Mathematics Policy and Guidance

All Key Stages and inclusive of EYFS

Ratifying Committee	**Curriculum & Standards Committee**
Date	**June 2025**
Review	**Annually**

School Vision for Mathematics

As a school we believe Mathematics is essential for everyday life and is an integral part of the curriculum. We endorse the view outlined by the National Curriculum:

'A high-quality Mathematics education . . . provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject'.

National Curriculum in England: mathematics programmes of study, National Curriculum 2014, DFE

We strive to equip pupils with the mathematical skills and knowledge that they will take with them to solve problems throughout their lives. For pupils with special needs, developing effective problem-solving skills is paramount to fostering independence and confidence. Everyday examples of problem solving may include - choosing and using appropriate tools and resources, sharing out snack items or negotiating with a peer. Using a centralised approach, our pupils access a carefully sequenced and ambitious curriculum, accompanied by high-quality teaching, maximising the proficiency of the skills they learn in order to gain a meaningful understanding of the world around them.

At The Bridge School, we aim for all of our pupils to become functional learners by engaging with their environment. Through multisensory exploration, they can begin to develop their understanding of their experiences and discover how they can interact with and influence the world around them. The mathematics curriculum supports the development of pupils' early foundational concepts, including cause and effect and object permanence. As pupils develop proficiency in early mathematical skills, the curriculum systematically develops the small-step component parts that comprise composite skills in number, measurement and geometry.

We endeavour to provide a wide range of inclusive opportunities that allow pupils to develop their declarative (*I know that*), procedural (*I know how*) and conditional (*I know when*) knowledge (**Appendix C**) in a variety of practical, enjoyable and meaningful contexts. Teaching and learning opportunities are engaging and relevant to the pupil, promoting the acquisition of 'forward facing' metacognitive knowledge (EEF, 2021 – see **Appendix H**).

This policy is set within the context of the school's vision, aims and policy on teaching and learning. As a result of their learning in mathematics and problem solving across the curriculum, children will:

- Begin to understand the world around them.
- Grow in self-confidence in their ability to solve problems.
- Be prepared to apply their skills in real world contexts within everyday life into adulthood.

Intent

The intent of the Mathematics curriculum is to provide a motivating and engaging context in which pupils can achieve and make progress based on their assessed levels and next steps. For each pupil, the curriculum will be delivered in a personalised way which supports their holistic needs.

The school has mapped out the intended progression of the fundamental skills and knowledge for pupils working below age related expectations, pre-key stage standards and that are pre-subject

specific. In EYFS, it is anticipated that pupils will be working at an 'emerging' level across the Early Learning Goals on completion of their EYFS Profile due to complex nature of their SEND. This is informed by baseline assessments on entry to EYFS, information from previous settings and multiagency professionals, parents and carers.

The school has also outlined the progression of early foundational skills and knowledge for Mathematics, working towards the ELGS (EYFS) and KS1 National Curriculum programmes of study inclusive of the pre-key stage standards (**Appendix A**). Within subject specific bands, we have incorporated an evidence-based progression of key concepts alongside targeted vocabulary (Locke, 1985).

*The bespoke, sequenced, small-step descriptors within the non-subject specific/subject specific bands provide a broad and balanced intended sequence of learning for **all** pupils.*

<table>
<tr><td colspan="3">The Bridge Knowledge and Skills Progression</td><td>National Curriculum</td></tr>
<tr><td>EYFS</td><td>Early Development

Bands 1-4</td><td>Mathematics
Bands 5-9+

(inclusive of ELGS)</td><td></td></tr>
<tr><td rowspan="3">Whole School

(Key Stage 1 onwards)</td><td rowspan="3">Non-Subject Specific (NSS)

Bands 1-4</td><td>Maths - Subject Specific (SS)</td><td rowspan="3">KS1 National Curriculum Attainment Targets in Maths</td></tr>
<tr><td>Bands 5-9+</td></tr>
<tr><td>Pre-Key Stage Standards</td></tr>
</table>

For each pupil their identified next steps will be based on their assessed Mathematical skills and knowledge rather than for their age or year group. Due to the needs of the pupils at the school, some may not make linear progression through the bands and present with an uneven profile. We carefully assess the 'security of pupils understanding and their readiness to progress to the next stage' (DFE, 2014). In line with these needs, descriptors may need to be broken down further and tailored to meet the needs of the individual. For those pupils who grasp Mathematical concepts rapidly, we ensure that they are offered a range of opportunities to consolidate their understanding in a variety of contexts and commit the learning to long term memory.

The bespoke skills and knowledge progression are available within our progression matrices (**EYFS / KS1 and above**). Pupil progress throughout the descriptors/bands is recorded directly on our online assessment system. The descriptors are designed in line with statutory requirements and curriculum guidance, and are reviewed annually, and on an on-going basis linked to developments in research, including guidance from the Education Endowment Fund/DFE Subject Reports/NCETM, to ensure our practice remains evidence based.

The following form the foundation of all delivery:

- engagement and enjoyment
- communication and understanding
- personal and social development including increasing awareness of self, their own emotions, and relationships with others.
- independence including life-skills.

Our overall aim is that pupils engage, achieve, and make the most personal progress they can over time to enable them to have the most fulfilling, enjoyable, and independent life possible.

Implementation

Communication within Mathematics

The DFE outline the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. As a school, we acknowledge this statement and agree that 'The quality and variety of language that pupils hear and speak* are key factors in developing mathematical vocabulary and presenting a mathematical justification, argument or proof' (DFE, 2014). *However, at The Bridge School, pupils may be working at a pre-verbal level.

At the Bridge School we adopt an Inclusive Communication approach[1]. This means that all forms of communication are recognised and valued equally as forms of interaction. To support the development of receptive and expressive language (detailed below), we follow evidence-based research[1], including regular consultations with the NHS Speech and Language Therapist (SaLT) team.

