



IDAHO
Mathematics Standards Grade 6
MathScape: Seeing and Thinking Mathematically
Course 1 © 2005

STANDARDS	PAGE REFERENCES
317. BASIC ARITHMETIC, ESTIMATION, AND ACCURATE COMPUTATIONS.	
01. Understand and use numbers.	
a. Read, write, order, and compare whole numbers, fractions, and decimals.	SE: 104-105, 108-109, 110-111, 114-115, 130-131, 146, 147, 148, 149, 156, 214-215, 216-217, 228-229, 258, 259, 264, 309, 310
b. Understand the use of fractions and decimals and their interrelationship.	SE: 212-213, 238-239, 257, 268, 269 #13, 312, 316, 317, 319
c. Expand the use of decimals and fractions to explore the use of percents and ratios.	SE: 232-233, 234-235, 240-241, 265, 266, 269
d. Show a sense of magnitudes and relative magnitudes of real numbers (whole numbers, fractions, decimals).	SE: 56-57, 62-63, 82, 84, 108-109, 110-111, 112-113, 114-115, 132-133, 147, 148, 149, 150, 157, 214-215, 216-217, 258, 259
e. Develop and apply number theory concepts [prime, composite, Greatest Common Factor (GCF), Lowest Common Multiple (LCM), prime factorization].	SE: 96-97, 98-99, 100-101, 142, 143, 144
f. Explore the use of integers in real-world situations.	SE: 244-246, 246-247, 248-249, 250-251, 252-253, 270, 271, 272, 273, 274
02. Perform computations accurately.	
a. Consistently and accurately multiply and divide whole numbers.	SE: 104-105, 145, 156
b. Add, subtract, multiply, and divide decimals.	SE: 220-221, 222-223, 224-225, 226-227, 260, 261, 262, 263
c. Add and subtract fractions with unlike denominators and simplify as necessary.	SE: 110-111, 114-115, 118-119, 120-121, 122-123, 124-125, 126-127, 132-133, 136-137, 140-141, 148, 150, 151, 152, 153, 154, 155, 156, 159, 161, 296-297, 315
d. Instantly recall basic multiplication and division facts from a 12 x 12 Times Table.	SE: 98-99, 100-101, 110-111, 114-115, 142, 143, 148, 150
e. Evaluate numerical expressions using the order of operations.	SE: 102-103, 104-105, 145, 146, 250-251, 273
f. Explore the use of exponents.	SE: 72-73, 74-75, 88, 89
g. Explore multiplication and division of fractions.	SE: 130-131, 132-133, 134-135, 136-137, 138-139, 140-141, 156, 157, 158, 159, 160, 161
h. Select and use an appropriate method of computation from mental math, paper and pencil, calculator, or a combination of the three.	SE: 98-99, 100-101, 102-103, 104-105, 112-113, 118-119, 139-140, 142, 143, 144, 146, 149, 151, 160, 213, 224-225, 226-227, 257
i. Use appropriate vocabulary.	SE: 99, 100, 110, 119, 122, 123, 137, 146

