**Title: Checklist for the Critical Area of Mathematics – Grades K - 5**

**Intended Audience:** Classroom teachers Grades K - 5

**Description:** This document provides support for teachers as they as transition to Common Core Standards. It draws attention to the most critical skills for their grade. *If more detailed information is needed, teachers should refer to the Common Core State Standards for a deeper understanding and more detailed information. The CCSS can be found on the ISBE website or at commoncore.org.*

**Suggested Use for the Document:**

1. Teachers could assess their students on the topics that have been deemed critical areas for their grade (K – 5). These are not ***all*** the topics to be taught, but should be emphasized as **critical areas** for the Math Common Core Standards.
2. Teachers could use the document to record each child’s progress in the critical areas.
3. Teachers could use the Checklist as a guide as they modify their instruction to better align to CCSS.

The document is in Microsoft Word, so teachers should feel free to modify to best meet their needs.

**For further information/feedback:**

Sue Mainville

SSoS/ ISBE Data and Assessment Specialist

smainvil@kidsroe.org

**Illinois State Board of Education**

**www.isbe.net**

100 N. 1st Street • Springfield, IL 62777

100 W. Randolph, Suite 14-300 • Chicago, IL 60601

**Checklist for Critical Areas of Math**

Kindergarten

Critical Area: 1. Representing, relating, and operating on whole numbers, initially with sets of objects. (K.CC)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Know the number names and count sequence** | Count to 100 by ones |  |  |
| Count to 100 by 10’s |  |  |
| Count forward from a given number within a known sequence (not 1) |  |  |
| Write numbers 0 -20 |  |  |
| Represent a number of objects with a written numeral 0 -20 (with zero representing a count of no objects) |  |  |
| **Count to tell the number of objects** | When counting objects, say the number names in the standard order, pairing each object with the one and only one number named and each number name with the one and only object. |  |  |
| Demonstrate an understanding that the last number name said tells the number of objects counted |  |  |
| Demonstrate an understanding that each successive number name refers to a quantity that is one larger |  |  |
| Count to answer “how many?” questions with up to 20 items arranged in a line, array or circle or up to 10 items scattered. |  |  |
| **Compare numbers** | Identify whether the number of objects in one group is greater than, less than or equal to the number of objects in another group (using matching and counting strategies) |  |  |
| Compare two numbers between 1 and 10 presented as written numerals |  |  |

**Checklist for Critical Areas of Math**

Kindergarten

Critical Area: 2. Describe shapes and space (K.G)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Identify and describe shapes (squares, circles, rectangles, triangles, hexagon, cubes, cones, cylinders, and spheres).** | Describe objects in the environment using names of shapes |  |  |
| Describe the relative position of these objects (above, below, beside, in front of behind, and next to) |  |  |
| Correctly name shapes regardless of their orientation or size |  |  |
| Identify shapes as 2 dimensional (flat) or 3 dimensional (solid) |  |  |

For more information on the Mathematic Common Core State Standards, visit the following website:

<http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf>

**Checklist for Critical Areas of Math**

Grade 1

Critical Area 1: Developing understanding of addition, subtraction, and strategies for addition and subtraction within 20. (1.OA)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Represent and solve problems involving addition and subtraction** | Use addition within 20 to solve word problems involving situations of adding to, putting together, and comparing with the unknowns in the **answer** position.\* |  |  |
| Use addition within 20 to solve word problems involving situations of adding to, putting together, and comparing with the unknowns in either addendposition.\* |  |  |
| Use subtraction within 20 to solve word problems involving taking apart, taking from and comparing with the unknown in the **answer** position\* |  |  |
| Use subtraction within 20 to solve word problems involving taking apart, taking from and comparing with the unknown in the **minuend** and **subtrahend** position.\* |  |  |
| Solve problems that call for addition of 3 whole numbers whose sum is no more than 20\* |  |  |
| *\*by using objects, drawings, and equations with a symbol for the unknown number to represent the problem* |

