

**Early Years Foundation Stage**  
**Area of Learning and Development: Mathematics**

**Educational Programme for Mathematics**

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.

<b>Development Matters Non-Statutory</b>	<b>Early Learning Goal – Number Statutory</b>	<b>Early Learning Goal – Numerical Patterns Statutory</b>
<p>Children in Reception will be learning to:</p> <p>Count objects, actions and sounds.</p> <p>Subitise</p> <p>Link the number symbol (numeral) with its cardinal number value.</p> <p>Count beyond 10</p> <p>Compare numbers</p> <p>Understand the 'one more than/one less than' relationship between consecutive numbers.</p> <p>Explore the composition of numbers to 10.</p> <p>Automatically recall number bonds for numbers 0–10.</p>	<p>Children at the expected level of development will:</p> <p>Have a deep understanding of number to 10, including the composition of each number.</p> <p>Subitise (recognise quantities without counting) up to 5.</p> <p>Automatically recall (without reference to rhymes, counting or other aides) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts</p>	<p>Children at the expected level of development will:</p> <p>Verbally count beyond 20, recognising the pattern of the counting system.</p> <p>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.</p> <p>Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.</p>

<p><b>Shape Space and Measure</b>  Children in Reception will be learning to:  Select, rotate and manipulate shapes in order to develop spatial reasoning skills.  Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.  Continue, copy and create repeating patterns.  Compare length, weight and capacity.</p>		
<p><b>Planning for Learning (LPDS)</b>  <b>Skills, Knowledge, Concepts – what children can do, know and understand.</b></p>		
<p><b>Key Learning linked to Mathematic - Number and Numerical Patterns</b></p> <p><b>Rote Counting</b>  Rote count from 1.  Rote count on from a given number between 1 and 20.  Rote count back from 5 to 1 then from 10 to 1.  Rote count back from a given number between 1 and 20.  Know what number comes before, or after a given number.  Say a number between two given numbers.  Rote count beyond 20.</p> <p><b>Recognition</b>  Recognise and identify numerals 0 to 20.  Select the numeral that represents a set of objects.  Order numerals 0 to 20.</p> <p><b>Counting Items</b>  Understand that counting is to find out how many.  Use one to one correspondence when counting.  Understand the last number said is the number in the set.  Count up to 20 objects, pictures, sounds and actions.  Understand and use conservation of number.  Use the word 'zero' to represent 'none'.  Compare two sets of different objects saying which set is more, greater, fewer, less, same, equal.  Order three or more sets of objects.  State without counting (subitise) quantities within 5.</p>		

Make a sensible guess of quantities within 10

### **Sense**

Partition a set of objects in different ways using the terminology part - part – whole. Explore the patterns in odd and even numbers.

Understand that ‘teen’ numbers are a group of 10 plus another number.

Understand 20 is the same as two groups of 10.

Recognise repeating patterns in the counting sequence i.e. 6, 7, 8, 9; 16, 17, 18, 19; 26, 27, 28, 29.

### **Ordinal Numbers**

Understand and use ordinal numbers.

### **Fractions**

Understand that sharing is splitting an amount into equal parts.

Understand that halving is sharing into two equal parts.

Understand that doubling is adding the same number to itself.

Automatically recall double facts to 10.

### **Graphics**

Represent amounts in their own ways.

Represent their thinking in their own ways.

Talk about their representations.

Write numerals 0-9, 10-2

### **Calculating**

Understand the concept of addition by practically combining sets of objects to find how many and use the terminology part – part – whole.

Understand the concept of subtraction by practically removing one amount from within another to find how many are left and use the terminology part – part – whole.

Relate subtraction to addition in practical situations using the terminology part – part – whole.

Identify one more and one less than a given number.

Identify two more and two less than a given number.

Add two single-digit numbers totalling up to 10, using practical equipment.

Add two single-digit numbers totalling greater than 10, using practical equipment.

Subtract a single-digit number from a number up to 10, using practical equipment. Subtract a single-digit number from a number greater than 10, using practical equipment.

Automatically recall addition and subtraction facts up to 5 and some addition and subtraction facts to 10.

### **Vocabulary**

Number, order, count, pattern, next, forwards, backwards.

More, less, fewer, altogether, equals, the same as, how many, too many, lots of, not enough, fewer than, before, after.

Zero, one, two, three...

## **Shape Space and Measure**

### **Shape**

Use everyday language to talk about shapes in the environment.

Build and make models with 3D shapes.

Create patterns and pictures with 2D shapes.

Name common 2D shapes (circle, triangle, square, rectangle, oblong).

Name common 3D shapes (sphere, cube, cuboid, cone).

Talk about using mathematical language (straight, curved, sides, flat, solid).

Sort shapes according to their own criteria.

Know that shapes can appear in different ways and be different sizes.

### **Space**

Understand and use positional language in everyday situations.

Understand and use ordinal numbers when describing position.

Understand and use the language of movement/direction.

Recognise patterns made of objects, numbers and shapes.

Describe patterns made of objects, numbers and shapes.

