

# North Dakota Mathematics Content Standards

## Grade 3 Prioritized Standards

Northeast Education Services Cooperative (NESC) - 2017



## How to Read This Document

Example: 3.OA.1

“3.OA.1” references the grade level followed by the domain and then the standard. This coding is taken directly from the North Dakota Department of Public Instruction’s standards document.

## Prioritized Standards

### Operations and Algebraic Thinking

Represent and solve problems involving multiplication and division:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
3.OA.3	Using drawings and equations with a symbol for an unknown number, solve multiplication and division word problems within 100 in situations involving equal groups, arrays, and measurement quantities.	✓	✓	✓	✓	✓	5

Understand properties of multiplication and the relationship between multiplication and division:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
3.OA.5	Apply properties of operations as strategies to multiply and divide (without the use of formal terms).	✓		✓	✓	✓	4

For more information about this document or the prioritization process please contact the NESC:

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Multiply and divide within 100:

No standards were prioritized within this cluster.

Solve problems involving the four operations, and identify and explain patterns in arithmetic:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
3.OA.8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies.	✓		✓	✓	✓	4

### Number and Operations in Base Ten

Use place value understanding and properties of operations to perform multi-digit arithmetic:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
3.NBT.1	Use place value understanding to round whole numbers to the nearest 10 or 100.	✓	✓	✓	✓	✓	5
3.NBT.2	Using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction, fluently add and subtract within 1000.	✓	✓	✓	✓	✓	5

### Number and Operations – Fractions (limited to fractions with denominators 2, 3, 4, 6 and 8)

Develop understanding of fractions as numbers:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
3.NF.1	Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into $b$ equal parts. Understand a fraction $\frac{a}{b}$ as the quantity formed by “ $a$ ” parts of size $\frac{1}{b}$ .	✓	✓	✓	✓	✓	5
3.NF.2	Understand a fraction as a number on the number line; represent fractions on a number line diagram. a. Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the	✓	✓	✓	✓	✓	5

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	<p>whole and partitioning it into <math>b</math> equal parts. Recognize that each part has size <math>1/b</math> and that the endpoint of the part based at 0 locates the number <math>1/b</math> on the number line.</p> <p>b. Represent a fraction <math>a/b</math> on a number line diagram by marking off a length <math>1/b</math> from 0. Recognize that the resulting interval has size <math>a/b</math> and that its endpoint locates the number <math>a/b</math> on the number line.</p>						
3.NF.3	<p>Explain equivalence of fractions in special cases and compare fractions by reasoning about their size.</p> <p>a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. Recognize and generate simple equivalent fractions.</p> <p>a. Explain why the fractions are equivalent using a visual fraction model.</p> <p>b. Recognize fractions, <math>a/1</math> or <math>a/a</math>, that are equivalent to whole numbers. Express whole numbers as fractions, <math>a/1</math> or <math>a/a</math>.</p> <p>c. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions by using a visual fraction model.</p>	✓	✓	✓	✓	✓	5

### Measurement and Data

Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
3.MD.1	Tell and write time to the nearest minute and measure time intervals in minutes. Solve elapsed time word problems on the hour and the half hour, using a variety of strategies.	✓		✓	✓	✓	4

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Represent and interpret data:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
3.MD.3	Draw scaled picture graphs and scaled bar graphs to represent data sets with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.	✓	✓	✓	✓	✓	5
3.MD.4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked in appropriate units— whole numbers, halves, or quarters.	✓	✓	✓	✓	✓	5

Geometric measurement: understand concepts of area and relate area to multiplication and to addition:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
3.MD.7	<p>Relate area to the operations of multiplication and addition.</p> <p>a. Find the area of a rectangle with whole-number side lengths by tiling it and show that the area is the same as would be found by multiplying the side lengths.</p> <p>b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems and represent whole-number products as rectangular areas in mathematical reasoning.</p> <p>c. Use tiling to show in a concrete case that the area of a rectangle with whole number side lengths <math>a</math> and <math>b + c</math> is the sum of <math>a \times b</math> and <math>a \times c</math>. Use area models to represent the distributive property in mathematical reasoning.</p> <p>d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.</p>	✓	✓	✓	✓	✓	5

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Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
3.MD.8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths. Find an unknown side length. Exhibit rectangles with the same perimeter and different area or with the same area and different perimeters.	✓	✓	✓	✓	✓	5

## Geometry

Reason with shapes and their attributes:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
3.G.1	Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the 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 these subcategories.	✓	✓	✓	✓	✓	5
3.G.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	✓	✓	✓	✓	✓	5

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