



IDAHO
Mathematics Standards Grade 6
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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.	<i>Gulliver's Worlds</i> SE: 15-16, 28-29, 32-33 <i>From Zero to One and Beyond</i> SE: 6-7, 8-9, 22-23, 26-27, 36, 37 TG: 12, 14, 16, 60
b. Understand the use of fractions and decimals and their interrelationship.	<i>Gulliver's Worlds</i> SE: 26-27, 32-33, 38, 42, 43, 45 <i>Number Powerhouse</i> SE: 30-31, 32-33 <i>From Zero to One and Beyond</i> SE: 26-27, 44 TG: R14, R15
c. Expand the use of decimals and fractions to explore the use of percents and ratios.	<i>Gulliver's Worlds</i> SE: 26-27, 32-33, 35, 37, 38, 42, 43, 45 <i>Number Powerhouse</i> SE: 30-31, 32-33, 44 <i>From Zero to One and Beyond</i> SE: 14-15, 16-17, 18-19, 24-25, 26-27, 42 TG: 32, 36, 48, 49
d. Show a sense of magnitudes and relative magnitudes of real numbers (whole numbers, fractions, decimals).	<i>The Language of Numbers</i> SE: 8-9, 16-17 TG: 20, 74 <i>From Zero to One and Beyond</i> SE: 6-7, 8-9, 16-17, 22-23, 36 TG: 16, 18, 52
e. Develop and apply number theory concepts [prime, composite, Greatest Common Factor (GCF), Lowest Common Multiple (LCM), prime factorization].	<i>The Language of Numbers</i> SE: 10-11, 20-21, 42 TG: 44 <i>Number Powerhouse</i> SE: 16-17 <i>Patterns in Numbers and Shapes</i> SE: 36
f. Explore the use of integers in real-world situations.	<i>Number Powerhouse</i> SE: 10-11, 12-13 TG: 2
02. Perform computations accurately.	
a. Consistently and accurately multiply and divide whole numbers.	<i>Number Powerhouse</i> SE: 6-7, 12-13 TG: 16

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b. Add, subtract, multiply, and divide decimals.	<i>Number Powerhouse</i> SE: 26-27, 28-29, 42, 43 TG: 58, 60
c. Add and subtract fractions with unlike denominators and simplify as necessary.	<i>Gulliver's Worlds</i> SE: 22-23 <i>Number Powerhouse</i> SE: 16-17, 38 TG: 36, 38
d. Instantly recall basic multiplication and division facts from a 12 x 12 Times Table.	Note: Such a Times Table could be included in Pre-assessment <i>Number Powerhouse A4 Skill Activity</i> .
e. Evaluate numerical expressions using the order of operations.	<i>Number Powerhouse</i> SE: 8-9, 10-11, 12-13, 22-23, 28-29, 35 TG: 18, 20, 48, 56, R13
f. Explore the use of exponents.	<i>Gulliver's Worlds</i> SE: 30-31 <i>The Language of Numbers</i> SE: 26-27, 28-29, 42, 43 TG: 60, 62, 74 <i>Patterns in Numbers and Shapes</i> SE: 34-35 <i>From Zero to One and Beyond</i> SE: 34-35, 47 TG: 76
g. Explore multiplication and division of fractions.	<i>Number Powerhouse</i> SE: 18-19, 20-21, 22-23, 39, 40 TG: 40, 44
h. Select and use an appropriate method of computation from mental math, paper and pencil, calculator, or a combination of the three.	<i>Number Powerhouse</i> SE: 6-7, 18-19, 26-27, 34, 38, 40, 41 TG: 16, 58
i. Use appropriate vocabulary.	<i>Number Powerhouse</i> TG: 12 <i>From Zero to One and Beyond</i> TG: 12-13, 30-31
03. Estimate and judge reasonableness of results.	
a. Use estimation to predict computation results.	<i>Gulliver's Worlds</i> SE: 10-11 TG: 24 <i>Number Powerhouse</i> SE: 22-23, 34 <i>From Zero to One and Beyond</i> SE: 14-15, 16-17 TG: 34, 38
b. Recognize when estimation is appropriate and understand the usefulness of an estimate as distinct from an exact answer.	<i>Number Powerhouse</i> SE: 18-19, 20-21, 34 TG: 42, 46 <i>From Zero to One and Beyond</i> SE: 10-11, 14-15, 16-17, 18-19 TG: 24, 34, 38

