**K-5 Number and Number Sense Progression**

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| **COUNTING, COMPARING AND ORDERING – WHOLE NUMBERS** | | | | | | | |
| **K** | | **1** | | | | **2** | |
| **K.1 The student will**  a) tell how many are in a given set of 20 or fewer objects by counting orally; and  b) read, write, and represent numbers from 0 through 20.   * Count orally to tell how many are in a given set containing 20 or fewer concrete objects, using one-to-one correspondence, and identify the corresponding numeral. (a) * Read, write, and represent numbers from 0-20 to include: * Construct a set of objects that corresponds to a given numeral, including an empty set; * Read and write the numerals from 0 through 20; * Identify written numerals from 0 through 20 represented in random order; * Identify the numeral that corresponds to the total number of objects in a given set of 20 or fewer concrete objects; and * Write a numeral that corresponds to a set of 20 or fewer concrete objects. (b)   **K.2 The student, given no more than three sets, each set containing 10 or fewer concrete objects, will**   1. **compare and describe one set as having more, fewer, or the same number of objects as the other set(s); and**   **b) compare and order sets from least to greatest and greatest to least.**   * Compare and describe no more than three sets of 10 or fewer objects, using the terms *more, fewer,* and *the same*. (a) * Given a set of objects, construct a second set which has more, fewer, or the same number of objects. (a) * Compare and order three or fewer sets, each set containing 10 or fewer concrete objects, from least to greatest and greatest to least. (b) | | | **1.2 The student, given up to 110 objects, will**  a) group a collection into tens and ones and write the corresponding numeral;  b) compare two numbers between 0 and 110 represented pictorially or with concrete objects, using the words *greater than, less than* or *equal to*;and  **c) order three or fewer sets from least to greatest and greatest to least.**   * Group a collection of up to 110 objects into sets of tens and ones. (a) * Write the numeral that corresponds to the total number of objects in a given collection of up to 110 objects that have been grouped into sets of tens and ones. (a) * Compare two numbers between 0 and 110 represented pictorially or with concrete objects, using the words *greater than, less than* or *equal to.* (b) * Order three or fewer sets, each set containing up to 110 objects, from least to greatest and greatest to least. (c)   **1.5 The student, given a familiar problem situation involving magnitude, will**  a) select a reasonable order of magnitude from three given quantities: a one-digit numeral, a two-digit numeral, and a three-digit numeral (e.g., 5, 50, 500); and  b) explain the reasonableness of the choice.   * Select a reasonable order of magnitude for a given set from three given quantities: a one-digit numeral, a two-digit numeral, and a three-digit numeral (e.g., 5, 50, or 500 jelly beans in jars) in a familiar problem situation. (a) * Explain why a particular estimate was chosen as the most reasonable from three given quantities (a one‑digit numeral, a two‑digit numeral, and a three‑digit numeral), given a familiar problem situation. (b) | | | | **2.1 The student will**   1. compare and order whole numbers between 0 and 999; and  * Compare two numbers between 0 and 999 represented with concrete objects, pictorially or symbolically, using the symbols (>, <, or =) and the words *greater than, less than* or *equal to*. (c) * Order three whole numbers between 0 and 999 represented with concrete objects, pictorially, or symbolically from least to greatest and greatest to least. (c) |
| **COUNTING, COMPARING AND ORDERING – WHOLE NUMBERS (continued)** | | | | | | | |
| **K** | **1** | | | | **2** | | |
