Curriculum Improvement Cycle
Draft Technical Framework
Numeracy and Mathematics
ASN Milestones

November 2026

Version 1.0

These are draft materials. The content, format and style are subject to change. They are being shared as part of the co-design process and in advance of engagement and feedback time during the 2026/27 session. There is no expectation on educators, schools or settings to do anything now with these drafts. It would not be appropriate to change current planning or tracking and monitoring systems in establishments at this stage.

Contents

Introduction to Numeracy and Mathematics ASN Milestones 2

Numeracy and Mathematics ASN Milestones Purpose Statement 2

Big Ideas 2

- Mathematics is a Language 2
- Mathematics is Interconnected 2
- Mathematics is Meaning 2

Know-Do-Understand Strands 4

- Quantity, Numbers and the Algebraic Properties of Number 4
- Shape, Space and Measurement 9
- Information, Data and Uncertainty 21

Annex A 23

Strand: Quantity, Numbers and the Algebraic Properties of Number 23

Strand: Shape, Space and Measurement 24

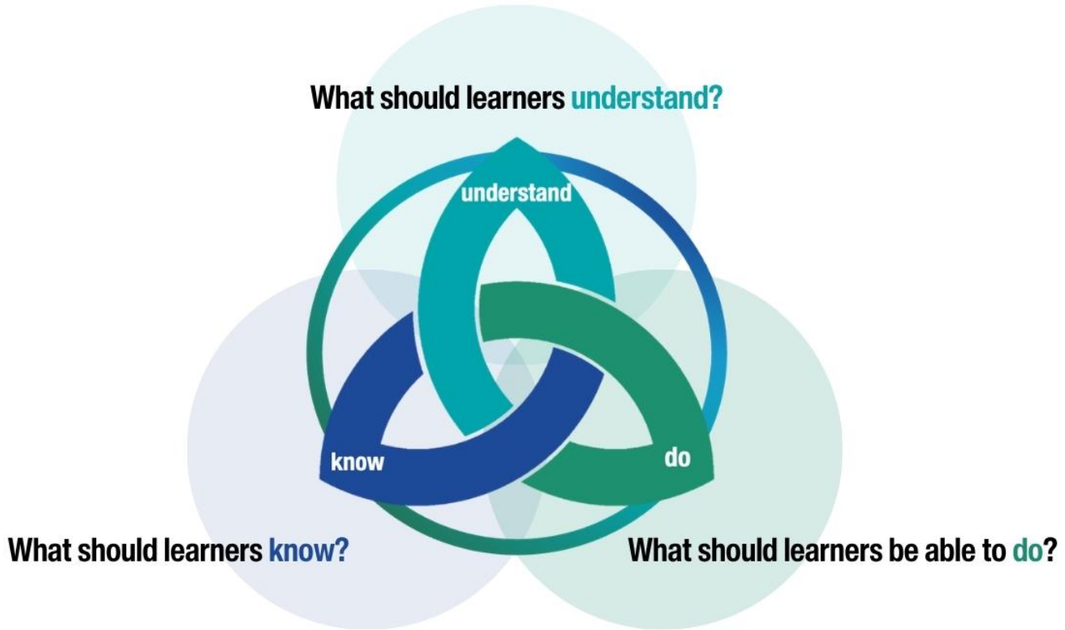
Strand: Information, Data and Uncertainty 25

Declaration 26

Version History 27

Return to Contents

The Know-Do-Understand (KDU) framework



How the KDU knots are written

Understand:
Statements that decribe the relationship between concepts.

Know:
Facts, definitions or **case studies** that learners need to know to develop the understanding above.

Do:
Skills, **processes** and **procedures** learners need to know to develop the understanding above.

Notes:
Information that helps practitioners in their planning for this KDU knot.

Return to Contents

Introduction to Numeracy and Mathematics ASN Milestones

Learners who require additional support, for whatever reason, are not a homogeneous group. They are an integral part of Scotland's education system and should therefore be reflected throughout all aspects of the curriculum.

Although there is no formal national definition of complex needs, the Doran National Strategic Commissioning Group developed the following working definition in the Doran Review:

> 'A child or young person who has additional support needs arising from one or more severe complex factors or multiple factors (needs that are likely to continue for more than a year) is deemed to have 'complex needs'.'

A short-life working group of practitioners, leaders, curriculum specialists and critical friends collaborated to create this draft to align the original Milestones with the CIC framework and the Know-Do-Understand (KDU) model. The aim was to ensure coherence in how learning, progression and achievement are understood and supported across diverse learner pathways. The working group retained and adapted the original Milestones statements where appropriate.

In addition, some expectations within the draft CIC documents have been updated to reflect wider curriculum developments and changes in society ensuring that learning remains relevant and meaningful for contemporary contexts.

The working group welcomed the increased focus on learners with complex additional support needs but recognised that alignment alone will not address all of the challenges relating to curriculum, assessment, progression and accreditation for these learners. In particular, the challenge of interpreting "understanding" for learners with complex needs within the KDU model will be complex and be demonstrated in a wide variety of ways.

Progression and achievement look different for all learners. Although the statements illustrate potential progression, learners with complex additional support needs may progress in different ways and at different rates. Progression is often non-linear and highly individual, and achievement may take place within a developmental stage rather than through movement between levels. Learners may revisit, consolidate and apply learning in different ways and over different timescales. This should be recognised as an important aspect of progress. The original guidance outlines how to track progress through stages of support required and levels of engagement. This, or similar approaches to documenting progression, remain applicable.

Not every learner starts here before Early Level. For some learners, the Foundation and ASN Milestones can provide a developmental pathway that precedes engagement with aspects of Early Level. However, these documents are not intended to represent a separate curriculum level or a stage through which all learners should be expected to progress.

Numeracy and Mathematics ASN Milestones Purpose Statement

Our purpose is to develop children and young people as mathematical thinkers and learners who can work both independently and collaboratively to reason, investigate and build connections. This will enable them to build fluency to make informed decisions, solve problems, and appreciate the mathematical relationships that shape our world.

