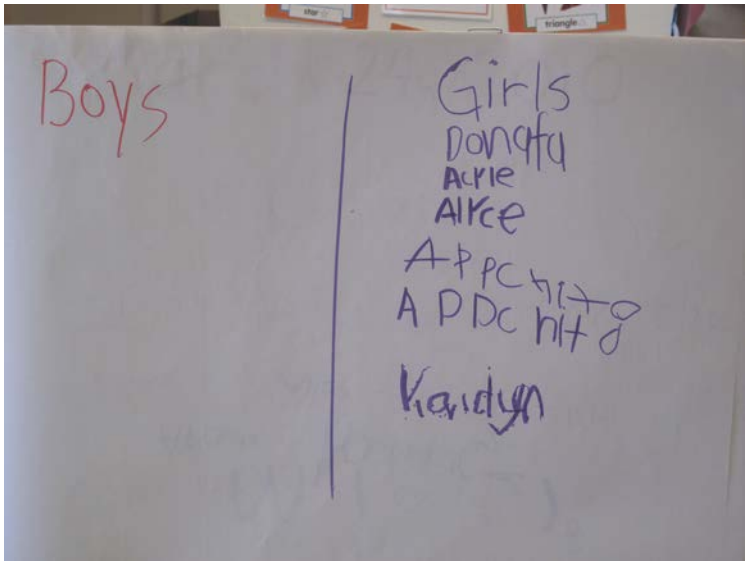
Family and Child Education (FACE)
Preschool Standards

Mathematics



Math is a way of thinking, knowing about, and problem-solving things that happen in your world. Children construct their knowledge of math through prior knowledge and experiences, interactions with real objects and the real world, and events in their daily lives. Children typically do this eagerly using their innate sense of curiosity and exploration.

Learning environments that support mathematical thinking are those that encourage curiosity, exploration, and are rich in mathematical language and experimentation. Planning math activities for preschoolers requires both intentionally planned experiences and those that are spontaneous, building from the interests and questions of children. Planned experiences includes writing specific activities into your lesson plans to meet goals, as well as providing materials in areas of the classroom that support the learning of math concepts during play. Remember that meaningful experiences for children are provided when they are developed out of the interests and curiosity of children and facilitated through play.

These experiences include, but are not limited to the following:

- One-on-one matching with small cubes or beads
- Sorting objects by two attributes, such as color and shape
- Recognizing shapes and their differences
- Measuring objects in the child's environment, with real or pretend measures
- Using a timer to finish cleaning up
- Play sequencing games or puzzles.

Plan math experiences for children within the daily routine and introduce math concepts that represent preschooler's modes of thinking. Build from their own world and their natural desire. Give children new math words to say when talking about math ideas. Provide many opportunities for hands-on experiences and active learning that includes math concepts.

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Parents are important for helping children learn math skills, too. Family literacy programs actively engage parents in children's learning processes. In FACE, early childhood teachers work closely with parents to share how to best support their children's learning. Parent Time is a good opportunity to talk with parents about the FACE preschool standards, discuss why they are important, and share some new ways for working with their children. When parents feel comfortable, they can practice these new ideas during PACT Time and at home.

The Math Standards are organized as follows:

- Counting
- Operations and Algebraic Thinking
- Measurement
- Geometry

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Counting

- Know number names
- Count in sequence
- Count to tell number of objects
- Compare numbers

Know and identify number names and the count sequence

Indicators	Examples
M-C 1. Shows beginning understanding of numbers and uses number words in daily routines, activities and play.	**The child** • During the reading of a story says, "Let's count the horses on the page!" • Wonders, "How many beads are in that box?" • Counts the number of children in the room. • Uses numbers in dramatic play. (e.g. Says, "I'm calling Granny, 4, 7, 9, 6," and pretends to punch numbers into a play telephone.) • Points to numbers on a poster or on clothing. (e.g. "That's a 2.) • At snack time says, "I want two cookies."
	The child • Says, "I'm three," and holds up three fingers. • Uses "scribble" writing to make numbers while playing.
M-C 3. Counts objects of up to 10 items (1-10), in English and home language.	**The child** • Points to each block in a line of blocks on the floor and counts, "One, two, three…" • Gives each child a napkin during snack and counts when handing to other child.

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M-C 4. Identifies and points out numbers 1-10 in the environment.	**The child** • Counts out five apples. When asked, "how many?" responds, "five!" • Points to the clock and says, "I see an eight!" • During PACT Time, shares the number of blocks in a tower using Native language.
M-C 5. Says number names 1-10 in English and home language.	**The child** • Counts objects in Native language during Small Group Time. • Shares numbers or counts in Native language curing Circle Time. • Counts in home language with Parent during PACT Time
M-C 6. Writes numbers from 1-10.	**The child** • Writes number-like forms on a page to represent a number • Begins to write numbers on paper in random sequence • Talks and writes a number on a page. "This is a one. This is a four."

