Key Learning in Mathematics – Nursery

This document has been created to support curriculum development in nursery settings, using the guidance from the Development Matters (*DfE Non-statutory curriculum guidance for the early years foundation stage 2021*). The statements in regular text are taken from Development Matters with birth to 3 and 3 & 4 year olds alongside to indicate the stage at which these elements are likely to be learnt. The italicised statements are adapted from the Learning and Progression Steps (LAPS) for EYFS which are pre-cursor steps to support acquisition of effective mathematical understanding, including the Early Learning Goals, in the Reception year.
This resource is to support the planning of a coherent curriculum and as such it **is not** designed to be a tick-list for assessment purposes.

Whilst we have indicated the stages of children's development alongside each statement, it should be noted that not all children develop at the same rate so these should be used as a guide only. The Department for Education states:
"Development Matters sets out the pathways of children's development in broad ages and stages. However, the actual learning of young children is not so neat and orderly… Examples of effective practice mentioned early on are often relevant for older children."

Development Matters 2021 (Pages 3 and 4)

The italicised objectives have been added by the Lancashire Mathematics Team, to support progression and enable children to develop a secure understanding of the mathematical concepts they are learning. The Department for Education states:
"Depth in learning matters much more than moving from one band to the next or trying to cover everything. A child's learning is secure if they show it consistently and in a range of different contexts. For example, it is important to give a child many opportunities to deepen their understanding of numbers up to five. There is no value in rushing to 10."

Development Matters 2021 (Page 4)

You can find the full Development Matters document here:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/944603/Development_Matters_-_non-statuatory_cirriculum_guidance_for_EYFS.pdf

Key Learning in Mathematics – Nursery

Number – counting

Rote counting

- Take part in finger rhymes with numbers (birth to 3)
- Recite numbers past 5 (3 & 4 year olds)
- *Rote count back from 5 to 1 or 0 (3 & 4 year olds)*

Counting objects

- Counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence (birth to 3)
- *Understand that counting is to find out how many (birth to 3)*
- Say one number for each item in order: 1, 2, 3, 4, 5 (3 & 4 year olds)
- Know the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle') (3 & 4 year olds)
- Count in everyday contexts, sometimes skipping numbers – '1-2-3-5' (birth to 3)
- *Count reliably up to 5 in everyday contexts (3 & 4 year olds)*
- Show 'finger numbers' up to 5 (3 & 4 year olds)
- *Understand and use conservation of number (3 & 4 year olds)*
- *Use the word 'zero' to represent 'none' (3 & 4 year olds)*
- Compare amounts, saying 'lots', 'more' or 'same' (birth to 3)
- Compare quantities using language: 'more than', 'fewer than' (3 & 4 year olds)
- Fast recognition of up to 3 objects, without having to count them individually (subitising) (3 & 4 year olds)
- Solve real world mathematical problems with numbers up to 5 (3 & 4 year olds)

Number – number sense

- *Partition a set of objects in different ways (3 & 4 year olds)*
- *Know that numbers greater than 1 can be made in different ways (3 & 4 year olds)*

Number – number recognition

- *Recognise and identify numerals 0 to 5 (3 & 4 year olds)*
- Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5 (3 & 4 year olds)

Number – graphics

- Experiment with their own symbols and marks as well as numerals (3 & 4 year olds)
- *Represent and explain their thinking in their own ways (birth to 3)*

Number – calculating

- React to changes of amount in a group of up to three items (birth to 3)
- *Understand the concept of addition by practically combining sets of objects to find how many (3 & 4 year olds)*
- *Understand the concept of subtraction by practically removing one amount from within another to find how many are left (3 & 4 year olds)*
- *In real life contexts find one more and one less than a given number (3 & 4 year olds)*
- *In real life contexts add two single-digit numbers totalling within 5, using practical equipment (3 & 4 year olds)*
- *In real life contexts subtract a single-digit number from a number up to 5, using practical equipment (3 & 4 year olds)*

Measurement

Distance

- *Describe and* compare sizes using gesture and language – 'bigger/little/smaller', 'high/low', 'tall', (birth to 3)
- Make comparisons between objects relating to size, length *and height e.g. longer / shorter; wider / narrower; taller / shorter* (3 & 4 year olds)
- *Find an object of similar length/width/height (3 & 4 year olds)*

Weight

- *Describe and* compare weights using gesture and language – 'heavy' (birth to 3)
- Make comparisons between objects relating to weight *e.g. heavier/lighter* (3 & 4 year olds)

Volume/capacity

- *Use language of full and empty to describe the amount in different containers (birth to 3)*
- Make comparisons between objects relating to capacity *e.g. more/less* (3 & 4 year olds)

Money

- *Understand that we need to pay for goods (3 & 4 year olds)*
- *Talk about things they want to spend their money on (3 & 4 year olds)*
- *Talk about different ways we can pay for things (3 & 4 year olds)*
- *Recognise that there are different coins and notes (3 & 4 year olds)*

Time

- *Talk about significant times of the day, e.g. home time, lunch time, snack time, bed time, etc. (birth to 3)*
- *Understand and use language – before, after, yesterday, today, tomorrow (3 & 4 year olds)*
- Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then…' (3 & 4 year olds)
- *Know some names of the days of the week (3 & 4 year olds)*

Shape

- Combine objects like stacking blocks and cups (birth to 3)
- Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round' (3 & 4 year olds)
- *Know that shapes can appear in different ways and be different sizes (3 & 4 year olds)*
- Build with a range of resources (birth to 3)
- Complete inset puzzles (birth to 3)
- Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. (3 & 4 year olds)
- Combine shapes to make new ones – an arch, a bigger triangle etc. (3 & 4 year olds)

Statistics

- *Sort objects and say what features they have in common (3 & 4 year olds)*

Space

- Put objects inside others and take them out again (birth to 3)
- Climb and squeezing selves into different types of spaces (birth to 3)
- Understand position through words alone – for example, "The bag is under the table," – with no pointing (3 & 4 year olds)
- Describe a familiar route (3 & 4 year olds)
- Discuss routes and locations, using words like 'in front of' and 'behind' (3 & 4 year olds)
- Notice patterns and arrange things in patterns (birth to 3)
- Talk about and identifies the patterns around them. For example, stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', blobs' etc. (3 & 4 year olds)
- Extend and create ABAB patterns – stick, leaf, stick, leaf (3 & 4 year olds)
- Notice and correct an error in a repeating pattern (3 & 4 year olds)