Big Ideas

Mathematics is a Language	**Mathematics is Interconnected**	**Mathematics is Meaning**
The language of mathematics supports the deepening of understanding. It allows us to model and communicate solutions to real-world problems. By using mathematical symbols, diagrams and accurate notation we can communicate effectively across disciplines and cultures. The use of precise notation and mathematical language is essential when conveying abstract concepts. As a collaborative practice, mathematics is about discourse, communicating ideas, and posing purposeful questions that promote curiosity and creativity. Precise mathematical language underpins clear and visible thinking, informed decision-making and justification.	Mathematics is a structure of connected ideas, relationships and concepts which depend on one another. Noticing and making sense of these connections is central to mathematical thinking. Mathematics underlies and makes sense of the world beyond its own boundaries. Seeing mathematics as interconnected changes how learners think, moving them from following procedures to building understanding, where grasping one idea helps develop others. Once learners see mathematics this way, they begin to see the world differently.	Mathematics is more than a collection of facts, rules and procedures. It uncovers truths about the world and enables us to think critically and make evidence-based decisions. Mathematics makes sense of uncertainty and creates beauty from logic. Finding solutions is important, but value also lies in developing the skills of reasoning and problem solving. Being mathematical requires curiosity and asking questions, it invites us to wonder, investigate and challenge assumptions. Mathematics is a human endeavour spanning centuries and cultures. At its core it is about meaning not just understanding what is true, but why it is true.

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Return to Contents

Overview of Statements of Understanding

Strand	Sub-Strand	Statements of Understanding
Quantity, Numbers and the Algebraic Properties of Number	**Building Foundations in Quantity and Number**	Numbers and quantities can be noticed and explored through words, actions, songs and objects.
	Building Foundations in Finance	Buying involves choosing, paying for and receiving goods through recognisable routines and interactions.
Shape, Space and Measurement	**Building Foundations in Position and Movement**	Position and direction can be communicated through words, symbols and gestures, helping locate, move and place objects and people.
	Building Foundations in Shapes and Solids	Shapes and objects can be recognised, matched and combined in different ways to build and create.
	Building Foundations in Patterns and Sequences	Patterns can be experienced, copied and created through touch, sound, movement and music.
	Building Foundations in Measures	Objects and containers can be described and compared by their size, mass or the amount they hold. Time, routines and events can be represented through symbols, schedules, cues and timing devices, helping make sense of what is happening now, next, and what has already happened.
Information, Data and Uncertainty	**Building Foundations in Information, Data and Uncertainty**	Information can be organised and communicated through sorting objects and expressing preferences.

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Return to Contents

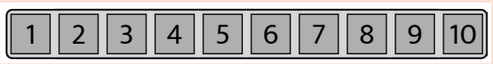
Know-Do-Understand Strands

<table>
<tr><td>Strand</td><td colspan="4">Quantity, Numbers and the Algebraic Properties of Number
The focus on quantity is to understand value and size. Determining quantities in the world around us often involves solving problems that draw on a range of mathematical concepts. Numbers help us count, order, compare and express values. Number sense contributes to mathematical fluency, building accuracy, flexibility and efficiency. The algebraic properties of number provide a lens through which learners can generalise how numbers and operations on numbers interact.</td></tr>
<tr><td>Sub-strand</td><td colspan="4">Building Foundations in Quantity and Number</td></tr>
<tr><td rowspan="2">Mathematics Milestones</td><td colspan="4">Understand: Numbers and quantities can be noticed and explored through words, actions, songs and objects.</td></tr>
<tr><td>Know:(Developing awareness of)

Number words occur regularly in familiar songs, stories, rhymes and daily routines.</td><td>Do: Support* me to:
Encounter / Notice / Show interest in / Respond to / Focus my attention on
The use of number names and numerals in stories, songs, music and routines. For example, vocalising or gesturing when listening to counting songs, or when objects are counted as they are being packed away.</td><td>Know:(Developing awareness of)

Number words can be linked with actions, movements, sounds, or objects.</td><td>Do: Support* me to:
Participate in / Initiate / Demonstrate / Consolidate / Extend
Counting songs that involve an introduction to number. For example, nodding, pointing to or tapping as objects are counted.


The sequence of one, two, three… For example, when leading into or out of an activity.

Following numerals in order as part of songs and rhymes. For example, gesturing towards the numerals on a numeral track as they are counted.


Calling out, signing or saying the number that comes next in a familiar sequence.</td></tr>
<tr><td>Objects can be noticed, tracked and explored through visual and sensory experiences.</td><td>Tracking groups of objects. For example, following an object or group of objects with my eyes or through gesture.

Touching or feeling objects as they are being counted. For example, touching objects as they are lined up in order.

Picking up, dropping, moving or transferring quantities of objects. For example, moving objects into a basket, posting items through a slot.</td><td>Objects can be counted.</td><td>Counting opportunities (where an adult models one-to-one correspondence.) For example, touching each cup of flour as it is added into a bowl, touching each object as it is counted in a line.</td></tr>
</table>

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	Adding or removing objects within a collection creates a noticeable change.	Significant change in collections of motivational objects. For example, vocalising excitement when shown twenty cars compared to one car. Familiar objects being removed from or added to a collection. For example, using gestures or vocalisations to indicate a change when an adult says 'all gone', 'none left', 'one more', 'give me more', or 'finished'. Wanting more or fewer objects using an action, gesture or vocalisation.	One collection can have more objects than another collection. A collection can have none when all the objects have been removed. Objects can be added or removed from a collection. Objects or parts can be joined together.	Two collections being directly compared, recognising which has more. For example, gesturing towards the collection with more.  Objects or groups of objects being removed from a collection to leave none. For example, putting away all the balls to leave none, posting letters in a letterbox until there are none left. Adding or removing one object from a collection. For example, touching or gesturing towards the object that will be removed. Combining two parts together. For example, connecting two towers of blocks to make one tower, squashing two balls of dough to make one big ball.
	Objects can be given to different people.	Sharing a collection of objects. For example, helping to give out objects while an adult uses modelled phrases such as 'one each', or 'one for you and one for me'.	A collection of objects can be shared out.	Distributing a collection of objects one at a time in everyday situations. For example, handing out one ball to each person, one cup at each place.
	Notes *This may include: physical support, gestural support, visual support, verbal support, support via technology or no support. In English, Western Arabic numerals are used. Some learners may have experience of different number systems, such as Chinese, Eastern Arabic, Roman, which can be explored where appropriate. Using familiar and engaging contexts such as songs, stories, and rhymes helps to connect number words to quantities and notice how numbers change over time. Encouraging multiple exposures and repetition within everyday routines, encourages awareness of number names and quantities in the world around them. Thanks to the National Autism Implementation Team (NAIT) and their work on visual support resources for the counting song image included above. **Includes but is not limited to** Working within the range 0 – 10. **Mathematical language to model** more, none, lots, sharing, adding, removing, zero, one, two…			

