



Waddington All Saints Academy

A L.E.A.D. Academy

Reception Maths Policy

At Waddington All Saints Academy, we aim to develop confident, curious mathematicians from the moment they join us in Reception. Our Reception curriculum is designed to ensure that all children:

- Develop a deep understanding of number up to 10 (including subitising, composition, and relationships)
- Build fluency, reasoning and problem-solving skills
- Use mathematics meaningfully in real-life and play-based contexts
- Develop positive attitudes towards maths, seeing themselves as capable learners

Our approach ensures a balance of explicit teaching, structured practice and rich mathematical exploration, reflecting key guidance.



Department
for Education

National Centre
for Excellence in the
Teaching of Mathematics



Education
Endowment
Foundation





Waddington All Saints Academy

A L.E.A.D. Academy

Teaching Early Mathematics in Reception at Waddington All Saints

In Reception, our aim is to facilitate an enabling environment which gives children opportunities to explore, risk take and problem solve. This supports the development of confident and resilient learners. Our mathematics curriculum enables children to develop strong number sense and secure firm foundations in early number, shape and space, and measure.

The NCETM states “children are born ready, able and eager to learn. They actively reach out to interact with other people, and in the world around them. Development is not an automatic process, however. It depends on each unique child having opportunities to interact in positive relationships and enabling environments.”

Our approach to mathematics is underpinned by the NCTEM and is designed to be progressive through the year, ensuring that children build up the skills required to confidently meet the Early Learning Goals set out in the EYFS Framework, by the end of the Reception year.

The NCTEM identify six areas that underpin early mathematics together forming the foundation for children’s mathematical development, as they move through primary school and beyond:



Cardinality and Counting



Comparison



Measures

National Centre
for Excellence in the
Teaching of Mathematics



Composition



Shape and Space



Pattern



Waddington All Saints Academy

A L.E.A.D. Academy

Cardinality and counting

Understanding the cardinality of a number means recognising the quantity it represents. When children understand cardinality, they grasp what a number actually means, not just how to say or recognise it. This develops initially through counting objects and matching numbers to quantities, and later progresses to skills such as subitising, where children can identify small amounts instantly without counting.

Comparison

Comparison focuses on understanding which numbers are worth more or less than each other. A secure grasp of cardinal value is essential before children can develop these comparison skills. This understanding forms the foundation for a mental number line, which supports early mathematical development.

Composition

Composition is the understanding that numbers are made up of two or more smaller numbers, including recognising part-whole relationships. A key stage in children's number development is being able to see a number as both a whole and as parts at the same time. This understanding of how numbers can be partitioned supports key mathematical skills such as addition, subtraction, doubling and halving.

Pattern

Pattern is a fundamental aspect of mathematics. Children need opportunities to observe, talk about and extend patterns in meaningful ways. They begin by copying simple repeating patterns and gradually progress to recognising and creating more complex structures. Patterns can be created using a range of materials, such as cubes, blocks or toys, making them hands-on and engaging. Children can also explore patterns through movement, linking to other areas of the curriculum, such as dance or obstacle courses, where repeated actions and sequences reinforce their understanding.

Shape and Space

Shape and Space focuses on developing children's spatial and shape awareness. It involves building visualisation skills and understanding how objects and shapes relate to one another in space. Children explore movement and how shapes can be combined and transformed, going beyond simply learning shape names and vocabulary. Through active exploration, they develop an understanding of spatial relationships and the key properties of different shapes.

Measures

Measures involves children exploring concepts such as length, volume, capacity and weight. They learn to notice and describe changes, including how objects can alter in appearance or size. Children actively engage in making comparisons, such as bigger/smaller or heavier/lighter. They also develop an understanding of time by sequencing events and recognising patterns such as daily routines and counting days