Create and describe their own patterns made of objects, numbers and shapes.

### **Distance**

Understand that measures of distance can have different names including length, width, height.

Compare two objects of different length.

Compare two objects of different width.

Compare two objects of different height.

Understand and use language of comparison, (e.g. wider/narrower; longer/shorter; taller/shorter).

Order three objects of different length/width/ height.

Understand and use language of comparison between three objects, (e.g. widest/narrowest; longest/shortest; tallest/shortest).

Find an object of similar length, width, height. Understand the concept of the conservation of length, width, height.

Use uniform non-standard units to measure length, width, height.

### **Weight**

Understand the measurement of weight(heavy/light).

Compare two objects of different weights.

Understand and use language of comparison, (e.g. heavier/lighter).

Understand the concept of conservation of weight.

Use uniform non-standard units to measure weight.

### **Volume/Capacity**

Understand the measurement of volume/capacity (empty/nearly full).

Compare two of the same container holding different amounts.

Understand and use language of comparison, (e.g. empty/full, more/ less, most/least). Order three of the same container holding different amounts.

Understand and use the language of comparison of three of the same container holding different amounts (e.g. most/least).

Understand the concept of conservation of volume/capacity.

Use uniform non-standard units to measure volume/capacity.

### **Money**

Understand that we need to pay for goods.

Talk about things they want to spend their money on.

Talk about different ways we can pay for things.

Recognise that there are different coins.

Recognise 1p coin.

Use 1p coins to pay for items.

### **Time**

Talk about significant times of the day, (e.g. home time, lunch time snack time, bed time, etc).

Use the language of comparison when talking about time, (e.g. longer/shorter; faster/slower).

Understand and use language (e.g. before, after, yesterday, today, tomorrow). Sequence two or three familiar events and describe the sequence.

Know the names of the days of the week.

Say names of days of the week in order

### **Key Vocabulary**

**Rote Counting** - Number zero, one, two, three... to twenty and beyond zero, ten, twenty... one hundred none count, count (up) to count on (from, to) count back (from, to) count forwards count backwards count down count in ones, twos... tens... pattern before, after, between

**Counting and Subitising number** - Zero, one, two, three... to twenty and beyond zero, ten, twenty... one hundred none count, count (up) to count on (from, to) count back (from, to) count forwards count backwards count down count in ones, twos... tens... how many...? pattern, arrangement sensible guess estimate

**Comparing Amounts**-Number zero, one, two, three... to twenty and beyond compare order equal to the same as more, most less, fewer, least, fewest greater amount, greatest amount smaller amount, smallest amount before, after lots, many few nearly, close to, about the same as just over, just under too many, too few, enough, not enough

**Number Sense and Place Value** - Number zero, one, two, three... to twenty and beyond part – part – whole group of ten pattern more, less greater, lesser/smaller amounts

**Number Recognition** - Read identify, match order

**Number Graphics** - Represent show, draw, make, write own way explain thinking

**Calculation – Addition** - Part – part – whole add, and, combine make, sum, total, altogether equals, equal to, is the same as score double one more, two more, ten more ... more than ... is ...

**Calculation – Subtraction** - Part – part – whole take (away), leave, left (over) how many have gone? How many more to make...? How many more is ... than ...? equals, equal to, is the same as one less/fewer, two less/fewer, ten less/fewer

**Number Fractions** - Share (sharing) equally equal parts half, halving double, doubling, adding same number

**2-D Shape** - Circle, triangle, square, rectangle, oblong flat, side, straight, curved sharp, pointed, corner, vertex different size, position same, different pattern, repeating, symmetrical recognise, identify, match

**3-D Shape** - Sphere, cube, cuboid, cone solid, face, flat, surface, curved edge sharp, pointed, corner, vertex different size, position same, different recognise, identify, match roll build.

**Space** - On top, under(neath) in front of, behind, next to, between above, below first, last second, third, fourth... forwards, backwards up, down, turn pattern, repeating next, after, before.

**Statistics** - Matching and Sorting same, different sort, match features in common

**Measurement –Distance** - Measure size compare, order guess, estimate nearly, close to, about the same as just over, just under length, width, height long, short, wide, narrow, tall longer, longest wider, widest narrower, narrowest taller, tallest.

**Measurement – Weight/Mass** - Measure size compare, order guess, estimate nearly, close to, about the same as just over, just under weigh, balance heavy, light heavier, heaviest lighter, lightest.

**Measurement – Volume and Capacity** - Measure size compare guess, estimate nearly, close to, about the same as just over, just under full, empty half full holds container how much/many...

**Measurement – Money** - Money penny, pence, pound 1p coin coins, notes, credit/debit card, online/internet colour, shape, size same, different pay, spend, price, cost buy, sell change cheap, dear, expensive total more, less, costs the same as

**Measurement - Time** - Time, lunch/dinner time, home time, tea time, play time, snack time, bed time morning, afternoon, evening, night before, after, yesterday, today, tomorrow day, week, month, year Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday longer, shorter faster, slower fastest, slowest clock, watch