



# Arizona Mathematics Standards– Kindergarten Standards Placemat

Grade level content emphasis indicated by: ● Major Cluster; ▲ Supporting Cluster

## 1. Develop competency with counting and the relationship to quantity.

Students use numbers, including written numerals, to represent quantities such as counting objects in a set; counting out a given number of objects; comparing sets or numerals and recognizing the cardinalities of small sets of objects.

## 2. Develop understanding of addition and subtraction and understands various strategies for addition and subtraction within 10.

Students use numbers including written numerals to represent and solve quantitative problems. Students choose, combine, and apply effective strategies to solve problems. They will model simple joining and separating situations with sets of objects or eventually with equations. Kindergarten students should see addition and subtraction equations; student writing of equations is encouraged but not required.

## 3. Develop place value understanding of whole numbers through 19.

Students work with quantities through 10 by finding two smaller quantities to compose a larger quantity. In addition, they determine the quantity needed to make 10 when given a quantity 0-9. Students compose and decompose numbers 11-19, with a focus on ten and some more ones, as a foundation for place value understanding.

### Counting and Cardinality

#### ● K.CC.A Know number names and the count sequence.

K.CC.A.1: Count to 100 by ones and by tens.

K.CC.A.2: Count forward from a given number other than one, within the known sequence (e.g., "Starting at the number 5, count up to 11.").

K.CC.A.3: Write numbers from 0 to 20. Represent a number of objects with a written numeral 0 to 20 (with 0 representing a count of no objects).

#### ● K.CC.B Counting to tell the number of objects.

K.CC.B.4: Understand the relationship between numbers and quantities; connect counting to cardinality.

- a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
- b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
- c. Understand that each successive number name refers to a quantity that is one larger.

K.CC.B.5: Count to answer questions about "How many?" when 20 or fewer objects are 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 to 20, count out that many objects.

#### ● K.CC.C Comparing numbers.

K.CC.C.6: Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group. (Include groups with up to ten objects.)

K.CC.C.7: Compare two numbers between 0 and 10 presented as written numerals.

### Operations and Algebraic Thinking

#### ● K.OA.A Understanding addition as putting together and adding to, and understanding subtraction as taking apart and taking from.

K.OA.A.1: Represent addition and subtraction concretely. See Table 1.

K.OA.A.2: Solve addition and subtraction word problems and add and subtract within 10. See Table 1.

K.OA.A.3: Decompose numbers less than or equal to 10 into pairs in more than one way (e.g., using fingers, objects, symbols, tally marks, drawings, expressions).

K.OA.A.4: For any number from 1 to 9, find the number that makes 10 when added to the given number (e.g., using fingers, objects, symbols, tally marks, drawings, or equation).

K.OA.A.5: Fluently add and subtract within 5.

### Number and Operations in Base Ten

#### ● K.NBT.A Working with numbers 11 – 19 to gain foundations for place value.

K.NBT.A.1: Compose and decompose numbers from 11 to 19 into ten ones and additional ones by using objects, drawings and/or equations. Understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones (e.g.,  $18 = 10 + 8$ ).

#### ● K.NBT.B Use place value understanding and properties of operations to add and subtract.

K.NBT.B.2: Demonstrate understanding of addition and subtraction within 10 using place value. See Table 1.

### Measurement and Data

#### ▲ K.MD.A Describe and compare measurable attributes.

K.MD.A.1: Describe measurable attributes of a single object (e.g., length and weight).

K.MD.A.2: Directly compare two objects with a measurable attribute in common to see which object has "more of" or "less of" the attribute, and describe the difference (e.g., directly compare the length of 10 cubes to a pencil and describe one as longer or shorter).

#### ▲ K.MD.B Classify objects and count the number of objects in each category.

K.MD.B.3: Classify objects into given categories; count the number in each category and sort the categories by count. (Note: limit category counts to be less than or equal to 10.)

### Geometry

#### ▲ K.G.A Identify and describe shapes.

K.G.A.1: 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.

K.G.A.2: Correctly name shapes regardless of their orientation or overall size (e.g., circle, triangle, square, rectangle, rhombus, trapezoid, hexagon, cube, cone, cylinder, sphere).

K.G.A.3: Identify shapes as two-dimensional (lying in a plane, flat) or three-dimensional (solid).

#### ▲ K.G.B Analyze, compare, create, and compose shapes.

K.G.B.4: Analyze and compare two-dimensional 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).

K.G.B.5: Model shapes in the world by building shapes from components (e.g., use sticks and clay balls) and drawing shapes.

K.G.B.6: Use simple shapes to form composite shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"

### Mathematical Practices

The Standards for Mathematical Practice complement the content standards so that students increasingly engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle, and high school years.

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

Arizona is suggesting instructional time encompass a range of at least 65%-75% for Major Clusters and a range of 25%-35% for Supporting Cluster instruction.