

DOMAIN 4: GENERAL KNOWLEDGE			
SUB-DOMAIN: MATHEMATICS AND NUMERACY			
NUMBER SENSE AND OPERATIONS			
GOAL 39: CHILDREN DEMONSTRATE UNDERSTANDING OF NUMBERS, WAYS OF REPRESENTING NUMBERS, RELATIONSHIPS AMONG NUMBERS, AND NUMBER SYSTEMS.			
Age Range	Developmental Growth	Child Indicators	Caregiver Strategies
60 Months through Kindergarten	Counts with understanding and recognizes “how many” are in sets of objects, showing understanding of discrete numbers.	<ul style="list-style-type: none"> ▪ Shows verbal, symbolic, and physical representation of numbers up to ten. ▪ When asked, tells what number comes before or after a given number up to ten. ▪ Tells what number comes before or after a given number up to 20, with assistance. ▪ Demonstrates the difference between addition (more) and subtraction (take away), with assistance. ▪ Counts using one to one correspondence to answer “how many?” ▪ Demonstrates counting where quantity is not affected by the arrangement of the objects being counted. ▪ When counting items, counts each item only once and does not leave any out. ▪ Uses numbers to predict and make realistic estimates (e.g. “I think there are about 20 marbles in that jar.”). ▪ Helps another child count or group objects or solve a quantity based problem. ▪ Puts numeral cards in order 1 to 10. ▪ Uses number in daily functions and in meaningful ways. ▪ Demonstrates knowledge of numeration system 	<ul style="list-style-type: none"> ▪ Engage the child in activities and interactions that use numbers and counting (e.g. surveying each other about class activities, playing bank, post office, or cooking activities, or keeping a count of individual, physical, or academic accomplishments). ▪ Have children divide objects equally among a group of people (e.g. each child gets three crackers or five different color crayons). ▪ Use counting finger-plays, songs, and number rhymes, and repeat them frequently. ▪ Estimate how many objects there are and then count out loud. ▪ Child and adult pose math questions relevant to daily life (“How many days until your birthday? How many days until the field trip?”). ▪ Use printed numerals in meaningful ways (recording daily temperature for weather forecasts, posting prices for a lemonade stand or bake sale). ▪ Use pictures to represent real-life situations involving mathematical concepts (simple addition used in cooking recipes). ▪ Tell and retell stories and read books with numbers and counting. ▪ Model writing simple math equations that are relevant to real-life situations (e.g. create and record recipes).

		<p>by counting forward by ones to at least 31.</p> <ul style="list-style-type: none"> ▪ Identifies a penny as a value of money. ▪ By end of kindergarten year: ▪ Selects strategies appropriate for solving a problem. ▪ Uses concrete objects to illustrate the concepts of addition and subtraction. ▪ Counts to 100 by ones. ▪ Counts forward beginning from a given number (e.g. twenty one, twenty two...). ▪ Writes numerals from 0-20. ▪ Identifies whether the number of objects in one group is greater than, less than, or equal. ▪ Compares two numbers between 1 and 10 presented as written numerals. ▪ Represents addition and subtraction with objects, fingers, mental images, or drawings. ▪ Solves addition and subtraction word problems. ▪ For numbers less than or equal to ten, decomposes that number in more than one way. ▪ Fluently adds and subtracts within five. ▪ With assistance, composes and decomposes numbers from 11-19 into tens and ones. 	<ul style="list-style-type: none"> ▪ Plan small group times where children solve word problems, and document their findings using equations. ▪ Provide objects and opportunities for manipulating and arranging objects into groups and sub-groups and for counting. ▪ Count and provide opportunities to think and talk about number concepts in everyday conversations (e.g. "The bookshelf has room for books, but how many will fit?" "Shall we count the blocks you used for your building?").
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