We have identified that communication and development are part of the foundations of engagement and all learning at The Bridge School. We employ a holistic approach to communication development which remains consistent throughout all subjects, including mathematics. Many of our pupils use symbolised visual aids[1] to access the curriculum content, which we refer to as 'symbols of reference' (SOR) or 'symbols'. Within the context of writing mathematical equations, these will be referred to as 'mathematic symbols' (+, -, ÷, = etc.).

[1]Further details of our communication approach, including references for our evidence-based communication strategies which also apply within Maths, are detailed within our policy 'Inclusive Communication Strategy – Whole School (Inclusive of EYFS)'.

Supporting the implementation of Mathematics

EYFS:

- Mathematics is one of the four Specific Areas in EYFS. Through the teaching of Mathematics, the three Prime Areas (Communication and Language, Personal, Social and Emotional Development and Physical Development) are strengthened and applied. All areas of learning and development are important and **inter-connected**.
- Mathematics is taught through daily adult-led circle times which are outcome based and a wide range of other contexts: adult led focused plans, interventions, work on 12-month outcomes, child-initiated learning activities, daily routines and experiences.

KS1 and above:

- Mathematics is taught as a specified timetabled subject and teachers set lesson targets to be achieved within the lesson or across a series of lessons/over time. The time allocation could be varied based on a pupil need and would be agreed with Head of Phase.

- Mathematics strands are also taught in a wide range of other contexts: functional skills, child initiated, work on 12-month outcomes, through cross curricular delivery and daily routines and experiences.

For all pupils:

- Elements of maths are covered throughout the day using everyday opportunities e.g. counting as a child comes down bus steps, using simple language up and down as pupil is hoisted, counting food items at snack time.
- Pupils have either cross curricular 12 monthly outcomes (non-subject specific / early development EYFS) or a number related outcome in their 12 monthly outcomes which is a priority target to work on at home and school.
- The work in Mathematics enables the lead adult to:
  - Consolidate existing skills and knowledge to retain and commit to long-term memory.
  - Work on next steps (understanding for some pupils this can be an uneven profile linked to their SEND) and break steps down further if needed.
  - For some pupils expose them to the foundations of higher skills as pupils may have strengths or motivations and it may lay 'forward facing' foundations for later learning.
  - Work on the application of the skills and knowledge, e.g. using in a different context, with different apparatus, with different people or apply within a different task.
  - Work on early underpinning foundational knowledge that build into different types of knowledge (declarative, procedural and conditional).
  - To have varied content to widen engagement and experiences of pupils.
- Decisions about when to progress should always be based on the security of pupils' mathematical understanding and their readiness to progress to the next stage. It is understood that some pupils do have learning strengths and interests and may not have an even profile.
- Teachers provide high quality teaching supported by engagement strategies outlined in Support plans and EHCP outcomes, communication systems and integration of therapy advice where relevant.
- Teachers promote students ability to 'learn to learn', developing their metacognitive knowledge through effective modelling and small-step explanation of their calculation process, e.g. verbalising the numbers as they point and count to each item. This includes effectively addressing any potential misconceptions that arise.
- Time in a lesson if required to target and consolidate a specific skill, this may include a skill covered in a previous unit that may be learned or mastered with continued repetition but not covered in the current unit.
- Exciting, motivating and varied content to support engagement and opportunities are taken to enhance cultural capital within curriculum delivery in school and out of school when possible. The school annually celebrate NSPCC Number Day and regularly link Mathematics activities to other themed days.

EYFS:

- Key areas of number will be covered each week through adult led Maths circle time, for pupils working within Early Development Bands the skills and knowledge may be cross curricular.

- The school has a range of band-linked supporting activities and resources for teachers to draw from in the form of adult-led focused plans. Teachers will personalise intent for an individual pupil's learning and select the appropriate activity based on this.

KS1 and above:

- Key areas of number will be covered each week either through Maths lessons or Functional Skills. For pupils working below Pre-Key Stage Standards skills and knowledge will be cross curricular.
- The school has a range of band-linked supporting activities and resources for teachers to draw from. Teachers will select the intent for an individual pupil's learning and select the appropriate activity based on this.
- The planned topics and activity cards provide a context/theme for pupils to engage in learning. The activity cards support pupils in achieving pre-subject cross curricular specific skills and knowledge/targeted outcomes linked to EHCP set with parents/carers and from any advice from other professionals. The cards are to support activities and ideas for sharing best practice and reducing workload. Teachers can add to the activity card based on pupils' engagement and are asked to share any other activities with Maths co-ordinators so they can be shared (**Appendix E**).
- To ensure pupils are demonstrating their skills in a range of contexts, there are range of number songs and games that have been devised for each phase (although if a pupil finds something particularly engaging from another phase, they can access it).

For all pupils:

- There are a range of interventions that can support pupils learning in Maths and they include:
    - Numicon, which is used as a tool among many others used to give pupils a broadened experience of mathematical equipment. Numicon is used across all strands of the Maths Curriculum including during number activities, pattern, sorting and classifying. Numicon is a tool to teach the concepts, the aim is not the Numicon itself.
    - Soundabout
    - Musical Interaction
    - Parachute and Drama games
    - Senseology
    - Attention Autism
    - Sensory Stories
    - Story Massage
    - Dance Massage
    - Use of rooms and equipment such as sensory rooms, omi-vista etc
    - Intensive Interaction
- A range of agreed and consistent strategies are used to support pupils' communication and understanding, examples:
    - Use of key single words
    - Use of consistent objects of reference (OOR)
    - Use of consistent photos of reference (POR)
    - Use of consistent Makaton signs (there are agreed guidelines on the use of
    - Makaton within school)

- Use of consistent symbols (**Appendix E -** for the agreed symbols bank for maths vocabulary, including symbolised written numerals).
- Use of regular routines
- Use of simple schedules such as 'Now and Next'.
- Use of other schedules with longer sequences

This will link to the wider curriculum and pupils' EHCP.