Waddington All Saints Academy

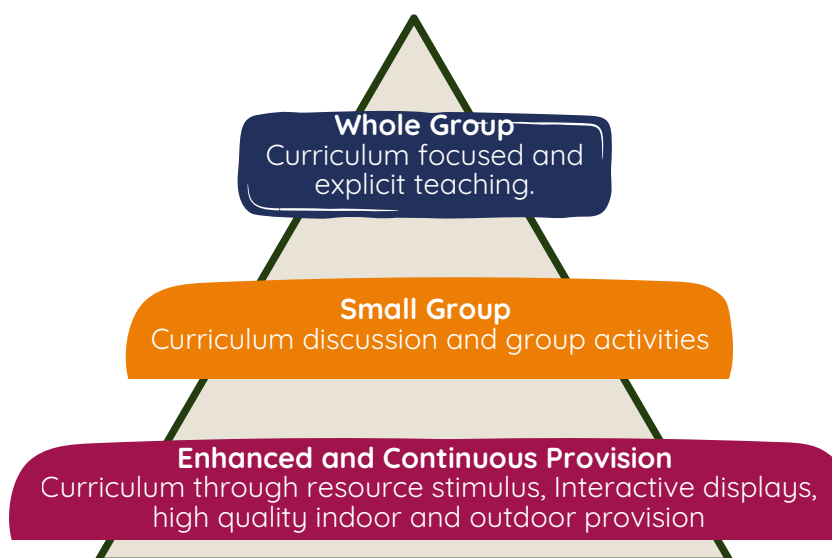
A L.E.A.D. Academy

Our Approach to Teaching Mathematics

Mathematics teaching begins with whole group input, where key concepts are introduced through clear, explicit teaching. This ensures all children are exposed to the same learning, modelling and mathematical language.

Following this, children take part in small group sessions, where learning is reinforced through discussion and targeted activities. These groups allow for focused support and challenge, ensuring that all children have the opportunity to engage, practise, and develop their understanding.

The six areas of learning are then embedded and deepened through enhanced and continuous provision. Carefully planned environments, both indoors and outdoors, provide rich opportunities for children to explore mathematical ideas independently using high-quality resources, interactive displays, and practical experiences.



NCETM Mastering Number

At All Saints, we implement the NCETM Mastering Number programme to support daily mathematics teaching in the Early Years. This evidence-informed programme is designed to develop a secure, fluent and flexible understanding of number, which research identifies as foundational for later mathematical success.

The programme places a strong emphasis on key early mathematical concepts, including:

- Subitising
- Composition of number
- Cardinality

These concepts are widely recognised in early mathematics research as critical for developing deep number sense and preventing reliance on rote counting.





Waddington All Saints Academy

A L.E.A.D. Academy

The pedagogy underpinning Mastering Number reflects the principles of NCETM Teaching for Mastery, which emphasises deep, connected understanding and ensures that all children have access to high-quality mathematics teaching. These principles are further supported by the EEF guidance report “Improving Mathematics in the Early Years and Key Stage 1”, which highlights the importance of developing early number sense, using mathematical language, and ensuring equitable access for all learners.

In practice, this is reflected through:

- **Mathematical language and communication:** Precise mathematical language is explicitly taught and modelled to support reasoning, communication and conceptual understanding
- **Conceptual Understanding:** a focus on deep understanding of number relationships, enabling children to generalise and apply their knowledge
- **Inclusion and access for all learners:** ensuring all pupils, including those with SEND, can access and succeed in mathematics learning

Children engage with a range of **concrete and visual representations**, including rekenreks, ten frames and counters. These representations help children to build mental models of number and develop flexibility in their mathematical thinking. A key focus is the development of rapid and accurate subitising, initially within 5 and then extending to 10. This supports children in recognising number patterns and structures, which underpins later calculation strategies.

Within Mastering Number children are also introduced to the Number Blocks, with short video animations that explicitly explore key mathematical knowledge through a fun and engaging way.

Mastering number aims to secure strong early foundations in early mathematics, leading to better outcomes and confidence as children progress into in Key Stage 1 and beyond.

Small group

Following whole group teaching, children participate in targeted small group sessions to reinforce and deepen their understanding of key mathematical concepts. This means that teaching is responsive and that it can be adapted to meet the specific needs of individuals and groups and that all children are supported to secure understanding before moving on.

Within these sessions, adults:

- Provide **focused opportunities for practice and consolidation** of key learning from Mastering Number.
- Use **explicit teaching and modelling** to develop mathematical vocabulary and language.
- Identify and address **misconceptions in the moment**.
- Offer appropriate **challenge to deepen understanding**.



Waddington All Saints Academy

A L.E.A.D. Academy

Enhanced and Continuous Provision

Enhanced and continuous provision provides the context in which the **Characteristics of Effective Learning** are actively developed and embedded. Through **carefully designed provision and high-quality adult interaction**, children are supported to engage with mathematics in ways that promote deep, sustained learning. A strong emphasis is placed on the development of mathematical language, with adults modelling, extending and reinforcing key vocabulary to enable children to articulate their thinking, explain their reasoning and make connections between mathematical ideas.

Playing and Exploring

Children engage with and investigate numbers, patterns and relationships through hands-on resources, meaningful experiences, independently selecting resources and applying mathematics in real-life contexts. Well-organised, accessible resources enable children to initiate their own learning and explore mathematical ideas.

Active Learning

Children are supported to persist with challenges, revisit and are modelled key concepts, and develop confidence through carefully sequenced opportunities to revisit and embed learning. Adults sustain engagement through high quality interactions and appropriate challenge.

