

North Dakota Mathematics Content and Achievement Standards

Grade 2

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North Dakota Department of Public Instruction

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Standard 1: Number and Operation

Standard 1: Students understand and use basic and advanced concepts of number and number systems..				
Benchmark Expectations	PROFICIENCY DESCRIPTOR			
	ADVANCED PROFICIENT	PROFICIENT	PARTIALLY PROFICIENT	NOVICE
Grade 2				
NUMBERS, NUMBER RELATIONSHIPS, AND NUMBER SYSTEMS				
2.1.1. Count and order numbers up to 1,000	Students count and order numbers up to 1,000 and count backward from 100 with ease and with no errors.	Students count and order numbers up to 1,000 and count backward from 100 with minimal difficulty and with no significant errors.	Students count and order numbers up to 1,000 and count backward from 100 with difficulty or with a few significant errors.	Students count and order numbers up to 1,000 and count backward from 100 with great difficulty or with many significant errors.
2.1.2. Count backward from 100				
2.1.3. Count by 2's, 5's, and 10's	Students count by 2's, 5's, and 10's with ease and with no errors.	Students count by 2's, 5's, and 10's with minimal difficulty and with no significant errors.	Students count by 2's, 5's, and 10's with difficulty or with a few significant errors.	Students count by 2's, 5's, and 10's with great difficulty or with many significant errors.
2.1.4. Identify and write numerals to 1,000	Students identify and write numerals to 1,000 with ease and with no errors.	Students identify and write numerals up to 1,000 with minimal difficulty and with no significant errors.	Students identify and write numerals up to 1,000 with difficulty or with a few significant errors.	Students identify and write numerals up to 1,000 with great difficulty or with many significant errors.
2.1.5. Connect number words and numerals to the quantities they represent up to 100	Students connect number words and numerals to the quantities they represent with ease and with no errors.	Students connect number words and numerals to the quantities they represent with minimal difficulty and with no significant errors.	Students connect number words and numerals to the quantities they represent with difficulty or with a few significant errors.	Students connect number words and numerals to the quantities they represent with great difficulty or with many significant errors.
2.1.6. Demonstrate, identify, and explain the difference between odd and even numbers using concrete objects or drawings	Students identify odd and even numbers with no errors, and demonstrate and explain the difference, in great detail, using concrete objects or drawings.	Students identify odd and even numbers with no significant errors, and demonstrate and explain the difference, in adequate detail, using concrete objects or drawings.	Students identify odd and even numbers with a few significant errors, or demonstrate and explain the difference, in some detail, using concrete objects or drawings.	Students identify odd and even numbers with many significant errors, or demonstrate and explain the difference, in minimal detail, using concrete objects or drawings.

Standard 1: Students understand and use basic and advanced concepts of number and number systems..

Benchmark Expectations	PROFICIENCY DESCRIPTOR			
	ADVANCED PROFICIENT	PROFICIENT	PARTIALLY PROFICIENT	NOVICE
2.1.7. Identify place value concepts through the hundreds place	Students identify place value concepts through the hundreds place with no errors.	Students identify place value concepts through the hundreds place with no significant errors.	Students identify place value concepts through the hundreds place with a few significant errors.	Students identify place value concepts through the hundreds place with many significant errors.
2.1.8. Use symbols (i.e., >, <, =) to compare whole numbers to 1,000	Students use symbols to compare whole numbers to 1,000 with no errors.	Students use symbols to compare whole numbers to 1,000 with no significant errors.	Students use symbols to compare whole numbers to 1,000 with a few significant errors.	Students use symbols to compare whole numbers to 1,000 with many significant errors.
2.1.9. Round numbers to tens and hundreds	Students round numbers to tens and hundreds with no errors.	Students round numbers to tens and hundreds with no significant errors.	Students round numbers to tens and hundreds with a few significant errors.	Students round numbers to tens and hundreds with many significant errors.
2.1.10. Use grade-appropriate terms when communicating about addition and subtraction; i.e., addend, sum, difference	Students use terms to communicate about addition and subtraction with no errors.	Students use terms to communicate about addition and subtraction with no significant errors.	Students use terms to communicate about addition and subtraction with a few significant errors.	Students use terms to communicate about addition and subtraction with many significant errors.
2.1.11. Represent and explain fractions (i.e., one half, one third, one fourth, one sixth and one eighth) as part of a whole and part of a set	Students represent and explain common fractions as part of a whole and part of a set with no errors.	Students represent and explain common fractions as part of a whole and part of a set with no significant errors.	Students represent and explain common fractions as part of a whole and part of a set with a few significant errors.	Students represent and explain common fractions as part of a whole and part of a set with many significant errors.
OPERATIONS AND THEIR PROPERTIES				
2.1.12. Select an operation to solve problems involving addition and subtraction of whole numbers	Students select an operation to solve problems involving addition and subtraction of whole numbers with no errors.	Students select an operation to solve problems involving addition and subtraction of whole numbers with no significant errors.	Students select an operation to solve problems involving addition and subtraction of whole numbers with few significant errors.	Students select an operation to solve problems involving addition and subtraction of whole numbers with many significant errors.
2.1.13. Demonstrate the inverse relationship between addition and subtraction; i.e., $3+4 = 7$, $7-4 = 3$	Students demonstrate the inverse relationship between addition and subtraction with no errors.	Students demonstrate the inverse relationship between addition and subtraction with no significant errors.	Students demonstrate the inverse relationship between addition and subtraction with a few significant errors.	Students demonstrate the inverse relationship between addition and subtraction with many significant errors.

