STANDARD 12 – Learning and Development

Standard 12.6–Curriculum Policy for Mathematics

Aim

To foster enthusiasm, confidence, and the development of knowledge in exploring, using and applying a broad range of mathematical concepts.

Objectives

To provide all children with broad and varied experience in which mathematical language, skills and concepts can be created, supported, and nurtured.

Operating Policy

The children will have an opportunity to observe peers and adults using and applying mathematical skills and concepts in everyday situations and in Preschool based activities. Maths is not seen as a separate area but rather as part of the whole curriculum and potential for developing mathematical awareness is built into all the activities provided by the Preschool.
The children will have the opportunity to explore the properties of a wide range of materials in a range of contexts which will include much free play experience with and without adult input, and experience of real life situations such as shopping, cooking, sharing etc.
Confidence and enthusiasm will be supported through sensitive adult input which will provide for open ended questioning and the development of mathematical thinking and language.

Programme of Work

Learning will be achieved via a mixture of subject, cross-curricular and child initiated activities. The curriculum will be delivered through both adult led and structured free play activities.
The programme of work will include opportunity for topic based and general activities which will encourage the children to explore, investigate and question.
Activities will involve the use of both natural and man-made material, selected to support the children's learning. The activities will be of a free play or teacher directed nature, and will be based upon structured play.
Where play is properly structured, and there is sensitive intervention and language input from adults, the child can gain knowledge of mathematical concepts and language in an incidental manner.
The children need many experiences of sorting, matching, and comparing a wide variety of objects and materials in order that they can begin to count systematically and understand the true meaning of number.
There are certain concepts which the child needs to understand, and in planning Preschool activities we aim to provide the children with practical experience to enable the development of this understanding.
In planning these activities, we are very much aware that each child is an individual and that not all children will grasp concepts and ideas at the same rate or level. It is of utmost importance that the child is allowed to explore and experiment before being given more structured activities - ideally there will be four stages of development in the mathematical experience of the children: -

a. Children should be allowed to play with as many activities and materials as possible without adult intervention.
b. Children play with materials which have been deliberately provided by the adult, in order to encourage the acquisition of certain concepts, but still without adult intervention.
c. Children play with materials of their own choice with the active involvement of the adult.
d. Children play with materials selected, guided and led by the adult.

The programme will include some or all, of the following activities:

Shape:

- Free play with a wide variety of natural objects - shells, leaves, stones, etc. with language input from the teacher where appropriate.
- Free play with manmade objects e.g. bricks, logic blocks.
- Model making using boxes and junk materials.
- Describing and identifying shapes - first by sight and later by touch – words such as fat, thin, long, short, spiky, sharp, smooth, etc. can be introduced.
- Simple movement themes - long shapes/snakes, short shapes/a tiny seed, etc.
- Play with jigsaws.
- 2D patterns - printing, painting, paper cutting etc.
- Collage.
- Drawing around shapes.
- Shapes in the environment - traffic signs, vehicles, food, etc.
- Collapsing cardboard containers - looking at shapes when flat, then rebuilding.
- Symmetry can be experienced on a simple level by folding paper and painting on one side only, and then reprinting by folding over the other side.

Sorting:

- Free sorting according to the child's own choice.
- Sorting by one attribute e.g. ' let's find all the red ones'.
- Sorting by two or more attributes from a simple collection of objects e.g. 'find the blue cars' from an assorted collection of vehicles.
- Sorting more than one type by one or more attributes from a mixed collection – 'find the big red beads and the shiny black buttons'.
- Cooking - sorting ingredients and equipment, things which melt, things which do not, foods we have to chew, liquids or solids, hot or cold, etc.
- Art - making pictures by selecting one colour from a mixed box of collage materials, making sets of objects with a variety of materials, dividing paper into sections and sorting handprints by colour into each section.
- Sand - sorting objects which have holes, handles, are large or small, etc.
- Water - sorting objects which float or sink, sorting objects which hold water and those that do not, sorting the equipment by shape, size, or colour.
- Construction toys - sorting by colour, shape, size, texture, etc.
- Stories/rhymes - choosing all the stories with pigs in them, or all the songs with frogs etc.
- Imaginative play - sorting all the teaspoons from a collection of spoons, all the cups, finding clothes according to colour/size, sorting all the fruit/vegetables into colours, families, etc.