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Return to Contents

	Numeracy and Mathematics Milestones **Estimation and rounding** Shows a recognition of one, none and lots in a range of practical contexts. Shows recognition of more in a range of practical contexts. (Recognition of less is introduced within Early Level). **Number and number processes** Participates in nursery rhymes and songs that involve an introduction to number. Calls out/demonstrates an awareness of numbers that come next in a familiar sequence. Recognises and/or uses the sequence of 1,2, 3 to lead into or out of an activity. Says or signs the *next* number words. (Number words in order is introduced within Early Level). Follows along a sequence of numerals while communicating the words. Begins to show one-to-one correspondence by indicating (for example, by pointing) at each item. (Reciting number words in order is introduced within Early Level). Adds one more and/or takes one away from a group of items on request. Identifies when there is none left. **Fractions, decimal fractions and percentages.** Takes part in distributing a collection of items between a group. Distributes items one at a time.

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Sub-strand	Building Foundations in Finance			
	Understand: Buying involves choosing, paying for and receiving goods through recognisable routines and interactions.			
	Know:(Developing awareness of)	**Do:** Support* me to: Encounter / Notice / Show interest in / Respond to / Focus my attention on	**Know:**(Developing awareness of)	**Do:** Support* me to: Participate in / Initiate / Demonstrate / Consolidate / Extend
Mathematics Milestones	Items can be bought from shops and other places in the community. Buying items involves making choices, following routines and interacting with others.	A range of shops and places where items can be bought. For example, a clothes shop, a supermarket, or a café. Shopping routines and experiences. For example, interactions with shop staff, or using checkout tills. Selecting an item and placing it in a basket, trolley or designated container. For example, gesturing towards a preferred item, finding items on a visual or verbal shopping list. Situations that involve money transactions. For example, using cash, store cards or electronic payments, handing over a store card or taking the receipt. Exchanging an item for something else. For example, passing an item to an adult and getting something back.	Particular items are associated with different types of or parts of a shop. Choices can be made based on preference, availability, or need. Money, cards, and electronic payment methods can be used to pay for items.	Role-playing situations that involve imaginary money transactions. For example, putting coins into a till or purse. Familiar parts of a shopping routine. For example, saying or signing thank you to the cashier. Handing over, receiving, or carrying an item. Participating in completing a transaction. For example, tapping a card reader, or placing coins into a cashier's hand. Identifying the type of or part of shop associated with familiar items. For example, matching bread to a supermarket or bakery, shoes to a shoe shop or clothing section, or sausages to a butchers or fridge section. Finding or matching items on a shopping list. For example,  Choosing between two items based on preference or availability. For example, making a choice when asked, ‘What shall we buy for snack?’ Selecting an item for a specific purpose or need. For example, choosing a drink if thirsty. Recognising UK coins when presented with a mixed collection of items. For example, gesturing

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				towards the coin rather than a bottle top or pom-pom.  Selecting the correct payment method when offered two choices. For example, choosing a store card rather than a toy when asked, 'What shall we give to the cashier?' 

Notes
*This may include: physical support, gestural support, visual support, verbal support, support via technology or no support.
Experiences of money and going shopping will vary, so ensure that examples discussed are relevant to the context and sensitive to individual circumstances.
Social stories, role play, story books and songs can be used to support the familiarisation of shopping experiences.
Suitable story books could include, Milo's Money, Maisy Goes Shopping, Ed and Bunny, The Money Bunnies.
Thanks to the National Autism Implementation Team (NAIT) and their work on visual support resources including the shopping list above.

Mathematical language to model
pay, buy, spend, cash, till, receipt, bank card, change, coins, pounds

Numeracy and Mathematics Milestones

Money
Exchanges an item for something else.
Exchanges a range of media including coins, cards or other forms of money in exchange for something.
Handles a range of real money that demonstrates an awareness of money. For example, puts it into a purse or a till or other relevant item.
Finds coins in a group of mixed items.

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<table>
<tr><td>Strand</td><td colspan="4">Shape, Space and Measurement
Ideas of shape and space support the development of visualisation skills, spatial reasoning, understanding the effects of transformations, recognising symmetry, and making sense of mathematical structures. Exploring position and movement provides a foundation for thinking spatially. Sorting, comparing and describing the properties of two-dimensional shapes and three-dimensional objects helps build geometric understanding. Coordinate geometry connects with algebra to provide meaning for critical ideas, such as linear models and proportional reasoning. Trigonometry builds on geometric principles by offering methods for calculating angles and distances.</td></tr>
<tr><td>Sub-strand</td><td colspan="4">Building Foundations in Position and Movement</td></tr>
<tr><td rowspan="2">Mathematics Milestones</td><td colspan="4">Understand: Position and direction can be communicated through words, symbols and gestures, helping locate, move and place objects and people.</td></tr>
<tr><td>Know:(Developing awareness of)

Objects and people can change position and direction.

Words, symbols and gestures can describe where objects and people are.

Position words describe where someone or something is.

Instructions can include positional language.</td><td>Do: Support* me to:
Encounter / Notice / Show interest in / Respond to / Focus my attention on
Activities where there is a change of position or direction. For example, exploring the concepts of inside and outside, up and down.

Changes of body position. For example, lifting up arms when an adult says ‘arms up’, responding to a symbol or gesture indicating 'sit down'.

Activities where there is a change of movement or body position. For example, vocalising when moving towards or away from an object.

