

Mathematical development - Nursery

Baseline (Sept)	Autumn (Dec)	Spring (April)	Summer (June)
<p>To be carried out in the first 3 weeks</p> <p>Count 5 different objects on a 1:1 correspondence.</p> <p>Say the number names in order to 5?</p> <p>Name 2d shapes Name different colours</p>	<p><b><u>CARDINALITY AND COUNTING</u></b></p> <p><u>Counting: saying number words in sequence:</u> Children need to know number names, initially to five.</p> <p><u>Counting: tagging each object with one number word.</u> Children need lots of opportunities to count things in irregular arrangements. For example, how many play people are in the sandpit? How many cars have we got in the garage? These opportunities can also include counting things that cannot be seen, touched or moved.</p> <p><u>Counting: knowing the last number counted gives the total so far.</u> Children need the opportunity to count out or 'give' a number of things from a larger group, not just to count the number that are there. This is to support them in focusing on the 'stopping number' which gives the cardinal value.</p> <p><u>Numeral meanings.</u> Children need to have the opportunity to match a number symbol with a number of things. Look for opportunities to have a range of number symbols available, e.g. wooden numerals, calculators, handwritten (include different examples of a number, e.g. , , )</p> <p><u>Conservation: knowing that the number does not change if things are rearranged (as long as none have been added or taken away)</u></p>	<p><b><u>CARDINALITY AND COUNTING – to 10</u></b></p> <p><u>Counting: saying number words in sequence:</u> Children need to know number names to 10.</p> <p><u>Counting: tagging each object with one number word.</u> Children need lots of opportunities to count things in irregular arrangements. For example, how many play people are in the sandpit? How many cars have we got in the garage? These opportunities can also include counting things that cannot be seen, touched or moved.</p> <p><u>Counting: knowing the last number counted gives the total so far.</u> Children need the opportunity to count out or 'give' a number of things from a larger group, not just to count the number that are there. This is to support them in focusing on the 'stopping number' which gives the cardinal value.</p> <p><u>Numeral meanings.</u> Children need to have the opportunity to match a number symbol with a number of things. Look for opportunities to have a range of number symbols available, e.g. wooden numerals, calculators, handwritten (include different examples of a number, e.g. , , )</p> <p><u>Conservation: knowing that the number does not change if things are rearranged (as long as none have been added or taken away)</u> Children need the opportunity to recognise amounts that have been rearranged and to generalise that, if nothing has been added or taken away, then the amount is the same.</p> <p><b><u>Number 1 and 2 and 3</u></b></p>	<p><b><u>CARDINALITY AND COUNTING – to 10 and beyond.</u></b></p> <p><b><u>Recap on all numbers to 3</u></b></p> <p><b><u>MEASURE</u></b></p> <p>Make comparisons between objects relating to weight and capacity.</p> <p>Provide experiences of size changes. Suggestions: "Can you make a puddle larger?", "When you squeeze a sponge, does it stay small?", "What happens when you stretch dough, or elastic?" Talk with children about their everyday ways of comparing size, length, weight and capacity. Model more specific techniques, such as lining up ends of lengths and straightening ribbons, discussing accuracy: "Is it exactly...?"</p> <p><b><u>POSITIONAL LANGUAGE</u></b></p> <p>Use spatial words in play, including 'in', 'on', 'under', 'up', 'down', 'besides' and 'between'. Suggestion: "Let's put the troll under the bridge and the billy goat beside the stream."</p> <p>Take children out to shops or the park: recall the route and the order of things seen on the way. Set up obstacle courses, interesting pathways and hiding places for children to play with freely. When appropriate, ask children to describe their route and give directions to each other. Discuss position in real contexts.</p>

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#### Number 1 and 2

**SUBITISING:** recognising small quantities without needing to count them all to 2.

**I can recognise a regular arrangement on how many are in a group without counting them to 2.**

Note: This can be on a dice face, structured manipulatives etc and say the number that is represented.

**I can recognise small amounts when they are not in a regular arrangement e.g a handful of objects.**

**SHAPE AND SPACE -** Showing awareness of properties of shape – 2 sided shape.

**I can count how many sides a circle has.**

**I can count how many long sides a rectangle has.**

**I can count how many short sides a rectangle has.**

#### USING FIVE FRAME

**I can use a five frame to count 2 objects on a 1:1 correspondence.**

#### PATTERNS

Continuing an AB pattern – represent number 2

**I can see and talk about a AB pattern.**

**I can continue an AB Pattern.**

Make their own AB pattern – Represent number 2

**I can make a AB pattern including objects and involve different aspects and modes such as sounds, words or actions**

Note: Patterns can involve different aspects and modes such as sounds, words or actions: some children will need suggestions, while others will think of their own. As children construct the

Recap on numbers 1 and 2

#### Number 3

**SUBITISING:** recognising small quantities without needing to count them all to 3.

**I can recognise a regular arrangement on how many are in a group without counting them to 3.**

Note: This can be on a dice face, structured manipulatives etc and say the number that is represented.