Standard 1: Students understand and use basic and advanced concepts of number and number systems..

Benchmark Expectations	PROFICIENCY DESCRIPTOR			
	ADVANCED PROFICIENT	PROFICIENT	PARTIALLY PROFICIENT	NOVICE
2.1.14. Model multiplication using equal sets of objects	Students model multiplication using equal sets of objects with no errors.	Students model multiplication using equal sets of objects with no significant errors.	Students model multiplication using equal sets of objects with a few significant errors.	Students model multiplication using equal sets of objects with many significant errors.
2.1.15. Add and subtract two-digit whole numbers between 0 and 100 without regrouping	Students add and subtract two-digit whole numbers between 0 and 100 with no errors.	Students add and subtract two-digit whole numbers between 0 and 100 with no significant errors.	Students add and subtract two-digit whole numbers between 0 and 100 with a few significant errors.	Students add and subtract two-digit whole numbers between 0 and 100 with many significant errors.
COMPUTATIONAL FLUENCY AND ESTIMATION				
2.1.16. Recall addition facts and subtraction facts (0-18)	Students recall addition facts and subtraction facts to 18 with ease.	Students recall addition facts and subtraction facts to 18 with minimal difficulty.	Students recall addition facts and subtraction facts to 18 with difficulty.	Students recall addition facts and subtraction facts to 18 with great difficulty.
2.1.17. Estimate whole number sums and differences	Students estimate whole number sums and differences with no errors.	Students estimate whole number sums and differences with no significant errors.	Students estimate whole number sums and differences with a few significant errors.	Students estimate whole number sums and differences with many significant errors.

Standard 2: Geometry and Spatial Sense

Standard 2: Student understands and applies geometric concepts and spatial relationships to represent and solve problems in mathematical and nonmathematical situations.

Benchmark Expectations	PROFICIENCY DESCRIPTOR			
	ADVANCED PROFICIENT	PROFICIENT	PARTIALLY PROFICIENT	NOVICE
Grade 2				
TWO- AND THREE-DIMENSIONAL SHAPES, GEOMETRIC PROPERTIES AND RELATIONSHIPS				
2.2.1. Recognize geometric shapes and structures in their environment	Students recognize an extensive variety of geometric shapes and structures in their environment.	Students recognize a variety of geometric shapes and structures in their environment.	Students recognize some different geometric shapes and structures in their environment.	Students recognize a limited number of geometric shapes and structures in their environment.
2.2.2. Identify, describe, and sort three-dimensional objects; i.e., pyramid, cube, rectangular prism, cone, cylinder, and sphere	Students identify and sort three-dimensional objects with no errors and describe them in great detail.	Students identify and sort three-dimensional objects with no significant errors and describe them in adequate detail.	Students identify and sort three-dimensional objects with a few significant errors or describe them in some detail.	Students identify and sort three-dimensional objects with many significant errors or describe them in minimal detail.
2.2.3. Predict and demonstrate the results of putting together and taking apart shapes	Students make predictions about, and demonstrate the results of, combining and taking apart shapes with no errors.	Students make predictions about, and demonstrate the results of, combining and taking apart shapes with no significant errors.	Students make predictions about, and demonstrate the results of, combining and taking apart shapes with a few significant errors.	Students make predictions about, and demonstrate the results of, combining and taking apart shapes with many significant errors.
COORDINATE GEOMETRY				
<i>No benchmark expectations at this level</i>				
TRANSFORMATION AND SYMMETRY				
2.2.4. Identify symmetrical shapes and draw their line of symmetry	Students identify symmetrical shapes and draw their line of symmetry with no errors.	Students identify symmetrical shapes and draw their line of symmetry with no significant errors.	Students identify symmetrical shapes or draw their line of symmetry with a few significant errors.	Students identify symmetrical shapes or draw their line of symmetry with many significant errors.
2.2.5. Identify congruent figures from a selection of similar figures	Students identify congruent figures from a selection of similar figures with no errors.	Students identify congruent figures from a selection of similar figures with no significant errors.	Students identify congruent figures from a selection of similar figures with a few significant errors.	Students identify congruent figures from a selection of similar figures with many significant errors.