The relative distance of people and objects through movement, gesture, vocalisation, facial expression, or changes in attention. For example, indicating someone is too close, an object is too far away.

Gesturing at, reaching for, or looking for a desired object by moving my head or body for a better view. For example, tilting my head towards a preferred object.

Tracking an object or person as it changed position or direction. For example, following a ball as it goes down the ramp.

Reaching out to touch or pick up objects or items offered. For example, to touch the edge of the hydrotherapy pool, to take food from the plate.

Gesturing at, reaching for or looking at a named object or person. For example, gesturing when asked, ‘Where is Daniel?’

Gesturing at or looking towards an object being described. For example, ‘The cup is on the table.’

Activities where verbal cues, symbols or gestures are linked to familiar actions and routines. For</td><td>Know:(Developing awareness of)

Objects can be moved from one position to another.

Directions and position words help us find and place objects.</td><td>Do: Support* me to:
Participate in / Initiate / Demonstrate / Consolidate / Extend
The language of position and direction through modelled daily routines. For example, using words such as up, down, in and out during dressing, mealtimes, songs and rhymes.


Activities that develop an awareness that objects continue to exist when out of sight. For example, searching for an object that has been hidden, and indicating its position when found, by gesturing, pointing or vocalising.

Yes / No questions about position of self, people or objects. For example, ‘Is your jumper on the floor?’, ‘Is Mr Lee next to you?’, ‘Is the hoop in the same place as before?’

Describing position using symbols. For example, pointing to the symbol for up when asked, ‘Where is the light?’

Activities that develop the concepts of in and out. For example, putting objects in and taking them out of a container in response to a prompt.

Activities that develop the concepts of up and down. For example, moving a toy car up or down the ramp in response to a prompt.
Activities that develop the concepts of on and under. For example, putting a teddy under the blanket or on the table in response to a prompt.</td></tr>
</table>

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		example, responding to ‘socks off’ by looking towards the socks or lifting a foot. 		One-step directional language and instructions used in daily routines, games, dance and movement activities, such as ‘sit on the cushion’, ‘turn around’, or ‘stand up’.

Notes
*This may include: physical support, gestural support, visual support, verbal support, support via technology or no support.
Learners may demonstrate understanding through eye gaze, facial expressions, gestures, body movements, vocalisations, symbols, signs, switches or assistive technology.
Awareness that objects continue to exist when out of sight is an important foundation for understanding position and location.
Concepts should be introduced concretely using real objects, people and actions before progressing to pictures, symbols and abstract representations.
Learners may demonstrate understanding by attending to, tracking, anticipating or responding to positional changes before they can independently follow instructions.
Opportunities should be provided to hear and experience positional language repeatedly in different contexts.
The physical limitations experienced by some learners with complex needs may prevent them from independently moving their bodies. Adults should recognise that responses to touch may be communicated in subtle ways, and that learners may be unable to communicate discomfort or enjoyment.

Mathematical language to model
in, out, on, under, next to, up, down, towards, away, turn, same, near, far, close

Numeracy and Mathematics Milestones
Angle, symmetry and transformation
Demonstrates an understanding of simple positional language such as in, on, under, up, and down.
Joins in familiar movement games and activities.
Follows some simple directions within familiar movement games and dance. For example, turn around.

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Return to Contents

<table>
<tr><td>Sub-strand</td><td colspan="4">Building Foundations in Shapes and Solids</td></tr>
<tr><td rowspan="2">Mathematics Milestones</td><td colspan="4">Understand: Shapes and objects can be recognised, matched and combined in different ways to build and create.</td></tr>
<tr>
<td>Know:(Developing awareness of)

Shapes and objects can look and feel different.

Objects can be placed on top of one another.

Shapes have names.</td>
<td>Do: Support* me to:
Encounter / Notice / Show interest in / Respond to / Focus my attention on
Shapes and objects through touch and movement. For example, looking at and feeling curved edges compared to straight ones, tracing or walking around the outline of a shape.

What happens when objects are placed on top of one another.

A stack being built or knocked down.

Placing one object on top of another.

Adding or removing an object to an existing stack.

The names of different two-dimensional shapes. For example, looking towards a circle when an adult says ‘circle’.</td>
<td>Know:(Developing awareness of)

The similarities and differences between shapes and objects can be explored through touch, movement and observation.

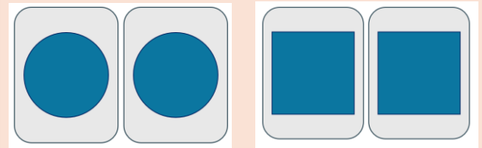
Shapes with the same properties belong together.</td>
<td>Do: Support* me to:
Participate in / Initiate / Demonstrate / Consolidate / Extend
Responding during shared exploration of similarities and differences between shapes and objects. For example, finding, selecting or moving towards objects, shapes or features described by an adult as flat, solid, round, curved or straight.

Building a stack of several objects.

Stacking objects so that they balance.

What happens when a stack becomes unstable. For example, watching a tower fall over.

Matching or finding symbols or cards which show identical shapes. For example, matching two circles.



Recognising and indicating a named shape. For example, looking towards or gesturing at a square when asked, ‘Where is the square?’

</td>
</tr>
<tr><td></td><td colspan="4">Notes
*This may include: physical support, gestural support, visual support, verbal support, support via technology or no support.
Posters, books and matching games may refer to informal names such as ‘heart’, ‘diamond’ and ‘star’. Whilst these can be acknowledged, the focus of learning should remain on circles, triangles, squares and rectangles.
Referring to thin 3D objects as 2D shapes can be confusing. A 2D shape cannot be picked up or held.
Make connections to Building Foundations in Position and Movement. For example, put the block on the tower.

Excludes
Naming 3D objects or their properties.

Mathematical language to model
circle, square, triangle, rectangle, flat, solid, curved, straight, round, corner, two-dimensional, 2D, three-dimensional, 3D, same, different</td></tr>
</table>

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	Numeracy and Mathematics Milestones **Properties of 2D shapes and 3D objects** Investigates shapes and objects through play activities such as posting shapes, stacking objects, inserting puzzle pieces. (The properties of shapes are introduced within Early Level, the properties of objects are introduced within First Level). Uses objects in a way that demonstrates an awareness of their properties. Matches 2D shapes. Recognises the names of some simple shapes, for example, circle, square.

