

NURSERY NUMERACY

Numeracy is the way we use math concepts in everyday life. In early childhood, numeracy is beginning right from the moment we are born. Children learn to understand daily routines when they are fed and go to bed, shapes when they hold different objects like spoons, and patterns and sequence from movements and repetition of stories and songs. As children grow, they start to attach meaning and concepts to what they are experiencing.

The Preschool Developmental Guide List breaks down numeracy into seven sections: Classification/Sorting, Numbers and Operations, Time and Sequence, Shapes and Space, Patterns, Fractions and Logic and Reasoning.

What is Classification/Sorting?

Classification is when we put items into categories. For example, children may understand categories such as food, animals, colors, vehicles, etc. Sorting involves having a number of items and dividing them by certain characteristics. For example, children can sort items by color, size, shape, etc.

What are Numbers and Operations?

Number sense is the understanding of number relationships like “what comes next” and “how many”. The skills that support number sense development consist of counting, grouping, and subitizing. Children build on these skills by exploring hands on and visual number relations in a variety of ways.

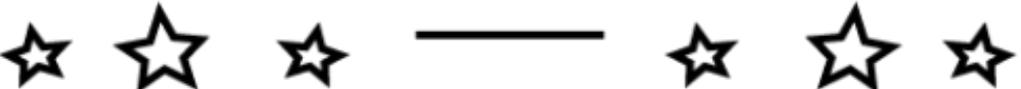
What is Time and Sequence?

Time for a child is what is happening during their day. They are beginning to understand concepts of today, tomorrow and yesterday, days of the week, months of the year and hours of the day. What children are really focusing more on is the sequence of events in their life. So being able to understand what is happening first, then second, before and after. They are making connections to the sequence of their days and starting the process of following multiple directions (ex. First get your shoes, then put them on).

What are Shapes and Space?

Shapes are the external form or appearance of something: the outline of an area or figure. Preschool children start to recognize basic shapes such as triangle, circle, square and rectangle. At roughly three and four years of age, children learn several aspects of shapes, both two-dimensional (2-D) and solid (3-D). Children start to be able to recognize and define attributes or characteristics of shapes. For example, a triangle has three sides and three corners.

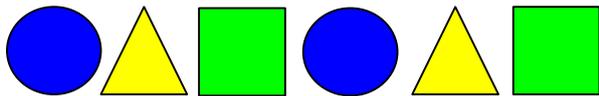
Space is about learning basic spatial concepts, how objects relate to one another and to us in space. Spatial ideas include simple location and position, perspective, coordinates, directions and aesthetic qualities. When children use a lego set or blocks, they need to understand the notion of space to describe the distance between blocks or how they are



arranged. Children can understand locational terms (ex. In front of, behind, under). We begin to promote an understanding of basic geometry.

What are Patterns?

Patterns are items that occur in a repeated way. A pattern can be 1 item repeated, 2 items repeated, 3 items repeated, etc. Children will look for patterns around them, in seeing how things happen over and over. We can encourage children to recognize a pattern, copy a pattern, add on to the pattern (grow it) and create their own patterns. Materials that lend themselves to making patterns could be blocks, beads, natural materials, loose parts, toys, and music. Below is an example of a simple pattern.



What are Fractions?

Fractions in preschool looks at understanding the concept of something as a whole that can be divided into parts. Then reversing that and taking parts to make something whole again.

What is Logic and Reasoning?

Children are beginning to understand the difference between what is real and what is pretend. They discover comparisons (same and different) between objects and real-life people, places and things. Children are growing in their sense of humour and start to be silly with things they say and what they laugh at.



Chart for Classification/Sorting

Concept	Description	Examples
Recognizes and sorts by a variety of attributes	Sorting by color, shape, size, etc.	Gather random objects from around the house and ask the child to sort based on (shape, size, color)
Compares objects using points of reference	Describing with terms like longer than, bigger than, etc.	Gather (socks, shoes, tshirts) ask the child to point to something bigger/ smaller than.
Orders/Puts in series (large to small, etc.)	Arranges objects in order based on a characteristic (small to large, heavy to light).	Using a growth chart.

