Maths at West SILC

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Overview

From our earliest interactions with the world around us, mathematical concepts underpin how we observe, investigate, and communicate. Mathematics is not just a subject—it is a vital tool embedded in our everyday lives. It helps us make comparisons, identify differences, explore relationships, and engage in practical tasks. At West SILC, we recognise mathematics as a way of making sense of the world—a framework through which we analyse information, solve problems, and express ideas.

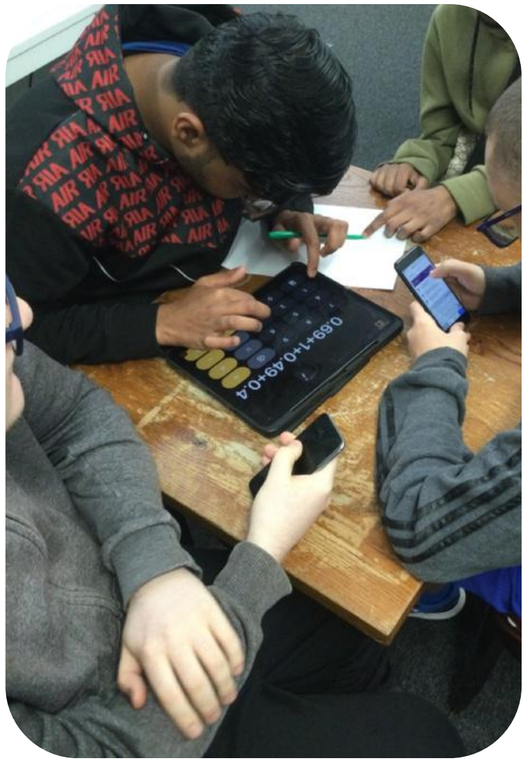
Mathematics provides the language and logic through which children and young people interpret their experiences. It is a network of concepts and connections that enables learners to engage meaningfully with real-life contexts. Whether it's through measuring, comparing, counting, or pattern-spotting, mathematical understanding supports informed, confident decision-making and independence.

We believe that the teaching of mathematics is a shared responsibility across all staff, with all adults contributing to the consistent, enriching development of learners' numeracy and problem-solving capabilities.



Subject Intent

At West SILC, our mathematics curriculum is designed to empower every learner—regardless of their starting point—to develop the knowledge, skills, and confidence to engage with the world mathematically.





We aim to:

· Provide stimulating, structured activities that promote the development of mathematical concepts and precise vocabulary.

· Offer hands-on, practical experiences that help learners connect mathematics to everyday life.

· Encourage the use of mathematical language to describe, discuss, and interpret ideas in an age- and ability-appropriate way.

· Foster curiosity and a sense of discovery, enabling children and young people to see how mathematics relates to their wider world.

· Build a positive attitude towards mathematics, nurturing an appreciation for its patterns, logic, and relevance.

· Support all learners to solve problems, reason logically, and work with accuracy and independence.

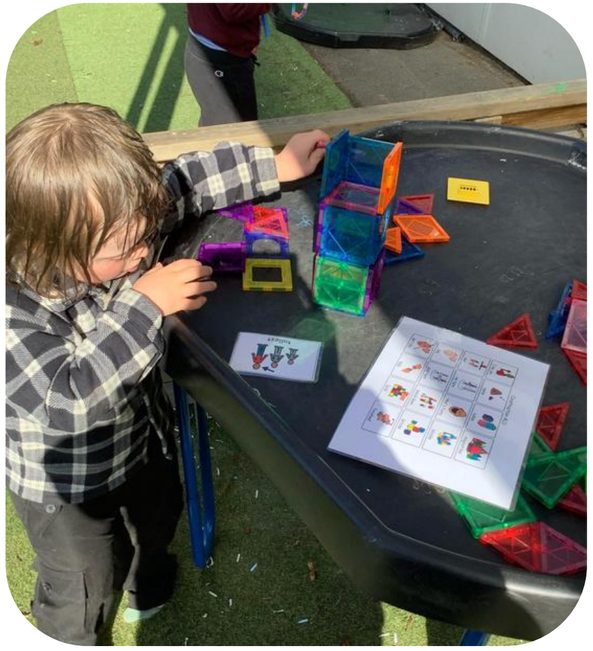
· Promote confidence through a culture of enquiry, experimentation, and exploration.

