon, fluid ounces.</p> <p>Calculate the volume of a composite shape (cubes and cuboids) within a range of contexts. E.g. real life problems using a choice of materials (concrete or formula).</p> <p>Calculates the volume/capacity of simple 3D objects in cubic centimetres (cm^3) and cubic metres (m^3) and explain their choice of methods used.</p> <p>Explore and calculate the volume/capacity of a cube and cuboid by multiplying length, breadth and height.</p> <p>Calculate the perimeter of composite 2D shapes in mm, cm and m and explain method of choice (e.g. use of area formula, multiplication or addition).</p> <p>Use problem solving skills to identify missing length to calculate areas and perimeters of different shapes.</p>

**Numeracy and Maths
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	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
			<p>cuboids in cubic centimetres (cm³) and cubic metres (m³).</p> <p>Calculates the perimeter of simple straight sided 2D shapes in millimetres (mm), centimetres (cm) and metres (m).</p>	<p>Understand that the term “perimeter” is the length around the outside of a shape.</p> <p>Estimate and calculate the perimeter of regular and irregular shapes in mm, cm and m.</p> <p>Understand that the term “area” is the space contained within the perimeter of a 2D shape.</p> <p>Measure the area of regular shapes using cm² and ½ cm².</p> <p>Use the term “square centimetre” for cm² and, if appropriate, “square metre” for m², when measuring area.</p> <p>Find the area of squares and rectangles in cm² and, if appropriate, m² using the formula $A = l \times b$</p> <p>Draw simple shapes with particular perimeters and areas.</p> <p>Calculate the area of composite shapes composed of rectangles, and squares.</p>	<p>Calculate volume/capacities of cubes and cuboids in cm³ using the formula $V = l \times b \times h$</p> <p>Know that capacity is maximum volume.</p> <p>Draw more complex shapes accurately with a given perimeter or area.</p> <p>Draw shapes with the same perimeter but different areas.</p> <p>Continue to explore the formula $A = l \times b$ to calculate the area of rectangles and squares in composite shapes.</p> <p>Understand that rectangles and squares with the same perimeter can have different areas.</p> <p>Find the area of right-angled triangles from the area of the surrounding rectangle.</p> <p>Estimate length and breadth, then find the area of squares and rectangles in m².</p>	<p>Investigate different ways a perimeter can be found.</p> <p>Calculate the area of 2D composite shapes made up of squares, rectangles and triangles in mm, cm and m (squared) and explain method of choice.</p> <p>Explain why there are $4 \times \frac{1}{2} m^2$ in $1m^2$.</p> <p>Explore and calculate the area of right angled triangles and isosceles triangles using $\frac{1}{2} b \times h$.</p> <p>Show an understanding of the relationship between simple imperial and metric systems and convert between the two, e.g. Miles to km.</p>