- There are a range of books that can support Maths skills and they are stored centrally within each department, maintained and organised by the Maths coordinator for each phase.
- Each class is equipped with an amount of counting equipment/apparatus to support the delivery of Number. Details of the equipment used throughout school are available within our calculation policy.
- Within each class, there is a display linked to number to promote pupil interest in Maths and reinforce the use of written numerals (**Appendix G**). In addition to this, there is a Maths display within each main corridor (EYFS/Primary/Secondary).
- There is also a wide range of resources stored centrally within each department to support the delivery of Measure, Geometry and Statistics / Spatial Reasoning and Shape, Space and Measure (EYFS)*. These are maintained and organised by the Maths coordinator for each phase who will be able to advise staff on where to locate them. This includes on-line resources, unit resource boxes, detailed medium-term planning, shared PowerPoints. Further shared planning and shared resource making is encouraged with the proviso that the teacher is clear what they want their individual pupils to learn/next steps and the planned lesson/lesson sequence enables this learning to take place. All of these structures reduce teacher workload.
- There is a whole school lead Mathematics coordinator supported by a Primary coordinator. EYFS has a coordinator for the linked area of the EYFS curriculum. The coordinators work alongside the Heads of Phase and Curriculum Coordinator. See **Appendix D** for roles and responsibilities.
- Some pupils may have specific needs that need to be carefully considered and planned for to access the Maths curriculum, for example, physical disabilities, sensory impairment or sensory issues such as tactile defensiveness.
- Alternative access where appropriate e.g.
  - Use of software counting, sorting and matching programmes
  - Use of adapted tools, e.g. larger Numicon tiles, tactile resources
  - Providing opportunities to participate and engage with adult support to ensure pupil has access to any relevant curriculum opportunities based on prior assessment.
  - Alternative activities to work on the next steps of skills and knowledge.

** Although there is not an ELG for Shape, Space and Measure we recognise that the framework emphasises the importance of enriched opportunities in these areas. We have mapped out the skills and progression for this to support our pupils to develop a secure base in Mathematics and to support their transition into the school curriculum in Year 1.*

Time Allocation for Maths (There is no specific time allocation for Maths delivery given by the DFE) Below is a guide but the pupil intent will always be the priority.

EYFS

- Daily Maths circle time.
- Adult led focused plans – integrating Maths into activities linked to Prime / Specific areas.
- Interventions (determined by teacher assessment of pupil needs e.g. structured teaching work reward / Senseology).
- Child-initiated learning activities.
- Daily routines and experiences.
- Work integrated during the day within routines.

Key Stage 1

- Three or four directed maths lessons per week
- Daily child-initiated sessions which integrates key priority Maths work and linked EHCP outcomes.
- Work integrated into other subject delivery.
- Work integrated during the day within routines.

Key Stage 2

- Three or four directed maths lessons per week
- Daily Functional Skills sessions which integrates key priority Maths work and linked EHCP outcomes.
- Work integrated into other subject delivery.
- Work integrated during the day within routines.

Key Stage 3 and 4

- One directed maths lessons per week
- Daily Functional Skills sessions which integrates key priority Maths work and linked EHCP outcomes.
- Work integrated into other subject delivery.
- Work integrated during the day within routines.

The school has a whole school motto of 'No missed opportunities'. Supporting staff will ensure that any opportunity to teach/consolidate mathematical skills throughout the school day will be capitalised on.

Training of staff

- For new staff, there will be some essential initial training priorities e.g. Safeguarding/ Prevent, Fire and Health and Safety, Safer feeding, Safer Positioning, Moving and Handling etc. New staff induction year also prioritises underpinning skills and knowledge e.g. linked to communication and understanding and the school ethos and values.
- During their first year of employment within The Bridge all staff will complete a comprehensive training programme. This includes -
    - An Introduction to the Bridge School Curriculum and Progression Document
    - What does mastery of skills in Maths mean?

    - A glossary of terms and examples of linked activities, e.g. 1:1 correspondence.
    - Use of Maths interventions, e.g. Numicon, Dance Massage, Sensory Stories.
    - Use of Makaton including correct signing of number names.
- In addition to the above teachers will receive training on –
    - Maths Planning and implementation of activity cards
    - Maths PARs/Annual review reports and Outcomes
    - Maths Folders
    - Maths Assessment including Onwards and Upwards
- They will also have opportunities to observe experienced teachers delivery of a high quality Maths lesson.
- Alongside the induction period, staff will receive subject specific training to support their knowledge and understanding within Maths. Subject training packs are completed (or in process of being amended) for staff to access. Staff can access with personal work devices. Further training is identified and prioritised through self-review process.

The Lead adult in class will support new and existing staff in understanding the pupils work tasks and expected learning/ access for the pupils staff are working with. The Lead adult may provide some wider training on skills and knowledge relevant to the class and pupil.

Health and Safety

- Lead staff members are responsible for checking that there are no obvious breaches of Health and Safety guidelines.
- Lead staff members will consider pupils individual risk assessments and their ability level when planning use of tools and equipment and assess hazards and risks specific to individual pupils'.
- All staff will dynamically risk assess throughout delivery and seek advice or stop if they have concerns.
- Risk assessments in relation to equipment will be followed but with an understanding that the risks for each pupil in relation to the pupil's individual profile need to be dynamically risk assessed.
- Visit risk assessments need to be completed and agreed.
- Lead adults need to ensure that COSSH assessments have been carried out and known for materials use- see Health and Safety Support Assistant.
- Electrical item checks should be carried out as per risk assessment and checks on equipment and environments for safety before use.

Impact

The aspiration for all pupils who attend the Bridge School is they achieve their potential in all aspects of their development. All pupils who attend the Bridge School, have severe/ profound learning difficulties. Many pupils have additional needs such as autism, physical disabilities, sensory impairments, complex medical needs etc. We work in a determined way to ensure that all pupils can achieve the most they can.