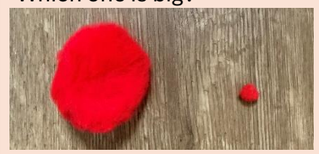
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Sub-strand	**Building Foundations in Patterns and Sequences**			
	Understand: Patterns can be experienced, copied and created through touch, sound, movement and music.			
Mathematics Milestones	**Know:**(Developing awareness of) Sounds, actions and movements can repeat to make a sequence. Patterns can be experienced through touch, sound, movement and music. A repeating pattern can be copied or created.	**Do:** Support* me to: Encounter / Notice / Show interest in / Respond to / Focus my attention on A repeating sequence on textured material. For example, rolling over a series of bumps, feeling a repeating pattern on objects with different textures. Repeated movements during physical activities. For example, bounce-stop-bounce-stop. Repeated sounds, songs or actions. For example, listening to a repeated drumbeat, watching a repeated light pattern. Responding to familiar repeating patterns. For example, smiling, vocalising or moving when a repeated action occurs. Responding when a familiar sound sequence is interrupted. For example, through gesture or vocalising. Joining in with repeated noises or vocalisations. For example, copying drum sounds during a music activity. Joining in with repeated body actions or phrases during songs and rhymes. Making a repeating sound using an instrument. For example, using a drum or triangle. Creating repeated sequences through songs and music. For example, moving a shaker to start a sequence. Taking turns when making sound sequences. For example, Gemma claps then Sam claps. Anticipating, pausing, or waiting for the next repeated action or sound. For example, waiting for the next drumbeat in a repeated rhythm.	**Know:**(Developing awareness of) Patterns are elements that repeat in a predictable order. A sequence can be continued by identifying what comes next. Patterns can be created using sounds, actions or movements.	**Do:** Support* me to: Participate in / Initiate / Demonstrate / Consolidate / Extend Recognising a familiar repeating pattern. For example, showing awareness of a clap-stamp-clap-stamp sequence during an activity. Recognising when a familiar pattern changes or stops. For example, responding when an expected drumbeat is omitted. Recognising familiar repeating sequences. For example, noticing a red-blue-red-blue arrangement of objects. Identifying the next elements of a repeating sound or movement sequence with support. For example, adding the next clap or tap sounds in a clap-tap-clap-tap sequence. Creating repeating sequences using sounds, actions or movements. For example, independently making a shake-stop-shake-stop sequence with a musical instrument. my

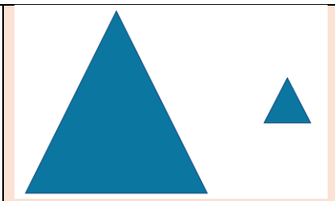
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	Notes *This may include: physical support, gestural support, visual support, verbal support, support via technology or no support. Learners may demonstrate understanding of patterns through awareness, anticipation, participation and response rather than through verbal explanation or independent sequence creation. Learners may demonstrate awareness of patterns through eye gaze, facial expression, body movement, vocalisation, gesture, anticipation, use of symbols, switches or assistive technology. The physical limitations experienced by some learners with complex needs may prevent them from independently exploring tactile experiences. Adults should recognise that responses to touch may be communicated in subtle ways, and that learners may may be unable to communicate discomfort or enjoyment. **Excludes** Verbal labelling of the pattern. **Mathematical language to model** repeat, repeating, next, pattern
	Numeracy and Mathematics Milestones **Patterns and relationships** Responds to a change in a familiar pattern or routine.

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Sub-strand	**Building Foundations in Measures**			
	Understand: Objects and containers can be described and compared by their size, mass or the amount they hold.			
	Know:(Developing awareness of)	**Do:** Support* me to: Encounter / Notice / Show interest in / Respond to / Focus my attention on	**Know:** (Developing awareness of)	**Do:** Support* me to: Participate in / Initiate / Demonstrate / Consolidate / Extend
Mathematics Milestones	Shapes and objects can be different in size or mass. Containers can hold different amounts.	Different-sized shapes and objects through touch. For example, handling a range of big and small objects during tactile exploration. Light and heavy objects through touch. For example, handling a range of light and heavy objects during tactile exploration. Filling and emptying containers of different shapes and sizes. Adding more to containers. For example, adding a scoop of flour to the bowl. Removing an amount from containers. For example, removing a jug of water from the water tray.	People and objects can be different from one another in observable ways. Objects can be big or small.	Exploring differences between people and objects through touch, movement and sensory experiences. For example, feeling my hand and the surface of a chair during supported exploration. Responding to noticeable differences between familiar objects. For example, exploring a soft teddy and a hard table, or my own hair and a smooth surface. Comparing the size of two objects of the same type and colour. For example, gesturing or looking at the pom-pom on the right when asked 'Which one is big?'  Comparing the size of two objects regardless of differences in colour, type, or appearance. For example, gesturing or looking at the teddy when asked 'Which one is big?', or at the ball when asked 'Which one is small?'  Comparing the size of two shapes. For example, when presented with two triangles of different sizes, responding yes or no to the questions such as 'Is this the small triangle?' and 'Is this the big triangle?'

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Sorting familiar objects by size using direct comparison. For example, sorting socks into two collections based on size.



Matching a big item with its corresponding small version and vice versa when they are the same in type and colour. For example, matching the big silver spoon with the little silver spoon, matching the little pink plate with the big pink plate.





Matching a big item with its corresponding small version, and vice versa regardless of differences in colour, type, or appearance. For example, matching the big and small animals together.



Ordering three or more objects of the same type and colour by size. For example, lining up the blue bears from biggest to smallest.



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			Objects can be light or heavy.	Ordering three or more objects which are different in type and colour by size. For example, lining up the penguins from biggest to smallest.  Comparing the mass of two different objects. For example, gesturing or looking at the tissue when asked ‘Which one is light?’, or at the book when asked ‘Which one is heavy?’ 
			Containers can be full or empty.	Comparing how much is in two different containers. For example, gesturing or looking at the correct jug when asked ‘Which one is full?’, or ‘Which one is empty?’ 