**Numeracy and Maths
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	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
<p>Mathematics – its impact on the world, past, present and future</p>	<p>Mathematics – its impact on the world, past, present and future</p>	<p>Bundle S9 I have worked with others to explore, and present our findings on, how mathematics impacts on the world and the important part it has played in advances and inventions. MTH 2-12a</p>	<p>Researches and presents examples of the impact mathematics has in the world of life and work.</p> <p>Contributes to discussions and activities on the role of mathematics in the creation of important inventions, now and in the past.</p>	<p>Explain simply how mathematics impacts on the world of:</p> <ol style="list-style-type: none"> 1. Science 2. Medicine 3. Finance 4. Design 5. Engineering 6. Technology <p>(choose from selection)</p> <p>Explain simply how maths has played an important part in advances and inventions.</p> <p>Research historical number systems and discuss how they have changed over time, e.g. Roman Numerals.</p> <p>Demonstrates an understanding of how maths and numeracy can be used to persuade people to change what they think and do, e.g. £1 for 3 apples or 35p each.</p>	<p>Explain how mathematics impacts on the world of:</p> <ol style="list-style-type: none"> 1. Science 2. Medicine 3. Finance 4. Design 5. Engineering 6. Technology <p>Explain how maths has played an important part in advances and inventions.</p> <p>Research historical number systems and discuss how they have changed over time, e.g. decimal System.</p> <p>Demonstrates an understanding of how maths and numeracy can be used to persuade people to change what they think and do. E.g. £1 for 3 apples or 35p each – Link to an enterprise experience.</p>	<p>Explain how mathematics impacts on the world of:</p> <ol style="list-style-type: none"> 1. Science 2. Medicine 3. Finance 4. Design 5. Engineering 6. Technology <p>Research, through collaborative work, how mathematics impacts on the world and the important part it has played in advances and inventions (e.g. bridges, STEM, hydraulics).</p> <p>Present and discuss through an appropriate contexts e.g. STEM, world at work.</p> <p>Research historical number systems and discuss how they have changed over time.</p>
	<p>Patterns and relationships</p>	<p>Bundle S10 Having explored more complex number sequences, including well-known named number patterns, I can explain the rule used to generate the sequence, and apply it to extend the pattern.</p>	<p>Explains and uses a rule to extend well known number sequences including square numbers, triangular numbers and Fibonacci sequence.</p> <p>Applies knowledge of multiples, square numbers and triangular numbers to generate number</p>	<p>Extend, create and explain the rules for repeating patterns and simple number sequences.</p> <p>Understand and calculate square numbers.</p> <p>Recognise in numbers and be able to continue them by identifying the rule.</p> <p>Recognise patterns in riles that go up in unequal steps, e.g. +1, +2, +3 etc.</p>	<p>Describe more complex number sequences and link them to table facts including square numbers.</p> <p>Create more complex number patterns of my own and explain the rule using my own words.</p> <p>Investigate and understand triangular numbers, e.g. do 2 triangles numbers = a square number.</p>	<p>Applies knowledge of multiples, factors, square numbers and triangular numbers to generate number patterns for others to continue.</p> <p>Express rules and patterns in words or algebraic notation.</p> <p>Identify and describe the relationship between two sets of numbers which involves two steps, e.g. multiply by 2 and add 3.</p>

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Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
Expressions and equations	MTH 2-13a	patterns.			<p>Identify and solve simple linear patterns.</p> <p>Explore and continue well-known number sequences e.g., Fibonacci sequence and Pascal's Triangle.</p>
	<p>Bundle S11 I can apply my knowledge of number facts to solve problems where an unknown value is represented by a symbol or letter.</p> <p style="text-align: right; color: #4F81BD;">MTH 2-15a</p>	Solves simple algebraic equations with one variable, for example, $a - 30 = 40$ and $4b = 20$.	<p>Understand and use function machines and the associated relationship between input and output values.</p> <p>Identify the input given a rule and the output.</p> <p>Describe the rule given the input and output in terms of +, -, x or ÷, e.g. add 5, subtract 3, multiply by 2, divide by 5.</p> <p>Calculate the missing numbers in more complex statements where symbols are used for unknown numbers or operators.</p> <p>Understand that letters and symbols can represent numbers and that this is known as substitution.</p> <p>Solve problems using substitution, e.g. $a = 3$ and $b = 5$ ($a + b = 8$).</p>	<p>Understand the language of solve meaning that a value is required for a letter.</p> <p>Understand the term equation.</p> <p>Understand that the equals sign signifies balance in an equation and means the same as.</p> <p>Compare both side of an equation and decide if they are equal or not.</p> <p>Understand that the value of a symbol or letter can vary depending on the equation.</p> <p>Simplify algebraic expressions e.g. $a + a + a + a = 4a$.</p> <p>Recognise the word variable in an algebraic context.</p> <p>Demonstrate knowledge of algebraic notation, e.g. $2y = 2$ (times) y.</p>	<p>Use a function machine in reverse for inverse operations.</p> <p>Solve simple equations using the appropriate common language and methodology e.g. $x + 4 = 6$, $b - 5 = 12$, $2e = 8$, $5t = 30$</p> <p>Recognise and solve simple equations with one variable. e.g. $3x + 1 = 10$</p> <p>Solve equations using algebraic notation.</p> <p>Recognise and use greater than and less than symbols.</p> <p>Solve simple inequalities.</p> <p>Recognise and understand the language of algebra and identify inverse process used to solve equations.</p>

Properties of 2D shapes and 3D objects

Bundle S12

Having explored a range of 3D objects and 2D shapes, I can use mathematical language to describe their properties, and through investigation can discuss where and why particular shapes are used in the environment.