Critical Area 1: Developing understanding of addition, subtraction, and strategies for addition and subtraction within 20. (1.OA) (con’t)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Understand and apply properties of operations and the relationship between addition and subtraction.** | Apply properties of operations as strategies to add and subtract.(Students **do not** need to use formal terms)8+3 = 11 so 3 + 8 =11 (Commutative property)2+ 6+4 = 2 + 10 (Associative property) |  |  |
| Understand subtraction as an unknown addend problem. Subtract 10 – 8 by finding the number that makes 10 when added to 8. |  |  |
| **Add and subtract within 20** | Relate counting to addition and subtraction. For example they see that counting on 2 is the same adding 2 |  |  |
| Add and subtract within 20 while demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on. |  |  |
| Making 10 ( e.g.,8 + **6** = 8 + **2 + 4 = 10** + 4=14 |  |  |
| Decomposing a number leading to a 10 (e.g.,13 – **4** = 13 – **3 – 1** = **10** – 1 =9) |  |  |
| Using relationships between addition and subtraction(e.g., knowing that 8 + 4 = 12, one knows that 12 – 8 = 4) |  |  |
| Creating equivalent but easier know sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 =12 + 1 = 13) |  |  |

Critical Area 2: Developing Understanding of Whole Number Relationships and place value, including grouping in tens and ones. (1NBT)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Extend the counting sequence.** | Count to 120, starting at any number less than 120 |  |  |
| Read and write numerals up to 120 and represent a number of objects with a written numeral. |  |  |
| **Understand place value.** | Understand that the two digits of a two-digit number represent amounts of tens and ones. |  |  |
| 10 can be thought of as a bundle of ten ones — called a “ten.” |  |  |
| The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. |  |  |
| The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). |  |  |
| Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. |  |  |
| **Use place value understanding and properties of operations to add and subtract.** | **Add** within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. |  |  |
| Relate the strategies to a written method and explain the reasoning used. |  |  |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Use place value understanding and properties of operations to add and subtract. (con’t)** | Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. |  |  |
| Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; **explain the reasoning used.** |  |  |
| **Subtract** multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. |  |  |
| Relate the strategies used above to a written method and **explain the reasoning used**. |  |  |

Critical Area 3: Developing understanding of linear measurement and measuring lengths as iterating units. (1MD)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Measure lengths indirectly and by iterating length units.** | Order three objects by length; compare the lengths of two objects indirectly by using a third object. |  |  |
| Compare the lengths of two objects indirectly by using a third object. |  |  |
| Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end. |  |  |
| Understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to* *contexts where the object being measured is spanned by a whole number of* *length units with no gaps or overlaps.* |  |  |

Critical Area 4: Reasoning about attributes of and composing and decomposing geometric shapes (1G)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Reason with shapes and their attributes** | Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color orientation, overall size. |  |  |
| Build and draw shapes to possess defining attributes from goal above. |  |  |
| **Compose** two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. |  |  |
| Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*.  |  |  |
|  | Describe the whole as two of, or four of the shares. Understand for these examples that **decomposing** into more equal shares creates smaller shares. |  |  |

For more information on the Mathematic Common Core State Standards, visit the following website:

<http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf>

**Checklist for Critical Areas of Math**

Grade 2

Critical Area 1: extending understanding of base-ten notation (2NB)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Understand Place Value** | Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones.  |  |  |
| 100 can be thought of as a bundle of ten tens — called a “hundred.” |  |  |
| The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). |  |  |
| Count within 1000; skip-count by 5s, 10s, and 100s. |  |  |
| Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. |  |  |
| Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons. |  |  |

