

What Math is DAP for Preschool? End of Year PreK Guidelines for Math

- Number and Number Operations
 - V.A.1 Recognizes that things (or parts of things) can be counted
 - V.A.2 Counting sequence to 30 (can start from a number other than one)
 - V.A.3 Counts objects with one-to-one correspondence to 10
 - V.A.4 Knows counting sequence is always the same, regardless of what is counted
 - V.A.5 Knows last number said is the number in the set (cardinality)
 - V.A.6 Knows items can be counted in any order
 - V.A.7 Uses ordinal numbers (first, second, third)
 - V.A.8 Subitizes (know number in set without counting) up to five items
 - V.A.9 Recognizes digits 0 to 9
- Adding and Taking Away
 - V.B.1 Verbalizes or uses objects to create word problems (adds up to 5)
 - V.B.2 Verbalizes or uses objects to create word problems (subtracts from 5)
- V.B.3 Shares or divides up to 10 items equally
- Geometry and Spatial Sense
 - V.C.1 Names common shapes (rhombus, square, triangle, circle, rectangle)
 - V.C.2 Makes shapes (with dough, drawing, etc.)
 - V.C.3 Uses positional words (over, under, beside, between, etc.)
 - V.C.4 Knows turning or sliding doesn't change shape
- Measurement
 - V.D.1 Compares two lengths
 - V.D.2 Compares two capacities
 - V.D.3 Compares two weights
 - V.D.4 Uses language to describe passage of time
- Classification and Patterning
 - V.E.1 Sorts objects and describes how groups are similar/different
 - V.E.2 Collects data and organizes it in a graphic representation
 - V.E.3 Recognizes and creates patterns

What Teachers Can Do

1. Create real-life counting situations. "Do we have enough snacks? Let's put a cracker on each napkin and count."
2. Incorporate counting into transitions "How long will it take us to clean up the blocks? Let's count." "Let's count to thirty while we wash our hands."
3. Sing counting songs throughout the day. "One little, two little, three little children."
4. Reinforce cardinality by saying, "So, how many do you have?" when children finish counting a set. You may also ask another child to tell how many without re-counting.
5. Use ordinal numbers to describe where children are in line. "Joey is first. Mei is second. Who is third?"
6. Use positional words to describe where toys are on the shelf. "The bear is beside the truck. It is between the truck and the doll. What is on the shelf above the truck?"
7. Create math centers that are engaging and DAP not just focused on "school skills" like writing numbers.
8. Read a variety of math-themed picture books and explore the math concepts. (see list of books below)
9. Talk about math in a positive way! Encourage children to be curious and try to make sense of the mathematical world. Describe problem solving and reasoning approaches to everyday problems. "I wonder if all of the blocks will fit in this tub. That is really a math problem, isn't it? Let's see if we can figure it out."
10. Go on pattern hunts and shape hunts. Use correct terminology for shapes.
11. Pump up the math in permanent centers. For example, put up a little sign that says, "How long is the sand table? Count bears to find out."
12. Keep the pan balance out—all the time! The balance is great for building ideas about equality and weight. "Two baby bears are equal to one papa bear." "My crayon box is lighter than a glue bottle."

What Directors Can Do

1. Require teachers to spend **at least 40 minutes a day** in focused math instruction and activities. This can be done in short segments and in whole and small group. Five minutes reading a counting book. Twenty minutes in math centers. Fifteen minutes doing a meaningful math activity in whole group with an individual activity to follow.
2. Encourage teachers to integrate math with other subjects and centers. For example, put play money in the dramatic play center. Put counters in the reading center so that children can "keep track" of illustrations on pages of counting books. Facilitate children's writing about math by posting numbers in writing center.
3. Purchase high quality math materials and make sure they are available for children to explore. (See list of manip below.)
4. Give teachers ongoing professional development in math. I would love to help!

- Listen for and reinforce teachers' "math talk." Encourage teachers to ask children who are building with blocks, "How many red blocks did you use?" "Can you make a pattern with the red, green, and blue blocks?" When you hear these things, cheer!
- Build a school-wide culture of math. Be math positive! Math is for every child, every day.
- Share math activities with parents through newsletters, bulletin boards, and displaying children's work.
- Communicate DAP math expectations to parents through newsletters, parent conferences, etc.
- Use authentic assessment to evaluate students' math learning (portfolios, observations, anecdotal records) then plan lessons.
- Include mathematics objectives on student assessments or evaluations. Be DAP! Not just recognizing numerals or counting.