The outcome of the curriculum is highly individual. All achievements and progress are celebrated. Progress for our pupils can be demonstrated by:

- Pupils making progress towards/achieving their intended outcomes set with parents/carers for 12 months within the EHCP annual meetings. These outcomes are informed by any relevant professionals working with the pupils.
- Pupils making progress towards outcomes when reviewed in 6-month review meetings with parents/carers.
- Pupils making progress/achieving in the Maths curriculum planned by teachers either demonstrating pre subject cross curricular skills and knowledge or subject specific skills and knowledge. Progress and achievement in all subjects are within reports to parents in either EHCP (Annual Review) report or annual Curriculum report.
- Achieving external accreditation for secondary aged pupils e.g. OCR accreditation.
- Using existing skills in a wider range of contexts.
- Supported transition within, in and out of the setting.

NB

- *Please note that the intended skills and knowledge are on school tracking documents and may have been updated. If there have been any revisions this will be updated in this policy when it is reviewed annually.*
- This policy is set alongside the Curriculum (Key stage one and above policy / EYFS Curriculum Policy), Teaching and Learning Policy, Engagement Policy, Planning Assessment and Reporting Policy (EYFS / Primary / Secondary) and subject curriculum policy.

Appendices

Appendix A - Statutory Requirements/Guidance

EYFS

ELG: Number
Children at the expected level of development will:

- Have a deep understanding of number to 10, including the composition of each number; 14 –
- Subitise (recognise quantities without counting) up to 5.
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

ELG: Numerical Patterns
Children at the expected level of development will:

- Verbally count beyond 20, recognising the pattern of the counting system.
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

The Early Learning Goals for Maths have been incorporated into the whole school banding structure within Number/Measurement and Geometry, to ensure that the transition between EYFS/Whole School is sequential and progressive.

National Curriculum

The national curriculum for Maths aims to ensure that all pupils:

- Become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Pupils at The Bridge School are working towards the Year 1 Programme of Study statutory requirements – these are available within the Maths skills and knowledge progression in Appendix B.

Pre-Key-Stage Standards (PKSS)

PKSS are sequentially plotted within the Bridge Skills and Knowledge Progression. These are available within the Maths skills and knowledge progression in Appendix B.

PKSS documentation is available here - T:\Bridge\Bridge K Drive\SHARED_W\CENTRAL New Assessment Framework\PKSS Moderation\March 2024\Guidance for teachers and PKSS documents

Appendix B: The Bridge Maths Skills and Knowledge Progression

Whole School Booklet

Available here, including Bands 1-4 (NSS) – T:\Bridge\Bridge K Drive\SHARED_W\1 Curriculum Work\Subject notes master\Curriculum Progression Booklet

Band 1
1.01 Encounters activities and experiences e.g. May be passive or resistant
1.02 Shows a reflex reaction to bright lights e.g. blinking, squinting, turning away
1.03 Shows a reflex reaction to a large object in line of vision
1.04 Glances at an object e.g. Fleeting visual attention
1.05 Glances at a large light source in a strongly contrasting environment e.g. Dark Room/Dark tent (Fleeting visual attention to plasma screen, television, eye gaze)
1.06 Glances at moving patterns/images on a computing device e.g. Fleeting visual attention
1.07 Show awareness of food and drink e.g. Opens/closes mouth as food/drink is presented /push foods away, when prompted with touch of a spoon will open mouth for more food, takes food samples to mouth
1.08 Shows a reflex reaction to strong smell e.g. Turns head towards or away from smell: dinner, toast cooking, carbolic soap, perfume, vinegar
1.09 Shows a reflex reaction to foods of different temperatures e.g. ice cream, warm soup
1.10 Shows a reflex reaction to strong tastes e.g. spice, lemon.
1.11 Shows a reflex reaction to touch by a person N.B Teacher would assess with a variety of different levels of pressures and different appropriate body parts.
1.12 Shows a reflex reaction to themselves touching an object N.B Teacher would assess with a variety of different textures, temperatures, vibrations and different appropriate body parts.
1.13 Shows a reflex reaction to loud unexpected sounds e.g. Startle, cry
1.14 Shows a reflex reaction to loud repeated sounds e.g. Move body, startle
1.15 Shows a reflex reaction to a quiet sound e.g. Turn head/body in direction of sound
1.16 Responds briefly to the initiation of interaction with an adult, e.g. maintain brief/intermittent eye contact, smile, laugh, change facial expression
1.17 non-intentional reactions interpreted by adult for like, dislike, upset, happy, more, no more based on their behavioural changes and response
1.18 Shows change in body position or reactions during interactions.
1.19 Changes facial expressions during interactions e.g. startle, cry, smile, frown

Figure 1 (above) – An example of The Bridge Progressive Skills and Knowledge, taken from the complete curriculum booklet. The descriptors outlined above are taken from Band 1 (Early Development – NSS bands).

Maths Specific Band Progression

Available here - T:\Bridge\Bridge K Drive\SHARED_W\CURRICULUM\Maths\Misc\Band Progression