STANDARDS	PAGE REFERENCES
03. Estimate and judge reasonableness of results.	
a. Use estimation to predict computation results.	SE: 134-135, 138-139, 158, 160, 216-217, 259, 284-285, 290-291, 294-295, 310, 312, 314
b. Recognize when estimation is appropriate and understand the usefulness of an estimate as distinct from an exact answer.	SE: 134-135, 138-139, 158, 160, 216-217, 236-237, 259, 267, 284-285, 294-295, 310, 314
c. Determine whether a given estimate is an overestimate or underestimate.	SE: 134-135, 138, 158
d. Use appropriate vocabulary.	SE: 138, 217, 285, 287, 295
318. MATHEMATICAL REASONING AND PROBLEM SOLVING.	
01. Understand and use a variety of problem-solving skills.	
a. Use a variety of strategies to compute problems drawn from real-world situations.	SE: 102-103, 104-105, 145, 146, 216-217, 259, 267, 326-327, 328-329, 348-349, 352-353, 355, 356, 363, 365
b. Solve problems using the 4-step process of problem solving (explore, plan, solve, examine).	SE: 10-11, 38, 83, 155 #17, 286-287, 294-295, 302-303, 357, 360, 363
c. Make predictions and decisions based on information.	SE: 10-11, 24-25, 38, 43, 45, 226-227, 263, 296-297, 304-305, 315, 318, 332-333, 334-335, 336-337, 344-345, 348-349, 357, 358, 359, 362, 363
02. Use reasoning skills to recognize problems and express them mathematically.	
a. Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning and concepts.	SE: 6-7, 14-15, 22-23, 32-33, 36, 39, 42, 52-53, 56-57, 62-63, 80, 82, 84, 91, 103, 110-111, 112-113, 120-121, 126-127, 147, 148, 149, 152, 155, 324-325, 326-327, 332-333, 336-337, 340-341, 354, 355, 357, 359, 360
b. Apply solutions and strategies to new problem situations.	SE: 297, 302-303, 315, 317, 326-327, 328-329, 334-335, 348-349, 355, 356, 358, 363
c. Formulate conjectures and discuss why they must be or seem to be true.	SE: 30-31, 32-33, 45, 46, 132-133, 157, 159 #21, 180-181, 182-183, 186-187, 190-191, 200-210, 202, 203, 212-213, 257, 328-329, 334-335, 348-349, 350-351, 352-353, 356, 358, 363, 364, 365
03. Apply appropriate technology and models to find solutions to problems.	
a. Understand the purpose and capabilities of appropriate technology use as a tool to solve problems.	SE: 30-31, 43, 62-63, 84, 212-213, 222-223, 224-225, 226-227, 257, 261, 262, 263
b. Use computer applications to display and manipulate data.	Computer applications can be used with the following pages. SE: 40-43, 275 #28-#29, 355, 360, 362
c. Select appropriate models to represent mathematical ideas.	SE: 14-15, 16-17, 22-23, 39, 40, 42, 110-111, 112-113, 118-119, 148, 149, 151, 166-167, 170-171, 186-187, 192-193, 194, 196, 202, 205, 244-245, 246-247, 270, 271
04. Communicate results using appropriate terminology and methods.	
a. Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to communicate mathematical information.	SE: 166-167, 168-169, 172-173, 176-177, 194, 195, 197, 198, 334-335, 336-337, 358, 359

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b. Use appropriate vocabulary to communicate mathematical information.	SE: 110-111, 114-115, 148, 150, 166-167, 168-169, 194, 195, 234-235, 266
c. Use appropriate notation.	SE: 54-55, 58, 81, 83, 210, 257
319. CONCEPTS AND PRINCIPLES OF MEASUREMENT.	
01. Understand and use U.S. customary and metric measurements.	
a. Select and use appropriate units and tools to make formal measurements in both systems.	SE: 178-179, 199, 280-281, 282-283, 290-291, 292-293, 308, 309, 312, 313
b. Apply estimation of measurement to real-world and content problems using actual measuring devices.	SE: 182-183, 201, 285, 287, 291, 293, 295, 310, 311, 312, 313, 314
c. Recognize the differences and relationships between perimeter and area in both systems.	SE: 182-183, 201, 313 #19-#20
d. Solve problems involving length, perimeter, area, weight, mass, and temperature.	SE: 182-183, 201, 228-229, 244, 264, 282-283, 284-285, 304-305, 309, 310, 312 #18, 313 #19-#20, 315 #15, 318, 319
e. Convert unit of measurement within each system.	SE: 149 #21-#25, 280-281, 292-293, 294-295, 308, 310 #15, 313, 314
f. Apply understanding of relationships to solve real-world problems related to time.	SE: 26-27, 44, 144
g. Use appropriate vocabulary.	SE: 280-281, 286-287, 301, 306-307, 308, 311, 316, 319
02. Apply concepts of rates and other derived or indirect measurements.	
a. Explore the use of rates to make indirect measurements.	SE: 45 #12, 308 #10-#11, 309 #18
03. Apply the concepts of ratios and proportions.	
a. Explore the use of proportions, ratios, and scales.	SE: 19, 41, 280-281, 282-283, 287, 291, 302-303, 308, 309, 311, 312, 317, 344-345, 362
04. Apply dimensional analysis.	
a. Understand units and their relationship to one another and to real-world applications.	SE: 32-33, 45 #12, 46, 312 #18, 314 #15-#16, 318 #18
320. CONCEPTS AND LANGUAGE OF ALGEBRA.	
01. Use algebraic symbolism as a tool to represent mathematical relationships.	
a. Explore the meaning and use of variables in simple expressions and equations.	SE: 332-333, 334-335, 336-337, 357, 358, 359
b. Translate simple word statements and story problems into algebraic equations.	SE: 332-333, 334-335, 357, 358
c. Use symbols (<, >, =) to express relationships.	SE: 102-103, 112-113, 114-115, 145, 149, 150, 217, 259, 334-335
02. Evaluate algebraic expressions.	
a. Explore and use the following properties in evaluating mathematical and algebraic expressions: commutative, associative, identity, zero, inverse, and distributive.	SE: 329, 334-335, 349, 350, 356, 358, 363, 364
b. Explore the order of operations.	SE: 102-103, 104-105, 145, 146
03. Solve algebraic equations and inequalities.	
a. Solve 1-step equations using inverse operations with whole numbers.	SE: 10-11, 16-17, 328-329, 334-335, 356, 358