· Develop initiative and collaboration, enabling learners to choose suitable methods and tools for each mathematical task.

· Equip all learners with the competence, understanding, and motivation to fulfil their potential.

Our overarching intent aligns with the school's mission: to develop confidence, independence, and self-esteem; encourage active participation in learning; foster mutual respect; and ensure all learners enjoy and achieve their full potential.

Implementation by pathway



At West SILC, mathematics supports learners to make sense of the world, explore relationships and patterns, solve problems and develop independence. Our approach is personalised across pathways, recognising that learners have different starting points and may demonstrate strengths in some areas while needing continued support in others.

For learners not yet engaged in subject-specific mathematics, learning focuses on the foundations of mathematical thinking through sensory exploration, movement, interaction, play and familiar routines. Staff respond to learners' interests and repeated patterns of exploration, including schemas, to develop awareness of objects, space, sequence, cause and effect, and changes in quantity.

For learners accessing subject-specific mathematics, teaching combines discrete sessions with opportunities across the curriculum and everyday life. A flexible concrete–pictorial–abstract approach supports understanding through practical experiences, pictures and symbols. Learners continue to use and revisit concrete resources for as long as these support their learning; progression is guided by understanding rather than a fixed expectation to move towards abstract work.

Number understanding is developed alongside shape, space, measure and pattern. Teaching prioritises meaningful understanding and application, with repeated opportunities to practise, consolidate and use learning in different contexts. Accessible mathematical language and each learner's preferred communication methods support participation throughout.

Our aim is for every learner to develop mathematical understanding that is relevant to their life, supports choice and independence, and enables participation in their community, further learning and employment where appropriate.

WEST SILC

Explore pathway



Mathematics in the Early Years Foundation Stage (EYFS) and Key Stage 1 at West SILC is designed to be accessible, meaningful, and responsive to the diverse and complex needs of our learners. Many learners in these stages have a broad range of developmental, sensory, medical, and communication needs, and as such, require a curriculum that is highly individualised, play-based, and rooted in real-life contexts.

We build on the principles of the EYFS statutory framework and Development Matters guidance, placing strong emphasis on the Characteristics of Effective Learning: playing and exploring, active learning, and creating and thinking critically. Where appropriate, we incorporate structured elements from White Rose Maths (Nursery and where appropriate Reception) to ensure progression in foundational mathematical skills.

The learning experiences are developmentally sequenced and designed to meet each child's unique profile of strengths and needs. While all learners are working below age-related expectations, we adapt our practice to support both emerging understanding and concrete application of mathematical concepts.

Personalised and Scaffolded Teaching

- Staff plan learning based on learners' individual EHCP targets, communication methods, sensory profiles, and engagement levels.
- learners access a combination of adult-led focus activities (where appropriate) and child-initiated exploration through continuous provision.
- Mathematics is embedded across the day in routines, transitions, and functional tasks, ensuring repetition, reinforcement, and relevance.

Explore pathway

Mathematical thinking develops through personalised play, everyday routines and well-resourced indoor and outdoor provision. Learners explore quantity, sorting and matching, shape, space, measure and pattern through practical experiences such as construction, water play, movement, songs and role play.

Staff observe and respond to schemas—repeated patterns of exploration such as transporting, enclosing, rotating and covering objects. These interests provide meaningful starting points for learning: filling and emptying containers supports exploration of capacity, while rolling objects develops awareness of movement, direction and cause and effect.

Adults sensitively extend learning through modelling, accessible language and each learner's preferred communication methods. Opportunities to initiate, repeat and revisit experiences are balanced with short adult-led activities where appropriate, supporting understanding at each learner's developmental starting point.

Explore pathway



Engage Pathway



Most learners within the Engage pathway with Complex and Multiple Learning Needs (CMLN) are not yet engaged in subject-specific learning. Within the Engage pathway, they develop foundations relevant to mathematical thinking through personalised sensory, physical and practical experiences embedded in everyday routines and interactions. These support exploration of objects, space, movement, sequence and change, guided by each learner's interests, responses and individual outcomes.

