

**MINNESOTA ACADEMIC STANDARDS
MATHEMATICS
MATHEMATICAL REASONING
GRADE FOUR**

Strand	Sub-Strand	Standard	Benchmarks	Content
<p>Strand: MATHEMATICAL REASONING</p>	<p>Sub-Strand:</p>	<p>Standard: Apply skills of mathematical representation, communication and reasoning throughout the remaining four content strands.</p>	<p>Benchmarks:</p> <ol style="list-style-type: none"> 1. Communicate, reason and represent situations mathematically. 2. Solve problems by distinguishing relevant from irrelevant information, sequencing and prioritizing information and breaking multi-step problems into simpler parts. 3. Evaluate the reasonableness of the solution by considering appropriate estimates and the context of the original problem. 4. Know when it is appropriate to estimate and when an exact answer with whole numbers, fractions or decimals is needed. 5. Express a written problem in suitable mathematical language, solve the problem and interpret the result in the original context. 6. Support mathematical results using pictures, numbers, and words to explain why the steps in a solution are valid and why a particular solution method is appropriate. 	<p>Content:</p>

**MINNESOTA ACADEMIC STANDARDS
MATHEMATICS
NUMBER SENSE, COMPUTATION AND OPERATIONS
GRADE FOUR**

Strand	Sub-Strand	Standard	Benchmarks	Content
<p>Strand: NUMBER SENSE, COMPUTATION, AND OPERATIONS</p>	<p>Sub-Strand: A. Number Sense</p>	<p>Standard: Represent whole numbers in various ways to quantify information and to solve real-world and mathematical problems. Understand the concept of fractions and decimals.</p>	<p>Benchmarks:</p> <ol style="list-style-type: none"> 1. Read and write whole numbers to 100,000, in numerals and words. 2. Compare and order whole numbers. 3. Use fractions and decimals to solve problems representing parts of a whole, parts of a set and division of whole numbers by whole numbers in real-world and mathematical problems. 4. Use rounding and estimation with whole numbers to solve real-world and mathematical problems. 	<p>Content:</p>

Strand	Sub-Strand	Standard	Benchmarks	Content
<p>Strand: NUMBER SENSE, COMPUTATION, AND OPERATIONS</p>	<p>Sub-Strand: B. Computation and Operation</p>	<p>Standard: Compute fluently and make reasonable estimates with whole numbers in real-world and mathematical problems. Understand the meanings of arithmetic operations and how they relate to one another.</p>	<p>Benchmarks:</p> <ol style="list-style-type: none"> 1. Use addition and subtraction of multi-digit whole numbers to solve multi-step real-world and mathematical problems. 2. Add up to three whole numbers containing up to three digits each, without a calculator. 3. Subtract whole numbers containing up to three digits each, without a calculator. 4. Demonstrate mastery of multiplication facts for the numbers 0-10, without a calculator. 5. Use multiplication and division of whole numbers to solve simple real-world and mathematical problems. 6. Use the inverse relationship of multiplication and division to compute and check results. 7. Multiply single digit multiples of powers of ten such as 300×60 or 70×3, mentally. 	<p>Content:</p>

**MINNESOTA ACADEMIC STANDARDS
MATHEMATICS
PATTERNS, FUNCTIONS AND ALGEBRA
GRADE FOUR**

Strand	Sub-Strand	Standard	Benchmarks	Content
Strand: PATTERNS, FUNCTIONS AND ALGEBRA	Sub-Strand: A. Patterns and Functions	Standard: Understand and describe patterns in tables and graphs.	Benchmarks: 1. Examine and describe patterns in tables and graphs.	Content:
Strand: PATTERNS, FUNCTIONS AND ALGEBRA	Sub-Strand: B. Algebra (Algebraic Thinking)	Standard: Apply arithmetic operations in the correct order to compute with whole numbers in real-world and mathematical problems.	Benchmarks: 1. Identify a missing number or operation in a simple arithmetic equation such as $3 _ 4$ $= 12$ or $45 / _ = 9$. 2. Use the properties of arithmetic that involve ordering, grouping and the numbers 1 and 0, to do simple computations with whole numbers.	Content:

**MINNESOTA ACADEMIC STANDARDS
MATHEMATICS
DATA ANALYSIS, STATISTICS AND PROBABILITY
GRADE FOUR**

Strand	Sub-Strand	Standard	Benchmarks	Content
Strand: DATA ANALYSIS, STATISTICS AND PROBABILITY	Sub-Strand: A. Data and Statistics	Standard: Represent and interpret data in real-world and mathematical problems.	Benchmarks: 1. Collect data using observations or surveys and represent the data with tables and graphs with labeling. 2. Use mathematical language to describe a set of data.	Content:
Strand: DATA ANALYSIS, STATISTICS AND PROBABILITY	Sub-Strand: B. Probability	Standard: Model simple probabilities by displaying the outcomes for real-world and mathematical problems.	Benchmarks: 1. Express outcomes of random experiments verbally and numerically such as 3 out of 4 or $\frac{3}{4}$. 2. Use physical models and pictures to represent possible arrangements of two or three objects.	Content:

**MINNESOTA ACADEMIC STANDARDS
MATHEMATICS
SPATIAL SENSE, GEOMETRY AND MEASUREMENT
GRADE FOUR**

Strand	Sub-Strand	Standard	Benchmarks	Content
<p>Strand: SPATIAL SENSE, GEOMETRY, AND MEASUREMENT</p>	<p>Sub-Strand: A. Spatial Sense</p>	<p>Standard: Understand spatial relationships and describe them using language such as congruent, similar, parallel and perpendicular.</p>	<p>Benchmarks: 1. Identify congruent and similar figures. 2. Identify parallel and perpendicular lines.</p>	<p>Content:</p>
<p>Strand: SPATIAL SENSE, GEOMETRY, AND MEASUREMENT</p>	<p>Sub-Strand: B. Geometry</p>	<p>Standard: Use attributes of two- and three-dimensional shapes to identify them and distinguish between them.</p>	<p>Benchmarks: 1. Identify, describe, and classify two- and three-dimensional shapes by their attributes. 2. Identify right angles in geometric figures or in appropriate objects and determine whether other angles are greater or less than a right angle.</p>	<p>Content:</p>

Strand	Sub-Strand	Standard	Benchmarks	Content
Strand: SPATIAL SENSE, GEOMETRY, AND MEASUREMENT	Sub-Strand: C. Measurement	Standard: Measure and calculate length and area using appropriate tools and units to solve real-world and mathematical problems. Make change with money.	Benchmarks: 1. Find the area and perimeter of a rectangle by measuring, using a grid, or using a formula, and label the answer with appropriate units. 2. Understand that rectangles with the same area can have different perimeters and that rectangles with the same perimeter can have different areas. 3. Make change using as few coins and bills as possible up to \$20.	Content: