

North Dakota Mathematics Content and Achievement Standards

Grade 1

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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 1				
NUMBERS, NUMBER RELATIONSHIPS, AND NUMBER SYSTEMS				
1.1.1. Count and order numbers to 100	Students count, order, identify, and write numbers to 100 with ease and with no errors.	Students count, order, identify, and write numbers to 100 with minimal difficulty and with no significant errors.	Students count, order, identify, and write numbers to 100 with difficulty or with a few significant errors.	Students count, order, identify, and write numbers to 100 with great difficulty or with many significant errors.
1.1.2. Identify and write numerals to 100				
1.1.3. Count backward from 20	Students count backward from 20 with ease and with no errors.	Students count backward from 20 with minimal difficulty and with no significant errors.	Students count backward from 20 with difficulty or with a few significant errors.	Students count backward from 20 with great difficulty or with many significant errors.
1.1.4. Count by 2's to 20, and 10's to 100	Students count by 2's to 20 and 10's to 100 with ease and with no errors.	Students count by 2's to 20 and 10's to 100 with minimal difficulty and with no significant errors.	Students count by 2's to 20 and 10's to 100 with difficulty or with a few significant errors.	Students count by 2's to 20 and 10's to 100 with great difficulty or with many significant errors.
1.1.5. Group objects by 2's, 5's, and 10's	Students group objects by 2's, 5's, and 10's with no errors.	Students group objects by 2's, 5's, and 10's with no significant errors.	Students group objects by 2's, 5's, or 10's with a few significant errors.	Students group objects by 2's, 5's, or 10's with many significant errors.
1.1.6. Identify position using ordinal numbers	Students identify position using ordinal numbers with no errors.	Students identify position using ordinal numbers with no significant errors.	Students identify position using ordinal numbers with a few significant errors.	Students identify position using ordinal numbers with many significant errors.
1.1.7. Connect number words and numerals to the quantities they represent (0 - 10)	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.
1.1.8. Represent and explain fractions (i.e., one half, one fourth) as part of a whole and part of a set using concrete materials/drawings	Students represent and explain fractions as part of a whole and part of a set using concrete materials/drawings with no errors.	Students represent and explain fractions as part of a whole and part of a set using concrete materials/drawings with no significant errors.	Students represent and explain fractions as part of a whole and part of a set using concrete materials/drawings with a few significant errors.	Students represent and explain fractions as part of a whole and part of a set using concrete materials/drawings 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
1.1.9. Identify place value for ones and tens	Students identify place value for ones and tens with no errors.	Students identify place value for ones and tens with no significant errors.	Students identify place value for ones and tens with a few significant errors.	Students identify place value for ones and tens with many significant errors.
1.1.10. Compare two digit numbers using symbols; i.e., >, <, =	Students use symbols to compare two digit numbers with no errors.	Students use symbols to compare two digit numbers with no significant errors.	Students use symbols to compare two digit numbers with a few significant errors.	Students use symbols to compare two digit numbers with many significant errors.
1.1.11. Use grade-appropriate terms when communicating about addition and subtraction; i.e., 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.
OPERATIONS AND THEIR PROPERTIES				
1.1.12. Use symbols to write addition and subtraction number sentences; i.e., +, -, =	Students use symbols to write addition and subtraction number sentences with no errors.	Students use symbols to write addition and subtraction number sentences with no significant errors.	Students use symbols to write addition and subtraction number sentences with a few significant errors.	Students use symbols to write addition and subtraction number sentences with many significant errors.
COMPUTATIONAL FLUENCY AND ESTIMATION				
1.1.13. Recall addition facts and subtraction facts (0-10)	Students recall addition and subtraction facts to 10 with ease.	Students recall addition and subtraction facts to 10 with minimal difficulty.	Students recall addition and subtraction facts to 10 with difficulty.	Students recall addition and subtraction facts to 10 with great difficulty.
1.1.14. Estimate the number of objects and check by counting	Students make and check estimates of quantity with no errors and with ease.	Students make and check estimates of quantity with no significant errors and with minimal difficulty.	Students make and check estimates of quantity with a few significant errors or with difficulty.	Students make and check estimates of quantity with many significant errors or with great difficulty.

