

## Progression Guidance for Mathematics from Early Years

### Overview

Mathematics in the EYFS Framework has its own area of learning and includes aspects of Number and Numerical Patterns. As part of the EYFS Reforms (September 2021), Shape, Space and Measures was removed from the Mathematics area of learning within the EYFS Framework. Consequently, Shape, Space and Measures was also removed as an Early Learning Goal. Despite this, Shape, Space, Measures and Pattern continue to be fundamental skills which impact on many other areas of learning. It remains important to ensure that children within EYFS are given a broad mathematics curriculum which provides them with the necessary skills and knowledge within shape, space, measures and pattern to access the KS1 curriculum in year 1.

The following table shows how the Statutory EYFS Framework Educational Programmes (curriculum) fit alongside Year 1 subject content and how Year 1 key skills, knowledge and understanding fit alongside relevant early learning goals (assessment). In addition, suggested key skills, knowledge and understanding for EYFS are provided. These are intended as guidance only. Individual schools should review their own curriculum and identify the appropriate skills, knowledge and understanding to be taught based on knowledge of their unique school context. In addition, it should be noted that the Early Learning Goals must not be used in any way to limit the wide variety of rich experiences that are crucial to a broad and balanced curriculum.

Maths – Shape, Space, Measures and Pattern		
Year 1 Subject Content	EYFS Educational Programmes (Curriculum)	Suggested EYFS Key Skills, Knowledge and Understanding* (Curriculum)
Geometry – Properties of Shapes	<b>Mathematics</b>  Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using	<ul style="list-style-type: none"> <li>Select and rotate shapes to fit into a given space</li> <li>Use positional vocabulary, including relative terms, to describe where things are in small-world play</li> <li>Show intentionality in selecting shapes for a purpose, such as cylinders to roll</li> <li>Make a range of constructions, including enclosures, and talk about the decisions they have made</li> <li>See shapes in different orientations and recognise that they are still that shape</li> <li>Recognise a range of triangles and say how they know what they are</li> <li>Find something that is longer, shorter, heavier, lighter (etc.) than a reference item</li> </ul>
Geometry – Position and Direction		

<p>Measurement</p>	<p>manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.</p>	<ul style="list-style-type: none"> <li>• Find an appropriate container for a specific item</li> <li>• Describe the location of something using positional language</li> <li>• Accurately use the relative terms 'yesterday' and 'tomorrow'</li> <li>• Order a short sequence of events</li> <li>• Continue, copy and create an AB pattern</li> <li>• Identify the pattern rule (unit of repeat) in an AB pattern</li> <li>• Continue, copy and create ABB, ABBC (etc.) patterns</li> <li>• Identify the pattern rule (unit of repeat) in ABB, ABBC (etc.) patterns</li> <li>• Spot an error and 'correct' a pattern</li> <li>• Explain whether a circular pattern is continuous or not</li> </ul> <p><i>*Taken from NCETM Early Years Typical Progression Charts with additional guidance for practitioners, 2018.</i></p>
--------------------	---	--

- Geometry – Properties of Shapes**
- Recognise and name common 2-D and 3-D shapes, including:
    - 2-D shapes [for example, rectangles (including squares), circles and triangles]
    - 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]
- Geometry – Position and Direction**
- Describe position, direction and movement, including whole, half, quarter and three-quarter turns
- Measurement**
- Compare, describe and solve practical problems for:
    - lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
    - mass/weight [for example, heavy/light, heavier than, lighter than]
    - capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]
    - time [for example, quicker, slower, earlier, later]
  - Measure and begin to record the following:
    - lengths and heights
    - Mass/weight
    - capacity and volume
    - time (hours, minutes, seconds)
  - Recognise and know the value of different denominations of coins and notes
  - Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
  - Recognise and use language relating to dates, including days of the week, weeks, months and years
  - Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times

NA

- *\*The ELGs should not be used in any way to limit the wide variety of rich experiences that are crucial to a broad and balanced curriculum.*

Maths – Number and Numerical Patterns		
Year 1 Subject Content	EYFS Educational Programmes (Curriculum)	Suggested EYFS Key Skills, Knowledge and Understanding* (Curriculum)