MTH 2-16a

Through practical activities, I can show my understanding of the relationship between 3D objects and their nets.

MTH 2-16b

I can draw 2D shapes and make representations of 3D objects using an appropriate range of methods and efficient use of resources.

MTH 2-16c

Describes 3D objects and 2D shapes using specific vocabulary including regular, irregular, diagonal, radius, diameter and circumference.

Applies this knowledge to demonstrate understanding of the relationship between 3D objects and their nets.

Identifies and describes 3D objects and 2D shapes within the environment and explains why their properties match their function.

Knows that the radius is half of the diameter.

Uses digital technologies and mathematical instruments to draw 2D shapes and make representations of 3D objects, understanding that not all parts of the 3D object can be seen.

Extend the range of regular and irregular 2D shapes I can work with and name, including a parallelogram, trapezium, rhombus and kite.

Identify 3D objects including: cube, cuboid, cylinder, sphere, cone, square-based pyramid, triangular-based pyramid (tetrahedron) and triangular prism.

Investigate and discuss 3D objects used in the environment.

Construct and deconstruct simple 3D objects to explore their nets e.g. cube, cuboid.

Identify correct/incorrect nets e.g. cube, cuboid

Draw simple nets of 3D objects (cube, cuboid, square based pyramids, tetrahedron, cylinder).

Tessellate more complex 2D shapes and am aware that I can rotate shapes in order to achieve successful tiling.

Extend the range of 3D objects that I can work with and name, e.g. hexagonal prism etc.

Describe the properties of equilateral, right angled and isosceles triangles.

Identify equilateral, isosceles, scalene and right-angled triangles.

State that the internal angles of any triangle total 180 degrees and perform a range of calculations based on this.

Understand recognise and use the term congruent.

Define the term "diagonal".

Describe the properties of 2D shapes using the appropriate terminology: sides, angles, diagonals, lines of symmetry.

Describe the properties of 3D objects using mathematical language: faces, edges, vertices.

Identify a 3D object from its net e.g. square based pyramid, tetrahedron and cylinder.

Construct nets of a variety of 3D objects, e.g. square based pyramid, tetrahedron and cylinder) using different materials when given templates.

Make and draw 3D models, solid and skeletal.

Consolidate my understanding of faces, edges, vertex, angle and diagonal.

Understand and use the terms diameter, radius and circumference.

Relate diameter, radius and circumference to practical investigations.

Classify types of quadrilateral: square, rectangle, rhombus, kite, parallelogram, and trapezium.

Investigate where and why particular shapes are used in the environment (e.g. bridge structure)

State that the internal angles of any quadrilateral total 360o

Investigate and identify the properties of different common quadrilaterals.


Discuss more complex 3D objects and visualise 3D objects from drawn nets and match a net with its solid.

Draw and construct nets of a variety of 3D objects.

Make use of digital technologies to draw representations of 3D objects.

Recognise that the radius is half of the diameter and use this knowledge to draw circles using a compass set.

Tile curved shapes.

					<p>Draw and tessellate 2D shapes. Solve tangram puzzles.</p> <p>Draw triangles using the following information: 3 sides, 2 sides and an angle, 1 side and 2 angles.</p>	<p>Draw cubes and cuboids, using isometric paper.</p> <p>Explore use of a compass to draw circles.</p> <p>Solve pentominoes problems.</p>
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**Numeracy and Maths
Second Level Skills Progression**

Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
Angles, Symmetry and Transformation	<p>Bundle S13 I have investigated angles in the environment, and can discuss, describe and classify angles using appropriate mathematical vocabulary. MTH 2-17a</p> <p>I can accurately measure and draw angles using appropriate equipment, applying my skills to problems in context. MTH 2-17b</p> <p>Through practical activities which include the use of technology, I have developed my understanding of the link between compass points and angles and can describe, follow and record directions, routes and journeys using appropriate vocabulary. MTH 2-17c</p>	<p>Uses mathematical language including acute, obtuse, straight and reflex to describe and classify a range of angles identified within shapes in the environment.</p> <p>Knows that complementary angles add up to 90° and supplementary angles add up to 180° and uses this knowledge to calculate missing angles.</p> <p>Measures and draws a range of angles to within $\pm 2^\circ$.</p> <p>Uses knowledge of the link between the eight compass points and angles to describe, follow and record directions.</p> <p>Interprets maps, models or plans with simple scales, for example, $1\text{cm}:2\text{km}$.</p>	<p>Explore angles in the environment.</p> <p>Understand, recognise and use the unit of measurement 'degree' and its symbol $^\circ$ as a measurement of turn.</p> <p>Explain that one right angle is 90°, a straight angle is 180° and a full rotation is 360°</p> <p>Relate the number of quarter, half and full angle turns to degrees using appropriate vocabulary.</p> <p>Estimate the size of angles.</p> <p>Use acute, right, obtuse, straight and reflex to describe an angle</p> <p>Compare and order angles.</p> <p>Classify angles, e.g. 88° is acute, 123° is obtuse etc.</p> <p>Explain that protractors are used to measure angles.</p> <p>Experiment with a protractor through practical activity to identify and measure right, acute and obtuse angles.</p> <p>Name angles using 3 capital letters.</p>	<p>Confidently use the terms acute, right, obtuse, straight and reflex to describe an angle.</p> <p>Calculate the size of missing angles using knowledge of straight line and right angle.</p> <p>Investigate and describe the properties of triangles.</p> <p>Explain that the angles in a triangle total 180°.</p> <p>Use a protractor to measure and draw angles within 5 degrees of accuracy.</p> <p>Estimate and measure reflex angles using a circular protractor.</p> <p>Draw a representation of an acute, right, obtuse and reflex angle.</p> <p>Apply skills in measuring and drawing angles to solve problems.</p> <p>Understand that bearings are measured clockwise from North.</p> <p>Begin to work with 3 figure bearings to describe direction.</p> <p>Recognise 8 compass points and their links to angles.</p>	<p>Calculate size of angles using mental strategies.</p> <p>Begin to explore opposite F and Z angles formed by parallel lines.</p> <p>Identify and calculate missing angles using knowledge of vertically opposite angles.</p> <p>Introduce the terms complementary and supplementary angles and know that complementary angles add up to 90° and supplementary angles add up to 180°</p> <p>Use knowledge of complementary and supplementary angles to calculate missing angles.</p> <p>Check my work by estimating after drawing an angle.</p> <p>Use a protractor to measure and draw angles within 2 degrees of accuracy.</p> <p>Measure and draw 3 figure compass bearings (± 2 degrees).</p> <p>Describe and record directions, follow routes and journeys with accuracy and detail linking compass points and angles appropriately.</p> <p>Apply knowledge of movement and direction in a problem solving context using programmable toys,</p>

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Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
	<p>Having investigated where, why and how scale is used and expressed, I can apply my understanding to interpret simple models, maps and plans.</p> <p style="text-align: right; color: blue;">MTH 2-17d</p>		<p>Recognise and name the eight direction points on a compass: N, S, E, W, NE, SE, SW, NW.</p> <p>Create routes and give simple instructions E.g. forward 3 steps right turn 90 degrees etc.</p> <p>Describe and follow familiar routes and directions using appropriate vocabulary.</p> <p>Understand the concept of scale.</p> <p>Discuss where scale might be used.</p> <p>Investigate where, why and how scale is used and expressed.</p> <p>Use scale drawings in many real life situations e.g. building plans, maps, car designs etc.</p>	<p>Record 3 figure bearings using the correct notation e.g. 045°.</p> <p>Describe a journey using appropriate vocabulary.</p> <p>Produce a scale drawing using ratio, e.g. 1cm:2 km.</p> <p>Complete calculations involving ratio and scale.</p>	<p>appropriate software or websites e.g. LOGO, Turtle.</p> <p>Use scale to calculate the true length/height/distance of an object or map.</p> <p>Produce scale drawings within 2 units of accuracy including angles.</p> <p>Use scale to resize objects and shapes 1:2, 1:5 using maps.</p>
	<p>Bundle S14 I can use my knowledge of the coordinate system to plot and describe the location of a point on a grid.</p> <p style="text-align: right; color: blue;">MTH 2-18a</p>	<p>Describes, plots and records the location of a point on a grid using coordinate notation.</p>	<p>Explain that x-axis is horizontal and y-axis is vertical.</p> <p>Plot points on a coordinate grid.</p> <p>Use 4 figure grid references to read or plot a location on a grid.</p> <p>Describe (0, 0) as the origin.</p> <p>Recognise the conventions of writing co-ordinates.</p>	<p>Understand, recognise and use the terms: coordinates, horizontal, vertical, x-axis, y-axis, origin.</p> <p>Use co-ordinates to complete a drawing on a co-ordinate grid.</p>	<p>Complete a shape by plotting the missing vertex and stating its coordinates.</p> <p>Describe, plot and record coordinates.</p> <p>Calculate distances between co-ordinate points.</p> <p>Use coordinates to rotate a shape on its vertex.</p>

