

## Just for fun! Early Mathematics Skills for Preschoolers

If you have preschool-aged children in your home school environment, below are some suggestions for ways to introduce them to number and counting concepts before their kindergarten curriculum begins.

### Expectations for Preschool Students:

- **Number and Quantity:** Count verbally up to at least 20; answer "How many?" questions for 10 objects; associate a quantity with written numerals up to 5.
- **Algebra and Functions:** Understand addition as adding more to a group and subtraction as taking away from a group.
- **Data, Statistics, and Probability:** Use language like shortest, heavier, biggest, or later to compare quantities, sizes, and times; put up to five objects in order of their size.
- **Geometry:** Name circles, squares, rectangles, and triangles and describe them in terms of their number of sides, angles, or their relative size ("the square is bigger than the circle").

### Throughout Preschool You May Find Students:

- Practicing counting out loud or answering questions like, "What comes after three?"
- Playing games that require counting the number of spaces to move on a game board.
- Comparing groups of objects by the relative number of pieces ("more" or "fewer") or comparing objects by their size ("bigger," "taller," "heavier," etc.).
- Answering simple word problems given verbally, like, "If you have three crackers and you eat one, how many crackers will you have left?"
- Sorting blocks, tiles, or other objects by their sizes and shapes.

### Preschool Learning Activities

- Know number names and how to count verbally to at least 20 by ones.
  - Read stories, sing songs, act out poems, and do finger plays that involve counting, numerals, and shapes.
- Instantly recognize, without counting, small quantities of up to five objects and say the number.
  - Hold five or fewer objects in a closed hand, then open it briefly for the child, close it again, and ask, "How many did you see?"
  - Quickly show children a card with five or fewer dots, then hide it and ask who can say how many dots they saw.
  - Respond to the question, "What comes after four?" with "One, two, three, four ... five!"
- Identify whether the number of objects in one group is more than, less than, or the same as objects in another group for up to at least five objects.
- Identify and use numbers related to order or position from first to fifth.
  - Identify which item is first, second, third, etc., when pointing to items or talking about events that are ordered.
- Associate a quantity with written numerals up to 5 and begin to write numbers up to 10 (with support).
  - Help a child write or trace using the numeral corresponding to his/her age.
- Understand addition as adding to and understand subtraction as taking away from.
  - Ask a child with five crackers, "If you eat three crackers, how many will you have left?"
- Solve addition and subtraction problems set in simple contexts. Add and subtract up to at least five to or from a given number to find a sum or difference up to 10.

- Ask “How many more?” questions, such as, “We have three children in this group. How many more children do we need to make a group of five?”
- Understand simple patterns. Fill in missing elements of simple patterns.
  - Recognize and duplicate patterns such as ABC, ABB, and AABB.
  - Duplicate simple patterns in a different location than demonstrated, such as making the same alternating color pattern with blocks at a table that was demonstrated on the rug.
- Use comparative language, such as shortest, heavier, biggest, or later.
- Compare or order up to five objects based on their measurable attributes, such as height or weight.
  - Follow a recipe and let children measure, pour, and stir the ingredients while asking questions like, “How many cups of flour does the recipe show we need to put in the bowl?”
  - Provide opportunities for children to sort, classify, and group household objects.
  - Offer a variety of measuring tools and models, such as rulers, yardsticks, measuring tapes, measuring cups, scales, and thermometers. (Children may not use each of these correctly, but they are developing early understandings of how tools measure things.)
- Identify, describe, compare, and compose shapes.
  - Use pattern tiles to make shapes out of other shapes, such as putting two squares side-by-side to make a non-square rectangle.
  - Put away blocks into different containers based on the number or length of sides.
- Correctly follow directions involving their own position in space, such as “Stand up” and “Move forward.”