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 1				
TWO- AND THREE-DIMENSIONAL SHAPES, GEOMETRIC PROPERTIES AND RELATIONSHIPS				
1.2.1. Identify, compare, draw, and sort two-dimensional figures; i.e., circle, triangle, rectangle, square, oval, and diamond	Students identify, compare, draw, and sort two-dimensional figures with no errors.	Students identify, compare, draw, and sort two-dimensional figures with no significant errors.	Students identify, compare, draw, and sort two-dimensional figures with a few significant errors.	Students identify, compare, draw, and sort two-dimensional figures with many significant errors.
1.2.2. Identify three-dimensional objects; i.e., pyramid, cube, cone, cylinder, sphere	Students identify three-dimensional objects with no errors.	Students identify three-dimensional objects with no significant errors.	Students identify three-dimensional objects with a few significant errors.	Students identify three-dimensional objects with many significant errors.
COORDINATE GEOMETRY				
<i>No benchmark expectations at this level</i>				
TRANSFORMATION AND SYMMETRY				
1.2.3. Identify lines of symmetry in two-dimensional figures	Students identify lines of symmetry in two-dimensional figures with no errors.	Students identify lines of symmetry in two-dimensional figures with no significant errors.	Students identify lines of symmetry in two-dimensional figures with a few significant errors.	Students identify lines of symmetry in two-dimensional figures with many significant errors.
VISUALIZATION, SPATIAL REASONING, AND GEOMETRIC MODELING				
1.2.4. Arrange and describe objects in space by proximity, position, and direction; e.g., near, far, below, above, up, down, behind, in front of, next to, left or right of	Students arrange and describe objects in space by proximity, position, and direction with no errors.	Students arrange and describe objects in space by proximity, position, and direction with no significant errors.	Students arrange and describe objects in space by proximity, position, and direction with a few significant errors.	Students arrange and describe objects in space by proximity, position, and direction with many significant errors.

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			
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Grade 1				
DATA COLLECTION, DISPLAY, AND INTERPRETATION				
1.3.1. Identify and display various forms of data in their world using charts and graphs; e.g., tally charts and bar graphs	Students identify and display various forms of data using charts and graphs with no errors.	Students identify and display various forms of data using charts and graphs with no significant errors.	Students identify and display various forms of data using charts and graphs with a few significant errors.	Students identify and display various forms of data with many significant errors.
1.3.2. Read and interpret tally charts and picture graphs as sources of information	Students read and interpret tally charts and picture graphs with no errors.	Students read and interpret tally charts and picture graphs with no significant errors.	Students read and interpret tally charts and picture graphs with a few significant errors.	Students read and interpret tally charts and picture graphs with many significant errors.
1.3.3. Sort objects by common attribute	Students sort objects by common attributes with no errors.	Students sort objects by common attributes with no significant errors.	Students sort objects by common attributes with a few significant errors.	Students sort objects by common attributes with many significant errors.
PROBABILITY				
<i>No benchmark expectations at this level</i>				
STATISTICAL METHODS				
<i>No benchmark expectations at this level</i>				
PREDICTIONS, DATA ANALYSIS, AND INFERENCES				
<i>No benchmark expectations at this level</i>				