Some learners may have physical, medical or multisensory barriers to learning that make it appropriate for them to be placed within the Engage pathway but who are able to develop some basic functional numeracy skills, this is planned for on an individual and highly personalised basis. These numeracy opportunities are woven into broader experiences of the world, rather than taught as discrete mathematical lessons. Learning is highly contextualised, using real-life scenarios to provide meaningful, motivating opportunities to develop:

- Awareness of number (e.g., recognising "more" or "less" in a snack or activity)
- Basic cause and effect (e.g., pressing buttons, manipulating objects)
- Time awareness (e.g., recognising routines, understanding 'now' and 'next')
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These skills are developed through consistent routines, repetition, and multi-sensory exploration, all grounded in the individual learner's interests and needs.

Engage Pathway

The Teaching for CMLN learners is:

- Individually Planned: Teachers and support staff use a personalised learning approach, drawing from EHCP targets, engagement profiles, and multi-disciplinary input to tailor numeracy-related experiences.
- Highly Adapted: Lessons incorporate a wide range of sensory materials, assistive technologies, and accessible resources (such as tactile numerals, object cues, and visual symbols).
- Embedded in Routines: early mathematical learning is embedded in everyday functional contexts—such as morning group, personal care, play, and classroom transitions—to build familiarity and repetition in a way that feels relevant to the learner.

<u>Engagement-Focused Practice</u>

Rather than measuring progress solely through traditional assessments, staff use frameworks such as:

·The Engagement Model (for those not engaged in subject-specific learning)

·Regular observation and tracking of personal progress milestones (individual small steps from EHCPs)

Success is celebrated in the smallest steps—responding to a prompt, making a choice, anticipating an outcome, or increasing attention span during shared activities. These foundational cognitive and communication skills lay the groundwork for the development of functional numeracy, where appropriate.

Engage Pathway



Aspire Pathway

Learners with complex communication needs and autism (CCA) often present with spiky cognitive profiles, where strengths in specific areas such as Maths or English can be more advanced than their broader developmental or core regulatory skills. These learners may have well-developed rote skills or number recognition, but find abstract reasoning, problem-solving, or social learning more challenging. At West SILC, we strive to nurture and extend mathematical strengths while respecting and addressing each learner's broader needs.

We uphold a commitment to high expectations and deep learning for all learners. To support this, we use a developmentally informed approach that combines adult-led, structured teaching with meaningful opportunities for exploration and communication within daily routines.
All learners within the Aspire pathway are currently working below Year 1 expectations, and as such, we align our planning and pedagogy with the Early Years Foundation Stage (EYFS) framework and accompanying best practice guidance.

Key features of our approach include:

- A focus on developmental rather than chronological age, ensuring learners engage with mathematical ideas in ways that are accessible and relevant to their stage of learning.
- Personalised learning that builds on strengths and targets gaps, using consistent routines and repetition to embed concepts.
- Where appropriate, meaningful adult-led sessions, which provide scaffolding, clarity, and opportunities for modelling language and number.

Mathematics is integrated into classroom provision areas, enabling learners to encounter mathematical thinking through play and exploration. These areas are carefully resourced to include:

- Sorting, matching, and counting materials
- Physical activities that support sequencing and spatial awareness
- Real objects and concrete manipulatives that support conceptual understanding ,such as containers for filling, emptying and comparing capacity; boxes and lids for exploring size and fit; balls and ramps for investigating movement

Aspire Pathway

Learners are encouraged to explore at their own pace, with staff skilled in identifying mathematical opportunities that naturally emerge from their interests and play schemas.
The use of play schemas is central to our planning and delivery. Staff observe children's play patterns (such as transporting, enclosing, rotating) and use these to create engaging and purposeful learning opportunities. For example:

- A child with a transporting schema might count or sort objects as they move them
- A learner with an enclosing schema might explore shape and space through building and construction

To support clarity and predictability, we incorporate:

- Visual schedules and task sequences
- Now and next boards

These tools support communication, attention, and understanding, creating an environment where all learners can participate meaningfully.

Functional and Life Skills Focus

A core component of our mathematics teaching involves applying numeracy in functional, real-life contexts. These opportunities include:

- Cooking and baking: Measuring ingredients, sequencing steps, and understanding quantities
- Shopping experiences: Using money, counting items
- Daily routines: Recognising time sequences (e.g., first/then/next), understanding timetables, and participating in tidy-up routines with sorting and grouping

These experiences are essential for promoting independence, generalisation, and confidence in applying maths to the world around them.

