Greenhall

MATHEMATICS

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1. Introduction

Mathematical opportunities and provision, and teaching and learning objectives in Nursery and Reception are derived from Development Matters and the Early Learning Goals within the EYFS curriculum.

Learning for young children is very much concerned with the integration of areas of learning, often centred around a theme. However, it is important that within this area of learning, planning focuses on the individual components in order to ensure that -

a) knowledge specific
b) skills specific
c) language specific
elements of each aspect are addressed.

As the children attending Greenhall present with a very wide range of physical, learning and language abilities they will obviously access learning experiences and activities in very different ways - planning and assessment will therefore need to take account of individual learning needs. Some children will be operating on a sensory level where activities such as TAC PAC, Circle Time, Resonance Boards & Knill need to be repeated and children's reactions to these closely monitored. Other children will have restricted physical abilities and will therefore be unable to access resources such as water & sand play, or bricks to build towers independently. These children will have missed out on the repetitive exploration needed to gain understanding of concepts such as full / empty, in / out, learning how objects and shapes fit together. They may know what a circle looks like (facts) but be less experienced in the properties of these (application) due to their lack of 'hands on' experience. Children with Autism may have a strong interest in maths – lining up objects, sequencing numerals etc. However they may not understand the concept of number e.g. quantity of 3.

Some children will have a combination of all these areas of limitation and the teacher's skill will be in providing activities that offer learning experiences for all of the children.

Mathematical teaching is highly differentiated through play opportunities, teacher initiated and structured adult – led activities. The children are provided with opportunities to develop their understanding of number, measurement, pattern, shape and space throughout a variety of learning activities.

2. Number and Numerical Patterns

We believe Mathematics in the Foundation Stage is at its most purposeful when it is based on real life situations and put into context for our pupils. Mathematics is taught in a variety of ways; it is linked to topic work where appropriate and through activities available in the environment each day. As part of everyday life, one will naturally encounter single objects / people / sounds or groups of these. We can create opportunities for children to explore this through treasure baskets, for example, that may contain one or two shells or pinecones. Children's understanding of object permanence is instrumental in a later understanding of the concept of number. Feely bags, voiles and sound-making objects are examples of resources we use to develop children's understanding in this area.

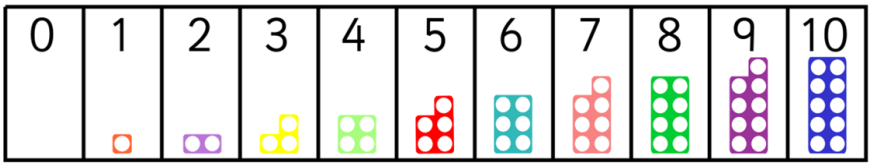
Children should be exposed to number through the use of number rhymes and songs and the use of mathematical language from an early age. At Greenhall, objects of reference are used when exploring a number rhyme, for example, 5 little ducks counting rhyme would involve 5 plastic ducks, blue material or a water tray and a switch for children to say 'quack, quack, quack'. Counting rhymes are also used to explore 1 more / 1 less.

Having opportunities to explore a range of toys and materials during their play provides children with opportunities to match, organise and sort these. For example, in the role play area or lining up cars on the small world road mat. Equipment drawers and cupboards are also labelled using symbols to help the children to learn where things belong. Giving each child a plate at snack time or passing rings around the group until everyone has one during task series is an example of how we reinforce 1:1 correspondence.

Children's understanding of the concept of number is developed through the use of a large range of resources available in Greenhall. These are used for specific focussed teaching activities as well as opportunities for the children to explore these within continuous provision. There are structured opportunities to count as part of the daily routine, for example counting the number of children here today, counting down from 5 to see if everyone is ready, counting objects out for snack / dinner / creative activities, counting how many children want milk to drink etc. as well as ad-hoc opportunities that may arise in role-play areas or small world play.

Children are exposed to numerals including written, magnetic, squidgy and number tiles.

Numicon apparatus has also been purchased to support Greenhall pupils in developing their early numeracy concepts. This resource is a multi - sensory maths resource that focuses on imagery, action and conversation. Numicon uses a series of structured patterns - Numicon shapes - to represent numbers as part of a progressive Mathematics teaching programme.



As with all resources, this will be used as appropriate to children's age and stage of development.