	Progression Matrix linked to Number					
	Band 5	**Band 6**	**Band 7**	**Band 8**	**Band 9**	**KS1 NC**
Subject Specific Number Descriptors	5.01 Attends to a number rhyme/game lead by an adult, alongside the use of props, when working in a distraction free environment. 5.02 Attends to a number rhyme/game lead by an adult, alongside the use of props, within a group setting. 5.03 Joins in with number rhymes/games and activities using a few recognisable counting words/signs/symbols randomly. 5.04 Shows an awareness/interest of numerals when engaging in numeral based activities, e.g. attending/touching numerals, searching for them within sensory media. 5.05 Explores arranging numerals (in any order). 5.06 Demonstrates a developing understanding of 1-1 correspondence, e.g. Giving a cup to each plate	6.01 Indicates 'gone' or 'all gone' (through speech, signs, gesture) 6.02 Demonstrates some understanding of the sequence of numbers by indicating (using words/signs/symbols) the next number in a well-repeated counting rhyme/game or activity. (Similar in Reading) 6.03 Consistently attends to a counting rhyme/game or activity from beginning to end (quantity up to 5), with the use of props. (Similar in Reading) 6.04 Aware of numerals in the environment, e.g. takes interest in symbols/displays in the classroom environment. (Similar in Reading) 6.05 Makes/indicates a group of 'one' Symbol, sign, gesture, point 6.06 Makes/indicates a group of 'lots' Symbol, sign, gesture, point 6.07 Distinguishes between 'one' and 'lots', when shown an example of a single object and a group of objects S1 N 6.08 Gives one item on request from a group 6.09 Gives lots of items on request 6.10 Indicates 1 or 2 in their own way Using one / two	7.01 Consistently attends to a counting rhyme/game or activity from beginning to end (quantity up to 10). 7.02 Rote counts to 10 7.03 Recognises written numerals 1-10 7.04 Counts objects 1-10 when presented in a line 7.05 Counts objects 1-10 when presented randomly 7.06 Makes a set of 1-10 7.07 Responds correctly to 'give me...' 1-10 7.08 Copies an adult to represent the numbers 1-10 using their fingers 7.09 Able to represent 1-10 using their fingers on request 7.10 Orders numbers 1-10	8.01 Rote counts to 20 8.02 Recognises written numerals 1-20 8.03 Counts objects 1-20 when presented in a line 8.04 Counts objects 1-20 when presented randomly 8.05 Makes a set of 1-20 8.06 Responds correctly to 'give me...' 1-20 8.07 Orders numbers 1-20 8.08 Identifies missing numbers in a sequence 1-20 8.09 Overwrites numerals 10-20 (approximation) 8.10 Copies numerals 10-20 (approximation) 8.11 Responds appropriately to the question, 'How many?' when working with numbers 1-20. 8.12 Counts backwards from 10 8.13 They move themselves backwards	9.01 Counts backwards from 20 9.02 They move themselves backwards when they count from 20 9.03 They move a counter/item backwards when they count from 20 9.04 Counts to 20, demonstrating that the next number in the count is one more and the previous number is one less S4 N 9.05 Rote counts to 50 9.06 Recognises written numerals 1-50 9.07 Counts objects 1-50+ when presented randomly when presented in a line 9.08 Counts objects 1-50+ when presented randomly when presented randomly 9.09 Makes a set of 1 -50 9.10 Responds correctly to 'give me...' 1-50 9.11 Orders numbers 1-50 9.12 Identifies missing numbers in a sequence 1-50 9.13 Responds appropriately to the question, 'How many?' when working with numbers 1-50+ 9.14 Counts backwards from 50 9.15 Rote counts to 100 9.16 Rote counts 100+ 9.17 Recognises written numerals 1-100 9.18 Recognises written numerals 100+ 9.19 Orders numbers 1-100 9.20 Counts backwards from 100 9.21 Identifies missing numbers in a sequence 1-100 9.22 Responds appropriately to the question, 'How many?' when working with numbers 1-100+	**Number and Place Value** Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number Count, read and write numbers to 100 in numerals, count in multiples of twos, fives and tens Given a number, identify one more and one less Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least Read and write numbers from 1 to 20 in numerals and words. **Addiction and Subtraction** Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs Represent and use number bonds and related subtraction facts within 20 Add and subtract one-digit and two-digit

Figure 2 (above) – An example of the Subject Specific progressive maths descriptors from The Bridge Skills and Knowledge Progression. The relevant KS1 targets from the National Curriculum are included.

Appendix C: Different types of knowledge

Declarative knowledge – The Knowledge of Facts:

- Is static in nature and consists of facts, formulae, concepts, principles and rules.
- Includes things you know fluently and can recall with speed.
- All content in this category can be prefaced with the sentence stem 'I know that'.

Procedural knowledge – The Knowledge of Methods:

- Is recalled as a sequence of steps. The category includes methods, algorithms and procedures: everything from long division, ways of setting out calculations in workbooks to the familiar step-by-step approaches to solving quadratic equations.
- Enables a pupil to process information quickly and accurately.
- All content in this category can be prefaced by the sentence stem 'I know how'.

Conditional knowledge – Knowledge of Strategies:

- Gives pupils the ability to reason and solve problems.
- Useful combinations of declarative and procedural knowledge are transformed into strategies when pupils learn to match the problem types that they can be used for.
- All content in this category can be prefaced by the sentence stem 'I know when'.

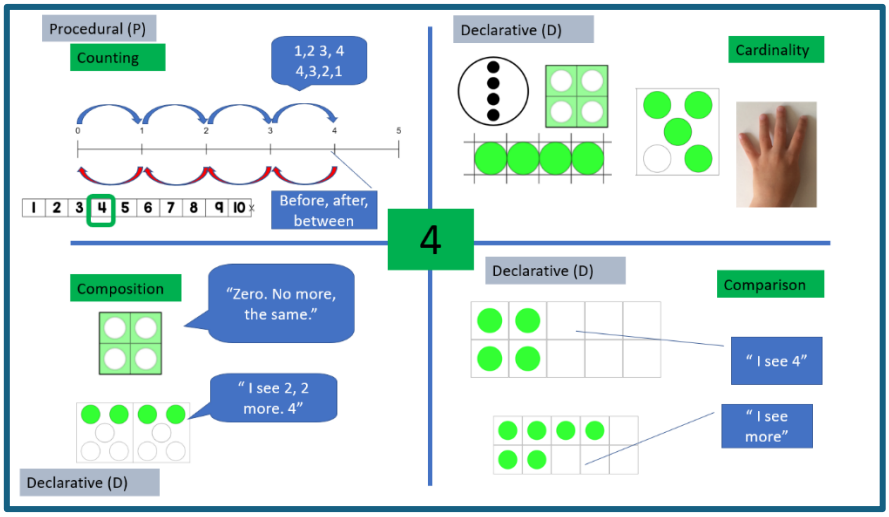


Figure 3 – Poster to support staff knowledge of the different types of knowledge within Maths.

Appendix D - Maths Co-ordinator Roles and responsibilities

There is a whole school lead Mathematics coordinator supported by a Primary coordinator. EYFS has a coordinator for the linked area of the EYFS curriculum. The coordinators work alongside the Heads of Phase and Curriculum Coordinator.

- Ensure that the curriculum meets the statutory requirements.
- Ensure the rolling programme provides coverage of the key aspects required.
- Ensure the planned units are reviewed prior to delivery in relation to the breadth of ability, the special educational needs of pupils in relation to their access to the curriculum, any progression in technology/research and any internal data.

