

Cognitive Development: Math (CD-MA)

0-12 Months

Strand: Number, Quantity, and Operations

Standard CD-MA1: The child will organize, represent, and build knowledge of number and quantity.

CD-MA1.0a | Observes simple songs or finger-plays that involve numbers and quantity.

CD-MA1.0b | Observes printed numerals in pictures, books, or objects.

CD-MA1.0c | Uses words and/or gestures to request “more” in reference to food or during play.

Standard CD-MA2: The child will explore, compare, describe relationships, and solve problems using number and quantity.

CD-MA2.0a | Participates in simple counting of objects when led by an adult.

Standard CD-MA3: The child will reason, estimate, and share solutions when solving problems with number and quantity.

Not appropriate at this age.

Strand: Measurement and Comparison

Standard CD-MA4: The child will explore and communicate about distance, weight, length, height, and time.

CD-MA4.0a | Plays with toys and objects with different sizes and shapes.

Standard CD-MA5: The child will reason, estimate, and share solutions when solving problems with measurement

Not appropriate at this age.

Strand: Patterns

Standard CD-MA6: The child will sort, put items in order (seriate), classify, and create patterns.

CD-MA6.0a | Shows awareness of consistent daily routines.

CD-MA6.0b | Explores objects with different characteristics.

CD-MA6.0c | *No indicator.*

CD-MA6.0d | Begins to imitate simple sounds and movements.

Standard CD-MA7: The child will reason, estimate, and share solutions when solving problems with patterns.

Not appropriate at this age.

Strand: Spatial Thinking

Standard CD-MA8: The child will explore, recognize, and describe spatial relationships between objects.

CD-MA8.0a | Explores relationships between objects through play.

CD-MA8.0b | Explores simple objects to make them fit.

Standard CD-MA9: The child will reason, visualize, and share solutions when solving problems with spatial thinking.

Not appropriate at this age.

Strand: Geometry

Standard: CD-MA10: The child will explore, recognize, and describe shapes.

CD-MA10.0a | Explores objects with different shapes.

Cognitive Development: Math (CD-MA)

12-24 Months

Strand: Number, Quantity, and Operations

Standard CD-MA1: The child will organize, represent, and build knowledge of number and quantity.

CD-MA1.1a Imitates rote counting using numbers.

CD-MA1.1b Participates in simple songs that involve number and quantity.

CD-MA1.1c Attaches meaning to names for numbers with adult support.

Standard CD-MA2: The child will explore, compare, describe relationships, and solve problems using number and quantity.

CD-MA2.1a Counts groups of one and two objects with adult guidance.

CD-MA2.1b Applies number and counting during play and routines with adult guidance.

CD-MA2.1c Shows awareness of quantity by noticing and responding to changes in amount, such as recognizing 'more' or 'all gone'.

Standard CD-MA3: The child will reason, estimate, and share solutions when solving problems with number and quantity.

Not appropriate at this age

Strand: Measurement and Comparison

Standard CD-MA4: The child will explore and communicate about distance, weight, length, height, and time.

CD-MA4.1a Uses size words appropriately.

CD-MA4.1b Explores standard and non-standard measuring tools.

Standard CD-MA5: The child will reason, estimate, and share solutions when solving problems with measurement

CD-MA5.1a Explores and identifies objects that are big or small, heavy or light, and tall or short, with assistance.

Strand: Patterns

Standard CD-MA6: The child will sort, put items in order (seriate), classify, and create patterns.

CD-MA6.1a Begins to predict daily routines.

CD-MA6.1b Orders (seriates) a few objects by characteristics with adult guidance.

CD-MA6.1c Differentiates between two objects with different characteristics with adult guidance.

CD-MA6.1d Copies patterns using sounds or physical movements with adult prompting and guidance.

Standard CD-MA7: The child will reason, estimate, and share solutions when solving problems with patterns.

Not appropriate at this age.

Strand: Spatial Thinking

Standard CD-MA8: The child will explore, recognize, and describe spatial relationships between objects.

CD-MA8.1a When modeled by an adult, attempts to move objects in different directions, such as up, down, around, or under.

CD-MA8.1b With prompting and guidance, begins to slide, rotate, and flip objects to make them fit.

Standard CD-MA9: The child will reason, visualize, and share solutions when solving problems with spatial thinking.

Not appropriate at this age.

Strand: Geometry

Standard: CD-MA10: The child will explore, recognize, and describe shapes.

CD-MA10.1a Recognizes basic shapes and matches two identical shapes.

Cognitive Development: Math (CD-MA)

24-36 Months

Strand: Number, Quantity, and Operations

Standard CD-MA1: The child will organize, represent, and build knowledge of number and quantity.

CD-MA1.2a Recites numbers up to five in sequence.

CD-MA1.2b Recognizes some numerals in the everyday environment.

CD-MA1.2c Begins to understand that numbers of objects can be symbolized by printed numerals.

Standard CD-MA2: The child will explore, compare, describe relationships, and solve problems using number and quantity.