Number and Place Value	<p><b>Mathematics</b></p> <p>Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.</p>	<ul style="list-style-type: none"> <li>• Consistently recite the correct sequence of numbers and cross decade boundaries</li> <li>• Collect nine from a large pile, e.g. nine pencils from a pot</li> <li>• Subitise (instantly recognise) a group that contains up to four, then five, in a range of ways, e.g. fingers, dice, random arrangement</li> <li>• Select a numeral to represent a quantity in a range of fonts, e.g. ,</li> <li>• Correct a puppet who thinks the amount has changed when their collection has been rearranged</li> <li>• State which group of objects has more with a large and/or small visual difference</li> <li>• Compare two numbers and say which is the larger</li> <li>• Predict how many there will be if you add or take away one</li> <li>• Subitise small groups within a larger number</li> <li>• Make a reasonable guess at a hidden number</li> <li>• In context, state two groups that make a larger amount. For example, how might the (six) bean bags land? You could have three with stripes up and three with spots up.</li> <li>•</li> </ul> <p><i>*Taken from NCETM Early Years Typical Progression Charts with additional guidance for practitioners, 2018.</i></p>
Addition and Subtraction		
Multiplication and Division		
Fractions		

### Number and Place Value

- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
- Given a number, identify one more and one less
- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
- Read and write numbers from 1 to 20 in numerals and words

### Addition and Subtraction

- Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract one-digit and two-digit numbers to 20, including zero

### Multiplication and Division

- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as  $7 = - 9$
- Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

### Fractions

- Recognise, find and name a half as one of two equal parts of an object, shape or quantity
- Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity

### Number

- Have a deep understanding of number to 10, including the composition of each number
- Subitise (recognise quantities without counting) up to 5
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

### Numerical Patterns

- Verbally count beyond 20, recognising the pattern of the counting system
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally

*\*The ELGs should not be used in any way to limit the wide variety of rich experiences that are crucial to a broad and balanced curriculum.*

## Step by Step Guidance to Support Planning for Shape, Space and Measures in Maths Progression

1.	Establish where, when and how often, children are given opportunities to develop the Characteristics of Effective Teaching and Learning which will prepare them for accessing all subject areas in KS1.
2.	Establish where and when children are given opportunities to explore the identified skills, knowledge and understanding across EYFS which will prepare them for accessing Mathematics in KS1.
3.	Map out where Shape, Space and Measures will have a predominant focus within EYFS teaching and learning. As well as direct teaching, you should also consider child-led learning and how the physical learning environment lends itself to Mathematics

4.	Look at the progression of your subject across school.	<p>Consider:</p> <ul style="list-style-type: none"> <li>• What children cover in Early Years</li> <li>• When mathematics topics or skills are revisited later on in school</li> <li>• If the curriculum offer in Early Years provides the appropriate foundations for future learning</li> <li>• What specific skills and knowledge children are learning in Early Years related to mathematics</li> <li>• If these skills provide children with the foundations needed to apply these skills in Year 1 and beyond</li> </ul>
5.	Map out the skills and knowledge children will achieve throughout their time in Early Years	<ul style="list-style-type: none"> <li>• What skills, knowledge and understanding will children have in mathematics by the end: <ul style="list-style-type: none"> <li>○ Autumn term, Spring term and Summer term of Nursery?</li> <li>○ Autumn term, Spring term and Summer term of Reception?</li> </ul> </li> <li>• Is this learning progressively sequenced?</li> <li>• Does this provide the opportunity to integrate new knowledge into larger concepts?</li> <li>• Are links made between new and previous learning?</li> </ul>
6.	Map out the vocabulary associated with mathematics children will learn at different points throughout Early Years. Does this vocabulary help to prepare children for the next phase?	
7.	Monitor the implementation of the long-term plan (set out by following steps 1-6).	<p>Consider:</p> <ul style="list-style-type: none"> <li>• The opportunities children have to apply mathematical knowledge and skills and embed understanding through child-initiated learning</li> <li>• The opportunities children have to embed learning through different contexts, e.g. across multiple areas of the Early Years environment during play</li> <li>• How adults support children to learn and understand specific vocabulary related to mathematics</li> </ul>
8.	Assess the impact of the long term plan and implementation process.	<ul style="list-style-type: none"> <li>• Are children able to demonstrate the skills (identified in step 1 and 2)?</li> <li>• Can children use and apply the taught vocabulary?</li> <li>• Are children confident with basic concepts related to mathematics by the end of Reception?</li> <li>• Do children enter Year 1 ready for the Mathematics National Curriculum Programme of Study?</li> </ul>