



POLICY FOR MATHEMATICS

This policy is a statement of the aims, principals and strategies for learning and teaching within the specific area of Mathematics.

The policy was developed by the subject co-ordinator, in conjunction with the Head-teacher, staff-team Governors, during the Summer Term 2018

What does "Mathematics" mean in the Foundation Stage?

"They (sic. children) must develop not only mathematical skills, knowledge, understanding and skills, but also a disposition or inclination to enjoy learning and exploring mathematics. Above all, adults must cherish and enhance the intensity, the ecstatic responses, the exuberance and joy which young children bring to their daily lives, channelling it to support learning throughout their lives"

"Supporting Mathematical Development in the Early Years" Linda Pound 2006

In the Revised EYFS 2012 Mathematics is identified as a "Specific Area" of learning, alongside Understanding the World, Literacy and Expressive Arts and Design.

"The specific areas include essential skills and knowledge. They grow out of the prime areas, and provide important contexts for learning". EYFS 2012

This Specific Area of learning and development is broken down into 2 aspects, and 2 Early Learning Goals (ELG's):

1. Numbers

Children count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.

2. Shape, Space and Measures

Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.

The Revised EYFS (2012) 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”.

To this end, At CMC Nursery, we recognise;

Each child is Unique

“Every child is a unique child who is constantly learning and can be resilient, capable, confident and self-assured”. EYFS 2012

- We value each child as an individual, accepting their individual needs, interests and rates of development.
- We recognise each child as a competent mathematical learner.
- We accept and recognise each child's ability, disability, gender, race, and cultural background, so enabling them to enjoy equality of opportunity and support to reach their full potential.
- We aim to support children in recognising that their views count and that their opinion is valued e.g. in following children's interests and ideas for topics in this area.

The Importance of Positive Relationships

“Children learn to be strong and independent through positive relationships.” EYFS 2012

- We aim to use parents and other carers knowledge and skills wherever possible to extend the children's understanding and experiences of mathematics.
- We aim to be confident and competent mathematical role-models for the children in our care.
- We aim to support children to work together and begin to take account of ideas and preferences which differ from their own.

The Provision of an Enabling Environment

“Children learn and develop well in enabling environments, in which their experiences respond to their individual needs and there is a strong partnership between practitioners and parents and carers.” EYFS 2012

- We aim to provide challenging, flexible, motivating resources and opportunities which support and develop the mathematical skills, independence, creativity and imagination of each child.
- We aim to create an environment where it is “safe” to make mistakes, to share thoughts and ideas, explore different options, and work collaboratively.
- We aim to provide a place where children are able to persevere, concentrate and pursue their own interests.
- We aim to provide resources which are accessible and organised in ways which encourage independence and responsibility (Continuous and Enhanced Provision)
- We aim to create a stimulating environment which offers a range of activities to develop mathematical interest and curiosity both indoors and outdoors.
- All staff aim to use the correct mathematical terminology and vocabulary to support development of the children’s understanding and vocabulary
- We aim to question children in a way which develops their thinking, extends their problem-solving opportunities and enhances their learning (see Appendix 1 Questions to challenge Children to THINK and TALK about their own Learning Process).
- We aim to support children with additional needs by providing supplementary experiences and information about the world around them in appropriate formats.

Learning and Teaching within Mathematics

Learning and Development

At CMC Nursery we aim to give each child the opportunity to:

- have the time, space, resources and opportunities to develop, mathematical concepts and language during activities which arise out of the child's own interests and curiosities (Project-based Learning) and adult-led activities.
- consolidate and extend children’s knowledge and skills through careful assessment, observations and planning.
- explore “real-life” problems by using everyday situations and events as they arise eg “How many cups will we need for snack-time? How can we find out?”
- represent their own explorations of mathematical concepts.
- develop their understanding and confidence through practical “hands-on” activities both indoors and outdoors, which is supported by appropriate adult intervention, and which takes

account of the preferred learning styles of individual children (visual, auditory and kinaesthetic).

- develop their understanding of and competent use of mathematics by offering a range of activities - some explicit and others which develop ideas more discreetly in activities such as role-play, songs and rhymes, everyday routines (such as group-time), walks in the local environment, interactive displays. ICT - (computer/non-computer).
- pursue and solve their own mathematical fascinations through offering them a rich and interesting environment in which they are encouraged to **focus on their own thinking** and not simply offering the adults "the right answer".
- interact with a diverse range of multi-sensory, motivational resources which appeal to young children, takes account of those who for whom English is a second language or who may need to use alternative communication systems, and which promote independent learning, thereby enhancing their understanding, experience and enjoyment of mathematics.

Teaching

At CMC Nursery, Practitioners;

- act as role-models, and help the children to see themselves as mathematicians and to develop positive attitudes towards learning and using mathematical concepts, by being confident and enthusiastic about the subject themselves.
- observe and listen to children to better understand their interests/curiosities and provide opportunities/resources for child-led learning.
- maintain children's enthusiasm and confidence by responding to the children's interests and lines of enquiry as well as planning practical and appealing activities which are appropriate for the children's level of development, and which take account of different learning styles. We aim to support children who need practice in developing basic skills in maths (e.g. some children in receipt of Pupil Premium) and to challenge more-able children to use and apply their mathematical knowledge/skills.
- make use of everyday play activities (e.g. farm - how many pigs do you think will fit in this sty?) or daily routines (e.g. gathering for group-time, sharing snacks) to demonstrate problem

solving strategies, encourage children to think about ways to solve problems and develop the children's understanding of mathematical language. Staff intervene appropriately to develop children's understanding of mathematical concepts (e.g. how many dinosaurs did you fit into your cave?)