Can count to tell the number of objects.

Indicators	**Examples**
M-C 7. Counts objects of up to 10 items in sequence and demonstrates knowledge of "how many."	**The child** • During small group time, lines up ten beads, points to each one, and counts out loud, "One, two, three…" up to 10 items. • Responds with the correct number when asked during Small Group Time when teacher asks, "How many beads are in your row?" • Says, "We have three boys in the classroom today. See? One, two, three."

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M-C 8. Counts objects, or groups of objects, using one-to-one correspondence.	**The child** • At recess, says, "My team has six people. See?" And proceeds to point to one child at a time and count them. • During Plan-Do-Review time, sorts blocks into colors and says, "I have four piles of blocks. One red, one blue, one yellow, and one green," and points/counts each.
M-C 9. Matches numbers from 1-10 with the quantities they represent.	**The child** • Works a puzzle that matches the number on one side with the number of objects on the other. • Sorts blocks into number representation and writes the number on a piece of paper under each. One block, with the number 1. Two blocks with the number 2. And so on.

Compare numbers and groups of items

Indicators	**Examples**
M-C 10. Identifies whether the number of objects in a group is "less than", "equal to" or "more than" another group, by counting and matching.	The child • Says, "Kara has more blocks that me. See? She has four, I have three." • During Small Group Time, responds correctly when the teachers asks, "which students have more bears than me?" (less than, same as, etc.) • Counts money in a drawer in the House area during Wonder-Work-Share and matches the coins in the correct drawer. Says, "we have more dimes than nickels." • Asks, "How many pennies is a nickel?" "How many nickels is a dime?" How many nickels is a quarter?" etc.

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Operations and Algebraic Thinking

- Change in sets of objects
- Sort and classify
- Patterns, sequence and relationships

Understand changes in sets of objects, i.e. adding to or taking away

Indicators	**Examples**
M-OA 1. Shows increasing interest and ability to match, sort and group items according to one or two attributes.	**The child** • Chooses a matching game in the toy area and says, "Let's match!: • During Small Group Time, successfully sorts items into big red buttons and small blue buttons. • While playing with dishes in the house area, puts all of the blue plates in one cubby and the pink plates in another. Says, "These green and black ones don't match."
M-OA 2. Describes changes (number) in sets of objects when combined.	**The child** • Mixes her beads with her friends and says, "Now we have more."
M-OA 3. Describes changes (number) in objects when separated into parts.	**The child** • Separates a stack of crackers into three piles and says, "Now we have three small piles. We used to have one, and now we have three." • Says, "My pile is bigger/smaller than yours."

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M-OA 4. Understands that adding to (or taking away) one or more objects from a group will change the group.	**The child** • During Circle Time, the teacher groups the children's cushions into one pile on the floor. She says, "We have ten cushions, one for each child, but one child went home sick at lunch. Do we still need ten cushions?" Child responds with "No. We need one less." And the teacher asks, "How did our group of cushions change? What number do we have now?"
M-OA 5. Understands that putting two groups of objects together will make a bigger group.	**The child** • During outside time, says, "Let's make our pile of leaves bigger. Can we add your pile?" • At small group time, children sort counting bears into various piles. One child says, "My pile will be bigger if I add Charlie's pile to mine."
M-OA 6. Understands that splitting a group apart will make more than one group.	**The child** • During play time, several children want to play with the dominoes, which are all in one container. One child says, "Let's put some in this one, and some in that one, and we'll have two piles!"

Understand sorting and classifying objects.

Indicators	**Examples**
M-OA 7. Sorts and groups (classifies) objects in everyday environment.	**The child** • During play/work time chooses to play with the plastic animals and groups them into farm animals, zoo animals, and water animals.
M-OA 8. Shows increasing ability to match, sort, and group items according to one or two attributes.	**The child** • Matches a star shape to a star shape. • Sorts all of the long, red beads from the other beads. • Sorts short and tall pipe cleaners into different piles, one for short, the other for long.

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	• Sorts buttons and says, "All of these have two holes, these have four holes."
M-OA 9. Classifies, compares and contrasts objects, events and experiences.	**The child** • Discusses events that happened last week at music time, and compares to this week. "Last week we sang *Bingo*, but this week we sang, *Red Rover*. Those are both dog songs."

Understand patterns, sequence and relationships.

Indicators	**Examples**
M-OA 10. Shows increasing interest and ability to arrange items into a series or pattern, describing the relationship (big/bigger/biggest; red/blue/red/blue)	**The child** • Arranges all of the plastic animals in a line from shortest to tallest and says," The small ones start there and the tall ones are over there." • Says, "The animals here are big, these in the middle are better, and over there are the biggest."
M-OA 11. Recognizes simple patterns and creates/duplicates them.	**The child** • Makes a beaded necklace matching the pattern on a picture. • Watches the teacher make a pattern with yellow and brown blocks and copies her. • Notices that her name and another child's name start with the same two letters. • When stacking blocks in a pattern—green, yellow, blue; green, yellow, blue—says, "I need a yellow one now," after stacking a green block."