Examples Sources of experience within Number

- Number rhymes & songs using objects of reference
- Peek-a-boo games
- Looking for hidden objects in sand / rice / shredded paper
- Step-by-step switches to explore counting
- Counting number of children during circle time
- 1:1 correspondence giving items out at snack-time
- Matching and sorting objects by colour / object type / shape / size
- Hanging out the washing and sorting the socks
- Compare bears (counting, matching and sorting)
- Number puppies (counting, matching & sorting)
- Counting money in the shop role-play area

We also follow maths approaches that are relevant for our individual pupils and classes. These include 'White Rose maths curriculum' which is designed to provide children with a solid foundation in mathematics.

Spatial Reasoning Skills - Shape, space & measure

This aspect of mathematics is closely linked to physical development as it involves handling objects and materials. The difficulties that some of our children have in this area often has an impact on their development in shape, space & measure. Whilst they may know facts such as what a circle looks like, they may be less familiar with its properties as they may not have had the 'hands-on' opportunities to spontaneously explore these for themselves.

Opportunities to develop children's mathematical skills exist in both the indoor and outdoor environments. Outside, for example, we have a mud kitchen where children can develop their understanding of measures. Sand and water trays are both indoor and outdoors and shape hunts take place, where children look for shapes in the natural environment, for example rectangular bricks in the house role-play area.

At Greenhall, we have a structured daily routine which is important in helping the children to make sense of their world. Some groups also use a visual timetable or objects of reference to support their understanding of this. Adults model language of time such as 'now', 'next' 'before', 'finished'. It also provides opportunities for the children to anticipate what is going to happen next. This

opportunity to anticipate is also provided throughout programmes such as 'TAC PAC', resonance boards, Knill and sensory stories that are repeated regularly so that the children have the opportunity to grow familiar with them. Children have opportunities to measure time using sand and buzzer timers & clocks.

Due to physical difficulties, some of the children will not have been able to use blocks to create their own structures and those that have done so are likely to be more restricted to simple structures such as towers, rather than using these more creatively, putting them next to each other and on top for example.

Spatial awareness can be affected in children with Cerebral Palsy which is why we use the Task Series to provide opportunity for children to develop skills in this area. The language of space is modelled to children throughout the school day, for example when providing instructions and directions e.g. sit next to x. Adults build on children's imagination in order to engage them in the solving of problems, for example helping teddy to find a way home.

Children are taught key mathematical knowledge and then given opportunities to apply this to a range of situations. The importance of providing opportunities to transfer and generalise skills to a range of different situations cannot be over-estimated and this is something that some of our children can find challenging because of their learning difficulties.

Sources of experience within shape, space & measure

- Inset puzzles
- Building with 3D construction materials
- Sand / water / rice play
- Shape hunt
- Using scales in the role-play area
- Bee bots
- Remote control bugs & toys
- Measuring worms
- Balance sets
- Mud kitchen

At Greenhall we aim to provide a rich mathematical environment, appropriate to the children's age and stage of development. Mathematical skills are modelled and careful consideration is given to planning appropriate learning experiences to promote development. Careful consideration is given to ensure provision and the environment promotes mathematical development, with the environment as the third teacher and the use of loose parts.

4. Assessment, recording & reporting

Children's progress is recorded on session evaluations and used to inform future planning. Observations and photographs are kept in the children's individual electronic learning journeys.

Children's Mathematical skills are assessed using the EYFS and B-Squared EYFS assessment tool on entry to provide a baseline and then each term. This is reported to the Headteacher and data is analysed with regards to progress made at the end of each academic year although information is gathered on trends at the end of each term.

At the beginning of their reception year children will take part in a statutory reception baseline assessment [RBA] which is an activity – based assessment which will assess their starting point in mathematics. At the end of their reception year, children are assessed against the Early Learning Goals in line with National Regulations.

5. Monitoring Effectiveness

The coordinator for Mathematics at Greenhall is Natalie Hart. She will monitor the effectiveness of the policy together with the link Governor. They will then report back to the Local Governing Board.

Monitoring takes the form of:

-Lesson Observations
-Data analysis – EYFS and B -Squared [Progression steps]
-Pupil Progress Meetings with Class Teachers
-Learning Walks
-Moderation of Learning Journeys

6. Equal Opportunities

This policy should be read in conjunction with the Equal Opportunities Policy.

Policy reviewed and approved by Governors 3/12/24.

Signed……..Date……

(Headteacher)

Signed……..Date……

(Chair of Governors)