Infants/Toddlers/Preschoolers: *NUMBER/OPERATIONS*

AGE	SKILL/CONCEPT	DESCRIPTION
24-36 mo.	One-to-One	The understanding that one thing can be matched up with another.
6-12 mo.	Object Permanence	The understanding that an item still exists when it is not seen. The child understands that it is just hiding.
12-18 mo.	More	The understanding that groups of objects or items have a quantity.
24-36 mo.	One	The understanding that items have a distinct quantity and can be counted.
24-36 mo.	Counting	Children can recite some number words.
2-3 Years	Number and Systems and Counting	Recognize numerals up to 5. Can recognize small groups of objects (3 and under) as being more or less.
3-4 Years		Recognize numerals up to 10. Can determine *how many* in groups of 5 or fewer objects. Demonstrate one-to-one correspondence.
4-5 Years		Recognize numerals up to and over 20 Can group and re-group sets of objects (5 blocks can be 2 groups: 2 blocks and 3 blocks.)
3-4 Years	Number and Operations	Child can count a collection of 1-4 items. Understands that the last word tells *how many* even if counting lacks numerical understanding. Counting is more like saying the *ABCs*. There is sequence, but not quantity.
4-4½ Years		Can add by ***counting all***. Children roll two dice that come up three and four. To determine how many spaces to move, the child counts *One, two, three*, on one die, and *Four five, six, seven* on the second die.
4½-5 Years		Can ***count on*** when using dice to play a math game or in other addition situations. The child rolls two dice. One displays three dots and the other displays four dots. He looks at the first die and says *Three* then counts on with the second die *Four five six seven.*

Infants/Toddlers/Preschoolers: *MEASUREMENT*

AGE	SKILL/CONCEPT	DESCRIPTION
6-12 mo.	Judging Distance	Infants begin to be able to judge *near* and *far*.
12-24 mo.	Quantity Measurements	Using concepts of *more* children are comparing quantities.
24-36 mo.	Size Comparisons	Children use words to make relative comparisons such as *bigger* or *smaller*.
2-3 Years	Measurement Concepts, Skills, Tools	Use comparing language in play situations such as bigger, smaller, longer, taller.
3-4 Years		Compare lengths directly. Recognize attributes of volume, weight, area, and time. Explore measurement using objects in a play environment, such as building blocks or shoes.
4-5 Years		Begin understanding transitivity; can use a stick or string to represent and re-create a length. Use nonstandard units to compare objects. Comparison of area by placing one object over another. Exploratory use of a standard ruler.
3-4 Years	Measurement	Recognizes and labels measurable attributes of objects such as length and weight. For example, they may ask, *Is this long enough?*
4-4½ Years		Begins to use nonstandard suits for measurement. They can use an item to be measured, but they need a number of them. For example the child can measure the teacher's desk .
4½-5 Years		Children begin to use standard units such as rulers to measure objects. They can use a 1-foot ruler to measure a 3-foot desk using *unit iteration*.

Infants/Toddlers/Preschoolers: *ALGEBRA*

AGE	SKILL/CONCEPT	DESCRIPTION
12-24 mo.	Sorting	Can sort things that are exactly alike
18-24 mo.	Multiple Classification	Grouping items by only one or more (but not all) characteristics.
24-30 mo.	Sequence	A child puts items in a order based on either arbitrary or non-arbitrary characteristics.
30-36 mo.	Seriation	A child puts objects in a numerical sequence from smallest to largest.
18-24 mo.	Patterns	Children can recognize, replicate, and produce patterns
2-3 Years	Patterns and Functions	Recognize that a pattern is present in a play situation, like in music, art, and blocks
3-4 Years		Can identify a pattern such as long-long-short, or red-blue-red-blue.
4-5 Years		Can create new patterns or re-create patterns seen before

Infants/Toddlers/Preschoolers: *GEOMETRY and SHAPES*

AGE	SKILL/CONCEPT	DESCRIPTION
12-18 mo	Matching	Children can match shapes and colors to other objects of the same shape and color.
24-36 mo	Stacking	Children can stack towers from different-sized objects
2-3 Years	Shapes	Match shapes of same size and orientation. Informal play with solids such as blocks or tiles. Use shapes to make a design. Usually in isolation rather than in combination.
3-4 Years		Match shapes of different sizes and orientations. Cover an outline or existing picture with moveable shapes. Break down simple shapes on a tangram puzzle with clues or help.
4-5 Years		Recognize and name variations of the circle, square,triangle,and rectangle. Build and describe two-dimensional shapes in play settings using their own words. Make representational pictures by combining shapes. Locate shapes in an arrangement of overlapping shapes or figures.
2-3 Years	Locations, Directions, and Coordinates	Understand and use ideas such as over, under, above, on beside, next to, and between.
3-4 Years		Place toy objects in correct relative position to make a map of the classroom. Orient objects vertically or horizontally.
4-5 Years		Can draw maps of familiar areas or environments that include landmarks, even if landmarks are not in correct relative positions.

Infants/Toddlers/Preschoolers: ***GEOMETRY and SHAPES*** *continued*		
2-3 Years	Transformation and Symmetry	Create two-dimensional shapes and three-dimensional buildings that have line and rotational symmetry in play situations.
3-4 Years		Can identify slides, flips,and turns of two-dimensional shapes informally.
4-5 Years		When asked, can identify and create shapes that have ***line and rotational symmetry***.
2-3 Years	Visualization and Spatial Reasoning	Copy a shape while directly observing it.
3-4 Years		Copy a shape from memory after seeing the model for a few seconds.
4-5 Years		Copy a small collection of shapes from memory after seeing the model for a few seconds.
3-4 Years		Child begins to associate names of two-dimensional and three-dimensional shapes wit the same size and orientation.
4-4½ Years	Geometry and Spatial Sense	Can identify two-dimensional and three-dimensional shapes regardless of size differences and orientations. A triangle is still a triangle even if it is upside-down.
4½-5 Years		Can use Tangrams to combine shapes into new shapes.

Infants/Toddlers/Preschoolers: *DISPLAYING AND ANALYZING DATA*

AGE	SKILL/CONCEPT	DESCRIPTION
3-4 Years	Displaying and Analyzing Data	Sorts objects and is able to count and compare the categories.
4-4½ Years		Creates categories based on complex characteristics of objects such as *things that cut* which could include knives, scissors, and saws.
4½-5 Years		Child organizes and displays data through simple numerical representations such as bar graphs. Children can count the number in each group.