

**MATHEMATICAL IDEAS & CONCEPTS:**

- Continue to know number names and the count sequence
- Continue to count to tell the number of objects
- Continue to compare number of objects and two numbers presented as written numerals between 0-20
- Continue to represent modeling strategies to solve simple joining and separating situations using objects, drawings, and *expressions or equations*
- Continue to decompose and compose numbers up to 10 using objects and drawings
- Continue to develop understanding of teen numbers
- Continue to compare and classify objects
- Continue to analyze and compare shapes
- Begin to develop concepts of time and money *new this quarter*

ESSENTIAL QUESTIONS:

1. *How does counting help me solve problems?*
2. *How can I solve problems and represent my thinking?*
3. *Why do I compare and classify objects?*
4. *How are shapes the same and how are they different?*

STANDARDS:

Aligned to Essential Questions; (★) Big Idea/Concept Standard with supporting standards (→) connected below

Notes in gray font are from the AR Mathematics standards; RPS instructional pacing notes are in red font

EQ 1: How does counting help me solve problems?

- ★ **K.CC.A.1** Count to 100 by ones, fives, and tens *Q4 Expectation: Count to at least 100 by ones, 100 by tens, and 100 by fives*
 - **K.CC.A.2** Count forward, by ones, from any given number up to 100 *Q4 Expectation: Count to at least 100 by ones*

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

When counting objects:

- Say the numbers in order, pairing each object with only one number and each number with only one object (one to one correspondence)
- Understand that the last number said tells the number of objects counted
- Understand that each successive number refers to a quantity that is one larger

- **K.CC.A.3** Read, write, and represent numerals from 0 to 20 *Q4 Expectation: at least up to 20*

Note: K.CC.A.3 addresses the writing of numbers and using the written numerals 0-20 to describe the amount of a set of objects. Due to varied progression of fine motor and visual development, a reversal of numerals is anticipated for the majority of students. While reversals should be pointed out to students, the emphasis is on the use of numerals to represent quantities rather than the correct handwriting of the actual number itself.

- **K.CC.C.6** Identify whether the number of objects in one group from 0-10 is greater than (more, most), less than (less, fewer, least), or equal to (same as) the number of objects in another group of 0-10. *For example: Use matching and counting strategies to compare values.*

- **K.CC.C.7** Compare two numbers between 0 and 20 presented as written numerals

Note: K.CC.C.7 The use of the symbols for greater than/less than should not be introduced in this grade level. Appropriate terminology to use would be more than, less than, or the same as.

Standards associated with this essential standard continue on next page...



EQ 1: How does counting help me solve problems? continued...

★ **K.CC.B.5** Count to answer “how many?”:

- Count up to 20 objects in any arrangement
- Count up to 10 objects in a scattered configuration
- Given a number from 1-20, count out that many objects

Note: K.CC.B.5 As students progress, they may first move the objects, counting as they move them. Students may also line up objects to count them. If students have a scattered arrangement, they may touch each item as they count it, or if students have a scattered arrangement, they may finally be able to count them by visually scanning without touching the items

→ **K.CC.C.8** Quickly identify a number of items in a set from 0-10 without counting (e.g., dominoes, dot cubes, tally marks, ten-frames)

EQ 2: How can I solve problems and represent my thinking?

Problem types include: join result unknown (JRU), separate result unknown (SRU), join change unknown (JCU), separate change unknown (SCU), part-part-whole whole unknown (PPW-WU) and part-part-whole both parts unknown (PPW-PPU)

★ **K.OA.A.2** Solve real-world problems that involve addition and subtraction within 10 (e.g., by using objects or drawings to represent the problem)

→ **K.OA.A.1** Represent addition and subtraction using objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, *expressions* (e.g., $2+3$), or *equations* (e.g., $2+3 =$)

Note: K.OA.A.1 Expressions and equations are not required but are recommended by the end of Kindergarten.

Q4 Expectation: represent problem solving using objects, fingers, mental images, sounds, acting out situations, drawings, and expression or equations.

★ **K.OA.A.3** Use objects or drawings to decompose (break apart) numbers less than or equal to 10 into pairs in more than one way, and record each decomposition (part) by a drawing or an equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$)

Note: K.OA.A.3 Students should see equations and be encouraged to recognize that the two parts make the whole. However, writing equations is not required.

→ **K.OA.A.4** 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

Note: K.OA.A.4 Use of different manipulatives such as ten-frames, cubes, or two-color counters, assists students in visualizing these number pairs.

→ **K.OA.A.5** Fluently add and subtract within 10 by using various strategies and manipulatives

Note: K.OA.A.5 Fluency in this standard means accuracy (correct answer), efficiency (a reasonable amount of steps), and flexibility (using various strategies).

Fluency is developed by working with many different kinds of objects over an extended period of time. This objective does not require the students to instantly know the answer. Student experiences with all OA standards help provide this flexibility and promote fluency at this level.

★ **K.NBT.A.1** Develop initial understanding of *place value* and the base-ten number system by showing equivalent forms of *whole numbers* from 11 to 19 as groups of tens and ones using objects and drawings *Use a group of ten ones and some more ones to represent teen numbers*



EQ 3: Why do I compare and classify objects?

- ★ **K.MD.A.2** Describe the difference when comparing two objects (side-by-side) with a measurable *attribute* in common, to see which object has more of or less of the common *attribute* *These standards are easily paired with science concepts*
 - **K.MD.A.1** Describe several measurable *attributes* of a single object, including but not limited to length, weight, height, and temperature.
Note: K.MD.A.1 Vocabulary may include short, long, heavy, light, tall, hot, cold, warm, or cool.
 - **K.MD.B.3** Classify, sort, and count objects using both measurable and non-measurable *attributes* such as size, number, color, or shape
Note: K.MD.B.3 Limit category count to be less than or equal to 10. Students should be able to give the reason for the way the objects were sorted.

EQ 4: How are shapes the same and how are they different?

- ★ **K.G.B.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)
Note: K.G.B.4 2-D shapes: squares, circles, triangles, rectangles, and hexagons; 3-D shapes: cube, cone, cylinder, and sphere
Standards could be connected to K.MD.B.3 when sorting and classifying
 - **K.G.A.1** Describe the positions of objects in the environment and geometric shapes in space using names of shapes, and describe the relative positions of these objects
Note: K.G.A.1 Positions could be inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of, to the right of, or beside.
 - **K.G.A.2** Correctly name shapes regardless of their orientations or overall size
Note: K.G.A.2 Orientation refers to the way the shape is turned (upside down, sideways).
 - **K.G.B.5** Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and by drawing shapes
 - **K.G.B.6** Compose two-dimensional shapes to form larger two-dimensional shapes *For example:* join two squares to make a rectangle or join six equilateral triangles to form a hexagon.

Additional Standards

- **K.MD.C.4** *Yearlong standard with minimal instructional focus*
 - Understand concepts of time including morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year
 - Understand that clocks, both analog and digital, and calendars are tools that measure time
- **K.MD.C.5** Read time to the hour on digital and analog clocks *new this quarter*
Note: K.MD.C.5 This is an introductory skill and is addressed more formally in the upcoming grade levels
- **K.MD.C.6** Identify pennies, nickels, and dimes, and know the *value* of each *new this quarter*
Note: K.MD.C.6 This is an introductory skill and is addressed more formally in the upcoming grade levels.