| **K.3 The student will**  a) count forward orally by ones from 0 to 100;  b) count backward orally by ones when given any number between 1 and 10;  c) identify the number after, without counting, when given any number between 0 and 100 and identify the number before, without counting, when given any number between 1 and 10; and  **d) count forward by tens to determine the total number of objects to 100.**   * Count forward orally by ones from 0 to 100. (a) * Count backward orally by ones when given any number between 1 and 10. (b) * Identify the number after, without counting, when given any number between 0 and 100. (c) * Identify the number before, without counting, when given any number between 1 and 10. (c) * Count forward orally by tens, starting at 0, to determine the total number of objects up to 100. (d) | **1.1 The student will**  a) count forward orally by ones to 110, starting at any number between 0 and 110;   1. write the numerals 0 to 110 in sequence and out-of-sequence; 2. **count backward orally by ones when given any number between 1 and 30; and** 3. **count forward orally by ones, twos, fives, and tens to determine the total number of objects to 110.**  * Count forward orally, by ones, from 0 to 110 starting at any number between 0 and 110. (a) * Use the oral counting sequence to tell how many objects are in a set. (a) * Write numerals 0-110 in sequence and out of sequence. (b) * Count backward orally by ones when given any number between 1 and 30. (c) * Count forward orally by ones, twos, fives, and tens to determine the total number of objects to 110. (d) | | | | **2.2 The student will**  a) count forward by twos, fives, and tens to 120, starting at various multiples of 2, 5, or 10;  b) count backward by tens from 120;   * Determine patterns created by counting by twos, fives, and tens to 120 on number charts. (a) * Describe patterns in skip counting and use those patterns to predict the next number in the counting sequence. (a) * Skip count by twos, fives, and tens to 120 from various multiples of 2, 5 or 10, using manipulatives, a hundred chart, mental mathematics, a calculator, and/or paper and pencil. (a) * Skip count by two to 120 starting from any multiple of 2. (a) * Skip count by five to 120 starting at any multiple of 5. (a) * Skip count by 10 to 120 starting at any multiple of 10. (a) * Count backward by 10 from 120. (b) | | |
|  | **1.3 The student, given an ordered set of ten objects and/or pictures, will indicate the ordinal position of each object, first through tenth.**   * Identify the ordinal positions first through tenth using ordered sets of 10 objects and/or pictures of such sets presented from: * left to right; * right to left; * top to bottom; and/or * bottom to top. | | | | **2.3 The student will**  a) count and identify the ordinal positions first through twentieth, using an ordered set of objects; and  b) write the ordinal numbers 1st through 20th.   * Count an ordered set of objects, using the ordinal number words *first* through *twentieth*. (a) * Identify the ordinal positions first through twentieth, using an ordered set of objects presented in lines or rows from * left to right; * right to left; * top to bottom; and * bottom to top**.** (a) * Write 1st, 2nd, 3rd, through 20th in numerals. (b) | | |
| **COMPOSING AND DECOMPOSING NUMBERS** | | | | | | | |
| **K** | | | | **1** | | | |
| **K.4 The student will**   1. **recognize and describe with fluency part-whole relationships for numbers up to 5; and** 2. **investigate and describe part-whole relationships for numbers up to 10.**  * Recognize and describe with fluency part-whole relationships for numbers up to 5 in a variety of configurations. (a) * Investigate and describe part-whole relationships for numbers up to 10 using a variety of configurations. (b) | | | | *SOL 1.\_ from Computation/Estimation Strand:*  **1.7 The student will**   1. **recognize and describe with fluency part-whole relationships for numbers up to 10; and**  * Recognize and describe with fluency part-whole relationships for numbers up to 10 in a variety of configurations. (a) | | | |

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| **PLACE VALUE, COMPARING, AND ORDERING – WHOLE NUMBERS** | | | | |
| **1** | **2** | **3** | **4** | |
| **1.2 The student, given up to 110 objects, will**  a) group a collection into tens and ones and write the corresponding numeral;   * Identify the place and value of each digit in a two-digit numeral (e.g., in the number 23, the 2 is in the tens place and the value of the 2 is 20). (a) * Identify the number of tens and ones that can be made from any number up to 100 (e.g., 47 is 47 ones or can also be grouped into 4 tens with 7 ones left over). (a)   *Additional EKS bullets can be found above.