- Review the intended skills and knowledge progression in relation to any changes to the school population, research, advice from professionals and teacher/parent/carer feedback.
- Ensure that they are professionally up to date in their subject area including self-identifying required training opportunities.
- Provide training for teachers and support staff including highlighting any common misconceptions.
- Liaise with the schools ECF coordinator/mentor to provide training and support for newly qualified teachers.
- Liaise with Head of Phase to support new teachers.
- Work with whole school assessment coordinator on internal moderation.
- Work with Heads of Phase on use of curriculum coordinator time to observe practice and carry out deep dives in Maths.
- Ensure that the unit delivery is well resourced including online shared resources.
- Complete annual self-evaluation reviews to inform whole school improvement planning.
- Liaise with the EYFS coordinator for the linked area of the curriculum.
- Design and deliver training to parents/carers as per any agreed parent offer.

Teachers:

- Ensure that they have current subject knowledge to effectively teach their designated group of pupils.
- Ensure that the follow the medium-term planning for Maths and liaise with subject coordinators over any content or specific resources.
- Ensure they differentiate the Maths curriculum in the units of work and set appropriate unit objectives/lesson targets in line with pupils assessed levels and the intended skills and knowledge.
- Extends unit content/context for their designated group of pupils if necessary and feeds back to the Maths coordinator.
- Ensure that Maths resources are maintained and liaise with the Maths coordinator for their phase if they need replenishing.
- Ensure that Maths work in other subjects links to the pupils assessed level of skills and knowledge.
- Ensure that they contact coordinators or Heads of Phase for any specific advice or to ask questions.
- Ensure they assist their support staff in their understanding of the Maths curriculum and their subject knowledge.
- Complete assessment, recording and reporting in relation to whole school policy.

Support staff:

- engage with training and self-identify If they require further training, advice and support in relation to the delivery of Maths to their designated group of pupils.
- They implement the teachers planning and direction and follow the whole school policy on assessment.

Appendix E - Maths Whole School Resources

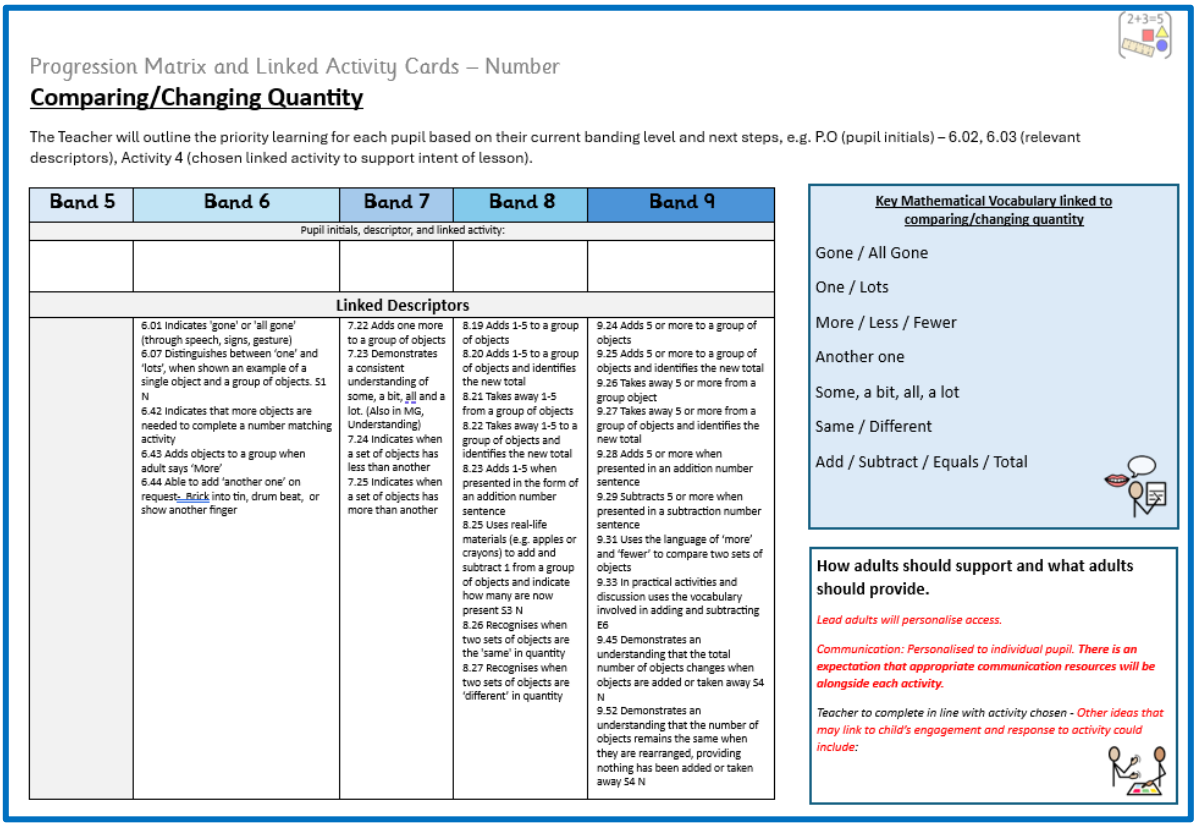
There is a wide range of resources stored electronically to support the delivery of Maths. This includes skills activity cards, songs, books and games for each Key Stage, the symbol and

vocabulary bank as well as Teacher shared resources. These are all stored at this location - S:\A1 CURRICULUM\Shared planning\Whole School Maths

Activity Cards

The subject coordinators have designed activity cards based on specific descriptors from The Bridge Maths Skills and Knowledge Progression. Teachers are clear that they select the intent of the learning first, based on what the pupil already knows and can remember and identifies activity cards that can effectively support new learning/consolidate existing skills and knowledge.

