Sequence of Kindergarten Modules Aligned with the Standards

Module 1: Numbers to 10
Module 2: Two-Dimensional and Three-Dimensional Shapes
Module 3: Comparison of Length, Weight, Capacity, and Numbers to 10
Module 4: Number Pairs, Addition and Subtraction to 10
Module 5: Numbers 10–20 and Counting to 100
Module 6: Analyzing, Comparing, and Composing Shapes

Summary of Year

Kindergarten mathematics is about (1) representing, relating, and operating on whole numbers, initially with sets of objects; and (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

Key Areas of Focus for K-2:   Addition and subtraction—concepts, skills, and problem solving

Required Fluency: K.OA.5   Add and subtract within 5.

AZCCRS Major Emphasis Clusters

Counting and Cardinality
- Know number names and count sequence.
- Count to tell the number of objects.
- Compare numbers.

Operations and Algebraic Thinking
- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Number and Operations in Base Ten
- Work with numbers 11-19 to gain foundations for place value.

Rationale for Module Sequence in Kindergarten

Like Pre-Kindergarten, in Module 1, Kindergarten starts out with solidifying the meaning of numbers to 10 with a focus on embedded numbers and relationships to 5 using fingers, cubes, drawings, 5 groups and the Rekenrek. Students then investigate patterns of "1 more" and "1 less" using models such as the number stairs (see picture). Because fluency with addition and subtraction within 5 is a Kindergarten goal, addition within 5 is begun in Module 1 as another representation of the decomposition of numbers.

In Module 2, Students learn to identify and describe squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres. During this module students also practice their fluency with numbers to 10.

Number Stairs

In Module 3, students begin to experiment with comparison of length, weight and capacity. Students first learn to identify the attribute being compared, moving away from non-specific language such as "bigger" to "longer than," "heavier than," or "more than." Comparison begins with developing the meaning of the word "than" in the context of "taller than," "shorter than," "heavier than," "longer than," etc. The terms "more" and "less" become increasingly abstract later in Kindergarten. "7 is 2 more than 5" is more abstract than "Jim is taller than John."

In Module 4, number comparison leads to a further study of embedded numbers (e.g., "3 is less than 7" leads to, "3 and 4 make 7," and 3 + 4 = 7,). "1 more, 2 more, 3 more" lead into addition (+1, +2, +3). Students now represent stories with blocks, drawings, and equations.

After Module 5, after students have a meaningful experience of addition and subtraction within 10 in Module 4, they progress to exploration of numbers 10-20. They apply their skill with and understanding of numbers within 10 to teen numbers, which are decomposed as "10 ones and some ones." For example, "12 is 2 more than 10." The number 10 is special; it is the anchor that will eventually become the "ten" unit in the place value system in Grade 1.

Module 6 rounds out the year with an exploration of shapes. Students build shapes from components, analyze and compare them, and discover that they can be composed of smaller shapes, just as larger numbers are composed of smaller numbers.

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Module and Approximate Number of Instructional Days	AZ College and Career Ready Standards Addressed in Kindergarten Modules[12]
Module 1: **Numbers to 10[13]** (43 days) **1st Quarter** **Aug 7-Oct 3**	**Know number names and the count sequence.[14]** **K.CC.3** Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). **Count to tell the number of objects.[15]** **K.CC.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.5** 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. **Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.[16]** **K.OA.3** 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). **Classify objects and count the number of objects in each category.** **K.MD.3** Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.)

[12] When a cluster is referred to in this chart without a footnote, the cluster is taught in its entirety.   [13] In this module, standards work is limited to within 10.

[14] The balance of this cluster is addressed in Module 5.

[15] K.CC.4d is addressed in Module 6.

[16] The balance of this cluster is addressed in Module 4.

Module and Approximate Number of Instructional Days	AZ College and Career Ready Standards Addressed in Kindergarten Modules
Module 2: **Two-Dimensional and Three-Dimensional Shapes** (12 days) **2nd[t] Quarter** **Oct 6-Oct 24**	**Classify objects and count the number of objects in each category.** **K.MD.3** Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.) **Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).** **K.G.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.2** Correctly name shapes regardless of their orientations or overall size. **K.G.3** Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). **Analyze, compare, create, and compose shapes.[17]** **K.G.4** 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).
Module 3: **Comparison of Length, Weight, Capacity, and Numbers to 10** (38 days) **2nd Quarter** **Oct 27-Dec 19**	**Compare numbers.** **K.CC.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, e.g., by using matching and counting strategies. (Include groups with up to ten objects.) **K.CC.7** Compare two numbers between 1 and 10 presented as written numerals. Describe and compare measurable attributes. **K.MD.1** Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. **K.MD.2** 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.*

[17] The balance of this cluster is addressed in Module 6.

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Module and Approximate Number of Instructional Days	AZ College and Career Ready Standards Addressed in Kindergarten Modules[12]
Module 4: **Number Pairs, Addition and Subtraction to 10** (47 days) **3rd Quarter** Jan. 5- March 6	**Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.** **K.OA.1** Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. (Drawings need not show details, but should show the mathematics in the problem.) **K.OA.2** Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. **K.OA.3** 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). **K.OA.4** 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. **K.OA.5** Fluently add and subtract within 5.

Module 5:	**Know number names and the count sequence.**
Numbers 10–20 and Counting to 100 (30 days) **4th Quarter** **March 9-May 8**	**K.CC.1** Count to 100 by ones and by tens.

Module 5:

Numbers 10–20 and Counting to 100

(30 days)

4th Quarter

March 9-May 8

Know number names and the count sequence.

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

K.CC.2   Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

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

Count to tell the number of objects.[18]

K.CC.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.5 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.

Work with numbers 11-19 to gain foundations for place value.

K.NBT.1   Compose and decompose 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 (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two three, four, five, six, seven, eight or nine ones.

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[18] K.CC.4d is addressed in Module 6.

Module and Approximate Number of Instructional Days	AZ College and Career Ready Standards Addressed in Kindergarten Modules[12]
Module 6: **Analyzing, Comparing, and Composing Shapes** (10 days) **4th Quarter** **May 11-May 28**	**Count to tell the number of things.[19]** **K.CC.4** Understand the relationship between numbers and quantities: connect counting to cardinality. d. Develop understanding of ordinal numbers (first through tenth) to describe the relative position and magnitude of whole numbers. **Analyze, compare, create and compose shapes.** **K.G.4** 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). **K.G.5** Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. **K.G.6** Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?*

[19] Ordinality is introduced in the context of constructing and manipulating shapes. The balance of this cluster is addressed in Modules 1 and