

Date agreed July 2017	Review Cycle 3 years	Due for review July 2020
Signed		

Mathematics Policy

At Efra Early Years Centre we recognise that Mathematics lies at the heart of everyday experience. Following the principles of the Early Years Foundation Stage, we aim to build on each child's mathematical knowledge in a broad range of contexts. Individuals are encouraged to make sense of their mathematical world by developing self-confidence, excitement and natural curiosity through a range of opportunities in personally meaningful ways.

We have developed an age appropriate STEM curriculum at Efra which supports us to deliver mathematics in an exciting and purposeful way and link it to other aspects such as science, technology and engineering.

We follow the guidelines in the 'Statutory Framework for Early Years Foundation Stage' (2014,) focusing on the specific areas of Number and Shape, Space and Measure through a wealth of fun and significant opportunities to build on children's experience and understanding.

Number

Covering all basic aspects of sorting, matching, naming, counting, ordering, quantity, numbers as labels, number strings, calculation and recording.

Shape, Space, Measure

Exploring basic concepts of shape, (2D and 3D), size, length, capacity, position, direction, pattern, symmetry and measurement, including time and money.

In both aspects our teaching and learning is planned and delivered through the following principles of the EYFS:

Considering the Unique Child

We recognise each child presents a unique case considering background, gender and ethnicity, levels of ability and special needs. Our following strategies work towards supporting individuals to reach their full potential:

Information Gathering, Planning and Evaluation

- The introductory chat with families helps form a picture of the child and brings useful information when planning for their settling in time, (For example, having prior knowledge of a newcomer's passion for transport, the Key Person can provide a fun and familiar experience of number and quantities, with a set of interesting vehicles)
- Further observations through pictures, video clips and notes provide a view of children's interests and development for next steps.
- Using the EYFS guidance on stages of development for 'The Unique Child' to plot the 'Next Steps' for individuals, whatever their age and ability.
- Analysing the data from termly assessments gives insight into the needs of children from particular groups and shows possible gaps in learning that we address through our provision.

Resources

Selecting equipment to suit individual needs to inspire each child as an active learner. Some examples include:

- Using familiar items, such as telephones or a collection of familiar kitchen equipment in the home corner.
- Providing different scripts to reflect our local community's range of languages and traditions in written signs and number lines.
- Using visual and sensory aids to give individuals greater access to learning, especially those with SEN and EAL.

Developing Positive Relationships

At Effra we work in partnership with parents and carers and recognise that forming good relationships between Early Years' Practitioners, Children and Families is key to progress in mathematical learning. For example:

The Key Person System

- Each child has a Key Person who is the first point of contact. Regular meetings to share progress with families can be an effective way to inspire teaching and learning mathematics at home as well as Nursery. Families with EAL can provide valuable resources in their home language, (for example, a recording of a favourite number rhyme or a script in the family dialect for counting).

Team work between peers

- We encourage children to work together to support shared learning and problem solving, (for example a pair engaged in a building activity, can discuss and make decisions on the length, height and quantity to gain the desired effect).

Communication between staff

- We recognise this is vital to plan effective mathematical teaching and learning. Daily evaluation sessions and weekly staff meetings contribute to sharing information and ideas. Here the same mathematical Learning Intentions for on-going provision for inside and outside classroom areas, is agreed to encourage continuous opportunities to embed learning throughout the nursery day. In addition, a focus on Mathematics in staff meetings and inset days contribute to a whole team approach and individual staff understanding and development in the subject.

Creating Enabling Environments.

At Effra we recognise that children's mathematical learning develops best when they are given space, time and resources to play, explore, experiment, make connections, reflect on experiences and repeat actions.

The following strategies support these aims:

- Opportunities for mathematical exploration are present throughout the Nursery day through: routines, adult led activities in key groups and one on one interaction, and a wealth of free choice activities.
- Daily schedules in welcome groups, at the snack table, and toilet and wash room visits can all contribute to mathematical thinking and sharing.
- A wide range of resources are stored in specified areas where children have easy access and staff have knowledge of the full range and whereabouts of materials. Here objects and collections are available for use in every activity area. We

recognise that children's different ways of learning are reflected in this bank, giving access to mathematics through a multisensory approach.

- Specific visual aids are a common feature through the environment and often tailor made to suit a topic or activity, (for example we recognise a collection of objects accompanied by a number chart or line is more likely to inspire independent sorting, counting and calculation).
- Stories, rhymes and songs are key in our teaching and learning where all aspects of Number, Shape, Space and Measure are a focus.
- Our continuing Role Play opportunities enable children to explore the different mathematical strands while acting out familiar situations. (For example a Post Office corner provides plenty of scope to deal with money, time, number, space and shape.
- Provision of mark making extends mathematical thinking and understanding in a range of situations. Examples could include a simple tallying exercise to survey people's favourite fruit at the snack table or map making resources to accompany an adventure game in the garden.
- Exploring mathematics in the outside area. Here children enjoy space to spread out, test out speed, height and depth, work with large piece equipment and use a big voice. We understand that activities such as jumping on numbered stepping stones or loud, rhythmic activities in the music area, combines physical movement with critical thinking when exploring number. Similarly a wealth of mathematical experiences are to be found in the natural garden.
- Extending learning beyond our school environment, we use the wider community in trips to explore mathematics in familiar, new and exciting environments. This includes trips to the supermarket to buy ingredients for cooking.

Learning and Development

We recognise that children's effective mathematical learning and development is best applied when encouraging 'Characteristics of Effective Learning'

Engagement through Playing and Exploring

- We acknowledge that children learn through Play and Exploration. Curiosity can be stimulated through a wide range of open ended activities, using all the senses, (for example the dough table is a frequent place to measure, count and calculate with visual resources that inspire mathematical thinking).
- Tapping into children's interests, individuals are encouraged to take risks and try something new, (for example the bee bot robotic toy brings directional language and number into an exciting new area).
- A supporting adult modelling play skills can help children engage and extend their interest.

Motivation through Active Learning

- Opportunities to re-visit experiences to practice skills, particularly in child initiated learning, with time to follow a process of discovery, (for example spending extended times at a water tray with jugs and containers to consolidate understanding of capacity).

- Using visual aids to help maintain a focus, (for example with illustrations from books or the internet, children are inspired to work out which shaped boxes they need to complete their model of a robot). We recognise that giving children opportunities to explain their achievement, display or use it to some end encourages further motivation.

Creating and Thinking Critically

- We recognise that we learn best by making connections and predictions, recognising patterns, asking questions, trying out ideas and working through mistakes to confirm our understanding.
- Children are encouraged to problem solve rather than having something done for them, however an adult's verbal contributions are key. Here modelling new vocabulary and reflecting back the child's mathematical reasoning gives confidence and acts as a bridge to their next step. Open ended questions can move children along in their thinking. (For example in a relevant role play situation a child may say:
'I have two cakes from the shop'.
In reply the adult could extend the thought process by replying:
'Yes you have two cakes. I wonder if that is enough for everyone coming to the party. Shall we check?').
- Linking mathematics with all areas of the curriculum, (for example by using the text of 'Jack and the Beanstalk' for a focus on measurement, we link this prime area with Literacy, something frequently done with our core book system, (See Literacy Policy)

Following the principles of 'S.T.E.M', we link Mathematics alongside Science and Technology, (for example using the programmable toys 'Bee Bots', children can explore directions while learning to programme a technical toy.

References: 'Practice Guidance for the Early Years Foundation Stage (2014).

Please also see the following policies

- STEM Policy
- Literacy Policy
- Teaching and Learning Policy
- Parental Engagement Policy