Creating and Thinking Critically

Opportunities are carefully designed for children to make connections, explain their thinking and use mathematical language to justify their ideas. High-quality adult interactions extend reasoning, using careful questioning, modelling and vocabulary, encouraging children to explore different strategies and representations.

Provision is designed to ensure that children have opportunities to practise, consolidate and apply their mathematical knowledge while also experiencing appropriate challenge. Mathematics areas are clearly defined and accessible both indoors and outdoors, enabling continuous engagement with key concepts.

Within these areas, children access well-organised continuous provision, including:

- A range of concrete and pictorial resources to support number sense, shape, space and measure
- A variety of recording materials (plain, coloured, squared and graph paper) to encourage representation of mathematical thinking
- A wide selection of mathematical manipulatives (e.g. counters, cubes, Numicon), ensuring familiarity with key resources that support conceptual understanding

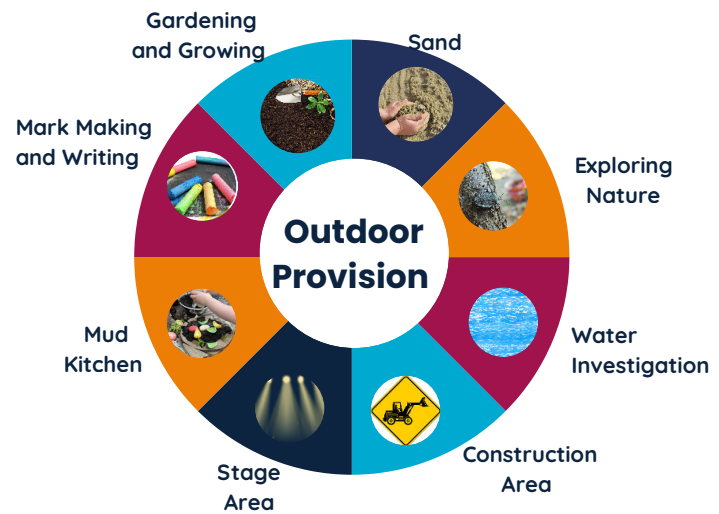


Waddington All Saints Academy

A L.E.A.D. Academy

Each week, enhanced provision opportunities are carefully planned and linked directly to the Mastering Number programme, ensuring that explicit teaching is reinforced and extended through independent exploration. Enhancements include:

- Targeted activities linked to key concepts (e.g. doubling, sharing, number bonds)
- The use of 'I wonder...' prompts to promote curiosity, reasoning and problem solving
- Activities informed by ongoing formative assessment, ensuring provision is responsive to the needs of the cohort



Construction Area

- Recognising, understanding and naming shape, size and colour whilst selecting and tidying away.
- Counting and creating quantities when building
- Comparing height, length and size of structures
- Subdividing and partitioning as part of building
- Recognising, creating and understanding patterns as part of model making
- Exploring position, balance and spatial relationships, including comparative language
- Measuring structures using comparative language and tools such as rulers

Water Investigation

- Cardinality through counting scoops, pours and containers, including estimation challenges
- Comparing capacity (more, less, full, empty) and predicting outcomes
- Composition through exploring combinations of amounts when filling different containers
- Shape and Space through understanding space and movement of water
- Measures through using tools such as containers, spoons and timers to explore capacity and time



Waddington All Saints Academy

A L.E.A.D. Academy

Dough area

- Exploring shape and size through use of graduated shape cutters, moulding and constructing.
- Developing number sense, counting, matching one to one and making pairs as part of baking with bun cases and tins.
- Composition by splitting and recombining dough (part-whole)
- Pattern by repeating shapes and designs
- Using measures by comparing length, weight and using cutters.

Sand Area (Wet & Dry)

- Cardinality through Counting scoops and quantities
- Comparing volume and capacity
- Composition through Combining quantities in different containers
- Patterns by repeated actions of filling and emptying
- Shape and space through exploring space and form when shaping sand
- Measuring through using tools to measure and compare

Role Play Area

- Cardinality through counting objects such as plates and cups
- Comparing amounts and deciding what is fair
- Sharing and grouping into equal sets
- Recognising routines and repeated actions
- Shape and space through using positional language in play
- Exploring measure through cooking, filling and timing

Mud Kitchen

- Cardinality through counting ingredients
- Composition through mixing and grouping
- Comparing quantities
- Repeating recipes, exploring materials, discussing their properties
- Using tools and containers
- Observing changes, cause and effect
- Investigating, predicting, testing and solving problems.