Numeracy and Maths Second Level Skills Progression					
Organiser	Experiences and Outcomes	Benchmarks	→	Skills Progression	→
	<p>Bundle S15 I can illustrate the lines of symmetry for a range of 2D shapes and apply my understanding to create and complete symmetrical pictures and patterns.</p> <p>MTH 2-19a</p>	<p>Identifies and illustrates all lines of symmetry on a wide range of 2D shapes and applies this understanding to complete a range of symmetrical patterns, with and without the use of digital technologies.</p>	<p>Identify both regular and irregular shapes with none, one or two lines of symmetry using different materials.</p> <p>Create a shape which has at least two lines of symmetry.</p> <p>Identify symmetry in real life objects.</p>	<p>Identify and draw up to 4 lines of symmetry.</p> <p>Create my own symmetrical shapes and patterns.</p> <p>Determine whether or not a shape has rotational symmetry.</p> <p>Recognise and draw shapes that have rotational symmetry.</p> <p>Use the correct vocabulary to describe the order of symmetry.</p>	<p>Translate, reflect or rotate a shape on a co-ordinate grid.</p> <p>Identify and illustrate all lines of symmetry, e.g. vertical, horizontal and diagonal -and applies this to complete a range of symmetrical shapes, pictures and patterns.</p> <p>Make use of digital technologies when creating lines of symmetry and completing symmetrical patterns, e.g. symmetry apps on iPads.</p>
Information Handling	<p>Bundle S16 Having discussed the variety of ways and range of media used to present data, I can interpret and draw conclusions from the information displayed, recognising that the presentation may be misleading.</p> <p>MNU 2-20a</p> <p>I have carried out investigations and surveys, devising and using a variety of methods to gather information and have worked with others to collate, organise</p>	<p>Analyses, interprets and draws conclusions from a variety of data.</p> <p>Draws conclusions about the reliability of data taking into account, for example, the author, the audience, the scale and sample size used.</p> <p>Devises ways of collecting data in the most suitable way for the given task.</p> <p>Collects, organises and displays data accurately in a variety of ways including through</p>	<p>Work collaboratively to identify trends in presented data.</p> <p>Interpret information presented in simple tables and bar graphs to show awareness of significance of the data to ensure its no misleading.</p> <p>Use frequency tables to show how often the same results appear.</p> <p>Calculate the frequency by counting how often it occurs.</p> <p>Interpret a Venn diagram with two overlapping sets of data.</p> <p>Interpret simple pie charts including quarters and halves.</p> <p>Work effectively with others to plan and conduct a suitable</p>	<p>Divide frequency into class intervals.</p> <p>Interpret bar graphs, line graphs, bar charts, simple pie charts and trend graphs.</p> <p>Calculate the mean average from a set of data.</p> <p>Use spreadsheets as an extension of tables showing more complex information.</p> <p>Sort information in to cells, records and fields.</p> <p>Identify that continuous data should be represented by a line graph, e.g. Temperature.</p> <p>Interpret and draw simple pie charts including thirds, quarters and halves using given templates.</p>	<p>Find and interpret specific information from bar graphs, line graphs, Venn diagrams and pie charts, including those with graduated axes.</p> <p>Describe and discuss the data presented in a range of charts and graphs using the terms range, mode, mean and median.</p> <p>Analyse whether the presented data is misleading e.g. the audience, sample sized, the scale used, numbers surveyed, and choice of graph.</p> <p>Analyse, interpret and draw conclusions from findings.</p> <p>Interpret straight and curved line graphs.</p>