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<table>
<tr><td></td><td colspan="4">Notes
*This may include: physical support, gestural support, visual support, verbal support, support via technology or no support.
Model and use the language of measurement during everyday routines as this helps to demonstrate the language through meaningful contexts.
The term weight is commonly used in everyday language. However, the mathematically correct term is mass.
Make connections to big (loud) and small (quiet) sounds through music activities.
Learners may confuse ‘light’ in colour with ‘light’ in mass. It is important to explore the mass of a range of different coloured items. For example, a black feather is dark in colour but light in mass, a white piece of paper is light in colour and light in mass, a pink plant pot is light in colour but heavy in mass.

Mathematical language to model
big, biggest, small, smallest, heavy, light, full, empty, same, different</td></tr>
<tr><td rowspan="4">Mathematics Milestones</td><td colspan="4">Numeracy and Mathematics Milestones

Measurement
Explores different items in their world in relation to size, mass, length and capacity through a variety of actions. For example, filling and emptying.
Identifies items by size and/or amount, for example, big and small, heavy and light, full and empty, from a choice of two.
Matches items by size and length. (Length is introduced within Early Level).
Sorts items by size, for example, big and small. (Sorting by capacity is introduced within Early Level and sorting by mass is introduced withing First Level).
Responds to directions to add more or less. (Milestone reworded to make expectation clearer).</td></tr>
<tr><td colspan="4">Understand: Time, routines and events can be represented through symbols, schedules, cues and timing devices, helping make sense of what is happening now, next, and what has already happened.</td></tr>
<tr><td>Know: (Developing awareness of)

Familiar routines and events are often signalled by objects, cues, symbols, sounds and actions.

Changes can occur to familiar routines.

Some events do not happen immediately.</td><td>Do: Support* me to:
Encounter / Notice / Show interest in / Respond to / Focus my attention on
Following everyday routines. For example, gesturing where to hang up a coat, looking towards the door when it is time to go outside.

The routine and order of the day. For example, looking at symbols on a now and next board, vocalising in response to an adult saying, ‘We have swimming today.’

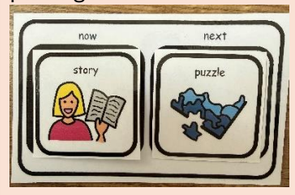

Familiar events by recognising and connecting the related objects. For example, by looking towards a lunchbox in response to an adult saying ‘lunchtime’, gesturing towards my jacket when the visual timetable shows home time.

Changes in expected routines. For example, by demonstrating a change in body language or facial expression, or through vocalisation.

Visual, verbal, or auditory cues that signal a short delay before an activity begins. For example, smiling, vocalising or looking towards the door when an adult says, “Let’s go outside!”</td><td>Know: (Developing awareness of)

Activities have a beginning and an end.

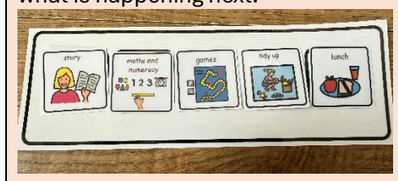
Routines and activities happen in a predictable order throughout the day and week.</td><td>Do: Support* me to:
Participate in / Initiate / Demonstrate / Consolidate / Extend
Using familiar transition cues to start, stop, or move between activities and routines. For example, knowing to stop and tidy up when the timer rings or putting on an apron when the timetable shows art.

Following regular routines and their representation on a visual schedule. For example, using a now and next board to transition from one familiar activity to the next, placing items in a finished box.


Following familiar routines by selecting the related objects. For example, collecting shoes and coat to go outside.

</td></tr>
</table>

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		or watching a sand timer for a few seconds before taking a turn. Cues that indicate a change is about to happen. For example, looking or gesturing towards the taxi driver arriving at the door. Cues that indicate a turn will come next. For example, looking towards an object that is being passed from person to person or at the next person who will receive lunch.		Co-creating a visual schedule. For example, selecting the next card to add to a now and next board.  Following and referring to a visual timetable. For example, looking at the timetable and identifying what is happening next.  Recognising and anticipating familiar daily and weekly routines and significant events. For example, going swimming or visiting the library. 
			Waiting may be necessary before an activity begins or before it is my turn. Events that happened in the past can be remembered and shared with others. Some objects display the time.	Waiting and taking turns during games and play. Anticipating and preparing for upcoming celebrations and special occasions. For example, showing excitement when seeing birthday decorations. Recalling and sharing information about significant events and recent personal experiences. For example, what happened at the weekend. Recognising a clock or digital time display when presented with a mixed collection of items. For example, gesturing towards the clock rather than the buttons or remote.

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Selecting the correct timing device when offered two choices. For example, choosing a watch rather than a computer mouse when asked, 'What will tell us the time?'



Notes
*This may include: physical support, gestural support, visual support, verbal support, support via technology or no support.
The focus is on developing awareness of sequence, routine, anticipation, waiting and change over time, rather than reading analogue or digital clocks.
Learners' experiences of time spent away from school will vary, so ensure that examples discussed are relevant to the context and sensitive to individual circumstances.
Seasonal changes are explored through the Science curriculum.
Thanks to the National Autism Implementation Team (NAIT) and their work on visual support resources including the Now and Next boards and the timetables included above.

Excludes
Telling the time.
Naming the days of the week and months of the year.

Mathematical language to model
now, then, next, today, tomorrow, yesterday, weekend, morning, afternoon, lunchtime, home time, tidy up time, first, last, start, finish, clock, time

Numeracy and Mathematics Milestones
Time
Demonstrates awareness of start and finish by responding to a start and finish signifier such as a tune or object.
Moves on to doing something different in response to a simple timetable for example, objects, photos, symbols.
Follows a sequence of activities in response to a timetable for example, objects, photos, symbols.
Shows an awareness that there are different days of the week.
Identifies that there are different activities that happen at different times of the day and different days of the week.
Shows some understanding of time passing. For example, through waiting for a timer, or waiting for a turn or activity.
Shows some awareness of the language of time. For example, before, after, time for, tomorrow, today, afternoon, morning, night, now, next, finished and wait.