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M-OA 12. Recognizes and names repeating patterns.	**The child** • Says, "The lines on my shirt go black, white, black, white, black, white."
M-OA 13. Extends simple patterns using a variety of materials.	**The child** • When shown a series of dominoes, one up, one down, one up, one down, child places the next two dominoes one up, one down. • Child extends a rhythmic pattern: clap, pat, clap, pat. Then gets rhythm sticks to repeat the pattern in a different way.
M-OA 14. Understands the concepts of time in daily routines, (i.e. what happens next, yesterday/tomorrow)	**The child** • Answers the teacher's question, "What happens after we have snack?" with "We go outside!" • Says, "Yesterday we painted on the sidewalk."
M-OA 15. Looks forward to, remembers, and talks about a sequence of events.	**The child** • Says, "We go to lunch and then Mommy comes to read to me." • Talks about events that happened on the way to school that morning.

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Measurement

- Describe and compare measurable attributes
- Classify and count objects

Describe and use measures, and compare measurable attributes.

Indicators	Examples
M-M 1. Uses nonstandard measures (e.g. hands, boxes, rope) to measure objects.	**The child** • Says, "my skateboard is three shoes long." • Uses a piece of paper to see how wide the room is. Say's "Our classroom is 14 papers wide!" • Uses a piece of string to compare the length of a piece of rope. "The rope is longer," he says. • Stacks blocks to measure how tall he is. "I am five blocks high. Sari is four blocks tall."
M-M 2. Uses standard measures for simple measuring tasks (ruler, measuring cup, tape measure, scales).	**The child** • Uses measuring tape to measure the height of a bookshelf. • Measures a doorway with a yardstick to see if a wheelchair will fit.
M-M 3. Participates in measuring activities.	**The child** • Joins other children at the sand and water table, filling up a sand bucket with measuring cups, and asks, "How many cups?"
M-M 4. Understands and uses descriptive words for size, amount and comparisons (more, less, same as, fewer or greater than, etc.)	**The child** • Says, "Dora has more blocks than Jose." • Rearranges the crayons on the table and says, "Now we all have two." • Looks around the table at snack and says, "Mica needs another cookie to

	be the same as us."
M-M 5. Compares objects and shows understanding of terms such as bigger, longer, faster, taller.	**The child** • Says, "My truck is going faster than yours." • Says, "I need a longer string for my beads." Says, "The water is too hot, put some cold in."

Classify objects and count the number of objects in each category.

Indicators	**Examples**
M-M 6. Sorts and classifies objects into groups.	**The child** • At Small Group Time, separates the pipe cleaners from the yarn into two groups. • Sorts money into dimes, nickels, quarters and paper • Talks about cows, sheep and horses being farm/ranch animals, but zebras and elephants are not.
M-M 7. Counts the number of items in a group.	**The child** • Says, "Mrs. Smith's small group has six people and Mrs. Charley's small group has two."

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Geometry

- Names shapes
- Understands spatial relationships, position and direction

Shapes, Spatial Relationships and Position

Indicators	Examples
M-G 1. Names basic shapes (e.g. circle, square, triangle) and identifies them in the environment, in English and/or home language.	**The child** • Points to a book when asked to point to something that is a rectangle. • Says, "Circle!" when asked what shape his cookie is. • Sits on a triangle in the carpet when instructed, "Caleb, sit on your triangle."
M-G 2. Represents shapes found in the environment.	**The child** • Paints circles with paint and a brush and says, "Here is the moon." • Rolls dough into ball and flattens it saying, "A tortilla!" • Makes animals from dough. • Picks up the rhythm triangle and says, "A triangle!"
M-G 3. Compares and describes attributes of shapes using own words.	**The child** • Says, "I want the three-sided shape" when referring to the musical triangle. • Says, "The ball doesn't have any corners." • Says, "I want that long square box" when referring to a rectangular shaped box.

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M-G 4. Describes the position or location of objects in relation to self or other objects.	**The child** • Says, "Stand in line behind me," and points to his back. • When asked if the tree is taller or shorter than her, she says, "Taller!" • Says, "The ball is under the bush" when asked where the ball is. • Says, "The puppy is in the middle," when looking at a picture in a book.
M-G 5. Understands positional terms (e.g. between, inside, under, behind, over, under, in front, behind, etc.)	**The child** • Stands behind Tate when asked to move there by the teacher. Puts crayons in her cubby when told, "Put your crayons in your cubby."
M-G 6. Puts together and takes apart shapes.	**The child** • Chooses puzzles and toys with multiple shapes and pieces to manipulate.