Critical Area 2: building fluency with addition and subtraction (2.OA, 2NBT)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Represent and solve problems involving addition and subtraction.** | Use **addition** within 100 to solve one- and two-step word problems involving situations of adding to and putting together with **unknowns in the answer** positions |  |  |
| Use **addition** within 100 to solve one- and two-step word problems involving situations of adding to and putting together with **unknowns in either addend position**. |  |  |
| Use **subtraction** within 100 to solve one- and two-step word problems involving situations of taking from and taking apart, with **unknowns in the answer** position. |  |  |
| Use **subtraction** within 100 to solve one- and two-step word problems involving situations of taking from and taking apart, with **unknowns in the minuend and subtrahend** position. |  |  |
| Solve one- and two-step word problems involving situations of comparing, with **unknowns in all** positions |  |  |
| **Add and subtract within 20.** | Fluently add and subtract within 20 using mental strategies |  |  |
|  By end of Grade 2, know from memory all sums of two one-digit numbers. |  |  |
| **Use place value understanding and properties of operations to add and subtract.** | Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. |  |  |
| Add up to four two-digit numbers using strategies based on place value and properties of operations. |  |  |
| 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. |  |  |
| Relate the strategy used in the goal above to a written method. |  |  |
| **Use place value understanding and properties of operations to add and subtract.** | Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. |  |  |

Critical Area 3: Using standard units of measure (2MD)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Measure and estimate lengths in standard units.** | Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. |  |  |
| Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. |  |  |
| Describe how the two measurements from the goal above relate to the size of the unit chosen. |  |  |

Critical Area 4: Describing and analyzing shapes (2G)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Reason with shapes and their attributes.** | Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.  |  |  |
| Draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. |  |  |
| Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. |  |  |

For more information on the Mathematic Common Core State Standards, visit the following website:

<http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf>

**Checklist for Critical Areas of Math**

**Grade 3**

Critical Area 1: developing understanding of multiplication and division and strategies for multiplication and division within 100 (3.OA)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Represent and solve problems involving multiplication and division** | Interpret products of whole numbers, |  |  |
| Interpret **a** x **b** as the total number of objects in **a** groups of **b** objects each. |  |  |
| * Describe a context in which a total number of objects can be expressed as **a** x **b***.*
 |  |  |
| * Interpret whole-number quotients of whole numbers
 |  |  |
| * Interpret a ÷ b as the number of objects in each share when **a** objects are partitioned equally into **b** shares
 |  |  |
| * Interpret a number of shares when **a** objects are partitioned into equal shares of **b** objects each.
 |  |  |
| * Use multiplication within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities
 |  |  |
| * Use division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities
 |  |  |
| * Determine the unknown whole number in a multiplication equation relating three whole numbers, with the unknowns in any position
 |  |  |
| * Determine the unknown whole number in a division equation relating three whole numbers, with the unknowns in any position
 |  |  |
| **Understand properties of multiplication and the relationship between multiplication and division.** | * Apply properties of operations as strategies to multiply and divide (Commutative, associative, distributive)
 |  |  |
| * Understand division as an unknown-factor problem.
 |  |  |
| Multiply and divide within 100. | * Fluently multiply within 100, using strategies such as the relationship between multiplication and division
 |  |  |
| * Fluently divide within 100, using strategies such as the relationship between multiplication and division
 |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Compare fractions by reasoning about their size. |  |  |

Critical Area 2: Developing understanding of fractions, especially unit fractions (fractions with numerator 1) (NF)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| Develop understanding of fractions as numbers. | * Understand a fraction 1/*b* as the quantity formed by 1 part when *a* whole is partitioned into *b* equal parts
 |  |  |
| Understand a fraction *a*/*b* as the quantity formed by a parts of size 1/*b*. |  |  |
| Understand a fraction as a number on the number line; represent fractions on a number line diagram. |  |  |
| Represent fractions on a number line diagram. |  |  |
| Explain equivalence of fractions in special cases,  |  |  |
| Compare fractions by reasoning about their size. |  |  |

Critical Area 3: developing understanding of the structure of rectangular arrays and of area

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| Geometric measurement: understand concepts of area and relate area to multiplication and to addition. | Recognize area as an attribute of plane figures and understand concepts of area measurement. |  |  |
| Understand concepts of area measurement. |  |  |
| * Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
 |  |  |
| * Relate area to the operations of multiplication and addition.
 |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Reason with shapes and their attributes** | Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes |  |  |
| Shared attributes can define a larger category (e.g., quadrilaterals). |  |  |
| * Recognize rhombuses, rectangles, and squares as examples of quadrilaterals
 |  |  |
| * Draw examples of quadrilaterals that do not belong to any of the subcategories above
 |  |  |
| * Partition shapes into parts with equal areas.
 |  |  |
| * Express the area of each part as a unit fraction of the whole.
 |  |  |