Matching:

- Teacher finds one object, child finds the match.
- Matching sequences - red bead, blue bead, red bead, etc.
- Matching one cup to one saucer, knife, and fork to place, spoon to dish, etc.
- Matching apron to activity - art apron, water apron, cooking apron.
- Buttoning coats - one button to one hole.
- Making patterns and copying them; both on paper and non-permanently with a variety of objects.
- Matching by size, shape, texture, taste, etc.
- Putting toys back in appropriate places.

Pattern:

- Looking for patterns in the environment e.g. brickwork, floor tiles, animal markings, leaves and flowers.
- Making patterns in painting, printing, and collage activities.
- Making 3D patterns with bricks and beads.
- Copying and continuing patterns on paper and in 3D.
- Using computer programs to create and manipulate patterns.

Ordering:

- Looking at and talking about pictures which contain varying amounts of objects.
- Playing with grading blocks, number pegs, grading jigsaws, stacking cups, etc.

Learning to Count:

- Reciting number rhymes.
- Reading counting books.
- Modelling counting through play-based activities and being given opportunities to count real objects

Numerals:

- The children can participate in counting exercises and watch the numerals being written down.
- Prices can be looked at when role playing shops.
- House numbers can be talked about and written down.
- Telephone digits can be observed.
- Drawing the corresponding number symbol next to a group of objects.

Capacity:

- Activities of a simple and an incidental, questioning nature - e.g. 'I wonder whose bottle holds the most water?'

Money:

- Play with pretend money, 'buying' items from a role-play shop.
- Children can accompany staff to the local shops to purchase items for use in the Preschool and observe the exchange of money for goods.

Time:

- Discussion about how the children's day is divided into times - playtime, story time, snack time, home time, etc.
- Discussion about how adults use clocks and watches to help them know what time it is and therefore at what time, according to the clock, we have drinks or go outside, etc.
- Free play with watches, clocks, timers etc. to help the child to recognise the role of number in telling the time and partitioning the day into times for doing certain activities.
- Discussion about days of the week, yesterday, tomorrow, last week, next week, etc.
- Discussion using pictorial timeline. o Discussion about the seasons can all help to develop a sense of awareness about time and the passage of time.

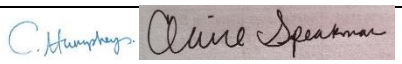
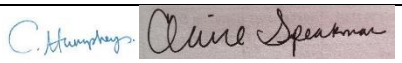
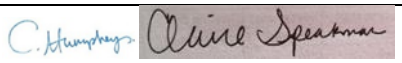
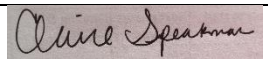
Planning, recording and assessment

Planning takes place on a weekly, half-termly and termly basis following children's interests. Activity planning occurs on a daily basis. The planning sheets used by the Preschool are laid out to identify each of the areas of learning in the Early Years Foundation Stage Curriculum. This ensures that mathematical development is considered whenever planning is done

Planning also occurs on a weekly or daily basis whereby staff select a specific mathematics activity for the children to use during focussed time and free play. Items are rotated so that all resources are used, providing broad experience for the children.

Staff are able to observe the children and records of such observations can be recorded on Tapestry.

Samples of the children's work which relate to Mathematics are kept in the child's individual folder as appropriate, photos are taken and shared with parents through Tapestry or their work is displayed around the setting.
Assessment is carried out through a mixture of informal observation, interaction with the child, the use of the information on record sheets and discussion during regular staff meetings. The information gathered during the assessment process is then used for future planning of activities for each child. Information gained through recording and assessment will be shared with parents, other school staff and outside agencies as appropriate.

This policy was adopted by	Horsted Keynes Preschool
On	1st March 2017
Reviewed 1st Mar 2018	
Reviewed 1st Mar 2019	
Reviewed 1st Mar 2020	
Reviewed 1st Mar 2021	
Reviewed 1st Mar 2022	
Signed on behalf of the provider	
Name of signatory & Role of signatory	Clare Humphreys Manager
Countersigned by Chair of committee	
Name of Counter signatory	Claire Speakman