

SECTION: H

MATH GOALS

In this section, you will find...

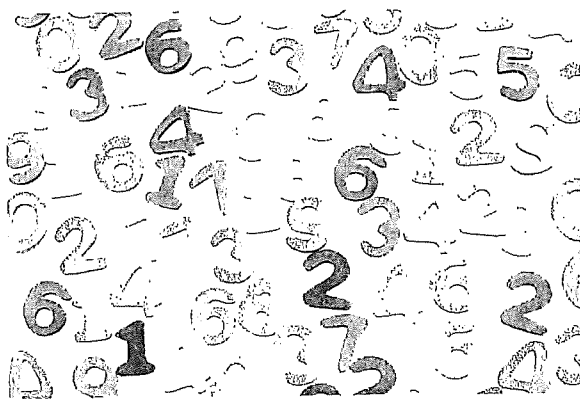
1. Math Goals for Transitional Kindergarten
2. Math Goals for Kindergarten
3. Math Goals for First Grade



Math Goals for Transitional Kindergarten

*Please note most of these goals are to be met by the end of Kindergarten.

- Counts orally to twenty.
- Counts with one to one correspondence to twenty.
- Writes numbers one through ten.
- Understands simple concepts of addition and subtraction up to 10.
- Identify shapes: circle, square, triangle, and rectangle and describe characteristics.
- Makes and names simple patterns.
- Sort and classify objects.
- Identify and apply math strategies to solve problems.



Math Goals for Kindergarten

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Counting and Order

- Count to 100 by ones and by tens.
- Count forward beginning with a different number instead of having to begin at 1 (begin at 5,6,7,...).
- Select the correct number card from 0 to 20 to name a number of objects, including 0 to show a count of no objects. For example, you have placed three beans on one paper, 5 matchbox cars on another sheet of paper, and 9 rocks on a third piece of paper. Ask your child to count the objects on each paper and select the appropriate number card to represent the number of objects on each paper.
- Understand the relationship between numbers and quantities; connect counting to order.
 - a. One-to-one correspondence. When counting, touch each object and give it the correct number name (1,2,3,4,...)
 - b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of how they are arranged (5 marbles all in a circle=5, 5 marbles in a straight line=5, 3 at the top of the page and 2 at the bottom=5, etc.)
- Understand that each successive number name refers to a quantity that is one larger.
- Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.
- Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
- Compare two numbers between 1 and 10 presented as written numerals (abstract level). Similar to #6, tell which number is greater than, less than, or equal to another number.

Operations and Equations

- Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
- Solve addition and subtraction word problems, and add and subtract 10, e.g., by using objects or drawings to represent the problem.
- Break numbers apart or Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).
- For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.
For example, draw 6 apples then have your child draw the next amount (4) to make a total of 10 apples.
- Fluently add and subtract within 5.

Working with numbers from 11 to 19

- Compose (put together) and decompose (take apart) numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.
For example, have your child count out 10 straws and wrap them in a group with a rubber band. Next, have them count out 6 straws that lay out individually. Starting with the group of ten straws count 10, then count on the ones: 11, 12, 13, 14, 15, 16 straws. You or your child can write the equation $10+6=16$ and your child can draw the straws below the equation if desired.

Measure, Compare, and Classify

- Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object (How many sides? How many corners?).
- Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.
For example, directly compare the heights of two children and describe one child as taller/shorter.
- Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.
For example, have your child sort M & Ms by color. Next, have your child count how many are in each group then arrange the groups in order from the smallest group to the largest group.

Geometry

- Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
- Correctly name shapes regardless of their orientations (ex.: turned on its side or standing upright) or overall size.
- Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").
- Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length). Talk about shapes using math language.
- Model shapes in the world by building shapes from components (e.g., sticks and clay balls, legos, etc.) and drawing shapes.
- Compose simple shapes to form larger shapes.
For example, "Can you join these two triangles with full sides touching to make a rectangle? Using pattern blocks for this is fun!

Math Goals for First Grade



Number and Operations in Base Ten

- Extend the counting sequence. (Count to 120, starting at any number less than 120)
- Understand place value. (Ones and tens)
- Use place value understanding and properties of operations to add and subtract. (Add within 100; mentally find 10 more or 10 less)

Measurement and Data

- Measure lengths indirectly and by iterating length units. (Order three objects by length; compare the lengths of two objects indirectly by using a third object)
- Tell and write time. (In hours and half-hours using analog and digital clocks)
- Represent and interpret data. (Up to three categories)

Geometry

- Reason with shapes and their attributes. (Defining attributes: triangles are closed and three-sided, Non-defined attributes: color, size, orientation; 2- and 3-dimensional shapes; partition circles and rectangles into two and four equal shares using the terms *halves*, *fourths*, and *quarters*)

Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.