Standard 2: Student understands and applies geometric concepts and spatial relationships to represent and solve problems in mathematical and nonmathematical situations.

Benchmark Expectations	PROFICIENCY DESCRIPTOR			
	ADVANCED PROFICIENT	PROFICIENT	PARTIALLY PROFICIENT	NOVICE
VISUALIZATION, SPATIAL REASONING, AND GEOMETRIC MODELING <i>No benchmark expectations at this level</i>				

Standard 3: Data Analysis, Statistics, and Probability

Standard 3: Students use data collection and analysis techniques, statistical methods, and probability to solve problems.				
Benchmark Expectations	PROFICIENCY DESCRIPTOR			
	ADVANCED PROFICIENT	PROFICIENT	PARTIALLY PROFICIENT	NOVICE
Grade 2				
DATA COLLECTION, DISPLAY, AND INTERPRETATION				
2.3.1. Sort and classify objects according to their attributes and organize data about the objects; e.g., Venn diagrams, graphs, tables	Students sort and classify objects according to their attributes, and organize data about the objects with no errors.	Students sort and classify objects according to their attributes, and organize data about the objects with no significant errors.	Students sort and classify objects according to their attributes, and organize data about the objects with a few significant errors.	Students sort and classify objects according to their attributes, and organize data about the objects with no many significant errors.
2.3.2. Demonstrate that data can be represented in a variety of ways	Students represent data in an extensive variety of ways.	Students represent data in a variety of ways.	Students represent data in some different ways.	Students represent data in a limited number of ways.
2.3.3. Formulate and answer simple questions from data represented by graphs	Students formulate and answer simple questions from data represented by graphs with no errors and with ease.	Students formulate and answer simple questions from data represented by graphs with no significant errors and with minimal difficulty.	Students formulate and answer simple questions from data represented by graphs with a few significant errors or with some difficulty.	Students formulate and answer simple questions from data represented by graphs with many significant errors and with great difficulty.
PROBABILITY				
<i>No benchmark expectations at this level</i>				
STATISTICAL METHODS				
<i>No benchmark expectations at this level</i>				
PREDICTIONS, DATA ANALYSIS, AND INFERENCES				
2.3.4. Record results of activities involving chance (e.g., coin flips, dice rolls) and make reasonable predictions based upon data	Students record results of activities involving chance and make predictions based on data with no errors.	Students record results of activities involving chance and make predictions based on data with no significant errors.	Students record results of activities involving chance and make predictions based on data with a few significant errors.	Students record results of activities involving chance and make predictions based on data with many significant errors.

Standard 3: Students use data collection and analysis techniques, statistical methods, and probability to solve problems.				
Benchmark Expectations	PROFICIENCY DESCRIPTOR			
	ADVANCED PROFICIENT	PROFICIENT	PARTIALLY PROFICIENT	NOVICE
2.3.5. Describe the likelihood of an event; e.g., cloudy, it may rain	Students describe in extensive detail the likelihood of an event.	Students describe in adequate detail the likelihood of an event.	Students describe in some detail the likelihood of an event.	Students describe in limited detail the likelihood of an event.

Standard 4: Measurement

Standard 4: Students use concepts and tools of measurement to describe and quantify the world..				
Benchmark Expectations	PROFICIENCY DESCRIPTOR			
	ADVANCED PROFICIENT	PROFICIENT	PARTIALLY PROFICIENT	NOVICE
Grade 2				
MEASURABLE ATTRIBUTES, MEASUREMENT SYSTEMS AND UNITS				
2.4.1. Tell time to the nearest quarter hour and 5 minute interval using digital and analog clocks	Students tell time to the nearest quarter hour and 5 minute interval with ease and with no errors.	Students tell time to the nearest quarter hour and 5 minute interval with minimal difficulty and with no significant errors.	Students tell time to the nearest quarter hour and 5 minute interval with difficulty or with a few significant errors.	Students tell time to the nearest quarter hour and 5 minute interval with great difficulty or with many significant errors.
2.4.2. Distinguish between week days and weekend days	Students distinguish between weekdays and weekend days with no errors.	Students distinguish between weekdays and weekend days with no significant errors.	Students distinguish between weekdays and weekend days with a few significant errors.	Students distinguish between weekdays and weekend days with many significant errors.
2.4.3. Recall the months of the year in order	Students recall the months of the year in order with ease.	Students recall the months of the year in order with minimal difficulty.	Students recall the months of the year in order with difficulty.	Students recall the months of the year in order with great difficulty.
2.4.4. Count mixed coins to \$1.00	Students count mixed coins to \$1.00 with no errors.	Students count mixed coins to \$1.00 with no significant errors.	Students count mixed coins to \$1.00 with a few significant errors.	Students count mixed coins to \$1.00 with many significant errors.
2.4.5. Estimate and measure weight to the nearest pound or kilogram	Students estimate and measure weight, capacity and length to the nearest designated unit with no errors.	Students estimate and measure weight, capacity and length to the nearest designated unit with no significant errors.	Students estimate and measure weight, capacity and length to the nearest designated unit with a few significant errors.	Students estimate and measure weight, capacity and length to the nearest designated unit with many significant errors.
2.4.6. Estimate and measure capacity to the nearest cup or liter				
2.4.7. Estimate and measure length to the nearest inch, half-inch, foot, or centimeter				
2.4.8. Estimate and verify a quantity; e.g., marbles in a jar	Students estimate and verify quantities with no errors.	Students estimate and verify quantities with no significant errors.	Students estimate and verify quantities with a few significant errors.	Students estimate and verify quantities with many significant errors.