There are activity cards for; 1:1 correspondence, counting, quantity, comparing/changing quantities, sequencing (including missing numbers), numeral recognition, numeral formation/representation, number patterns, place value, estimation, data handling addition, subtraction, number bonds, equals, multiplication, division, fractions, length, height, weight, capacity/volume, size, time, temperature, money, solving problems involving money and measures, properties of shape, object permanence, position and direction, cause and effect, observational and anticipation skills, patterns, matching, sorting and classifying, understanding data. Available here - T:\Bridge\Bridge K Drive\SHARED_W\CURRICULUM\Maths\Activity Cards



Progression Matrix and Linked Activity Cards – Number

Comparing/Changing Quantity

The Teacher will outline the priority learning for each pupil based on their current banding level and next steps, e.g. P.O (pupil initials) – 6.02, 6.03 (relevant descriptors), Activity 4 (chosen linked activity to support intent of lesson).

Band 5	Band 6	Band 7	Band 8	Band 9
Pupil initials, descriptor, and linked activity:				
Linked Descriptors				
	6.01 Indicates 'gone' or 'all gone' (through speech, signs, gesture) 6.07 Distinguishes between 'one' and 'lots', when shown an example of a single object and a group of objects. S1 N 6.42 Indicates that more objects are needed to complete a number matching activity 6.43 Adds objects to a group when adult says 'More' 6.44 Able to add 'another one' on request- Brick into tin, drum beat, or show another finger	7.22 Adds one more to a group of objects 7.23 Demonstrates a consistent understanding of some, a bit, all and a lot. (Also in MG, Understanding) 7.24 Indicates when a set of objects has less than another 7.25 Indicates when a set of objects has more than another	8.19 Adds 1-5 to a group of objects 8.20 Adds 1-5 to a group of objects and identifies the new total 8.21 Takes away 1-5 from a group of objects 8.22 Takes away 1-5 to a group of objects and identifies the new total 8.23 Adds 1-5 when presented in the form of an addition number sentence 8.25 Uses real-life materials (e.g. apples or crayons) to add and subtract 1 from a group of objects and indicate how many are now present S3 N 8.26 Recognises when two sets of objects are the 'same' in quantity 8.27 Recognises when two sets of objects are 'different' in quantity	9.24 Adds 5 or more to a group of objects 9.25 Adds 5 or more to a group of objects and identifies the new total 9.26 Takes away 5 or more from a group object 9.27 Takes away 5 or more from a group of objects and identifies the new total 9.28 Adds 5 or more when presented in an addition number sentence 9.29 Subtracts 5 or more when presented in a subtraction number sentence 9.31 Uses the language of 'more' and 'fewer' to compare two sets of objects 9.33 In practical activities and discussion uses the vocabulary involved in adding and subtracting E6 9.45 Demonstrates an understanding that the total number of objects changes when objects are added or taken away S4 N 9.52 Demonstrates an understanding that the number of objects remains the same when they are rearranged, providing nothing has been added or taken away S4 N

Key Mathematical Vocabulary linked to comparing/changing quantity

Gone / All Gone

One / Lots

More / Less / Fewer

Another one

Some, a bit, all, a lot

Same / Different

Add / Subtract / Equals / Total

How adults should support and what adults should provide.

Lead adults will personalise access.

Communication: Personalised to individual pupil. ***There is an expectation that appropriate communication resources will be alongside each activity.***

Teacher to complete in line with activity chosen - Other ideas that may link to child's engagement and response to activity could include:

Figure 4 – Example of an activity card with linked descriptors. Teachers are also supported by examples of relevant vocabularly and guidance on the implementation of teaching and learning linked to the bands.

Maths Songs –

Teachers have a wide range of number/measurement and geometry based songs available to support their implementation of Maths teaching and learning. Examples include – 1 man went to mow, 1 potato/2 potato, Can you count? Long and Short. These songs are available in activity card format to support teacher workload.

Available at - S:\A1 CURRICULUM\Shared planning\Whole School Maths\Songs Books and Games

Agreed symbol vocabulary for Maths –

The full set of agreed vocabulary is available here - S:\A1 CURRICULUM\Shared planning\Whole School Maths\Symbol and vocabulary bank

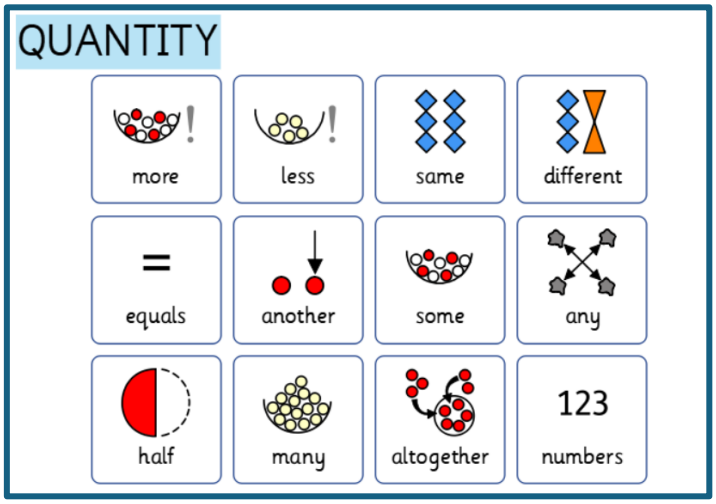


Figure 5 – Example of concept specific (quantity) vocabulary. All areas of maths have symbol sets that have been approved by the communication coordination to ensure that symbol use is consistent across school.

