

Course/Grade Level: Kindergarten Math Curriculum

Focus: Students will read, write, and identify numbers 0-20, as well as use models and manipulatives to explore mathematical relationships.

M.K.1 Students will demonstrate number sense for whole numbers 0-20, fractions, and money using concrete objects in a variety of situations. Students will...

- M.K.1.1 ▲ establish a one-to-one correspondence with whole numbers from 0-20 using concrete objects. (K.1.1.K1)
- M.K.1.2 ▲ compare and order whole numbers 0-20 using concrete objects.
- M.K.1.3 solve real-world problems using equivalent representations and concrete objects to compare and order whole numbers 0-10. (K.1.1.A1)
- M.K.1.4 locate whole numbers from 0-20 on a number line. (K.2.3.K1)
- M.K.1.5 recognize a whole, half, and part of a whole using concrete objects. e.g., half a pizza, part of a cookie, or the whole school. (K.1.1.K3)
- M.K.1.6 identify positions as first and last. (K.1.1.K4)
- M.K.1.7 ▲ identify penny, nickel, dime and state the value of each coin. (K.1.1.K5)

M.K.2 Students will use concrete models to examine the relationship between whole numbers and place value with numbers 0-20. Students will...

- M.K.2.1 ▲ recognize and write whole numbers 0-20 in numerical form.
- M.K.2.2 use place value models to represent whole numbers 0-20. e.g., base ten blocks, ten frames, unifix cubes, or straws bundled in 10's. (K.1.2.K2)
- M.K.2.3 solve real-world problems with whole numbers 0-20 using place value models. e.g., group the class into tens, count by tens, then continue counting by ones to find the total number of students in class. (K.1.2.A1)
- M.K.2.4 ▲ count whole numbers from 0-20, and backwards from 10-0. (K.1.2.K3a-b)
- M.K.2.5 use a number line to count forward and backwards from a specific number 0-10. (K.1.2.A2)
- M.K.2.6 skip count by 5's to 50, and 10's to 100. (K.1.2.K3c)
- M.K.2.7 group objects by 5's and 10's using concrete objects. (K.1.2.K5)
- M.K.2.8 sort objects by similar attributes. (K.2.1.K5)
- M.K.2.9 use the concept (not term) of the zero property of addition with whole numbers 0-20 and demonstrate its meaning using concrete objects. e.g., 4 apples and no (zero) other apples are 4 apples. (K.1.2.K5)

M.K.3 Students will model, perform, explain computation, and use computational estimation with whole numbers 0-10 using concrete objects in a variety of situations. Students will...

- M.K.3.1 use concrete objects to estimate whether a group of 20 objects has more, less, or about the same number of objects as a second set of the same kind of object. (K.1.3.K1)
- M.K.3.2 compare two randomly arranged groups of 10 or less concrete objects and state the comparison using the terms: more, less or about the same.
- M.K.3.3 add/subtract with whole numbers from 0-10 using various mathematical models. e.g., concrete objects, number lines, or unifix cubes. (K.1.4.K1)
- M.K.3.4 solve one-step real-world addition and subtraction problems with whole numbers from 0-10 using concrete objects in various groupings and explain reasoning. e.g., seven apples are in a basket, five students take one apple, how many apples are left? (K.1.4.A1)
- M.K.3.5 use concrete objects to find the unknown sum using basic facts with sums through 10. e.g., 5 marbles + 5 marbles = □ (K.2.2.K1)
- M.K.3.6 describe real-world addition problems with sums through 10 using concrete objects and pictures. e.g., there are 3 red marbles and 3 blue marbles. Altogether, there are 6 marbles. (K.2.2.A1)

M.K.4 Students will recognize, describe, continue, and generate relationships in patterns using concrete objects in a variety of situations. Students will...

