



St Peter's Nursery Maths Scheme of Learning

Daily Skills

Maths should not only be taught during specific maths sessions but wherever possible throughout the day through lots of the class routines and through lots of incidental learning. The following should be utilised to support maths teaching:

- Register routines e.g. days of the week song/talking about the day, counting how many children are here and representing on a tens frame
- General counting e.g. counting how many bananas there are in the fruit box
- Counting songs
- Use of ordinal numbers e.g. "Sam line up first, Lilly line up second..."
- Maths games such as counting games and dice games (board games)
- Noticing maths in the environment e.g. shapes, numerals
- Incorporating maths in areas of continuous provision e.g. containers for filling and emptying in the water tray, balance scales in the role play, amounts and numerals for matching, shapes for creating pictures etc
- Meaningful numerals around the room e.g. how many children can play in an area at once, numbered bikes to park, how many children are here today

Key Language

Cardinal - The number that identifies how many there are in a set

Numeral - The written symbol for a number e.g. 1, 2, 3

Subitise - Instantly recognise a small quantity without having to count how many there are

More and fewer; more than and fewer than - Used when talking about an amount of objects

More and less; more than and less than - Used when talking about the number e.g. 2 is less than 4



Key Representations

Five Frames & Ten Frames



Numicon



Fingers



Dice



Cubes



Numerals



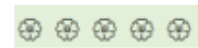
Real Life Objects



Number Blocks



Drawing/Pictures



Autumn 1 Overview

Recognising and naming colours

Children should be taught to recognise and name colours in a variety of contexts e.g. toys within the classroom, colours in nature, colours in the environment, matching colours, colours on themselves such as hair, skin, clothes. Children should be able to say when objects are and are not the same colour.

Links to expressive art and design.

Key Vocabulary: notice, match, same, colour

Sorting

There should be a focus on reasoning within sorting e.g. how have you sorted the animals/button? Children should be given the opportunity to sort the objects by their own rules and should be taught how to communicate that rule e.g. I have sorted the buttons by colour. This should be explored in many different contexts such as shapes, different coloured and size objects, different animals, objects found in the environment, appearance of various objects and people. Children should be taught to verbalise what is the same and what is different between sets of objects e.g these buttons are pink and these buttons are blue.

Links can be made to Understanding of the World.

Key Vocabulary: sort, notice, groups, sets, same, different

Pattern

Developing an awareness of pattern helps children to notice and understand mathematical relationships. Children should initially be taught to continue an AB



pattern. Children need the opportunity to see a pattern, talk about what they can see and to continue a pattern. At first they may do this one object at a time e.g red cube, blue cube, red cube... verbalising the pattern helps. Children may then be asked to say what they would add next to continue it.

For further progression in Pattern see NCETM Early Years Typical Progression Chart – Pattern.

Key Vocabulary: pattern, continue, notice, next

Autumn 2 Overview

Size

At this stage only focus on large/big and small/little. Use real life examples of objects that are large and small in relation to each other. Begin with objects that are vastly larger/smaller than each other and move onto objects with a smaller difference in size. Include reasoning e.g. 'do you think this large tree would fit into my small box?'

Key Vocabulary: notice, big, large, small, little The _____ is smaller/larger than the _____.

Counting principles

1. **The one-one principle** – this involves children assigning one number name to each objects that is being counted. Children need to ensure that they count each objects that is being counted only once ensuring that they have counted every object. Children will sometimes count objects more than once or miss an object out that needs to be counted. Encourage children to line up objects and touch each one as they count saying one number name for each object. This will also avoid children counting more quickly than they touch the objects which again shows that they have not grasped one-one correspondence. When counting pictures children should use the strategy of drawing a line through each picture as they count it. Children should be taught number names through number songs and general counting.

2. **The stable-order principle** – children understand when counting that the numbers have to be said in a certain order. Children need to know all the number names for the amount in the group they are counting. Teachers can therefore encourage children to count aloud to larger numbers without expecting them to count that number of objects immediately. The order of numbers should be reinforced through number songs and daily counting activities.

3. **The cardinal principle** – Children understand that the number name assigned to the final object in a group is the total number of objects in that group. In order to grasp this principle, children need to understand the one-one and stable-order principles. From a larger group, children select a given number and count them out. When asked 'how many?' children should be able to recall the final number they



said. Children who have not grasped this principle will recount the whole group again.

4. The abstraction principle – this involves children understanding that anything can be counted including things that cannot be touched including sounds and movements. When starting to count many children rely on touching the objects in order to count accurately. Teachers can encourage abstraction on a daily basis by counting claps or clicks.

5. The order-irrelevance principle – this involves children understanding that the order we count a group of objects is irrelevant. There will still be the same number. Encourage children to count objects left to right, right to left, top to bottom, bottom to top. Once children have counted a group, move the objects and ask children how many there are. If they count them all again they have not fully grasped this principle.

Other resources NCETM Early Years Typical Progression Chart – Cardinality and Counting

Key vocabulary: count, how many, total, altogether

Comparing

Children need progressive experiences where they can compare collections and begin to talk about which group has more things. When talking about amounts of objects use the language of more and fewer. Children should initially be taught perceptual comparing (comparing without counting). Initially the groups need to be very obviously different e.g. 2 objects and 7 objects. Move on to collection of small numbers of objects that are similar e.g. 1 and 3 objects. Then move onto different items but same quantity (using language of same or equal).