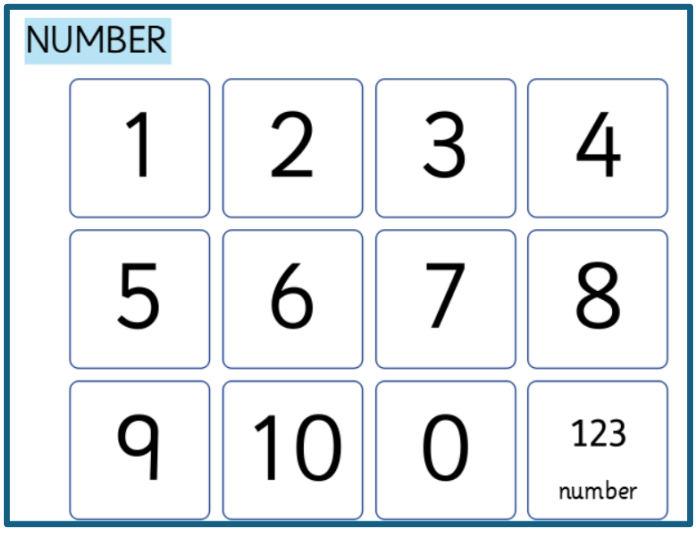


Figure 6 – Agreed symbols for written numerals. All numerals to be written in SassoonPrimaryInfant for consistency using a 'Text only' button on InPrint3.

Appendix F – Cultural Capital

Cultural capital is the accumulation of knowledge, behaviours, and skills that a child can draw upon and which demonstrates their cultural awareness, knowledge and competence; it is one of the key ingredients a pupil will draw upon to be successful in society, their career and the world of work.

Cultural capital gives power. It helps children achieve goals, become successful, and rise up the social ladder without necessarily having wealth or financial capital. Cultural capital is having assets that give children the desire to aspire and achieve social mobility whatever their starting point. Therefore, gradually widening pupil's experiences as they progress through school is an important step in providing rich and engaging learning across the curriculum. We plan carefully for pupils to have progressively richer experiences throughout each phase at the Bridge.

Exciting, motivating and varied content is planned to support engagement with opportunities taken to enhance cultural capital within the Maths curriculum delivery in school and out of school when possible.

Examples of different types of experiences we provide within the context of Maths:

- all maths songs/texts have been carefully selected to include a range of settings around the world, with the books containing engaging illustrations from different backgrounds and cultures.
- multiple opportunities during the school week to learn and practise skills in different environments – sensory rooms, library areas, wildlife area, food technology room, swimming/Hydro-therapy pool.
- opportunities created during the school day, in a wide range of contexts, for pupils to practise and develop their early mathematical skills, including problem solving, e.g. during snack and lunch time, visiting the sensory rooms and library areas, during both core and foundation subject lessons.
- educational visits to the local community, including cafés and garden centres where pupils can practice and develop their skills in a real-world setting.
- opportunities in the secondary department to participate in the 'School Council', encouraging pupils to sharing their thoughts, ideas and emotions about their school, including how they feel about Maths.
- specialist curriculum days/events, e.g. 'NSPCC Number Day' celebrated as a whole school annually.
- cross curricular links to Maths throughout all areas of the curriculum.

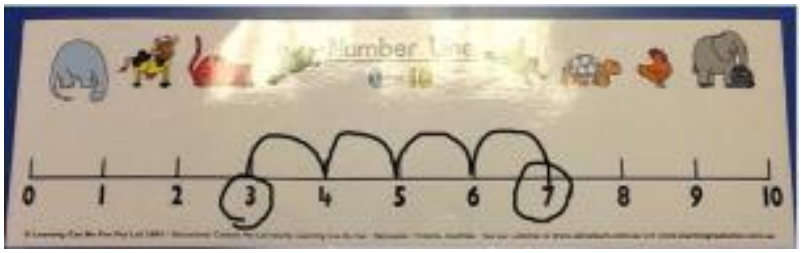
Appendix G – Agreed and consistent use of symbols related to Maths in the school environment.

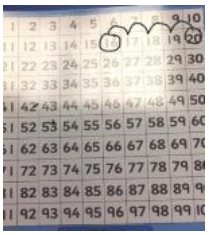
Displays in and around the Bridge reinforce the school's inclusive communication approach. Classroom, and whole school displays incorporate use of photos, symbols and text – where appropriate interactive sound buttons are also used to reinforce key mathematical vocabulary and content.
The agreed font for the Bridge is Sassoon Primary Infant, this should be used for all labelling and resourcing. The agreed bank of symbol vocabulary is **InPrint 3 – Widgit Software.**

The focus and content for the corridors in Foundation, Primary and Secondary are agreed with each Heads of Phase. Within each corridor there will be a maths display (number or measurement and geometry). Classrooms are the responsibility of the class teacher. Within each class, there is a display linked to number to promote pupil interest in Maths and reinforce the use of written numerals. Shared areas are the responsibility of the Heads of Phase.

Appendix H – Metacognition and Self-Regulation (EEF, 2021)

The EEF (2021) state that self-regulated learners are aware of their strengths and weaknesses, and can motivate themselves to engage in, and improve, their learning. Within the context of The Bridge School, we seek to develop pupils' metacognitive knowledge by modelling *how* to learn. Teachers will demonstrate high-quality modelling of how to approach a mathematical problem, at a level and pace that the pupil understands, e.g. modelling how to move backwards on a number line/number square to demonstrate that the quantity has reduced. Through repetition and overlearning, our aim is that pupils will begin to recognise the tools they have available to solve a problem and direct their own learning (when facing problems in line with their starting points).





Teachers approach any learning task or opportunity considering pupils' metacognitive knowledge about:

- Pupils' own abilities and attitudes (knowledge of ourselves as a learner – **motivation**)
- What strategies are effective and available (knowledge of strategies – **the tools available**)
- This particular type of activity (knowledge of the task – **the context**).

Teachers should support pupils to plan, monitor, and evaluate their learning, e.g. are they able to use a previously introduced tool/intervention in a new context?

References

Department for Education (2014) *The national curriculum in England: Mathematics Programmes of Study.* Available at: https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study/national-curriculum-in-england-mathematics-programmes-of-study (Accessed: 26th June 2024).

Locke, A. (1985) Living Language Windsor: NFER-Nelson

Education Endowment Fund (2021) *Metacognition and Self-regulation.* Available at: https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/metacognition-and-self-regulation (Accessed: 26th June 2024).

N.B. Further details of our communication approach, including references for our evidence-based communication strategies which also apply within Maths, are detailed within our policy 'Inclusive Communication Strategy – Whole School (Inclusive of EYFS)'.