Chart for Numbers and Operations

Concept	Description	Examples
Rote Counting 1-5, 1-10, 1-15, 1-20	Counting in order from 1-20.	Singing counting songs. Caught a Fish - https://www.youtube.com/watch?v=9ir_l7qTiZ4 5 Little Monkeys- https://www.youtube.com/watch?v=0j6AZhZfb7A
Counting objects with 1-1 correspondence	Point to the object with your finger while counting each object.	Playing with Lego (counting pieces, building groups) Label amounts of items with numbers
Compares groups of objects	Identifying more than/less than.	Fill a sink or large bin with water, add measuring cups of different sizes. Let the child explore and talk about which cup has more/less water.
Recognizes written numerals 1-10	Can say numbers 1-10 when shown them.	Drawing numbers in sand.

Chart for Time and Sequence

Concept	Description	Examples
Recognizes/Uses ordinal numbers	Understands first, second, third, etc.	Make a bowl of cereal and talk through the steps together. Ex. first pour the cereal into the bowl, 2nd pour the milk in, 3rd grab a spoon.
Understands order of events	Attaching meaning to the words before/after.	Get dressed to go outside. Talk about what needs to be put on before going. When coming in, talk about what needs to be taken off after playing.
Uses terms (though still grasping concepts) for basic units of time	Begins to use terms like seconds, days, next year, etc.	Play with the stopwatch setting on your phone. Ex. time how fast the child can run.

Chart for Shapes and Space

Concept	Description	Examples
Recognizes and names at least four basic shapes	Names triangle, square, circle, rectangle.	Go on a shape scavenger hunt in the room looking for the 4 shapes.
Understands and uses spatial location terms	Uses terms in front of, behind, under, etc.	Sing "Going on a Bear Hunt" https://www.youtube.com/watch?v=5_ShP3fiEhU
Manipulates 3 dimensional shapes to create (using blocks, etc.)	Using all forms of building materials to make their own construction.	Building with blocks, lego, loose parts, boxes, paper towel rolls, sticks, rocks, etc.
Completes puzzles from 12-24 pieces		Provide an array of puzzles including board and jigsaw.

Chart for Patterns

Concept	Description	Examples
Follows a simple AB rhythm (clap, pat, clap, pat...)	Copying a pattern that they see or hear.	Sing songs with actions (ex. Open Shut Them, Itsy Bitsy Spider, The Wheels on the Bus, If You're Happy and You Know It) Open Shut Them - https://www.youtube.com/watch?v=XRb3CyEW_14&t=6s Itsy Bitsy Spider - https://www.youtube.com/watch?v=xwKX6m2tCR4 The Wheels on the Bus - https://www.youtube.com/watch?v=hvzMmwRNIfQ If You're Happy and You Know It - https://www.youtube.com/watch?v=zbflttfKc9U
Completes AB pattern	Continuing a pattern once it has stopped.	Make patterns with your body movements (ex. Jump, step, jump, step)
Creates AB pattern	Making their own patterns out of different materials.	Make patterns with toys (ex. Duplo, lego, blocks, cars, stuffed animals) Make patterns with loose parts (ex. Buttons, coins, sticks, rocks, pom poms, socks, shoes)
Utilizes complex patterns	Copies patterns that have multiple ways of organizing (AABB, ABBA, etc.).	Clap to the beat of the music or make a sound pattern (ex. Stomp, stomp, clap, clap)

Chart for Fractions

Concept	Description	Examples
Recognizes that whole can be divided into parts	Understanding that 1 object can be divided.	Use snack times to show how cutting fruits can lead to more pieces.
Combines halves to make a whole	Taking 2 pieces of an object and combining to make it whole.	Build with lego. Draw with paint on one side of a paper, fold in half to have a whole picture.

Chart for Logic and Reasoning

Concept	Description	Examples
Appreciates age-appropriate humor.	Recognizes certain things as "silly."	Sing silly songs. Down By the Bay https://www.youtube.com/watch?v=Yt1czlnCUCg
Beginning to understand real vs pretend, though not consistently	Looking at differences between life and imagination.	Act out stories. Do dramatic and pretend play of different themes (ex. Animals, vehicles, grocery store).
Recognizes the concepts of same vs different	Learning about similarities and differences between items.	Have children look in the mirror and talk about what they look like and what other people in the house look like.