Standard 4: Measurement

Standard 4: Students use concepts and tools of measurement to describe and quantify the world...				
Benchmark Expectations	PROFICIENCY DESCRIPTOR			
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Grade 1				
MEASURABLE ATTRIBUTES, MEASUREMENT SYSTEMS AND UNITS				
1.4.1. Use the days of the week to show knowledge of yesterday, today, and tomorrow	Students use the days of the week to show knowledge of yesterday, today, and tomorrow with no errors.	Students use the days of the week to show knowledge of yesterday, today, and tomorrow with no significant errors.	Students use the days of the week to show knowledge of yesterday, today, and tomorrow with a few significant errors.	Students use the days of the week to show knowledge of yesterday, today, and tomorrow with many significant errors.
1.4.2. Tell time to the hour and half-hour using digital and analog clocks	Students tell time to the hour and half-hour with ease and no errors.	Students tell time to the hour and half-hour with minimal difficulty and no significant errors.	Students tell time to the hour and half-hour with difficulty and a few significant errors.	Students tell time to the hour and half-hour with great difficulty and many significant errors.
1.4.3. Estimate, and verify by measuring, length, weight, or capacity using nonstandard units	Students estimate, and verify by measuring, length, weight, or capacity using nonstandard units with no errors.	Students estimate, and verify by measuring, length, weight, or capacity using nonstandard units with no significant errors.	Students estimate, and verify by measuring, length, weight, or capacity using nonstandard units with a few significant errors.	Students estimate, and verify by measuring, length, weight, or capacity using nonstandard units with many significant errors.
1.4.4. Estimate, and verify by measuring, length to the nearest inch, foot, and centimeter	Students estimate, and verify by measuring, length to the nearest inch, foot, and centimeter with no errors.	Students estimate, and verify by measuring, length to the nearest inch, foot, and centimeter with no significant errors.	Students estimate, and verify by measuring, length to the nearest inch, foot, and centimeter with a few significant errors.	Students estimate, and verify by measuring, length to the nearest inch, foot, and centimeter with many significant errors.
1.4.5. Identify a penny, nickel, dime, and quarter and state its value	Students identify a penny, nickel, dime, and quarter and state all of the values with ease and no errors.	Students identify a penny, nickel, dime, and quarter and state all of the values with minimal difficulty and no significant errors.	Students identify a penny, nickel, dime, and/or quarter and state some of the values with difficulty and a few significant errors.	Students identify a penny, nickel, dime, and/or quarter and state the values with great difficulty and many significant errors.
1.4.6. Count a like set of pennies, nickels, or dimes to \$1.00	Students count a like set of pennies, nickels, or dimes to \$1.00 with no errors.	Students count a like set of pennies, nickels, or dimes to \$1.00 with no significant errors.	Students count a like set of pennies, nickels, or dimes to \$1.00 with a few significant errors.	Students count a like set of pennies, nickels, or dimes to \$1.00 with many significant errors.

Standard 4: Students use concepts and tools of measurement to describe and quantify the world...				
Benchmark Expectations	PROFICIENCY DESCRIPTOR			
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1.4.7. Demonstrate that different combinations of coins (i.e., pennies, nickels and dimes) can have the same value	Students demonstrate with ease that different combinations of coins can have the same value.	Students demonstrate with minimal difficulty that different combinations of coins can have the same value.	Students demonstrate with difficulty that different combinations of coins can have the same value.	Students demonstrate with great difficulty that different combinations of coins can have the same value.
1.4.8. Sequence events with respect to time; e.g., yesterday, today, tomorrow, seasons	Students sequence events with respect to time with no errors.	Students sequence events with respect to time with no significant errors.	Students sequence events with respect to time with a few significant errors.	Students sequence events with respect to time with many significant errors.
MEASUREMENT TOOLS, TECHNIQUES, AND FORMULAS				
1.4.9. Identify the appropriate tool used to measure length (i.e., ruler), weight (i.e., scale), time (i.e., clock, calendar) and temperature (i.e., thermometer)	Students identify the appropriate tool used to measure length, weight, time, and temperature with no errors.	Students identify the appropriate tool used to measure length, weight, time, and temperature. with no significant errors.	Students identify the appropriate tool used to measure length, weight, time, and temperature with a few significant errors.	Students identify the appropriate tool used to measure length, weight, time, and temperature 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 1				
PATTERNS, RELATIONS, AND FUNCTIONS				
1.5.1. Identify, sort, and classify objects by two or more attributes	Students identify, sort, and classify objects by two or more attributes with no errors.	Students identify, sort, and classify objects by two or more attributes with no significant errors.	Students identify, sort, and classify objects by two or more attributes with a few significant errors.	Students identify, sort, and classify objects by two or more attributes with many significant errors.
1.5.2. Recognize, extend, create, and describe patterns	Students recognize, extend, and create patterns with no errors and describe them in great detail.	Students recognize, extend, and create patterns with no significant errors and describe them in adequate detail.	Students recognize, extend, and create patterns with a few significant errors or describe them in some detail.	Students recognize, extend, and create patterns with many significant errors or describe them in minimal detail.
NUMERIC AND ALGEBRAIC REPRESENTATIONS				
1.5.3. Demonstrate the commutative property of addition; e.g., $3+5 = 5+3$	Students demonstrate the commutative property of addition with no errors.	Students demonstrate the commutative property of addition with no significant errors.	Students demonstrate the commutative property of addition with a few significant errors.	Students demonstrate the commutative property of addition with many significant errors.
MATHEMATICAL MODELING				
<i>No benchmark expectations at this level</i>				
RATES OF CHANGE				
<i>No benchmark expectations at this level</i>				