Differentiation and Progression

For learners with in Aspire, progress is not linear, and their curriculum must reflect both challenge and support. To ensure this:

- We differentiate activities based on individual EHCP targets, known interests, and learning preferences.
- We use evidence-informed tools (e.g. small step progress) to monitor development.
- Learners with more advanced mathematical skills are given access to appropriate challenge, with targeted support to prevent regression and build on prior knowledge. For example, where appropriate, learners may access maths lessons in the Connect pathway if required.

At all times, our aim is to strike a balance between protecting existing skills and extending learning—fostering resilience, curiosity, and joy in mathematical discovery.

Aspire Pathway





Connect Pathway

Learners in Connect often have significant cognitive, communication, and/or sensory processing differences. These learners may have spiky profiles, limited working memory, and require consistent repetition and real-world context to retain and generalise learning. They benefit from concrete, hands-on learning experiences supported by sensory-rich environments.
Mathematics teaching on this pathway focuses on the foundational understanding of number, shape, pattern, and measure, with a strong emphasis on how these concepts relate to the learners' lives and environment. The aim is to promote functional numeracy and confidence in real-world settings.

Key Characteristics:

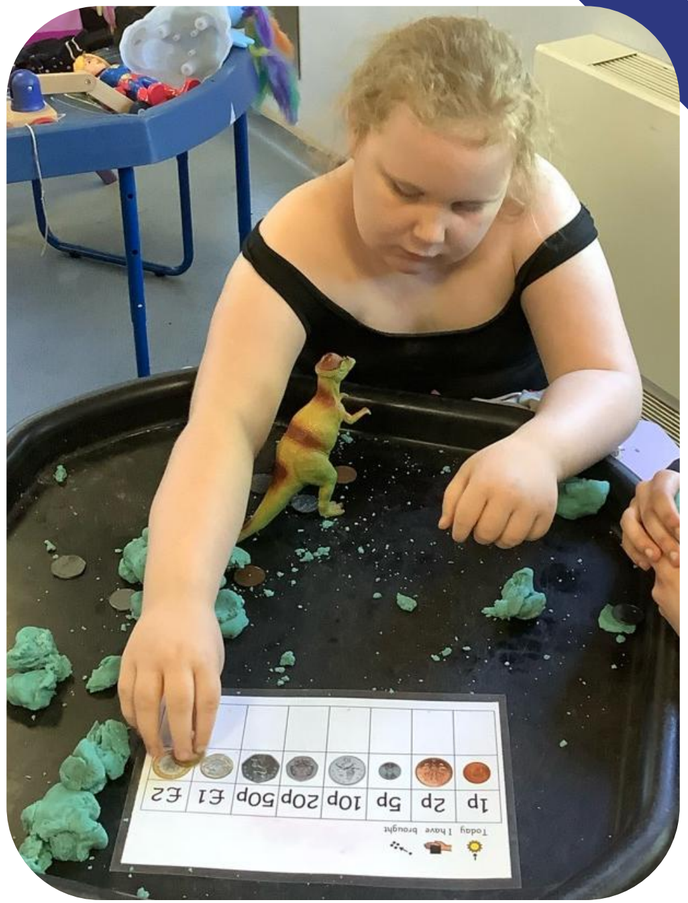
- Uses highly adapted content from White Rose Maths schemes to create highly structured, visual, and practical lessons.
- Curriculum content includes:
  - Number recognition and early counting (1:1 correspondence, comparing quantities)
  - Practical calculation (adding/subtracting using real objects, counting in context)
  - Early time awareness (now, next, daily routines)
  - Shape, space, and measure (handling and comparing everyday objects)
  - Observation of pattern (in nature, routine, objects)
- Heavy use of concrete resources (e.g., Numicon, cubes, tactile shapes) to support concept formation.

Connect Pathway

Teaching Strategies

- Experiential and sensory-based learning: learners engage through cooking, water play, sand play, and exploratory tasks that incorporate counting, measuring, and sorting.
- Structured play: encourages number sense and understanding of patterns (e.g., building towers, matching shapes, sorting items).
- Daily life skills: embedded opportunities to practise maths during snack times, cooking sessions (measuring ingredients), and shopping trips (counting coins/items).
- Learning is repetitive, routine-based, and designed to support generalisation across settings (e.g., using the same counting language at school and home).
- Maths interventions such as individual sessions with specialist maths teacher are used where appropriate.

