

Desired Results Developmental Profile (DRDP-K) Correspondence to California Learning Standards: Cognition: Math (COG: MATH) and the Common Core State Standards for Mathematics in Kindergarten

The Common Core State Standards (CCSS) for Mathematics include Standards for Mathematical Practice and Standards for Mathematical Content. The alignment of the DRDP-K Cognition: Math (COG: MATH) measures to the CCSS for Mathematics in Kindergarten indicates a significant level of correspondence for both Mathematical Practice Standards and Mathematical Content Standards. The Standards for Mathematical Practice describe mathematical processes that play an important role in learning concepts and skills in all content areas of mathematics and at all grade levels (K–12). These practices are listed on the overview of each grade level of content standards as “mathematical practices.” The COG: MATH domain addresses all eight mathematical practices, with each measure assessing multiple mathematical practices. For example, when children classify objects, count, solve math problems, measure, or attend to characteristics of different shapes, they use various mathematical practices. The DRDP-K measures show how children develop their ability to attend to precision (solving math problems), reason abstractly (e.g., classification), look for and express regularity (patterning), make sense of problems (math operations), and look for and make use of structure (classification).

Mathematical Practices

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.

Similarly, there are significant correspondences between the CCSS for Mathematical Content in Kindergarten and the math measures in the DRDP-K. The COG: MATH measures assess the development of key concepts and skills covered in the Standards for Mathematical Content in Kindergarten in each of the following key areas: Counting and Cardinality, Operations and Algebraic Thinking, Number and Operations in Base Ten, Measurement and Data, and Geometry. For example, the COG: MATH measures of Number Sense of Quantity and Number Sense of Math Operations address key concepts and skills in the CCSS for Counting and Cardinality and Operations and Algebraic Thinking. Also, the COG: MATH measures of Classification and Measurement assess skills and concepts in the CCSS for Measurement and Data, and the measure of Shapes addresses key concepts in the CCSS for Geometry. The CCSS for Mathematical Content do not include Patterning, but the COG: MATH measure of Patterning maps to CCSS in Mathematical Practice, specifically to Practice Standard 7, *Look for and make use of structure*, and Practice Standard 8, *Look for and express regularity in repeated reasoning*. The skills described in the CCSS under “Compare Numbers” in Counting and Cardinality are not explicitly covered in the DRDP-K, but this set of skills is assessed indirectly by the COG: MATH measures of Number Sense of Quantity and Number Sense of Math Operations. Overall, the concepts and skills in the CCSS in Mathematics for Kindergarten are represented in the various DRDP-K math measures. In each of the COG: MATH measures, the sequence of levels delineates a continuum of development. The descriptions at the last three levels, within each measure, cover the mathematical concepts and skills that children often

develop during kindergarten. The table below details the correspondence between the CCSS Kindergarten Content Standards and the DRDP-K COG: MATH measures.

**Correspondence between the DRDP-K Instrument and
the Common Core State Standards for Mathematics, Standards for Mathematical Content in
Kindergarten**

DRDP-K Measure	Common Core State Standards (CCSS) for Mathematical Content in Kindergarten	Measure Corresponds with CCSS for Mathematics in the Following Ways:
<p>COG: MATH 1: Classification</p> <p>Definition: Child shows an increasing ability to compare, match, and sort objects into groups according to their attributes</p>	<p>Measurement and Data</p> <p>Standard 3: Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.</p>	<p>Child classifies objects and counts the number of objects in categories (Measurement and Data 3).</p>
<p>COG: MATH 2: Number Sense of Quantity</p> <p>Definition: Child shows developing understanding of number and quantity</p>	<p>Counting and Cardinality</p> <p>Standard 1: Count to 100 by ones and by tens.</p> <p>Standard 2: Count forward beginning from a given number within the known sequence (instead of having to begin at 1).</p> <p>Standard 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).</p> <p>Standard 4: Understand the relationship between numbers and quantities; connect counting to cardinality.</p>	<p>Child demonstrates ability to count to 100 by ones and tens and to count forward in a given sequence of numbers. Additionally, the child writes numbers 0 to 20 (Counting and Cardinality 1–3).</p> <p>Child demonstrates ability to count in a variety of configurations to tell the number of the objects he or she is counting (Counting and Cardinality 4).</p>
<p>COG: MATH 2: Number Sense of</p>	<p>Standard 5: Count to answer “how</p>	<p>Child demonstrates ability to</p>

