

North Dakota Mathematics Content Standards

Grade 5 Prioritized Standards

Northeast Education Services Cooperative (NESC) - 2017



How to Read This Document

Example: 5.OA.1

“5.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

Write and interpret numerical expressions:

No standards were prioritized within this cluster.

Analyze patterns and relationships:

No standards were prioritized within this cluster.

Gain familiarity with factors and multiples:

No standards were prioritized within this cluster.

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Number and Operations in Base Ten

Understand the place value system:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
5.NBT.2	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10. 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.	✓	✓	✓	✓	✓	5
5.NBT.3	Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, word form, and expanded form. b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.	✓	✓	✓	✓	✓	5

Perform operations with multi-digit whole numbers and with decimals to hundredths:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
5.NBT.5	Fluently multiply multi-digit whole numbers using strategies flexibly, including the standard algorithm.	✓	✓	✓	✓	✓	5
5.NBT.6	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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	✓	✓	✓	✓	✓	5
5.NBT.7	Using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction, add, subtract, multiply, and divide decimals to hundredths. Relate the strategy to a written method and explain the reasoning used.	✓	✓	✓	✓	✓	5

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Number and Operations – Fractions

Use equivalent fractions as a strategy to add and subtract fractions:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
5.NF.1	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.	✓	✓	✓	✓	✓	5
5.NF.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, by using visual fraction models and equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.	✓	✓	✓	✓	✓	5

Apply and extend previous understandings of multiplication and division to multiply and divide fractions:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
5.NF.3	Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers by using visual fraction models and equations to represent the problem.	✓	✓	✓	✓	✓	5
5.NF.4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by	✓	✓	✓	✓	✓	5

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	<p>multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles. Represent fraction products as rectangular areas.</p>						
5.NF.5	<p>Interpret multiplication as scaling (resizing), by: a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case) Explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number. c. Relating the principle of fraction equivalence $a/b = (n \times a) / (n \times b)$ to the effect of multiplying a/b by 1.</p>	✓	✓	✓	✓	✓	5
5.NF.7	<p>Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. b. Interpret division of a whole number by a unit fraction, and compute such quotients. c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions using visual fraction models and equations to represent the problem.</p>	✓	✓	✓	✓	✓	5

Measurement and Data

Convert like measurement units within a given measurement system:
No standards were prioritized within this cluster.

Represent and interpret data:
No standards were prioritized within this cluster.

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

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
5.MD.5	<p>Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.</p> <p>a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes. Show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base.</p> <p>b. Represent threefold whole number products as volumes to represent the associative property of multiplication.</p> <p>c. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.</p> <p>d. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.</p>		✓	✓	✓	✓	4

Geometry

Graph points on the coordinate plane to solve real world and mathematical problems:

No standards were prioritized within this cluster.

Classify two-dimensional figures into categories based on their properties:

No standards were prioritized within this cluster.

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