Number and number processes
Demonstrates an understanding of first and last in a familiar routine.

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<table>
<tr><td>Strand</td><td colspan="4">Information, Data and Uncertainty
Information and data are everywhere. They influence our decisions and predictions and help us analyse and interpret the world around us. Probability helps us navigate uncertainty and risk. By providing structured methods, mathematics allows us to collect, organise, analyse and represent information accurately and objectively. Statistics help us identify and make sense of patterns and trends, measure variation, and draw reliable conclusions.</td></tr>
<tr><td>Sub-strand</td><td colspan="4">Building Foundations in Information, Data and Uncertainty</td></tr>
<tr><td rowspan="3">Mathematics Milestones</td><td colspan="4">Understand: Numbers and quantities can be noticed and explored through words, actions, songs and objects.</td></tr>
<tr><td>Know: (Developing awareness of)</td><td>Do: Support* me to:
Encounter / Notice / Show interest in / Respond to / Focus my attention on</td><td>Know:(Developing awareness of)</td><td>Do: Support* me to:
Participate in / Initiate / Demonstrate / Consolidate / Extend</td></tr>
<tr><td>Objects and materials can feel, sound or look different.</td><td>Objects and materials with different attributes. For example, exploring objects of different colours, sizes, textures and shapes.

Matching an object with another identical object. For example, placing one spoon next to another spoon.</td><td>Some objects share the same attributes and can be grouped together.

Some objects do not belong in a group.</td><td>Sorting objects by a single attribute. For example, gazing or gesturing when objects are sorted by colour or size.

Matching objects with the same attribute. For example, placing a red object with other red objects.


Identifying which objects, pictures or symbols belong to a sorted group. For example, choosing another large object to add to a group of large objects.

Finding objects, pictures or symbols which could be added to a sorted group. For example, finding a picture of a kitchen item from a collection of pictures.


Recognising when an object does not belong in a group. For example, indicating a blue object amongst a group of red objects.</td></tr>
<tr><td></td><td>Preferences can be expressed through actions, gestures, vocalisations or other forms of communication.</td><td>Selecting or reaching for a preferred item when presented with choices.

Showing a preference for particular objects, sounds, textures or sensory experiences.

Indicating preference. For example, by placing a photograph, symbol or object into a choice box.</td><td>Choices can be represented and recorded.</td><td>Contributing to simple surveys and votes using a symbol, object, gesture, eye gaze or switch.

Communicating a preference. For example, choosing a favourite song or snack.</td></tr>
</table>

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				Indicating whether an item belongs to a preferred or non-preferred group. For example, sorting pictures into likes and dislikes.
			Different people may have different preferences and responses.	Recognising that different people may make different choices. For example, noticing that peers have chosen something different. Showing awareness of similarities and differences in choices. For example, looking at who chose the same item.
			Visual displays can show information about preferences.	Identifying the option chosen most often in a display. For example, gesturing towards the most popular fruit in a class chart when asked, 'What fruit was chosen the most often?'

Notes
*This may include: physical support, gestural support, visual support, verbal support, support via technology or no support.
Start with sorting concrete objects, progressing to sorting pictures or images. Technology could be used to capture these images. For example, photos captured outdoors.
Objects could be sorted by colour, size, texture, shape, sound or type.
Responses should not be limited to verbal communication. Preferences may be expressed through a range of communication methods, including eye gaze, gestures, facial expressions, body movements, vocalisations, symbols, objects of reference, switches or assistive technology.

Excludes
Formal recording, counting and interpreting data is not required, unless it emerges naturally from learners' experiences.

Mathematical language to model
same, different, identical, match, sort, most popular, most, least, vote, survey

Numeracy and Mathematics Milestones
Data and analysis
Collects or chooses a group of objects that share one property.
Matches specific objects to other objects, pictures or symbols.
Uses signs/symbols/pictures/objects of reference to make choices. (Milestone reworded to make expectation clearer).

Patterns and relationships
Finds familiar items that go together and matches them.

Number and number processes
Carries out familiar tasks that involve one to one matching.

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Return to Contents

Annex A

Strand: Quantity, Numbers and the Algebraic Properties of Number

The focus on quantity is to understand value and size. Determining quantities in the world around us often involves solving problems that draw on a range of mathematical concepts. Numbers help us count, order, compare and express values. Number sense contributes to mathematical fluency, building accuracy, flexibility and efficiency. The algebraic properties of number provide a lens through which learners can generalise how numbers and operations on numbers interact.

	Building Foundations in Quantity and Number		**Number systems and structures -** Conceptual Understanding(s)	
Level	**ASN Mathematical Milestones**		**Early Level**	**First Level**
	• Numbers and quantities can be noticed and explored through words, actions, songs and objects.	Learners may progress onto Early level and beyond or take alternative learning pathways.	• Numbers, including zero, can be represented as spoken number names, written numerals and quantities, while retaining the same value. • Numbers have a fixed order which can be used to describe or compare position. • Sets of objects and numbers can be partitioned, and their parts can be recombined to restore the original whole.	• Whole numbers extend without limit, so quantities can be counted indefinitely. • The base ten system uses symbols (digits) to express quantities in an organised way, with each place representing a value ten times greater than the one on its right. • Numbers can be partitioned flexibly to reveal their structure and support efficient calculation.
			Number relationships and operations- Conceptual Understanding(s)	
			Early Level	**First Level**
			• Small quantities of objects can be identified immediately without counting. • Objects, sounds and movements can be counted to determine how many there are. • Comparing quantities reveals whether one collection has more, less, or the same number of items. • Addition describes combining collections of items into a single quantity. • Subtraction describes finding the quantity left when some items are removed, or the difference between quantities of items. • Addition and subtraction are connected, so one can undo the effect of the other. • Equal sharing results in a quantity being split into a given number of equal parts. • Equal grouping results in arranging a quantity into equal parts of a given size.	• Additive relationships explain how quantities are increased, decreased, combined or compared. • Multiplicative relationships involve organising quantities into equal groups and equal parts. • Fractions represent equal parts of a whole and can be used for counting, comparing, measuring and partitioning quantities.
			Proportional Reasoning – Conceptual Understanding(s)	
			Early Level	**First Level**
			Patterns and sequences – Conceptual Understanding(s)	
			Early Level	**First Level**
			• Number sequences follow a predictable order, helping to identify missing numbers and what comes next.	• Additive patterns involve sequences where the same number is added or subtracted each time, so the difference between terms remains constant.
			Expressions, Equations and Relationships – Conceptual Understanding(s)	
			Early Level	**First Level**
				• Symbols and visual representations model unknown quantities and make mathematical relationships explicit.