Maths sessions are taught for 30 minutes every day, with one of those being a practical life skills based maths lesson once every week. Maths sessions are taught in small groups according to the learners abilities.



Climb pathway



Mathematics is taught through:

- Systematic, scaffolded teaching
- A blend of adult-led input and independent tasks
- Emphasis on verbal reasoning, use of symbols/visuals, and applied learning
- Practical learning to bridge abstract and functional understanding

Mathematical learning builds toward greater independence in:

- Numeracy (place value, simple operations, skip counting, estimation)
- Problem-solving (through structured challenges in small groups)
- Data handling (e.g., tally charts, pictograms using real-life data)
- Measurement and time (e.g., using analogue clocks, measuring length/volume/weight)
- Geometry (naming 2D and 3D shapes, exploring symmetry and position)

Concepts are taught using:

- A carefully structured curriculum that has been developed to best meet the needs of our learners.
- Elements of White Rose Maths (EYFS–LKS2 adapted and extended for context)
- Learner-friendly manipulatives (Numicon, cubes, place value charts)
- Applied activities like cooking, travel training, enterprise projects
- ICT programmes are used to enhance and embed learning- ‘Maths Seeds’, ‘Sum Dog’ and ‘Times Tables Rockstars
- Dynamo Maths 1:1 intervention focusses on developing early numeracy. and is used to supplement the class teacher and also the intervention work by 1:1 Maths teacher.

Resources and Planning:

- Structured, small-group sessions, set groups in Secondary (with learners ranging from working within Year 1 expectations through to GCSE content)
- Daily numeracy sessions supported by visual aids, models, and worked examples
- Integration of maths into:
  - Life skills sessions (e.g., using money at a tuck shop)
  - Community visits (e.g., reading timetables, buying snacks)
  - Thematic projects (e.g., making posters with measurements, creating simple budgets)

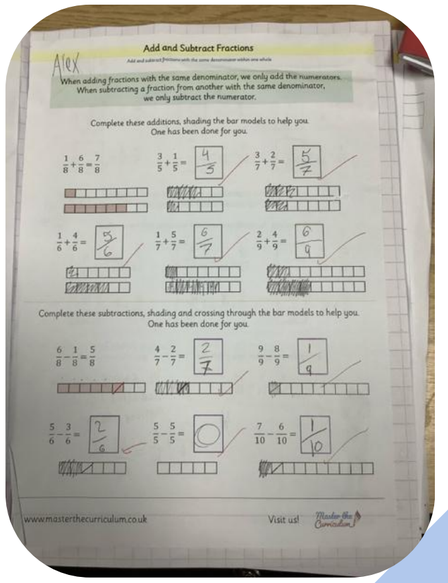
Elevate pathway

Partnership learners have 8 lessons of Maths per fortnight and KS3 learners have two additional Numeracy lessons. In the teaching of Maths, there is a focus on a Mastery approach to learning to promote our learners understanding of all strands of Maths. Maths topics are taught using an in- depth approach; beginning with a kinaesthetic highly hands on use of manipulatives (like counters, Base 10, bricks and Cuisenaire Rods) to learning more formal methods of written calculation methods and using and applying these skills to real-life worded situations. Engagement with new topics and the practicing of new skills is promoted with the use of games, quizzes, computer programmes and whole class discussions alongside the more formal learning and written work learners are expected to complete. Partnership learners arrive into Key Stage 3 with highly differentiated prior abilities in all areas of Maths and numeracy and their lessons are always tailored to ensure that every learner is challenged and makes progress. Key skills that are needed across most Maths topics are reinforced for the first ten minutes of every lesson so learners can practice and improve on these daily.

At our school, we understand that homework can present challenges for some learners and families due to a variety of individual circumstances. While we recognise these challenges, we also acknowledge that homework can be a valuable tool to reinforce classroom learning and consolidate learners' understanding of key concepts.
Homework is not mandatory, and there is no expectation for all learners to complete it. However, in response to requests from some parents and carers who wish to support learning at home, individual homework packs are made available and sent home as appropriate. These are designed to be accessible, supportive, and aligned with what children are learning in school.
In addition, learners are encouraged to engage with online learning platforms such as Sumdog and Sparx, which offer fun and interactive ways to practise core skills in maths. While we encourage the use of these platforms to promote independent learning, their use is optional and not compulsory for any learner.
This flexible approach aims to support all learners while respecting the diverse needs of our school community.