- M.K.4.1 ▲ recognize and continue a pattern presented in various formats including numeric, visual, verbal, and kinesthetic (AB, AAB, and ABC patterns). Students need to be able to recognize that there is or is not a pattern, they do not have to name it as AB, etc. (K.2.1.K3)
- M.K.4.2 generate the following patterns using pictorial and oral descriptions, including the use of concrete objects. (K.2.1.A1a-b)
 - a. repeating patterns for the AB, AAB, ABC patterns
 - b. patterns using geometric shapes with one attribute change
 - c. whole numbers. e.g., 1,2,1,2,1,2 (K.2.1.K2a)
 - d. things related to daily life. e.g., breakfast, lunch, dinner (K.2.1.K2c)
- M.K.4.3 recognize multiple representations of the AB pattern. (K.2.1.A2)
- M.K.4.4 generate growing patterns that add 1, 2, or 10 to continue the pattern using pictorial, oral descriptions and/or concrete objects. (K.2.1.K1b)

M.K.5 Students will identify geometric shapes and their attributes using concrete objects in a variety of situations. Students will...

- M.K.5.1 ▲ recognize and identify circles, squares, rectangles, triangles, and ellipses. (K.3.1.K1)
- M.K.5.2 use concrete models, drawings, and/or appropriate technology to investigate attributes of circles, squares, rectangles, triangles, and ellipses. (K.3.1.K2)
- M.K.5.3 demonstrate how several plane figures (circles, squares, rectangle, triangles, ellipses) can be combined to make a new shape. (K.3.1.A1)
- M.K.5.4 sort cubes, rectangular prisms, cylinders, cones, and spheres (3-D solids) by their attributes using concrete objects (do not need to name them). (K.3.1.K3)
- M.K.5.5 sort real world geometric shapes that are representations of the 3-D solids. e.g., dice can be sorted as cubes, some boxes can be sorted as rectangular prisms, cans can be sorted as cylinders, some ice cream cones can be sorted as cones, and some balls as spheres. (K.3.1.A2)

M.K.6 Students will estimate and measure length, height, weight, temperature, and capacity using non-standard units of measure with concrete objects in a variety of situations. Students will ...

- M.K.6.1 use whole number estimations for length/height using non-standard units of measure. e.g., the door is about two kindergartners high or this pencil is about six connecting tubes long. (K.3.2.K1)
- M.K.6.2 compare two measurements using these terms: (K.3.2.K2a-d)
 - a. longer, shorter (length)
 - b. taller, shorter (height)
 - c. heavier, lighter (weight)
 - d. hotter, colder (temperature)
 - e. holds more, holds less (capacity)
- M.K.6.3 compare and order concrete objects by length or weight. (K.3.2.A1)
- M.K.6.4 locate and name concrete objects that are about the same length or weight as a given concrete object. (K.3.2.K3)
- M.K.6.5 ▲ read and tell time to the hour using analog and digital clocks. (K.3.2.K3)
- M.K.6.6 identify the following parts of a clock (face, minute hand, hour hand, numbers).
- M.K.6.7 ▲ recite in order the days of the week, and state the number of days in a week. (1.3.2.K6)

M.K.7 Students will develop a foundation for spatial sense using concrete objects in a variety of situations. Students will ...

- M.K.7.1 describe the spatial relationship between two concrete objects using appropriate vocabulary including, but not limited to, behind, above, below, on, under, up, or down. (K.3.3.K1)
- M.K.7.2 ▲ identify the spatial relationships of left and right. (K.3.3.K1)
- M.K.7.3 identify two like objects or shapes from a set of four objects. (K.3.3.K2)
- M.K.7.4 demonstrate that two concrete objects or shapes are congruent by physically fitting one object or shape on top of the other (students do not need to know the term congruent, just the concept). (K.3.3.A1)
- M.K.7.5 demonstrate spatial relationships by moving concrete objects from one location to another when given appropriate vocabulary. e.g., move object: up, down, behind, above. (K.3.3.A2)

M.K.8 Students will collect, record, and interpret numerical (whole numbers) and non-numerical data. Students will ...

- M.K.8.1 record numerical and non-numerical data in bar graphs, pictographs (with each picture representing one), and frequency tables. (K.4.2.K1)
- M.K.8.2 collect data related to familiar everyday experiences by counting and tallying. (K.4.2.K2)
- M.K.8.3 interpret and communicate results of bar graphs, pictographs, and frequency tables. (K.4.2.K1)
- M.K.8.4 identify the most occurring (mode) by one attribute. e.g., color, shape, size. (The concept of mode, not the term). (K.4.2.K3)