**I can recognise small amounts when they are not in a regular arrangement e.g a handful of objects.**

**SHAPE AND SPACE -** Showing awareness of properties of shape – 3 sided shape.

**I can count how many sides a circle has.**

**I can count how many long sides a rectangle has.**

**I can count how many short sides a rectangle has.**

#### USING FIVE FRAME

**I can use a five frame to count 3 objects on a 1:1 correspondence.**

#### PATTERNS

Continuing an ABC pattern – represent number 3

**I can see and talk about a ABc pattern.**

**I can continue an ABc Pattern.**

Make their own ABC pattern – Represent number 3

**I can make a ABC pattern including objects and involve different aspects and modes such as sounds, words or actions**

Note: Patterns can involve different aspects and modes such as sounds, words or actions: some children will need suggestions, while others will think of their own. As children construct the patterns, ensure they have opportunities to: • repeat the unit at least three times (big bear, small bear; big bear, small bear; big bear, small bear). This is to ensure the child can sustain the pattern • make a

Suggestions: how to shift the leaves off a path, or sweep water away down the drain.

**I can use positional language in my play.**

**I understand and use words/signs such as, in, under, behind, in front, beside, next to and use them in my play**

**I understand position through words alone – for example, “The bag is under the table,” – with no pointing.**

**I am able to tell you a familiar route I know**

**I can discuss routes and locations, using words like ‘in front of’ and ‘behind’.**

#### PATTERNS

Provide patterns from different cultures, such as fabrics. Provide a range of natural and everyday objects and materials, as well as blocks and shapes, for children to play with freely and to make patterns with. When appropriate, children to continue patterns and spot mistakes. Engage children in following and inventing movement and music patterns, such as clap, clap, stamp.

**I can talk about and identifies the patterns around me. For example: stripes on clothes, designs on rugs and wallpaper.**

**I can use informal language like ‘pointy’, ‘spotty’, ‘blobs’ etc.**

**I am able to follow and make own patterns like stick, leaf, stick, leaf.**

#### SEQUENCE OF EVENTS.

Talk about patterns of events, in cooking or getting dressed. Suggestions:

- ‘First’, ‘then’, ‘after’, ‘before’

- “Every day we...”

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- repeat the unit at least three times (big bear, small bear; big bear, small bear; big bear, small bear).

This is to ensure the child can sustain the pattern

- make a specified pattern, e.g. 'Can you do a green, yellow pattern?' This is to ensure the child can apply their pattern understanding
- choose their own rule, e.g. 'I am going to make a big, small pattern.' This is to ensure the child can identify pattern features/rules/criteria
- choose their own actions or sounds, e.g. clap, stamp... This is to help children generalise the idea of pattern

### **COMPOSITION**

Part-whole: identifying smaller numbers within a number (conceptual subitising – seeing groups and combining to a total to 2)

**I can represent and show the relationship between a whole number and its parts.**

Note: Children need opportunities to see small numbers within a larger collection. 'Number talks' allow children to discuss what they see. For instance, with giant ladybirds: 'There are 2 spots altogether. I can see 1 and 1, 0 and 2, 2 and 0 can be and look. Children are encouraged to look closely at numbers to see what else they can see. This reinforces the concept of conservation.

Number bonds: knowing which pairs make a given number

**I can use pairs of numbers that are added to make another number.**

Note: Children need opportunities to say how many are hidden in a known number of things. For example: 'two toys go into a tent, then 1 comes out. How many are left in the tent?' The child should respond that there are still 1 toy in the tent.

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### **SHAPES**

Talk about and explore 3D shapes (sphere, cube, cone, cylinder, pyramid)) using informal and mathematical language: faces, edges, solid,

- "Every evening we..."

Talk about the sequence of events in stories.

Use vocabulary like 'morning', 'afternoon', 'evening' and 'night-time', 'earlier', 'later', 'too late', 'too soon', 'in a minute'.

Count down to forthcoming events on the calendar in terms of number of days or sleeps. Refer to the days of the week, and the day before or day after, 'yesterday' and 'tomorrow'.

**I can begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...**

	<p><b><u>SHAPES</u></b></p> <p>Talk about and explore 2D shapes (for example, circles, rectangles, triangles and squares) using informal and mathematical language: ‘sides’, ‘corners’; ‘straight’, ‘flat’, ‘round’.</p> <p>Begin to use words like “round” and “straight” when talking about the shapes.</p> <p>Chooses the right shape for a task like flat surfaces for building, a triangular prism for a roof etc</p> <p>Able to combine shapes to make new ones – an arch, or a bigger triangle etc.</p> <p><b>I can identify 2d shapes</b>  <b>I can talk about and identify their properties.</b>  <b>I can select a shape that I need and talk about my reasons.</b></p>	<p>Begin to use words like “round” and “straight” when talking about the shapes.</p> <p>Chooses the right shape for a task like flat surfaces for building, a triangular prism for a roof etc</p> <p>Able to combine shapes to make new ones – an arch, or a bigger triangle etc.</p> <p><b>I can identify 3d shapes</b>  <b>I can talk about and identify their properties.</b>  <b>I can select a shape that I need and talk about my reasons.</b></p> <p><b><u>MEASURE</u></b></p> <p>Make comparisons between objects relating to size, length.</p> <p>Provide experiences of size changes. Suggestions: “Can you make a puddle larger?”, “When you squeeze a sponge, does it stay small?”, “What happens when you stretch dough, or elastic?” Talk with children about their everyday ways of comparing size, length, weight and capacity. Model more specific techniques, such as lining up ends of lengths and straightening ribbons, discussing accuracy: “Is it exactly...?”</p>	
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