Elevate Pathway

Learners spend extended periods of time on the different areas of Maths such as place value, calculations, money and time and they are beginning to incorporate their Entry Level qualification in Mathematics, into these areas. Some learners have the opportunity to complete much of their Entry Level 2 and Entry Level 3 Qualification early. This offers these more confident maths learners in the Partnership to follow an adapted Key Stage 4, three-year GCSE Curriculum beginning in Year 9 like the mainstream learners at Co-op Academy Priesthorpe. The few Partnership learners (for whom GCSE Mathematics is not appropriate) will spend Key Stage 4 reinforcing their understanding and building on their Key Stage 3 learning to maximise their Entry Level Qualification grade, build on their mathematics knowledge and their understanding of key life skills like telling the time, understanding and recognising the value of money, reading timetables, estimating and measuring.



The focus for all of our Partnership learners is that they will all participate and enjoy their Numeracy and Maths lessons and leave this setting confident in the basic numeracy skills they will require in life. Alongside the more formal lessons in Maths, other areas of the Partnership curriculum will further reinforce and build on the learners' numeracy life skills. Partnership learners will be able to gain practical experience to put these valuable skills into practice with the many trips and outings offered in their life skills lessons.

WAIP

The maths curriculum is designed to help learners to become fluent in the fundamentals of mathematics to enable learners to develop their conceptual understanding and their ability to recall and apply knowledge and skills. Our learners are taught mathematics five times a week. Teaching of mathematics focuses on the application of the mastery approach to learning. Our curriculum in mathematics is promoted by application to real-life situations, playing games, virtual learning environments such as Maths Box, My Maths, and Class VR. We also have regular quizzes and class discussions. learners are taught number, ratio & proportion, algebra, geometry & measures, probability and statistics with special emphasis on application and problem solving by applying their mathematics knowledge and skills to a variety of routine and non-routine problems. learners are assessed on entry using the Access Mathematics Test (AMT) to determine their mathematics age and appropriate curriculum. We offer GCSE (Foundation and Higher tiers) and Entry Level AQA qualifications. Lessons are tailored to ensure that the curriculum meets the individual needs and ability of the learner and that learners can be challenged and make meaningful progress. For learners for whom the GCSE may not be appropriate, they spend KS4 reinforcing their understanding of maths skills such as knowledge of numbers, calculation skills, money, time, interpreting mathematical information, shapes, measurement and data handling.


STAFF
Counters

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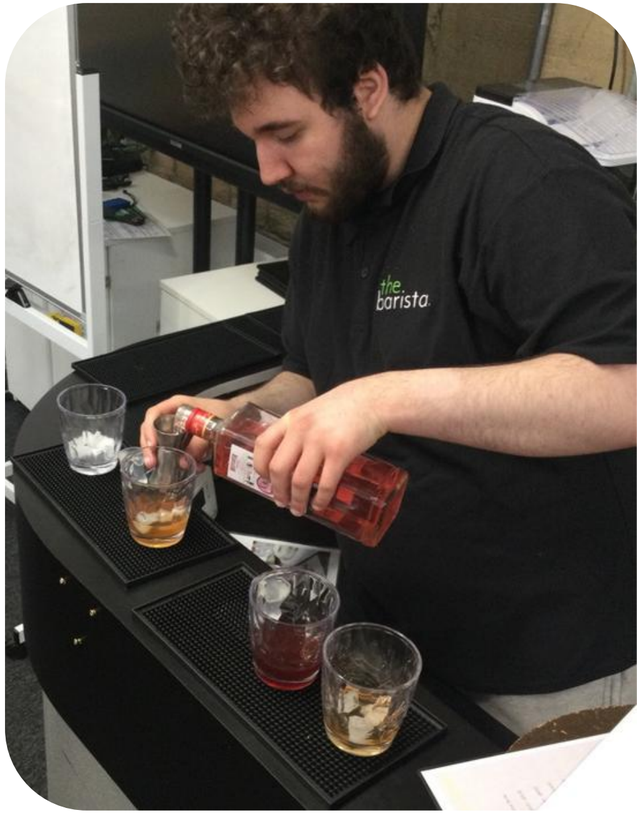
We are committed to nurturing our learners' confidence in numeracy by providing meaningful, daily opportunities to engage with mathematical concepts in supportive and enriching environments.