Critical Area 4: describing and analyzing two-dimensional shapes (G)

**Checklist for Critical Areas of Math**

Grade 4

Critical Area 1: developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends (OA) (NBT)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Use the four operations with whole numbers to solve problems** | Interpret a multiplication equation as a comparison |  |  |
| Represent verbal statements of multiplicative comparisons as multiplication equations |  |  |
| Multiply to solve word problems involving multiplicative comparison |  |  |
| Divide to solve word problems involving multiplicative comparison |  |  |
| 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. |  |  |
| Represent word problems using equations with a letter standing for the unknown quantity. |  |  |
| Assess the reasonableness of answers using mental computation and estimation strategies including rounding. |  |  |
| Gain familiarity with factors and multiples. | Find all factor pairs for a whole number in the range 1–100. |  |  |
| Recognize that a whole number is a multiple of each of its factors. |  |  |
| Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| Generalize place value understanding for multi-digit whole numbers | Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right |  |  |
| Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. |  |  |
| Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons |  |  |
| Use place value understanding to round multi-digit whole numbers to any place |  |  |
| Use place value understanding and properties of operations to perform multi-digit arithmetic | Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. |  |  |
| Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models |  |  |
| 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. calculation by using equations, |  |  |
| Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models |  |  |

Critical Area 2: developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators and multiplication of fractions by whole numbers (NF)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| Extend understanding of fraction equivalence and ordering. | Explain why a fraction *a*/*b* is equivalent to a fraction (*n* × *a*)/(*n* × *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. |  |  |
| Use this principle to recognize and generate equivalent fractions |  |  |
| Compare two fractions with different numerators and different denominators. |  |  |
| Record the results of comparisons with symbols >, =, or <, and justify the conclusions |  |  |
| Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. | Understand a fraction *a*/*b* with *a* > 1 as a sum of fractions 1/*b* |  |  |
| Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. |  |  |
| Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation.  |  |  |
| Justify decompositions above |  |  |
| Add mixed numbers with like denominators |  |  |
| Subtract mixed numbers with like denominators |  |  |
| Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators |  |  |
| Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. |  |  |
| Solve word problems involving multiplication of a fraction by a whole number, |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| Draw and identify lines and angles, and classify shapes by properties of their lines and angles | Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. |  |  |
| Identify the above figures as two-dimensional. |  |  |
| Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.  |  |  |
| Recognize right triangles as a category, and identify right triangles |  |  |
| Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. |  |  |
| Identify line-symmetric figures and draw lines of symmetry |  |  |

Critical Area 3: understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry. (G)

**Checklist for Critical Areas of Math**

Grade 5

Critical Area 1:  developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions)(NF)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| **Use equivalent fractions as a strategy to add and subtract fractions.** | Add 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. |  |  |
| 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. |  |  |
| Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators. |  |  |
| Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers in fraction word problems |  |  |
| Apply and extend previous understandings of multiplication and division to multiply and divide fractions |  Interpret a fraction as division of the numerator by the denominator (*a*/*b* = *a* ÷ *b*).  |  |  |
| Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, |  |  |
| Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. |  |  |
| Interpret multiplication as scaling (resizing), |  |  |
| Solve real world problems involving multiplication of fractions and mixed numbers |  |  |
|  Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions |  |  |

Critical Area 2:  extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations. (NBT)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| Understand the place value system. |  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 |  |  |
| Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10 |  |  |
| Read, write, and compare decimals to thousandths |  |  |
|  Use place value understanding to round decimals to any place |  |  |
| Perform operations with multi-digit whole numbers and with decimals to hundredths | 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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models |  |  |
| 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 and explain the reasoning used. |  |  |

Critical Area 3:  developing understanding of volume. (MD)

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** |  | **Exceeds****Meets****Progressing** | **Comments** |
| Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition | Recognize volume as an attribute of solid figures and understand concepts of volume measurement |  |  |
| Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. |  |  |
|  Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume |  |  |