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321. CONCEPTS AND PRINCIPLES OF GEOMETRY.	
01. Apply concepts of size, shape, and spatial relationships.	
a. Precisely describe, classify, and understand relationships among types of one-, two-, and three-dimensional objects using their defining properties.	SE: 166-167, 170-171, 172-173, 176-177, 180-181, 186-187, 188-189, 190-191, 192-193, 194, 196, 197, 198, 200, 202, 203, 204, 205
b. Construct and measure various angles and shapes using appropriate tools.	SE: 168-169, 178-179, 192-193, 195, 199, 205
c. Apply fundamental concepts, properties, and relationships among points, lines, angles, and shapes.	SE: 176-177, 178-179, 180-181, 192-193, 198, 199, 200, 205
d. Recognize and apply congruence, similarities, and symmetry of shapes.	SE: 170-171, 176-177, 192-193, 196, 198, 205
e. Develop and apply formulas for perimeter, circumference, and area to triangles, quadrilaterals, and circles.	SE: 182-183, 201, 262 #21-#22, 334-335, 358
f. Explore the relationship between two- and three-dimensional objects.	SE: 166-167, 172-173, 186-187, 188-189, 190-191, 192-193, 194, 197, 202, 203, 204, 205
g. Explore reflections, translations, and rotations on various shapes.	SE: 168-169, 176-177, 195, 198, 312
h. Use appropriate vocabulary.	SE: 169, 177, 179, 183, 187, 189, 193, 203 #11-#14
02. Apply graphing in two dimensions.	
a. Identify and plot points on a coordinate plane.	SE: 340-341, 342-343, 344-345, 360-361, 362
322. ANALYSIS, PROBABILITY AND STATISTICS.	
01. Understand data analysis.	
a. Read and interpret tables, charts, and graphs (line graphs, bar graphs, frequency lines or line plots, and circle graphs).	SE: 6-7, 10-11, 14-15, 16-17, 18-19, 22-23, 24-25, 26-27, 36, 38, 39-44
b. Explain and justify conclusions drawn from tables, charts, and graphs.	SE: 10-11, 16-17, 18-19, 22-23, 24-25, 26-27, 38, 40-44
c. Understand and use appropriate vocabulary.	SE: 6, 8-9, 11, 15, 17, 19, 23
02. Collect, organize, and display data.	
a. Collect, organize, and display data with appropriate notation in tables, charts, and graphs (line graphs, bar graphs, frequency lines or line plots, and circle graphs).	SE: 6-7, 10-11, 14-15, 16-17, 18-19, 22-23, 24-25, 26-27, 36, 38, 39-44
03. Apply simple statistical measurements.	
a. Find measures of central tendency – mean, median, and mode with simple sets of data.	SE: 6-7, 8-9, 31, 32-33, 36, 37, 43, 45, 46
b. Determine the range of a set of data.	SE: 6-7, 18-19, 36, 41
04. Understand basic concepts of probability.	
a. Predict, perform, and record results of simple probability experiments.	SE: 30-31, 32-33, 34-35, 45-47
b. Understand and use the language of probability.	SE: 31, 34-35
05. Make predictions or decisions based on data.	
a. Make predictions based on simple experimental probabilities.	SE: 32-33, 34-35, 46, 47

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b. Understand and use appropriate vocabulary.	SE: 30-31, 32-33, 45, 46
323. FUNCTIONS AND MATHEMATICAL MODELS.	
01. Understand the concept of functions.	
a. Extend patterns and identify a rule (function) that generates the pattern using whole numbers, decimals, and fractions.	SE: 324-325, 326-327, 328-329, 334, 335, 340-341, 342-343, 354-356, 359, 360, 363
b. Discover, describe, and extend patterns by using manipulatives and pictorial representations.	SE: 324-325, 326-327, 328-329, 334-335, 354-356, 359
c. Use mathematical models to show change in real context.	SE: 326-327, 328-329, 334-335, 340-341, 348-349, 350-351, 355, 358, 359, 360, 363, 364
d. Understand and use appropriate vocabulary.	SE: 325, 329, 333, 344, 350-351, 364
02. Apply functions to a variety of problems.	
a. Use patterns and functions to represent and solve simple problems.	SE: 326-327, 340-341, 342-343, 344-345, 348-349, 350-351, 352-353, 355, 360-365