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	Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
		<p>and communicate the results in an appropriate way. MNU 2-20b</p>	<p>the use of digital technologies, for example, creating surveys, tables, bar graphs, line graphs, frequency tables, simple pie charts and spreadsheets.</p>	<p>survey or investigation using a variety of methods including oral and paper questionnaires and ICT recording information appropriately.</p> <p>Organise information in a table, using row and column headings, databases and spreadsheets.</p> <p>Establish an appropriate scale on a set of axes to draw a bar graph.</p> <p>Display information in a table or bar graph, including those with graduated axes.</p> <p>Use a spreadsheet to produce a bar graph.</p>	<p>Interpret a Venn diagram with three overlapping sets of data.</p> <p>Collect and display data from a task including a questionnaire which allows several responses.</p> <p>Use spreadsheets with up to 3 pupil defined fields.</p> <p>Use databases to find, sort and select specific information.</p>	<p>Collects, organises and displays data accurately in a variety of ways through the use of digital technologies e.g. frequency tables, creating surveys, tables, bar graphs, line graphs, pie charts and spreadsheets.</p> <p>Apply my knowledge of range, mode, median and mean to solve problems.</p>
		<p>I can display data in a clear way using a suitable scale, by choosing appropriately from an extended range of tables, charts, diagrams and graphs, making effective use of technology. MTH 2-21a</p>	<p>Displays data appropriately making effective use of technology and chooses a suitable scale when creating graphs.</p>	<p>Present information in a range of ways.</p> <p>Construct a graph in multiple units.</p> <p>Read graphs horizontally and vertically.</p> <p>Interpret a line graph to show information over a period of time.</p>	<p>Present information in range of more complex ways including line graphs, frequency charts etc.</p> <p>Select the most appropriate way of displaying information.</p> <p>Create a graph or chart from data which is presented in another form.</p> <p>Construct graphs and charts using simple fractions or decimals where appropriate, using computer packages where possible.</p>	<p>Display data appropriately making effective use of technology.</p> <p>Choose a suitable scale when creating graphs.</p> <p>Use a spread sheet where appropriate to produce a pie chart, bar or line graph.</p> <p>Create a pie chart with graduations given incorporating percentages.</p>

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Organiser	Experiences and Outcomes	Benchmarks	→ Skills Progression →		
Ideas of chance and uncertainty	<p>Bundle S17 I can conduct simple experiments involving chance and communicate my predictions and findings using the vocabulary of probability.</p> <p style="text-align: right; color: #00AEEF;">MNU 2-22a</p>	<p>Uses the language of probability accurately to describe the likelihood of simple events occurring, for example equal chance; fifty-fifty; one in two, two in three; percentage chance; and $\frac{1}{6}$.</p> <p>Plans and carries out simple experiments involving chance with repeated trials, for example, 'what is the probability of throwing a six if you throw a die fifty times?'</p> <p>Uses data to predict the outcome of a simple experiment.</p>	<p>Understand that probability is the chance that a particular outcome will occur.</p> <p>Plan and carryout a simple experiment involving chance with limited possibilities.</p> <p>Recognise and use the language of chance e.g. impossible, certain, even chance etc.</p> <p>Discuss the probability of an outcome within 2 choices e.g. tossing a coin.</p>	<p>Discuss the probability of an outcome more than 2 choices.</p> <p>Record chance in numerical terms, e.g. 1 in 4 chance.</p> <p>Represent probability on a number line between 0-1.</p> <p>Plan and conduct simple experiments involving chance e.g. roll a die, draw straws.</p>	<p>Use averages to discuss probability e.g. weather (average rainfall etc.)</p> <p>Understand and use the vocabulary of probability e.g. even/equal chance, fifty-fifty, one in two, probable, 100% chance and 1/6.</p> <p>Use data to predict the outcome of an experiment and explain reasons.</p> <p>Consider fair and unfair and explain my reasoning.</p> <p>Plan and carry out an experiment involving chance with repeated trials, for example, 'what is the probability of throwing a six if you throw a die fifty times?'</p>