For further progression in comparing see NCETM Early Years Typical Progression Chart – Comparison.

Key vocabulary: compare, more, fewer, same, equal There are more _____ than _____ / there are fewer _____ than _____.

Spring 1 & Spring 2 Overview

Numbers

Always consider the counting principles. Wherever possible, ensure that children are counting real-life objects. They could start by counting objects that are identical before moving on to counting objects that have slight differences. Encourage children to put objects in a line when counting so they have a clear start and end point. The five frame can be used to support children in lining up objects to count. It will also support children to subitise numbers within 5, then move onto the ten frame for number 6 and beyond. Numerals can also be introduced to children but they are not expected to write them at this stage. They could use drawings to represent their



numbers. Do not move past a number until most of the group are secure with the previous number.

For each number explore:

Number blocks episode

Counting

Finding objects

Its position on a number line, ordinal numbers

Numicon

Dice

Subitising

Representing five/ten frame

actions e.g. 1 hop, 1 jump, 1 clap

The numeral and formation

Number in the environment

Representing using marks, pictures and fingers

Matching numeral to quantity

Composition – e.g. 1 is a part of me, 1 is a part of me and the whole of me is 2.

Note: do not introduce children to addition or number sentences until Reception.

Follow Number 1 with a week on a 1 sided shape – circles, including in the environment. Follow Number 3 with a week exploring 3 sided shapes – triangles. Including in the environment and exploring different varieties and orientations of triangles. Follow Number 4 with a week exploring 4 sided shapes – rectangles and squares, including in the environment.

Other resources: Number Blocks series 1, <https://nrich.maths.org/13372>

Key vocabulary: number, numeral, subitise, represent, how many, count, cardinal, first/second/third etc.

Summer 1 Overview

Shapes

The primary focus in relation shapes should be on the properties of shapes. For example, children should be encouraged to notice and describe shapes in the environment and talk about the properties using words such as



'straight/flat/round/curved'. When teaching the names of shapes, wherever possible, real life shapes in the environment should be used.

Other Resources: NCETM Early Years Typical Progression Chart –Shape and Space, <https://nrich.maths.org/13373>

Key vocabulary: edge, curve, straight, round, flat, sides, face, corner, smooth *Note: This is for staff to model*

My Day

Children should explore talking about and ordering the events of their day such as waking up, coming to school, dinner, bed time. Encourage the vocabulary of first, next, then and last.

Key vocabulary: first, next, then, last

Length and Height

In the first stage children should be able to apply the attribute of long, short, tall etc to various examples (e.g. a bus is long; an adult is tall; grass is short). Adults should be continuously modelling this language. The children should then move on to finding objects that are longer/shorter than a given item. They should be encouraged to utilise strategies such as direct comparison e.g. placing objects side by side to determine which is longer. When comparing length and height verbally children should be encouraged to use language such as 'taller than/longer than/shorter than'. When comparing lengths directly children need to ensure that they align the starting points and compare like-for-like e.g. straightening skipping ropes before comparing lengths.

Other Resources: NCETM Early Years Typical Progression Chart – Measures <https://nrich.maths.org/13374>

Key vocabulary: long, short, tall, longer than, shorter than, taller than The _____ is longer/shorter/taller than the _____.

Summer 2 Overview

Weight

Initially begin with identifying objects the children think may be heavy – use lots of adult modelled language. Move on to comparing weights. One way to identify this is to identify that a heavier object creates a greater downwards pull. Ask children to hold a carrier bag; encourage them to notice if it feels as though their hand is being pulled down when something heavy is put in it. Place a carrier bag in each hand and identify which one is heavier by discussing which arm feels more pulled down. Explore the link to the balance scales to show that the heavier side goes down.



Exemplify this with a see-saw 'What can we do to make this side of the see-saw go down?'. Ensure that children are presented with large but light objects and small but heavy objects to prevent the generalisation that big means heavy and small means light.

Other Resources: NCETM Early Years Typical Progression Chart – Measures
<https://nrich.maths.org/13374>

Key vocabulary: Heavy, heavier than, light, lighter than, balanced The _____ is heavier than/lighter than the _____.

Capacity

Children should be given daily opportunity for sand and water play which can provide lots of opportunities to explore capacity. Children should be able to identify when a container is empty, full and half full. Initially children should be exposed to the comparison of full, half full, empty using the same container. However this can be moved on by talking about different size containers e.g. 'I wonder whose pot will hold the most water?' When comparing capacities directly children can pour from one container to another to find which holds more or less water.

Other Resources: NCETM Early Years Typical Progression Chart – Measures
<https://nrich.maths.org/13374>

Key vocabulary: full, half full, empty, most, least The container is full/half full/empty. The _____ holds the most/least water.

Positional Language

Children need opportunities to be exposed to and to use the language of position and direction; Position: 'in', 'on', 'under'. Direction: 'up', 'down', 'across' Children also need opportunities to use terms which are relative: 'in front of', 'behind', 'on top of'. Create as many opportunities as possible to explore this language such as hunting for hidden objects with some prompts e.g. look behind the shed.

Other Resources: NCETM Early Years Typical Progression Chart – Shape and Space
<https://nrich.maths.org/13373>

Key vocabulary: in, on, under, up, down, across, in front of, behind, on top of. The _____ is (position) the _____

The final weeks at the end of the year provide a good opportunity to re-visit anything needed, particularly 2D shape and counting principles.