Waddington All Saints Academy

A L.E.A.D. Academy

Gardening and Growing

- Comparing growth and measures through size
- Exploring natural patterns
- Understanding space and arrangement of plants (shape & space)

Enquiry Area

- Cardinality through counting and grouping objects
- Sorting and comparing collections
- Composition through exploring grouping and classification
- Identifying and correcting patterns
- Shape and space through Using spatial reasoning in investigations
- Measuring and making predictions



Waddington All Saints Academy

A L.E.A.D. Academy

High-Quality Adult Interactions in Mathematics

At Waddington All Saints, high-quality adult interaction is central to effective mathematics teaching and learning. Adults play a critical role in extending children's thinking, supporting conceptual understanding and developing mathematical language through purposeful, intentional engagement. These interactions have a significant impact on children's cognitive development, particularly in early mathematics. Through skilled questioning, modelling and responsive teaching, teachers deepen understanding and support all learners.

Within both targeted group work and continuous provision, adults:

- Use carefully structured questioning to probe understanding, encourage reasoning and extend thinking
- Model precise mathematical vocabulary and stem sentences, supporting children to articulate their ideas clearly
- Respond in the moment to children's thinking, addressing misconceptions and moving learning forward
- Provide scaffolding that supports children to achieve success while maintaining an appropriate level of challenge
- Encourage children to explain, justify and reflect on their mathematical thinking

These interactions ensure mathematical talk and language is developed, including reasoning and making connections, which are central to developing deep understanding.

Adults are also skilled in balancing support and independence. They create opportunities for children to think for themselves, make decisions and explore multiple strategies, while intervening at appropriate moments to guide learning. This sustained shared thinking allows children to develop ideas and solve problems collaboratively.

In provision, adults ensure that interactions are:

- Responsive – based on ongoing assessment of children's understanding
- Purposeful – focused on clear mathematical objectives
- Inclusive – enabling all children, including those with SEND, to access and succeed
- Challenging – extending learning beyond surface-level understanding

High-quality interactions are further supported through the consistent use of mathematical language and visual prompts, such as displayed vocabulary and stem sentences, enabling children to independently rehearse and apply mathematical thinking.



Waddington All Saints Academy

A L.E.A.D. Academy

Daily Practice

Mathematics is embedded within daily routines to ensure children encounter key concepts frequently and meaningfully.

Regular, predictable routines support children to notice, use and apply mathematical structures in familiar contexts, which research identifies as crucial for developing secure early number sense.

Daily opportunities include:

- A visual timetable, including the day and month, supporting understanding of sequence, pattern and the language of time
- Exploration of days of the week and months of the year, reinforcing pattern
- Consistent routines, supporting recognition of repetition and predictability
- Counting children in the line, developing cardinality and the understanding of “how many”
- Sharing number facts (e.g. number bonds, doubles) using stem sentences, promoting mathematical reasoning and fluency (NCETM)
- Singing mathematical songs and rhymes (e.g. 5 Currant Buns, 5 Little Speckled Frogs), supporting:
 - Composition (adding and subtracting)
 - Pattern and structure
 - Subitising and counting principles

These approaches reflect research from NCETM and EEF which emphasise that frequent, short, embedded interactions are more effective than isolated teaching for securing early mathematical understanding.

Parental Engagement

We recognise that mathematical development is strengthened when learning is shared between school and home.

We provide opportunities for parents to:

- Participate in maths-focused sessions and challenges, enabling children to demonstrate and explain their understanding, a key feature of NCETM’s focus on mathematical talk and reasoning
- Engage in activities such as mapping and spatial exploration, supporting understanding of shape, space and problem-solving

Ongoing communication includes:

- Weekly Tapestry observations, often highlighting mathematical learning within play, making learning visible and supporting parental understanding of early maths development
- Parents’ evenings, where practitioners discuss children’s progress in relation to key mathematical concepts such as cardinality, composition and comparison, alongside next steps
- End-of-year reports, providing a clear summary of:
 - Engagement with mathematical learning
 - Development of key skills (aligned with Early Learning Goals)
 - Individual attainment and progression



Waddington All Saints Academy

A L.E.A.D. Academy

Assessment

Formative Assessment

Ongoing, responsive assessment through:

- Observation in play and provision
- Interaction and questioning
- Practitioners identify children's understanding of:
 - Cardinality (knowing how many)
 - Composition (part-whole relationships)
 - Comparison (more, fewer, equal)

This informs:

- Targeted adult-led group work
- Adaptations to continuous provision
- Immediate support to address misconceptions

Summative Assessment

Key assessments are carried out in relation to the Early Learning Goals

- Assessment points are used to:
 - Identify gaps in understanding
 - Inform future planning
 - Ensure progression in key mathematical concepts
 - Targeted Support and Intervention

For children with identified barriers:

Assessment is used diagnostically to identify specific misconceptions

- Interventions focus on securing foundational concepts, particularly:
 - Subitising
 - Counting principles
 - Part-whole understanding