DRDP-K Measure	Common Core State Standards (CCSS) for Mathematical Content in Kindergarten	Measure Corresponds with CCSS for Mathematics in the Following Ways:
<p>Quantity (continued)</p> <p>Definition: Child shows developing understanding of number and quantity</p>	<p>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.</p> <p>Number and Operations in Base Ten</p> <p>Standard 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 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.</p>	<p>count in a variety of configurations to tell the number of the objects he or she is counting (Counting and Cardinality 5).</p> <p>Child demonstrates ability to work with numbers 11–19 through composition and decomposition to gain foundations for place value (Number and Operations in Base Ten 1).</p>
<p>COG: MATH 3: Number Sense of Math Operations</p> <p>Definition: Child shows increasing ability to add and subtract small quantities of objects</p>	<p>Operations and Algebraic Thinking</p> <p>Standard 1: Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.</p> <p>Standard 2: Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.</p>	<p>Child understands addition as putting together and adding to, and understands subtraction as taking apart and taking from. Additionally, the child demonstrates ability to use objects or drawings to represent the problem (Operations and Algebraic Thinking 1–2).</p>
<p>COG: MATH 3: Number Sense of</p>	<p>Standard 3: Decompose numbers</p>	<p>Child understands addition as</p>

<p>DRDP-K Measure</p>	<p>Common Core State Standards (CCSS) for Mathematical Content in Kindergarten</p>	<p>Measure Corresponds with CCSS for Mathematics in the Following Ways:</p>
<p>Math Operations (continued)</p> <p>Definition: Child shows increasing ability to add and subtract small quantities of objects</p>	<p>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 $5 = 4 + 1$).</p> <p>Standard 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.</p> <p>Standard 5: Fluently add and subtract within 5.</p>	<p>putting together and adding to, and understands subtraction as taking apart and taking from. Additionally, the child demonstrates ability to use objects or drawings to represent the problem (Operations and Algebraic Thinking 3–5).</p>
<p>COG: MATH 4: Measurement</p> <p>Definition: Child shows an increasing understanding of measurable properties such as size, length, weight, and capacity (volume), and how to quantify those properties</p>	<p>Measurement and Data</p> <p>Standard 1: Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.</p> <p>Standard 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 differences. <i>For example, directly compare the heights of two children and describe one child as taller/shorter.</i></p>	<p>Child demonstrates ability to describe and compare measurable attributes (Measurement and Data 1 and 2).</p>

DRDP-K Measure	Common Core State Standards (CCSS) for Mathematical Content in Kindergarten	Measure Corresponds with CCSS for Mathematics in the Following Ways:
<p>COG: MATH 5: Patterning</p> <p>Definition: Child shows an increasing ability to recognize, reproduce, and create patterns of varying complexity</p>	<p><i>Note: The CCSS Standards for Mathematical Content in Kindergarten do not address concepts and skills related to patterning. However, two of the Standards for Mathematical Practice—7. Look for and make use of structure and 8. Look for and express regularity in repeated reasoning—are particularly well addressed by the Patterning measure. Rating this measure is important for two reasons: DRDP-K is psychometrically valid at the domain level, and it provides teachers with information about children’s abilities with patterning to plan curriculum and support individual children’s learning and development in mathematical practices.</i></p>	
<p>COG: MATH 6: Shapes</p> <p>Definition: Child shows an increasing knowledge of shapes and their characteristics</p>	<p>Geometry</p> <p>Standard 1: Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as <i>above, below, beside, in front of, behind, and next to</i>.</p> <p>Standard 2: Correctly name shapes regardless of their orientation or overall size.</p> <p>Standard 3: Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).</p> <p>Standard 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).</p>	<p>Child demonstrates ability to identify and describe shapes regardless of position, presentation, or dimension (Geometry 1–3).</p> <p>Child demonstrates ability to analyze, compare, create, and compose shapes (Geometry 4).</p>

DRDP-K Measure	Common Core State Standards (CCSS) for Mathematical Content in Kindergarten	Measure Corresponds with CCSS for Mathematics in the Following Ways:
<p>COG: MATH 6: Shapes (continued)</p> <p>Definition: Child shows an increasing knowledge of shapes and their characteristics</p>	<p>Standard 5: Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.</p> <p>Standard 6: Compose simple shapes to form larger shapes. <i>For example, “Can you join these two triangles with full sides touching to make a rectangle?”</i></p>	<p>Child demonstrates ability to analyze, compare, create, and compose shapes (Geometry 5–6).</p>

Standards for Mathematical Content not addressed by DRDP-K (2015) COG: MATH domain

- Counting and Cardinality 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 by using matching and counting strategies.
- Counting and Cardinality 7: Compare two numbers between 1 and 10 presented as written numerals.