Basic Manipulatives for Building Foundations in Math

Pattern Blocks

Pattern blocks can be used for:

- Patterns
- Geometry
- Symmetry

Hundred Charts

A hundred Chart can be used for:

- Visual counting/skip counting
- Visual addition and subtraction
- Patterns in our number system

Snap Cubes or Unifix Cubes

Can be used for:

- Counting/skip counting
- Addition/Subtraction
- Patterns
- Equality
- Graphing
- Measurement

- Probability

- 3D shapes

Color 1" Tiles

These are 1" x1" square color tiles in four colors. They can be used for:

- Counting/skip counting
- Patterns
- Addition/Subtraction
- Measurement (length and area)
- Graphing and probability

Two-Sided Counters

Two-Sided Counters are circular chips with different colors on each side.

They can be used for:

- Addition/Subtraction
- Probability

5 Frames and 10 Frames

They can be used for:

- Addition/Subtraction
- Grouping/Subitizing
- Counting

Other Useful Mathematics Tools:

- Number lines
- Dice & spinners
- Measuring cups and spoons
- Calculators
- Decks of cards
- Tangrams
- Blocks of all sorts
- Pan balance

Fifty Math Picture Books that are Worth Buying

(wordless picture books marked with *)

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| 1. Aker, S. | What Comes In 2's, 3's & 4's? | 26. Murphy, S. J. | Henry The Fourth |
| 2. Allen, P. | Who Sank The Boat | 27. Murphy, S. J. | Probably Pistachio |
| 3. *Anno, M. | Anno's Counting Book | 28. Murphy, S. J. | Room For Ripley |
| 4. *Burningham, J. | 1 2 3 | 29. Nathan & McCourt | The Long And Short Of It |
| 5. *Carle, E. | 1, 2, 3 To The Zoo | 30. O'Brien, M. | Counting Sheep To Sleep |
| 6. Carle, E. | The Grouchy Ladybug | 31. O'Leary, J. | Ten On A Train |
| 7. Carle, E. | Today Is Monday | 32. Ochiltree, D. | Sixteen Runaway Pumpkins |
| 8. Colandro, L. | There Was An Old Lady ...Shell | 33. Pienkowski, J. | Eggs For Tea |
| 9. Floca, B. | Five Trucks | 34. Rau, D. M. | A Star In My Orange |
| 10. Hubbard, W. | 2 Is For Dancing | 35. Ryan, P. M. | One Hundred Is A Family |
| 11. Hutchins, H. | A Second Is A Hiccup | 36. Reasoner, C. | Shapes For Lunch! |
| 12. Hutchins, H. | Two So Small | 37. Samton, S. W. | Moon To Sun: An Adding Book |
| 13. *Hutchins, P. | 1 Hunter | 38. Sheppard, J. | The Right Number Of Elephants |
| 14. Hutchins, P. | Clocks And More Clocks | 39. Sierra, J. | Counting Crocodiles |
| 15. Hutchins, P. | Rosie's Walk | 40. Slobodkina, E. | Caps For Sale |
| 16. Hutchins, P. | The Doorbell Rang | 41. Steiner, J. | Look-Alikes |
| 17. Jenkins, S. | Actual Size | 42. Thong, R. | Round Is A Mooncake |
| 18. Jenkins, S. | Biggest, Strongest, Fastest | 43. Viorst, J. | Alexander, Who Used...Sunday |
| 19. Jonas, A. | Round Trip | 44. Walters, V. | Are We There Yet, Daddy? |
| 20. Keats, E. J. | One Red Sun | 45. *Wegman, W. | 1 2 3 |
| 21. Leedy, L. | Measuring Penny | 46. Wells, R. E. | Is A Blue Whale The Biggest...? |
| 22. Lesser, C. | Spots | 47. Williams, R.L. | The Time Song |
| 23. Lionni, L. | Inch By Inch | 48. Wojtowycz, D. | Animal Antics From 1 To 10 |
| 24. Long, L. | Domino Addition | 49. Wood & Wood | Big Hungry Bear...Strawberry |
| 25. Merriam, E. | 12 Ways To Get To 11 | 50. Yolen & Teague | How Do Dinosaurs Count...? |