Standard 4: Students use concepts and tools of measurement to describe and quantify the world..				
Benchmark Expectations	PROFICIENCY DESCRIPTOR			
	ADVANCED PROFICIENT	PROFICIENT	PARTIALLY PROFICIENT	NOVICE
2.4.9. Compare and order given lengths, capacities, weights, or temperatures that are expressed in the same unit of measure	Students compare and order given lengths, capacities, weights, or temperatures with no errors.	Students compare and order given lengths, capacities, weights, or temperatures with no significant errors.	Students compare and order given lengths, capacities, weights, or temperatures with a few significant errors.	Students compare and order given lengths, capacities, weights, or temperatures with many significant errors.
2.4.10. Identify the approximate size of basic units; e.g., width of finger is about one centimeter, large soda bottle is two liters, a paper clip weighs one gram	Students identify the approximate size of basic units with no errors.	Students identify the approximate size of basic units with no significant errors.	Students identify the approximate size of basic units with a few significant errors.	Students identify the approximate size of basic units with many significant errors.
MEASUREMENT TOOLS, TECHNIQUES, AND FORMULAS				
2.4.11. Select the appropriate units for measuring time, length, weight, and temperature	Students select a unit for measuring time, length, weight, and temperature with no errors.	Students select a unit for measuring time, length, weight, and temperature with no significant errors.	Students select a unit for measuring time, length, weight, and temperature with a few significant errors.	Students select a unit for measuring time, length, weight, and temperature with many significant errors.
2.4.12. Use the symbols for the dollar and cent	Students use the symbols for the dollar and cent with no errors.	Students use the symbols for the dollar and cent with no significant errors.	Students use the symbols for the dollar and cent with a few significant errors.	Students use the symbols for the dollar and cent with many significant errors.

Standard 5: Algebra, Functions and Patterns

Standard 5: Students use algebraic concepts, functions, patterns, and relationships to solve problems.				
Benchmark Expectations	PROFICIENCY DESCRIPTOR			
	ADVANCED PROFICIENT	PROFICIENT	PARTIALLY PROFICIENT	NOVICE
Grade 2				
PATTERNS, RELATIONS, AND FUNCTIONS				
2.5.1. Extend and create number patterns	Students extend and create number patterns with no errors.	Students extend and create number patterns with no significant errors.	Students extend and create number patterns with a few significant errors.	Students extend and create number patterns with many significant errors.
2.5.2. State the rule that describes a given repeating and growing pattern	Students state the rule that describes a given repeating or growing pattern with no errors.	Students state the rule that describes a given repeating or growing pattern with no significant errors.	Students state the rule that describes a given repeating or growing pattern with a few significant errors.	Students state the rule that describes a given repeating or growing pattern with many significant errors.
NUMERIC AND ALGEBRAIC REPRESENTATIONS				
2.5.3. Solve addition and subtraction equations with unknown numbers; e.g., $2 + \square = 5$	Students solve addition and subtraction equations with unknown numbers with no errors.	Students solve addition and subtraction equations with unknown numbers with no significant errors.	Students solve addition and subtraction equations with unknown numbers with a few significant errors.	Students solve addition and subtraction equations with unknown numbers with many significant errors.
MATHEMATICAL MODELING				
2.5.4. Use symbols (i.e., +, -, =, <, >) to write simple number sentences	Students use symbols to write number sentences with no errors.	Students use symbols to write simple number sentences with no significant errors.	Students use symbols to write simple number sentences with a few significant errors.	Students use symbols to write simple number sentences with many significant errors.
2.5.5. Use words, objects, and number sentences to represent addition and subtraction problems	Students use words, objects, and number sentences to represent addition and subtraction problems with no errors.	Students use words, objects, and number sentences to represent addition and subtraction problems with no significant errors.	Students use words, objects, and number sentences to represent addition and subtraction problems with a few significant errors.	Students use words, objects, and number sentences to represent addition and subtraction problems with many significant errors.
RATES OF CHANGE				
<i>No benchmark expectations at this level</i>				