Appendix 1: Numeracy and Mathematical skills – Skills Pathway, South Ayrshire Council

Numeracy and mathematical skills are embedded in the Experiences and Outcomes and cannot be taught in isolation. These skills can be developed through careful planning of learning activities, questions and a range of assessments. These should encourage learners to think about the concepts, going beyond the recall of knowledge and encouraging them to explain their thinking. As learners progress through Curriculum for Excellence levels, they should demonstrate increasing sophistication and independence in their ability to demonstrate, link, transfer and apply the following skills in a range of increasingly more challenging contexts

Numeracy and mathematical skill	Key features of the skill	Additional guidance
Interpret questions	<ul style="list-style-type: none"> selects the relevant information interprets data highlights key words or phrases makes notes draws diagrams chooses appropriate operations 	<p><i>Learners need to:</i></p> <ul style="list-style-type: none"> interpret questions successfully in order to work out solutions; select relevant information and be able to identify redundant or missing information in a question; interpret data and understand information presented to work out the solution; be supported to develop their skills of interpreting questions by highlighting key words or phrases, making notes or drawing diagrams; and make important decisions about which operations to choose when solving a word problem.
Select and communicate processes and solutions	<ul style="list-style-type: none"> explains choice of process shares thinking verbalises or demonstrates thought processes 	<p><i>Learners need to:</i></p> <ul style="list-style-type: none"> be able to explain why they have chosen a particular process as it demonstrates their understanding of the task, question or assessment; have frequent opportunities to discuss their thinking with their peers and teachers; select from a range of processes and increasingly choose processes which are most efficient; discuss their solutions to verbalise their thought process, either through explaining their thinking or demonstrating it pictorially; and become more confident in their abilities to select from a growing repertoire of strategies, articulate their chosen approaches with increasing clarity and make greater use of specialised vocabulary.
Justify choice of strategy used	<ul style="list-style-type: none"> shows and talks through their thinking explains their strategy justifies choice of strategy compared to other approaches 	<p><i>Learners need to:</i></p> <ul style="list-style-type: none"> show and talk through their thinking to better understand and explain their own strategies; regularly work in pairs and groups to learn with and from each other to refine their strategies; and justify their choice of strategy, identifying the most efficient strategies for different types of task.
Link mathematical concepts	<ul style="list-style-type: none"> understands and applies links between mathematical concepts transfers learning in one area to another uses connections to solve problems 	<p><i>Learners need to:</i></p> <ul style="list-style-type: none"> be able to link mathematical concepts through inverse operations and equivalences; and transfer and apply their knowledge and skills within numeracy and mathematics and across the curriculum to solve a range of problems.
Use mathematical vocabulary and notation	<ul style="list-style-type: none"> uses correct mathematical vocabulary 	<p><i>Learners need to:</i></p> <ul style="list-style-type: none"> apply the correct mathematical vocabulary, notation and appropriate units in a range of contexts.
Mental agility	<ul style="list-style-type: none"> knowledge of number facts manipulates numbers 	<p><i>Learners need to:</i></p> <ul style="list-style-type: none"> develop fluency in mental processes through a sound knowledge of key number facts; and use strategies to manipulate an appropriate range of numbers and apply these to solve open-ended problems.
Reason algebraically	<ul style="list-style-type: none"> finds the unknown quantity understands and uses the commutative, associative and distributive laws 	<p><i>Learners need to:</i></p> <ul style="list-style-type: none"> understand that numbers can be replaced by pictures or symbols and use this to solve problems; and apply commutative, associative and distributive laws to work with expressions and equations.
Determine the reasonableness of a solution	<ul style="list-style-type: none"> routinely uses estimation and rounding skills selects the most appropriate degree of accuracy 	<p><i>Learners need to:</i></p> <ul style="list-style-type: none"> use estimation and rounding to estimate and check the reasonableness of a solution; consider the context of the question when determining the reasonableness of the solution; and select the appropriate degree of accuracy for the given task.