UCSD #1 Math Essential Standards 19-20

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| **Sta**  **#** | **K** | **1st** | **2nd** | **3rd** | **4th** | **5th** | **Proficiency Scale** |
| **Counting & Cardinality (Kindergarten)** | | | | | | | |
| CC.1 | Count to 100 by ones and by tens. |  |  |  |  |  |  |
| CC.2 | Count forward beginning from a given number within the known sequence (instead of having to begin at 1. |  |  |  |  |  |  |
| CC.3 | Write numbers from 0-20. |  |  |  |  |  |  |
| CC.5 | Count to answer “how many?” questions (more than 20 things arranged in a line, a rectangular array, or a circle). |  |  |  |  |  |  |
| CC.6 | Identify whether the number of objects in one group is >, <, or = to the number of objects in another group. |  |  |  |  |  |  |
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| **Operations and Algebraic Thinking (K-5)** | | | | | | | |
| OA.1 |  | Use addition and subtraction within 20 to solve word problem situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions. | Use addition and subtraction within 100 to solve one-and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing. | Interpret products of whole numbers, e.g., interpret 5x7 as the total number of objects in 5 groups of 7 objects each. | Interpret a multiplication as a comparison, e.g., interpret 35 = 5x7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. | Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. |  |
| OA.2 | Solve addition and subtraction word problems, and add and subtract within 10. |  | Fluently add and subtract within 20 using mental strategies. | Interpret whole-number quotients of whole numbers. |  |  |  |
| OA.3 | Decompose numbers less than or equal to 10 into pairs in more than one way. |  |  |  | Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. |  |  |
| OA.4 |  |  | Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns. |  |  |  |  |
| OA.5 | Fluently add and subtract within 5. |  |  | Apply properties of operations as strategies to multiply and divide. |  |  |  |
| OA.6 |  | Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. |  |  |  |  |  |
| OA.8 |  |  |  | Solve two-step word problems using the four operations. |  |  |  |
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| **Geometry (K-5)** | | | | | | | |
| G.1 | Describe objects in the environment using names of shapes, and describe the relative positions of these objects. | Distinguish between defining attributes (e.g., triangles are closed and three-sided) vs. non-defined attributes (e.g., color orientation, overall size). | Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. | Understand that shapes in different categories (e.g., rhombuses, rectangles) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). |  | Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. |  |
| G.2 | Correctly name shapes regardless of their orientations or overall size. | Compose two-dimensional shapes or three-dimensional shapes to create composite shapes, and compose new shapes from the composite shape. |  |  | Classify two-dimensional figures based on the presence of absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. |  |  |
| G.3 |  | Partition circles and rectangles into two and four equal shares, describe the shares using the word halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. | Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of , a third of, etc.,and describe the whole as two halves, three thirds, and four fourths. |  |  |  |  |
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| **Number and Operations in Base Ten (K-5)** | | | | | | | |
| NBT.1 | Compose and decompose numbers from 11 to 19 into ten ones and some further ones. | Count to 120, starting at any number less than 120. | Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. | Use place value understanding to round whole numbers to the nearest 10 or 100. |  | Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. |  |
| NBT.2 |  | Understand that the two digits of a two-digit number represent amounts of tens and ones. | Count within 1000; skip-counting by 5’s, 10’s and 100’s. | Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations and/or the relationship between addition and subtraction. | Read and write multi-digit numbers using base-ten numerals, number names, and expanded form. |  |  |
| NBT.3 |  |  | Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. |  |  | Read, write, and compare decimals to thousandths. |  |
| NBT.4 |  | Adding within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10. |  |  | Fluently add and subtract multi-digit whole numbers using the standard algorithm. |  |  |
| NBT.5 |  |  | Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or relationship between addition and subtraction. |  | Multiply a whole number of up to four digits by one-digit number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. | Fluently multiply multi-digit whole numbers using the standard algorithm. |  |
| NBT.6 |  |  |  |  | Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. | Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. |  |
| NBT.7 |  |  | Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. |  |  | Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. |  |
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| **Number and Operations-Fractions (3-5)** | | | | | | | |
| NF.1 |  |  |  |  | Explain why a fraction *a/b* is equivalent to a fraction (n x a)/(n x b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. | Add and subtract fractions with unlike denominators (including mixed numbers)-by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. |  |
| NF.2 |  |  |  | Understand a fraction as a number on the number line; represent fractions on a number line diagram. | Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fractions such as ½. |  |  |
| NF.3 |  |  |  | Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. | (NF.3c)- Understand a fraction *a/b* with *a>1* as a sum of fractions *1/b*.  Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. |  |  |
| (NF.3d)- Understand a fraction *a/b* with *a>1* as a sum of fraction *1/b*.  Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators. |
| NF.4 |  |  |  |  |  | Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. |  |
| NF.6 |  |  |  |  | Use decimal notation for fractions with denominators 10 or 100. | Solve real world problems involving multiplication of fractions and mixed numbers. |  |
| NF.7 |  |  |  |  |  | Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions. |  |
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| **Measurement and Data (K-5)** | | | | | | | |
| MD.1 |  |  | Measure the length of an object by selecting and using appropriate tools. | Tell and write time to the nearest minute and measure time intervals in minutes. |  | Convert among different-sized standard measurement units within a given measurement system. |  |
| 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. | Express the lengths of an object as a whole number of length units, by laying multiple copies (units) of shorter object (the length unit) end to end. |  |  | Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals. |  |  |
| MD.3 |  |  |  | Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. |  |  |  |
| MD.4 |  | Organize, represent, and interpret data with up to three categories. |  | Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. |  |  |  |
| MD.3 |  | Tell and write time in hours and half-hours using analog and digital clocks. |  |  |  |  |  |
| MD.5 |  |  |  |  |  | Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. |  |
| MD.7 |  |  | Tell and write time from analog and digital clocks to the nearest five minutes using a.m. and p.m. | Relate area to the operations of multiplication and addition. |  |  |  |
| MD.8 |  |  | Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. | Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. |  |  |  |
| MD.10 |  |  | Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. |  |  |  |  |