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c. Determine whether a given estimate is an overestimate or underestimate.	<i>Gulliver's Worlds</i> SE: 16-17, 22-23 <i>Number Powerhouse</i> SE: 34 <i>From Zero to One and Beyond</i> SE: 14-15, 16-17 TG: 34
d. Use appropriate vocabulary.	<i>Number Powerhouse</i> SE: 7, 19, 21 TG: 42, 46 <i>From Zero to One and Beyond</i> SE: 15, 17 TG: 30, 31, 38
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.	<i>Gulliver's Worlds</i> SE: 12-13, 22-23 TG: 13 <i>Number Powerhouse</i> SE: 6-7, 16-17, 38 TG: 16 <i>Patterns in Numbers and Shapes</i> SE: 6-7, 8-9, 10-11, 14-15, 18-19 <i>From Zero to One and Beyond</i> SE: 6-7, 10-11, 18-19, 26-27, 32-33, 36 TG: 14, 16, 40, 74
b. Solve problems using the 4-step process of problem solving (explore, plan, solve, examine).	<i>Gulliver's Worlds</i> SE: 28-29 TG: 64 <i>Number Powerhouse</i> SE: 37 #14, 40 #23
c. Make predictions and decisions based on information.	<i>Gulliver's Worlds</i> SE: 12-13, 22-23, 30-31 <i>Number Powerhouse</i> SE: 16-17, 18-19, 22-23 <i>Patterns in Numbers and Shapes</i> SE: 14-15, 16-17, 18-19, 30-31 <i>From Zero to One and Beyond</i> SE: 18-19, 32-33 TG: 16, 40, 74

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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.	<i>Gulliver's Worlds</i> SE: 12-13, 22-23 TG: 2 <i>Number Powerhouse</i> SE: 6-7, 16-17, 38 TG: 16 <i>Patterns in Numbers and Shapes</i> SE: 6-7, 8-9, 14-15, 18-19 <i>From Zero to One and Beyond</i> SE: 6-7, 10-11, 18-19, 26-27, 32-33, 36 TG: 14, 16, 74
b. Apply solutions and strategies to new problem situations.	<i>Gulliver's Worlds</i> SE: 22-23, 28-29 <i>Number Powerhouse</i> SE: 18-19, 39 #15, 40 #23, 44 #21 <i>Patterns in Numbers and Shapes</i> SE: 8-9, 10-11, 30-31 TG: 20, 22
c. Formulate conjectures and discuss why they must be or seem to be true.	<i>Designing Spaces</i> SE: 8-9 <i>Number Powerhouse</i> SE: 16-17, 18-19, 22-23 <i>Patterns in Numbers and Shapes</i> SE: 10-11, 16-17, 30-31, 32-33, 36 TG: 32, 34, 42, 74
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.	<i>The Language of Numbers</i> SE: 28-29 <i>Number Powerhouse</i> SE: 28-29 TG: 13, 35, 64 <i>Patterns in Numbers and Shapes</i> SE: 30-31
b. Use computer applications to display and manipulate data.	<i>What Does the Data Say?</i> TG: 31, 67 <i>Patterns in Numbers and Shapes</i> TG: 13, 31 <i>From Zero to One and Beyond</i> TG: 67
c. Select appropriate models to represent mathematical ideas.	<i>What Does the Data Say?</i> SE: 14-15, 16-17 TG: 32 <i>Designing Spaces</i> SE: 6-7 TG: 14