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Return to Contents

Strand: Shape, Space and Measurement

Ideas of shape and space support the development of visualisation skills, spatial reasoning, understanding the effects of transformations, recognising symmetry, and making sense of mathematical structures. Exploring position and movement provides a foundation for thinking spatially. Sorting, comparing and describing the properties of two-dimensional shapes and three-dimensional objects helps build geometric understanding. Coordinate geometry connects with algebra to provide meaning for critical ideas, such as linear models and proportional reasoning. Trigonometry builds on geometric principles by offering methods for calculating angles and distances.

	Building Foundations in Position and Movement		**Position and Movement** - Conceptual Understanding(s)	
Level	**ASN Mathematical Milestones**		**Early Level**	**First Level**
	• Position and direction can be communicated through words, symbols and gestures, helping locate, move and place objects and people.		• Position, direction and movement describe where objects are and how they move in relation to other objects, people and spaces.	• The language of location, movement and direction describes where objects are and how they move in relation to other objects, people or spaces.
				• Angles quantify rotation and enable changes in orientation to be described.
	Building Foundations in Shapes and Solids		**Properties of Shapes and Solids** - Conceptual Understanding(s)	
	ASN Mathematical Milestones		**Early Level**	**First Level**
	• Shapes and objects can be recognised, matched and combined in different ways to build and create.		• 2D Shapes and 3D objects have properties that can be identified, described, and compared.	• The defining properties of 2D shapes and 3D objects determine how they are recognised and classified.
			Proportional Reasoning – Conceptual Understanding(s)	
			Early Level	**First Level**
			• Relative size shows how big or small things are compared to each other.	• Maps and plans represent spaces at a different scale, allowing the location and relationships of objects and places to be recreated.
	Building Foundations in Patterns and Sequences		**Patterns and sequences** – Conceptual Understanding(s)	
	ASN Mathematical Milestones		**Early Level**	**First Level**
	• Patterns can be experienced, copied and created through touch, sound, movement and music.		• Patterns repeat in a regular way, allowing what comes next to be predicted.	• Sequences follow rules that determine how they repeat or grow, allowing what comes next to be predicted.
	Building Foundations in Measures		**Measures** – Conceptual Understanding(s)	
	ASN Mathematical Milestones		**Early Level**	**First Level**
	• Objects and containers can be described and compared by their size, mass or amount they hold.		• Measurement helps describe, compare and make sense of the features of objects and events in everyday life.	• Standard units of measure provide a commonly used and consistent way for measurable quantities to be estimated, measured, compared and described accurately.
	• Time, routines and events can be represented through symbols, schedules, cues and timing devices, helping make sense of what is happening now, next, and what has already happened.		• Time helps describe when things happen, the order they happen in, and the repeating patterns of hours, days, weeks, months and seasons.	• The passing of time can be noted, represented and standardised, allowing events to be ordered, planned and coordinated.
			• Different timing devices track the passing of time and help estimate and compare durations in everyday contexts.	• Time can be measured using standard units, allowing durations to be estimated, calculated and compared.
			• Measurement helps describe, compare and make sense of the features of objects and events in everyday life.	• Standard units of measure provide a commonly used and consistent way for measurable quantities to be estimated, measured, compared and described accurately.

Learners may progress onto Early level and beyond or take alternative learning pathways.

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Return to Contents

Strand: Information, Data and Uncertainty

Information and data are everywhere. They influence our decisions and predictions, and help us analyse and interpret the world around us. Probability helps us navigate uncertainty and risk. By providing structured methods, mathematics allows us to collect, organise, analyse and represent information accurately and objectively. Statistics help us identify and make sense of patterns and trends, measure variation, and draw reliable conclusions.

<table>
<tr><td></td><td>Building Foundations in Information, Data and Uncertainty</td><td rowspan="11">Learners may progress onto Early level and beyond or take alternative learning pathways.</td><td colspan="2">Data Management - Conceptual Understanding(s)</td></tr>
<tr><td>Level</td><td>ASN Mathematical Milestones</td><td>Early Level</td><td>First Level</td></tr>
<tr><td rowspan="9"></td><td rowspan="9">• Information can be organised and communicated through sorting objects and expressing preferences.</td><td>• Words, numbers and pictures represent information and help us communicate and make sense of everyday situations.
• Data can be collected and organised to describe situations.</td><td>• Classifying items by their properties reveals similarities and differences that support comparison.
• Questionnaires, surveys and observations can be used to collect information to answer questions and learn about the world.
• Graphs and charts use agreed features to organise data so that information can be understood, compared and shared clearly.</td></tr>
<tr><td colspan="2">Data Analysis and Interpretation - Conceptual Understanding(s)</td></tr>
<tr><td>Early Level</td><td>First Level</td></tr>
<tr><td>• Comparing data informs how questions are answered and how decisions are made.</td><td>• Graphical representations enable visual analysis and interpretation of data sets.</td></tr>
<tr><td colspan="2">Probability - Conceptual Understanding(s)</td></tr>
<tr><td>Early Level</td><td>First Level</td></tr>
<tr><td>• Some events are certain and others are uncertain, so predictions cannot always be made with confidence</td><td>• The likelihood of events can be described and predicted to guide actions and choices.</td></tr>
</table>

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Return to Contents

Declaration

The content of this document was written by the author, exercising full professional judgement. Education Scotland approved AI tools were used to support review, clarity, and quality assurance. Education Scotland staff retain full responsibility and have reviewed and approved all content.

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Return to Contents

Version History

Version	Date	Detail
Version 1	4 November 2026	First released

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