* | **2.1 The student will**   1. read, write, and identify the place and value of each digit in a three-digit numeral, with and without models; 2. identify the number that is 10 more, 10 less, 100 more, and 100 less than a given number up to 999;  * Demonstrate the understanding of the ten-to-one relationships among ones, tens, and hundreds, using manipulatives. (a) * Write numerals, using a model or pictorial representation (i.e., a picture of base-10 blocks). (a) * Read three-digit numbers when shown a numeral, a model of the number, or a pictorial representation of the number. (a) * Identify and write the place (ones, tens, hundreds) of each digit in a three-digit numeral. (a) * Determine the value of each digit in a three-digit numeral (e.g., in 352, the 5 represents 5 tens and its value is 50). (a) * Use models to represent numbers in multiple ways, according to place value (e.g., 256 can be 1 hundred, 14 tens, and 16 ones, but also 25 tens and 6 ones). (a) * Use place value understanding to identify the number that is 10 more, 10 less, 100 more, or 100 less than a given number, up to 999. (b) | **3.1 The student will**  a) read, write, and identify the place and value of each digit in a six-digit whole number, with and without models;  **b) *see ‘rounding’ below***  c) compare and order whole numbers, each 9,999 or less.   * Read six-digit numerals orally. (a) * Write six-digit numerals in standard form that are stated verbally or written in words. (a) * Represent numbers up to 9,999 in multiple ways, according to place value (e.g., 256 can be 1 hundred, 14 tens, and 16 ones, but also 25 tens and 6 ones), with and without models. (a) * Determine the value of each digit in a six-digit whole number (e.g., in 165,724, the 7 represents 7 hundreds and its value is 700). (a) * Compare two whole numbers, each 9,999 or less, using symbols (>, <, =, or ≠) and/or words (*greater than, less than*, *equal to,* and *not equal to)*. (c) * Order up to three whole numbers, each 9,999 or less, represented with concrete objects, pictorially, or symbolically from least to greatest and greatest to least. (c) | | **4.1 The student will**  a) read, write, and identify the place and value of each digit in a nine-digit whole number;  b) compare and order whole numbers expressed through millions; and  **c) *see ‘rounding’ below***   * Read nine-digit whole numbers, presented in standard form and represent the same number in written form. (a) * Write nine-digit whole numbers in standard form when the numbers are presented orally or in written form. (a) * Identify and communicate, orally and in written form, the place and value for each digit in a nine-digit whole number. (a) * Compare two whole numbers expressed through millions, using the words *greater than, less than, equal to,* and *not equal to* or using the symbols >, <, =, or ≠. (b) * Order up to four whole numbers expressed through millions. (b)   *Additional EKS bullets can be found above.* |

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| **ROUNDING NUMBERS** | | | |
| **2** | **3** | | **4** |
| **2.1 The student will**   1. round two-digit numbers to the nearest ten.  * Round two-digit numbers to the nearest ten. (d) | **3.1 The student will**  **b) round whole numbers, 9,999 or less, to the nearest ten, hundred, and thousand;**   * Round a given whole number, 9,999 or less, to the nearest ten, hundred, and thousand. (b) * Solve problems, using rounding of numbers, 9,999 or less, to the nearest ten, hundred, and thousand. (b) | | **4.1 The student will**  c) round whole numbers expressed through millions to the nearest thousand, ten thousand, and hundred thousand.   * Round whole numbers expressed through millions to the nearest thousand, ten thousand, and hundred thousand place. (c) * Identify the range of numbers that round to a given thousand, ten thousand, and hundred thousand. (c) |
| **EVEN/ODD NUMBERS AND PRIME/COMPOSITE NUMBERS** | | | |
| **2.2 The student will**  c) use objects to determine whether a number is even or odd.   * Use objects to determine whether a number is even or odd (e.g., dividing collections of objects into two equal groups or pairing objects). (c) | | **5.3 The student will**  a) identify and describe the characteristics of prime and composite numbers; and  b) identify and describe the characteristics of even and odd numbers.   * Identify prime numbers less than or equal to 100. (a) * Identify composite numbers less than or equal to 100. (a) * Demonstrate with concrete or pictorial representations and explain orally or in writing why a number is prime or composite. (a) * Identify which numbers are even or odd. (b) * Demonstrate with concrete or pictorial representations and explain orally or in writing why a number is even or odd. (b) * Demonstrate with concrete or pictorial representations and explain orally or in writing why the sum or difference of two numbers is even or odd. (b) * Demonstrate with manipulatives or pictorial representations and explain orally or in writing why a number is even or odd. (b) * Demonstrate with manipulatives or pictorial representations and explain orally or in writing why the sum or difference of two numbers is even or odd. (b) | |