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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.	<i>Designing Spaces</i> SE: 6-7, 8-9 TG: 14 <i>The Language of Numbers</i> SE: 22-23 <i>Patterns in Numbers and Shapes</i> SE: 16-17, 18-19 TG: 36, 42, 67
b. Use appropriate vocabulary to communicate mathematical information.	<i>Designing Spaces</i> SE: 6-7, 8-9 TG: 16, 20 <i>From Zero to One and Beyond</i> SE: 6-7, 32-33 TG: 16, 72
c. Use appropriate notation.	<i>The Language of Numbers</i> SE: 8-9, 12-13 <i>From Zero to One and Beyond</i> SE: 14-15, 18-19, 22-23 TG: 32, 40, 50
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.	<i>Designing Spaces</i> SE: 18-19, 39 <i>Gulliver's Worlds</i> SE: 6-7, 8-9, 16-17, 18-19 TG: 40, 42
b. Apply estimation of measurement to real-world and content problems using actual measuring devices.	<i>Designing Spaces</i> SE: 18-19, 22-23, 39, 40 <i>Gulliver's Worlds</i> SE: 11, 13, 17, 19, 23 TG: 13, 22, 38
c. Recognize the differences and relationships between perimeter and area in both systems.	<i>Designing Spaces</i> SE: 22-23 TG: 48
d. Solve problems involving length, perimeter, area, weight, mass, and temperature.	<i>Designing Spaces</i> SE: 22-23 <i>Gulliver's Worlds</i> SE: 8-9, 10-11, 30-31, 38 #18 TG: 20, 22 <i>Number Powerhouse</i> SE: 36 #16, 38 #17 <i>From Zero to One and Beyond</i> SE: 45 #12
e. Convert unit of measurement within each system.	<i>Gulliver's Worlds</i> SE: 6-7, 18-19, 34, 39, 40 TG: 40
f. Apply understanding of relationships to solve real-world problems related to time.	<i>What Does the Data Say?</i> SE: 26-27 TG: 48, 49

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g. Use appropriate vocabulary.	<i>Gulliver's Worlds</i> TG: 12-13, 34-35
02. Apply concepts of rates and other derived or indirect measurements.	
a. Explore the use of rates to make indirect measurements.	Note: These examples could be used with extra drawings provided. <i>Gulliver's Worlds</i> SE: 34 #10 & #11, 45 #12
03. Apply the concepts of ratios and proportions.	
a. Explore the use of proportions, ratios, and scales.	<i>What Does the Data Say?</i> SE: 19 TG: 54 <i>Gulliver's Worlds</i> SE: 6-7, 8-9, 13, 17, 28-29, 35, 37 TG: 12-13, 14, 62 <i>Patterns in Numbers and Shapes</i> SE: 26-27, 44
04. Apply dimensional analysis.	
a. Understand units and their relationship to one another and to real-world applications.	<i>What Does the Data Say?</i> SE: 32-33 TG: 72 <i>Gulliver's Worlds</i> SE: 38 #18, 41 #15 & #16, 44 #18, 45 #12
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.	<i>The Language of Numbers</i> SE: 32-33 <i>Patterns in Numbers and Shapes</i> SE: 14-15, 16-17, 18-19, 32-33, 40 TG: 32, 36
b. Translate simple word statements and story problems into algebraic equations.	<i>The Language of Numbers</i> SE: 22-23 <i>Number Powerhouse</i> SE: 12-13 <i>Patterns in Numbers and Shapes</i> SE: 14-15, 16-17 TG: 36
c. Use symbols (<, >, =) to express relationships.	<i>Patterns in Numbers and Shapes</i> SE: 16-17 TG: 38 <i>From Zero to One and Beyond</i> SE: 8, 37 TG: 13
02. Evaluate algebraic expressions.	
a. Explore and use the following properties in evaluating mathematical and algebraic expressions: commutative, associative, identity, zero, inverse, and distributive.	<i>Number Powerhouse</i> SE: 12-13, 35 TG: 20