As numeracy skills play an increasingly significant role in recruitment and career progression and daily life, developing confidence and competence in mathematics is key to our learners' future success. To achieve this, we extend learning beyond the classroom, incorporating real-life contexts that bring numeracy to life. For example, during kitchen sessions, learners apply their mathematical understanding by following recipes, measuring ingredients, and managing time efficiently—turning abstract concepts into tangible skills.

Our classroom-based lessons follow a functional skills approach, covering essential numeracy topics such as number, time, and money. These foundational concepts are continuously reinforced through dynamic activities including budgeting, shopping, and home management. Daily timetable exercises also encourage learners to manage and interpret time effectively, promoting independence and routine planning.

Financial literacy is a key component of our curriculum. It is embedded both within structured lessons and through our innovative reward system, where real-world financial scenarios are simulated. Positive behaviors are rewarded with opportunities to earn, save, and spend within a structured framework, helping learners grasp vital concepts such as tax, fines, deposits, credit, and debit. learners are also encouraged to 'bank' their earnings, gaining early experience in responsible money management.

By cultivating a learning environment where numeracy is accessible, practical, and empowering, we help learners build the skills and confidence they need to thrive in all areas of life.





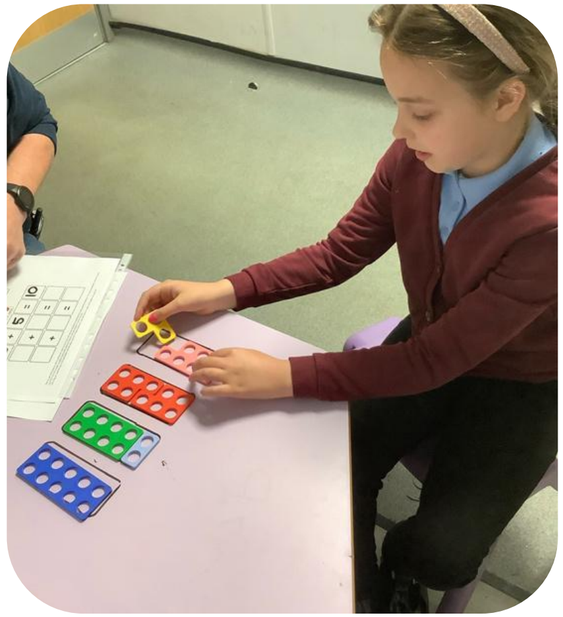
Impact

Learners:

·Develop confidence and competence with numbers and the number system
·Understand place value, addition and subtraction, multiplication and division, fractions and ratios
·Can transfer learned skills and use them in a functional way, for example, when using money and measures
·Develop a sense of shape and space
·Are able to use measuring skills in a range of contexts
·Understand the properties of shape and using position and direction
·Are able to understand and interpret data in different ways, for example, sorting, collecting data and creating graphs
·Can interpret data in different contexts, for example, using a bus timetable

Assessment

At West SILC, assessment and progress tracking are carefully tailored to reflect the diverse profiles of our learners across the school's distinct curriculum pathways. In the Explore pathway, SENIT DJ is the main assessment tool, as well as individual learners' small steps. In the Engage pathway, where learners have profound and complex needs, progress is measured through frameworks such as the Engagement Model, focusing on learners' responsiveness, persistence, exploration, anticipation, and initiation. Observational assessments, learner engagement profiles, and EHCP outcomes guide the identification of small, meaningful steps in progress. In Connect and Climb, including progress is tracked using a combination of West SILC assessment frameworks and bespoke assessment tools aligned with pre-key stage standards. These tools capture both subject-specific progress and functional skill development. Across all pathways, assessment is continuous, formative, and highly personalised—ensuring that each learner's development is recognised, celebrated, and used to inform future planning. Regular reviews of progress against EHCP targets, supported by multidisciplinary input where appropriate, ensure that assessment remains holistic, responsive, and relevant to each learner's stage of learning and individual aspirations.





For further information please contact Brian Elsegood, Director of Maths