CD-MA2.2a Matches two equal sets using one-to-one correspondence with adult guidance.

CD-MA2.2b Counts up to three objects using one-to-one correspondence with adult guidance.

CD-MA2.2c Shows awareness of quantity by comparing amounts using simple words, such as 'more' or 'less', during play and routines.

CD-MA2.2d Participates in creating simple, real, and pictorial graphs.

Standard CD-MA3: The child will reason, estimate, and share solutions when solving problems with number and quantity.

Not appropriate at this age.

Strand: Measurement and Comparison

Standard CD-MA4: The child will explore and communicate about distance, weight, length, height, and time.

CD-MA4.2a Develops vocabulary for length, weight, and height.

CD-MA4.2b Uses standard and non-standard measurement tools in play activities.

Standard CD-MA5: The child will reason, estimate, and share solutions when solving problems with measurement.

CD-MA5.2a Makes simple comparisons between two objects, such as bigger or smaller, heavier or lighter, taller or shorter.

Strand: Patterns

Standard CD-MA6: The child will sort, put items in order (seriate), classify, and create patterns.

CD-MA6.2a Identifies daily routines and changes in routine.

CD-MA6.2b Orders (seriates) several objects on the basis of one characteristic through trial and error.

CD-MA 6.2c Matches objects with similar attributes or characteristics.

CD-MA 6.2d Recognizes simple patterns in the environment.

Standard CD-MA7: The child will reason, estimate, and share solutions when solving problems with patterns.

Not appropriate at this age.

Cognitive Development: Math (CD-MA)

Strand: Spatial Thinking

Standard CD-MA8: The child will explore, recognize, and describe spatial relationships between objects.

CD-MA8.2a Practices using directionality and uses directional words

CD-MA8.2b With some adult guidance, demonstrates increasing ability to slide, rotate, and flip objects to make them fit

Standard CD-MA9: The child will reason, visualize, and share solutions when solving problems with spatial thinking.

Not appropriate at this age

Strand: Geometry

Standard: CD-MA10: The child will explore, recognize, and describe shapes.

CD-MA10.2a Recognizes and names two-dimensional shapes with adult guidance

Strand: Spatial Thinking

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Not appropriate at this age

Strand: Geometry

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CD-MA10.2a Recognizes and names two-dimensional shapes with adult guidance

Cognitive Development: Math (CD-MA)

36-48 Months

Strand: Number, Quantity, and Operations

Standard CD-MA1: The child will organize, represent, and build knowledge of number and quantity.

CD-MA1.3a	Recites numbers up to 10 in sequence
CD-MA1.3b	Recognizes numerals and quantities in the everyday environment
CD-MA1.3c	Matches numerals to sets of objects with the same number, 0 – 5
CD-MA1.3d	Quickly recognizes and names how many items are in a set of up to three items (subitizing)

Standard CD-MA2: The child will explore, compare, describe relationships, and solve problems using number and quantity.

CD-MA2.3a	Matches two equal sets using one-to-one correspondence independently
CD-MA2.3b	Counts up to five objects using one-to-one correspondence with adult guidance
CD-MA2.3c	Demonstrates understanding of quantity by comparing groups and identifying which group of items has more, fewer, or the same
CD-MA2.3d	Participates in creating and using real and pictorial graphs or other simple representations of data

Standard CD-MA3: The child will reason, estimate, and share solutions when solving problems with number and quantity.

CD-MA3.3a	Begins to recognize that objects or sets can be put together or taken apart with adult support (Composition and decomposition)
CD-MA3.3b	Practices estimating using mathematical terms and numbers with adult guidance
CD-MA3.3c	Shows interest in solving mathematical problems involving number and quantity

Strand: Measurement and Comparison

Standard CD-MA4: The child will explore and communicate about distance, weight, length, height, and time.

CD-MA4.3a	Labels objects using size words
CD-MA4.3b	Uses a variety of standard and non-standard tools to measure object attributes with assistance

Standard CD-MA5: The child will reason, estimate, and share solutions when solving problems with measurement

CD-MA5.3a	Compares two or more objects using a single attribute, such as length, weight, or size. Matches items of similar sizes
CD-MA5.3b	Shows interest in solving mathematical problems involving measurement
CD-MA5.3c	Uses emerging reasoning skills to determine a solution to a measurement mathematical problem

Cognitive Development: Math (CD-MA)

Strand: Patterns

Standard CD-MA6: The child will sort, put items in order (seriate), classify, and create patterns.

CD-MA6.3a	Predicts upcoming events from prior knowledge.
CD-MA6.3b	Independently orders (seriates) objects using one characteristic.
CD-MA6.3c	Sorts objects by one attribute, such as color, shape, or size.
CD-MA6.3d	Identifies and duplicates simple, repeating patterns.

Standard CD-MA7: The child will reason, estimate, and share solutions when solving problems with patterns.

CD-MA7.3a	Begins to identify patterns and predicts what comes next using emerging reasoning skills.
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Strand: Spatial Thinking

Standard CD-MA8: The child will explore, recognize, and describe spatial relationships between objects.