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| **FRACTIONS** | | |
| **K** | **1** | **2** |
| **K.5 The student will investigate fractions by representing and solving practical problems involving equal sharing with two sharers.**   * Share a whole equally with two sharers, when given a practical situation. * Represent fair shares concretely or pictorially, when given a practical situation. * Describe shares as equal pieces or parts of the whole (e.g., halves), when given a practical situation. | **1.4 The student will**  **a) represent and solve practical problems involving equal sharing with two or four sharers; and**  **b) represent and name fractions for halves and fourths, using models.**   * Share a whole equally with two or four sharers, when given a practical situation. (a) * Represent fair shares pictorially, when given a practical situation. (a) * Describe shares as equal pieces or parts of the whole (e.g., halves, fourths), when given a practical situation. (a) * Represent halves and fourths of a whole, using a region/area model (e.g., pie pieces, pattern blocks, paper folding, and drawings). (b) * Name fractions represented by drawings or concrete materials for halves and fourths. (b) | **2.4 The student will**  a) name and write fractions represented by a set, region, or length model for halves, fourths, eighths, thirds, and sixths;  b) represent fractional parts with models and with symbols; and  c) compare the unit fractions for halves, fourths, eighths, thirds, and sixths, with models.   * Recognize fractions as representing equal-size parts of a whole. (a) * Name and write fractions represented by a set model showing halves, fourths, eighths, thirds, and sixths. (a, b) * Name and write fractions represented by a region/area model showing halves, fourths, eighths, thirds, and sixths. (a, b) * Name and write fractions represented by a length model showing halves, fourths, eighths, thirds, and sixths. (a, b) * Represent, with models and with symbols, fractional parts of a whole for halves, fourths, eighths, thirds, and sixths, using: * region/area models (e.g., pie pieces, pattern blocks, geoboards); * sets (e.g., chips, counters, cubes); and * length/measurement models (e.g., fraction strips or bars, rods, connecting cube trains). (b) * Compare unit fractions for halves, fourths, eighths, thirds, and sixths), using words (greater than, less than or equal to) and symbols (>, <, =), with models. (c) * Using same-size fraction pieces, from region/area models or length/measurement models, count the pieces (e.g., *one-fourth, two-fourths, three-fourths*, etc.) and compare those pieces to one whole (e.g., *four-fourths* will make one whole*; one-fourth* is less than a whole). (c) |

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| **FRACTIONS/DECIMALS** | |
| **3** | **4** |
| **3.2 The student will**  a) name and write fractions and mixed numbers represented by a model;  b) represent fractions and mixed numbers, with models and symbols; and  c) compare fractions having like and unlike denominators, using words and symbols (>, <, =, or ≠), with models.   * Name and write fractions (proper and improper) and mixed numbers with denominators of 12 or less in symbols represented by concrete and/or pictorial models. (a) * Represent a given fraction (proper or improper) and mixed numbers, using concrete or pictorial set, area/region, length/measurement models and symbols. (b) * Identify a fraction represented by a model as the sum of unit fractions. (b) * Using a model of a fraction greater than one, count the fractional parts to name and write it as an improper fraction and as a mixed number (e.g., , , , , = 1, or 2 = ). (b) * Compare a model of a fraction, less than or equal to one, to the benchmarks of 0, , and 1. (c) * Compare proper fractions using the terms *greater than, less than, equal to, or not equal to* and the symbols (<, >, =, and ≠). Comparisons are made between fractions with both like and unlike denominators, with concrete or pictorial models. (c) | **4.2 The student will**  a) compare and order fractions and mixed numbers, with and without models;  b) represent equivalent fractions; and  c) identify the division statement that represents a fraction, with models and in context.   * Compare and order no more than four fractions having like and unlike denominators of 12 or less, using concrete and pictorial models. (a) * Use benchmarks (e.g., 0, or 1) to compare and order no more than four fractions having unlike denominators of 12 or less. (a) * Compare and order no more than four fractions with like denominators of 12 or less by comparing number of parts (numerators) (e.g., < ). (a) * Compare and order no more than four fractions with like numerators and unlike denominators of 12 or less by comparing the size of the parts (e.g., < ). (a) * Compare and order no more than four fractions (proper or improper), and/or mixed numbers, having denominators of 12 or less. (a) * Use the symbols >, <, =, and ≠ to compare fractions (proper or improper) and/or mixed numbers having denominators of 12 or less. (a) * Represent equivalent fractions through twelfths, using region/area models, set models, and measurement/length models. (b) * Identify the division statement that represents a fraction with models and in context (e.g., means the same as 3 divided by 5 or represents the amount of muffin each of five children will receive when sharing 3 muffins equally). (c) |

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| **FRACTIONS/DECIMALS (continued)** | |
| **4** | **5** |
| **4.3 The student will**  a) read, write, represent, and identify decimals expressed through thousandths;  b) round decimals to the nearest whole number;  c) compare and order decimals; and  d) given a model, write the decimal and fraction equivalents.   * Read and write decimals expressed through thousandths, using base-ten manipulatives, drawings, and numerical symbols. (a) * Represent and identify decimals expressed through thousandths, using base-ten manipulatives, pictorial representations, and numerical symbols (e.g., relate the appropriate drawing to 0.05). (a) * Investigate the ten-to-one place value relationship for decimals through thousandths, using base-ten manipulatives (e.g., place value mats/charts, decimal squares, and base-ten blocks). (a) * Identify and communicate, both orally and in written form, the position and value of a decimal through thousandths (e.g., given 0.385, the 8 is in the hundredths place and has a value of 0.08. (a) * Round decimals expressed through thousandths to the nearest whole number. (b) * Compare two decimals expressed through thousandths, using symbols (>, <, =, and ≠) and/or words (*greater than, less than, equal to,* and *not equal to*). (c) * Order a set of up to four decimals, expressed through thousandths, from least to greatest or greatest to least. (c) | **5.1 The student, given a decimal through thousandths, will round to the nearest whole number, tenth, or hundredth.**   * Given a decimal through thousandths, round to the nearest whole number, tenth, or hundredth.   **5.2 The student will**  a) represent and identify equivalencies among fractions and decimals, with and without models; and  b) compare and order fractions, mixed numbers, and/or decimals, in a given set, from least to greatest and greatest to least.   * Represent fractions with denominators that are thirds, eighths, and factors of 100 in their equivalent decimal form with concrete or pictorial models. (a) * Represent decimals in their equivalent fraction form (thirds, eighths, and factors of 100) with concrete or pictorial models. (a) * Identify equivalent relationships between decimals and fractions with denominators that are thirds, eighths, and factors of 100 in their equivalent decimal form without models. (a) * Compare and order from least to greatest and greatest to least a given set of no more than four decimals, fractions (proper or improper), and/or mixed numbers with denominators of 12 or less. (b) * Use the symbols >, <, =, and ≠ to compare decimals through thousandths, fractions (proper or improper fractions), and/or mixed numbers, having denominators of 12 or less. (b) |