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b. Explore the order of operations.	<i>Number Powerhouse</i> SE: 8-9, 12-13, 35 TG: 20 <i>Patterns in Numbers and Shapes</i> SE: 6-7
03. Solve algebraic equations and inequalities.	
a. Solve 1-step equations using inverse operations with whole numbers.	<i>Number Powerhouse</i> SE: 12-13, 37 <i>Patterns in Numbers and Shapes</i> SE: 10-11, 30-31, 45
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.	<i>Designing Spaces</i> SE: 6-7, 10-11, 12-13, 16-17, 20-21, 26-27, 28-29, 30-31, 32-33 TG: 14, 24
b. Construct and measure various angles and shapes using appropriate tools.	<i>Designing Spaces</i> SE: 8-9, 18-19, 32-33 TG: 40
c. Apply fundamental concepts, properties, and relationships among points, lines, angles, and shapes.	<i>Designing Spaces</i> SE: 16-17, 18-19, 20-21, 32-33 TG: 36, 42, 44, 46
d. Recognize and apply congruence, similarities, and symmetry of shapes.	<i>Designing Spaces</i> SE: 10-11, 16-17, 32-33 TG: 36
e. Develop and apply formulas for perimeter, circumference, and area to triangles, quadrilaterals, and circles.	<i>Designing Spaces</i> SE: 22-23 TG: 48
f. Explore the relationship between two- and three-dimensional objects.	<i>Designing Spaces</i> SE: 6-7, 12-13, 26-27, 28-29, 30-31, 32-33 TG: 14
g. Explore reflections, translations, and rotations on various shapes.	<i>Designing Spaces</i> SE: 16-17 TG: 20
h. Use appropriate vocabulary.	<i>Designing Spaces</i> SE: 9, 17, 19, 27, 29 TG: 16, 20, 24, 38, 42, 60, 64
02. Apply graphing in two dimensions.	
a. Identify and plot points on a coordinate plane.	<i>Patterns in Numbers and Shapes</i> SE: 22-23, 24-25, 26-27, 42, 43, 44 TG: 50, 52
322. What Does the Data Say? 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).	<i>What Does the Data Say?</i> SE: 7-8, 11, 14-15, 16-17, 18-19, 22-23, 24-25, 26-27, 38, 39 TG: 14, 16, 50
b. Explain and justify conclusions drawn from tables, charts, and graphs.	<i>What Does the Data Say?</i> SE: 10-11, 16-17, 18-19, 22-23, 24-25, 26-27, 39-40, 41

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c. Understand and use appropriate vocabulary.	<i>What Does the Data Say?</i> TG: 12, 18, 20
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).	<i>What Does the Data Say?</i> SE: 7-8, 11, 14-15, 16-17, 18-19, 22-23, 24-25, 26-27, 38, 39, 42 TG: 14, 16, 50
03. Apply simple statistical measurements.	
a. Find measures of central tendency – mean, median, and mode with simple sets of data.	<i>What Does the Data Say?</i> SE: 6-7, 8-9, 31-32, 33-34, 36, 37, 38, 39, 40, 43 TG: 12, 18, 20, 70, 72
b. Determine the range of a set of data.	<i>What Does the Data Say?</i> SE: 6-7, 18-19, 36 TG: 12, 14, 16
04. Understand basic concepts of probability.	
a. Predict, perform, and record results of simple probability experiments.	<i>What Does the Data Say?</i> SE: 30-31, 32-33, 34-35, 45, 46, 47 TG: 66, 67, 68, 70, 76
b. Understand and use the language of probability.	<i>What Does the Data Say?</i> SE: 30, 35 TG: 66, 68
05. Make predictions or decisions based on data.	
a. Make predictions based on simple experimental probabilities.	<i>What Does the Data Say?</i> SE: 32-33, 34-35, 45, 46, 47 TG: 74, 76, 78
b. Understand and use appropriate vocabulary.	<i>What Does the Data Say?</i> SE: 30-31, 32-33 TG: 74
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.	<i>Patterns in Numbers and Shapes</i> SE: 6-7, 8-9, 10-11, 16-17, 22-23, 24-25 TG: 20, 22, 24, 54
b. Discover, describe, and extend patterns by using manipulatives and pictorial representations.	<i>Patterns in Numbers and Shapes</i> SE: 6-7, 8-9, 10-11, 16-17 TG: 14, 20, 22, 24, 36
c. Use mathematical models to show change in real context.	<i>Patterns in Numbers and Shapes</i> SE: 8-9, 10-11 TG: 20, 22, 48, 49
d. Understand and use appropriate vocabulary.	<i>Patterns in Numbers and Shapes</i> SE: 7 TG: 12, 20, 30, 48, 49
02. Apply functions to a variety of problems.	
a. Use patterns and functions to represent and solve simple problems.	<i>Patterns in Numbers and Shapes</i> SE: 8-9, 22-23, 24-25, 28-29, 30-31, 32-33, 34-35, 45, 46 TG: 20, 54, 68, 72, 74