CD-MA8.3a	Follows simple directions which demonstrates an understanding of directionality, order, and position of objects
CD-MA8.3b	Begins to use increasingly intentional actions when connecting or fitting objects together

Standard CD-MA9: The child will reason, visualize, and share solutions when solving problems with spatial thinking.

CD-MA9.3a	Uses emerging reasoning skills to determine how objects should be moved or organized within a space
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Strand: Geometry

Standard: CD-MA10: The child will explore, recognize, and describe shapes.

CD-MA10.3a	Recognizes basic, two-dimensional shapes in the environment independently
CD-MA10.3b	Begins to draw circles and squares
CD-MA10.3c	Begins to use two-dimensional and three-dimensional shapes during play to build, design, and problem-solve

Cognitive Development: Math (CD-MA)

48-60 Months

Strand: Number, Quantity, and Operations

Standard CD-MA1: The child will organize, represent, and build knowledge of number and quantity.

CD-MA1.4a	Recites numbers up to 20 in sequence.
CD-MA1.4b	Recognizes numerals and uses counting as part of play and as a means for determining quantity.
CD-MA1.4c	Matches numerals to sets of objects with the same number, 0 – 10.
CD-MA1.4d	Quickly recognizes and names how many items are in a set of up to five items (subitizing).
CD-MA1.4e	With adult guidance and when counting, understands and can respond with the last number counted to represent quantity (cardinality).

Standard CD-MA2: The child will explore, compare, describe relationships, and solve problems using number and quantity.

CD-MA2.4a	Matches two equal sets using one-to-one correspondence and understands that they are the same independently.
CD-MA2.4b	Counts at least 10 objects using one-to-one correspondence.
CD-MA2.4c	Demonstrates understanding of quantity by comparing and estimating amounts and explaining which group has more, fewer, or the same.
CD-MA2.4d	Describes data from classroom graphs using numerical math language.
CD-MA2.4e	Tells numbers that come before and after a given number up to 10.

Standard CD-MA3: The child will reason, estimate, and share solutions when solving problems with number and quantity.

CD-MA3.4a	Practices putting together, taking apart, and naming quantities (Composition and decomposition).
CD-MA3.4b	Estimates “how many” using mathematical terms and understands how to check the estimate.
CD-MA3.4c	Uses simple strategies to solve number mathematical problems and communicates how they solved it.
CD-MA3.4d	Uses reasoning skills to determine the solution to a number mathematical problem and communicates why.

Strand: Measurement and Comparison

Standard CD-MA4: The child will explore and communicate about distance, weight, length, height, and time.

CD-MA4.4a	Uses mathematical terms to describe experiences involving measurement.
CD-MA4.4b	Uses a variety of techniques and standard and non-standard tools to measure and compare length, volume (capacity), and weight.

Standard CD-MA5: The child will reason, estimate, and share solutions when solving problems with measurement

CD-MA5.4a	Compares objects using two or more attributes, such as length, weight, and size.
CD-MA5.4b	Uses simple strategies to solve measurement mathematical problems and communicates how they solved it.
CD-MA5.4c	Uses reasoning skills to determine the solution to a measurement mathematical problem and communicates why.
CD-MA5.4d	Estimates objects measurable characteristics or attributes using mathematical terms and understands how to check the estimate.

Cognitive Development: Math (CD-MA)

Strand: Patterns

Standard CD-MA6: The child will sort, put items in order (seriate), classify, and create patterns.

CD-MA6.4a	Associates and describes the passage of time with actual events.
CD-MA6.4b	Independently orders (seriates) objects using one characteristic and describes the criteria used.
CD-MA6.4c	Sorts and classifies objects using one or more attributes or relationships.
CD-MA6.4d	Creates and extends simple, repeating patterns.

Standard CD-MA7: The child will reason, estimate, and share solutions when solving problems with patterns.

CD-MA7.4a	Uses simple strategies to create and extend patterns and communicates how they solved it.
CD-MA7.4b	Uses reasoning skills to determine what comes next in a pattern and communicates why.

Strand: Spatial Thinking

Standard CD-MA8: The child will explore, recognize, and describe spatial relationships between objects.

CD-MA8.4a	Uses appropriate directional language to indicate where things are in their environment: positions, distances, order.
CD-MA8.4b	Uses consistent intentional actions to fit objects together and begins to describe how they did it.

Standard CD-MA9: The child will reason, visualize, and share solutions when solving problems with spatial thinking.

CD-MA9.4a	Uses simple strategies to determine how objects should be moved or organized within a space and communicates how they solved it.
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Strand: Geometry

Standard: CD-MA10: The child will explore, recognize, and describe shapes.

CD-MA10.4a	Recognizes and names common two-dimensional and three-dimensional shapes, their parts and attributes.
CD-MA10.4b	Draws circles and squares, and begins to draw triangles, and rectangles.
CD-MA10.4c	Experiments with combining, stacking, and arranging two-dimensional and three-dimensional shapes to build, design, and problem-solve during play.