- do not rush children to record numbers or symbols until they are ready to do so and see that it is purposeful e.g. price tickets on toys in the toy shop, shopping lists, recipes, measurements to build a den etc. i.e. recording numbers as an integral part of the play situation.
- use a wide-range of resources and activities both *indoors* and *outdoors* to develop the children's enjoyment of mathematics in a varied and stimulating way.

Learning

At CMC Nursery children learn by:

- being supported to follow and develop their own fascinations (child-led learning/provision of a rich and stimulating environment/Continuous Provision) as well as being involved in explicitly mathematical activities i.e. planned, "focused" activities that are organised and led by the adult.
- being involved in play which is purposeful so that they can (with appropriate adult support) begin to appreciate mathematics in the world around them (e.g. numbering model houses so the postman can match letters to the right houses).
- being encouraged to talk "mathematically" about activities or observations. They are encouraged to develop their own strategies for solving mathematical problems. They are praised for their efforts in **thinking** about a problem, for **guessing** (estimating) and not just for giving correct answers.

Planning for Mathematics

Planning for Mathematics at CMC Nursery is devised in line with the EYFS Statutory Framework and Guidance "Development Matters" 2012 and from observation and assessment of children's needs. It includes;

- The Nursery's 2-year rolling programme of 12 termly topics. Topics titled "Maths Stories" and "Number Songs and Rhymes" have a mathematical emphasis.
- Medium Term Planning for Mathematics - linked to each terms topic to ensure coverage of steps toward Early Learning Goals (ELG's)
- Short-Term "Focussed" Key-worker Group-time planning. Within this session Key-workers observe, target and support "target" children - see Weekly Planning. Staff work to a "Target-List" for both Number and Shape, Space & Measures. Children requiring challenge or support are clearly identified. Staff can easily differentiate the activity to offer challenge or smaller steps as necessary. Families are invited to join staff and children in a bi-annual mathematics themed Family Fun-day - "Let's Play Maths".

Planning for Mathematics takes account of;

- Individual stages of development within development bands (EYFS 2012) with an understanding that children develop at different rates and in different ways.
- Observations made of the children.
- Individual Support Plans (I.S.P's) for children with additional needs.
- Preferred learning styles (VAK)
- Monitoring and Evaluation.

Observation, Assessment, Monitoring and Record-Keeping

Children's skills and stages of development are observed and monitored by key-workers and the whole teaching team. Observations may be long or short and supported by evidence such as annotated photographs (using electronic software) or pieces of work when possible.

These observations may also include Levels of Well-being and Involvement (Laevers)

Parents and Carers are encouraged to post their own observations of significant development or learning experiences to their child's Learning Journey. Staff monitor then accept/decline parental contributions as necessary.

Records of individual children's progress and achievement towards objectives and ELG's are kept electronically as part of each child's electronic profile. These observations and records inform planning, identify specific targets for each child, may identify a learning difficulty or talent, and provide the school with the means to monitor cohort progress and collect data on the effectiveness of the provision.

Data collected each half-term identifies children requiring additional support or challenge in the three strands of this specific area of learning.

Children's Progress in Mathematics is shared with parents/carers during the child's Curriculum Consultation at the mid-point of their time at Nursery. This enables two-way sharing of information and the planning of "next steps".

Supporting All our Children's Needs

- Provision will be made to meet the individual requirements of children with any additional needs, to enable them to make progress in this area of learning and achieve their full potential, e.g. through specific targets as part of an Individual Support Plan.
- Staff will liaise and work closely with other professionals involved with the child and respond to the advice they offer.
- Where necessary, resources and equipment (e.g. a computer touch-screen) to support children with additional needs will be procured from other agencies.

Equal Opportunities

At CMC Nursery we aim to offer children and their families a safe environment, free from harassment and discrimination, in which children's contributions are valued and where racial and religious beliefs are respected. We aim to challenge discrimination on the grounds of gender or disability.

All children will be treated as individuals and they will have full access to all elements of provision and opportunities in Mathematics, regardless of gender, ability/disability, race or cultural background.

The Role of the Subject- Co-ordinator

The Subject Co-ordinator is responsible for

- the writing and reviewing of the Policy for Mathematics
- the development and auditing of this area of learning
- ensuring that all children receive their entitlement to all the elements of this area of learning
- monitoring and evaluating the quality of teaching and learning in this area and the children's progress towards ELG's
- monitoring, maintaining and ordering resources

- supporting colleagues in their understanding and delivery of this area of learning
- identifying and attending relevant courses to promote continued professional development (CPD) and to feed-back to the Head-teacher and staff.
- ensure equality of opportunity and access to all aspects of this area of learning
- liaising with the Governor who has curriculum responsibility for Mathematics, in order to support their monitoring role.

APPENDICES

Questions to Develop Cognitive Thinking

This Policy should be read in conjunction with the following Policies;

Policy for Teaching & Learning

SMSC Policy

Policy for Assessment

Policy for Equal Opportunities

EYFS Development Matters for Mathematics

Questions to develop cognitive thinking

What do you need to do next?

Tell me how you did that?

What do you think would happen if?

When have you done something like this before?

How do you feel if?

Yes, that's right, but how did you know it was right?

When is another time you need to?

Stop and look carefully at what you are doing.

What do you think the problem is?

Can you think of another way we could do this?

Why is this one better than that one?

Where have you done that before to help you solve a problem?

Let's make a plan so we don't miss anything.

How can you find out?

How is different from (like)?