Independent School District of Boise City
Mathematics - Sixth Grade

District Course #608

Course Description

The elementary mathematics curriculum of the Boise School District is vibrant, - challenging, and child-centered. With consideration for children's needs and their development, the following NCTM strands, which are of equal importance, will comprise the elementary mathematics curriculum: (1) Numbers and Numeration, (2) Organizing and Interpreting Data, (3) Problem Solving, (4) Measurement, (5) Geometry, (6) Technology, and (7) Algebra – the language of mathematics. However, instruction will be structured as a spiral of strands to insure that children will experience mathematics as a unified whole rather than as a set of disjointed, unrelated parts. In particular, problem solving and technology should integrate the curriculum across strand and among other disciplines.

Meaning and understanding of mathematics rests upon the foundation of mathematical concepts developed through frequent experience with concrete manipulatives. It is recommended that manipulatives be used as often as possible. Concepts and skills should not be taught in isolation. Both are built on students' past knowledge through meaningful examples and experiences, and students should be provided ample opportunities to apply them to practical, real-life situations.

Adopted Materials

Title: Houghton Mifflin Math
Edition: 2005
Publisher: Houghton Mifflin Company
ISBN: 0-618-33869-1

Course Scope (view Mathematics Curriculum Map for Sequence)

Unit 1	Understand and use numbers	4-5 Weeks
Unit 2	Perform computations accurately	4-5 Weeks
Unit 3	Estimate and judge reasonableness of results	Ongoing
Unit 4	Understand and use a variety of problem-solving skills	Ongoing
Unit 5	Use reasoning skills to recognize problems and express them mathematically	Ongoing
Unit 6	Apply appropriate technology and models to find solutions to problems	Ongoing
Unit 7	Communicate results using appropriate terminology and methods	Ongoing
Unit 8	Use algebraic symbolism as a tool to represent mathematical relationships	Ongoing
Unit 9	Evaluate algebraic expressions	Ongoing
Unit 10	Solve algebraic equations and inequalities	Ongoing
Unit 11	Understand data analysis	1 Week
Unit 12	Collect, organize, and display data	Ongoing
Unit 13	Apply simple statistical measurements	1 Week

Unit 14	Understand the concept of functions	1 Week
Unit 15	Apply functions to a variety of problems	1 Week
Unit 16	Understand and use numbers	2-3 Weeks
Unit 17	Perform computations accurately	4-5 Weeks
Unit 18	Understand basic concepts of probability	1 Week
Unit 19	Make predictions or decisions based on data	1 Week
Unit 20	Apply concepts of rates and other derived or indirect measurements	1 Week
Unit 21	Apply the concepts of ratios and proportions	1 Week
Unit 22	Apply dimensional analysis	1 Week
Unit 23	Apply concepts of size, shape and special relationships	4 Weeks
Unit 24	Understand and use U.S. customary and metric measurements	2 Weeks
Unit 25	Apply concepts of size, shape, and spatial relationships	1 Week
Unit 26	Apply graphing in two dimensions	1 Week
Unit 27	Understand and use U.S. customary and metric measurements	Ongoing
Unit 28	Explore use of integers in real world situations	2 Weeks

Mathematics Grade 6		**District Reference** 608
Unit 1	**Understand and use numbers.**	**5 weeks**

Instructional Objective 608.01 Read, write, order and compare **whole numbers**, fractions and **decimals**.		**Standard Reference** 6.M.1.1.1	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Identify the largest or smallest number in a given set of whole numbers.	Ch. 1	TMA
02	Identify the largest or smallest number in a given set of decimal numbers.	Ch. 1,4	TMA
03	Identify or write a set of positive whole numbers and decimals arranged in order from greatest to least or least to greatest.	Ch. 1,4	TMA
Instructional Objective 608.02 Show a sense of magnitudes and relative magnitudes of real numbers (**whole numbers**, fractions and **decimals**).		**Standard Reference** 6.M.1.1.3	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Place positive and negative whole numbers and decimals on a number line.	Ch. 1,11	TMA
Instructional Objective 608.03 Explore the use of integers in real world situations.		**Standard Reference** 6.M.1.1.7	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Explore the use of integers in real world situations.	Ch. 11	TO

Instructional Objective			Standard Reference
608.04 Use appropriate vocabulary			6.M.1.1.8
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use appropriate vocabulary.	Dist. List	TO

Mathematics Grade 6		District Reference
		608
Unit 2	**Performs computations accurately.**	**5 weeks**

Instructional Objective			Standard Reference
608.05 Consistently and accurately multiply and divide whole numbers.			6.M.1.2.2
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Find the product or quotient of whole numbers (up to four digit factors, or three digit divisors with six digit dividends).	Ch. 2	TMA
Instructional Objective			**Standard Reference**
608.06 Add, subtract, multiply and divide decimals.			6.M.1.2.2
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Find the sum or difference of three or four place decimal numbers.	Ch. 1,7	TMA
02	Find the product or quotient consisting of three or four decimal places.	Ch. 7	TMA
Instructional Objective			**Standard Reference**
608.07 Instantly recall basic multiplication and division facts from a 12 x 12 times table.			6.M.1.2.1
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Instantly recall basic multiplication and division facts from a 12 x 12 times table.	12 x 12 Multiplication Tables, MAD Minutes	TMA
Instructional Objective			**Standard Reference**
608.08 Evaluate numerical expressions using the order of operations.			6.M.1.2.3
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Simplify numerical expressions using the order of operations.	Ch. 2	TMA
Instructional Objective			**Standard Reference**
608.09 Select and use an appropriate method of computation from mental math, paper and pencil, calculator or a combination of the three.			6.M.1.2.4
No.	**Performance Objective**	**Resource Reference**	**Assessment**

			Correlation
01	Select and use an appropriate method of computation from mental math, paper and pencil, calculator or a combination of the three.	Text	TO

Instructional Objective	Standard Reference
608.10 Use appropriate vocabulary.	6.M.1.2.6

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Use appropriate mathematical vocabulary.	District List	TO

Mathematics Grade 6		District Reference 608
Unit 3	**Estimate and judge reasonableness of results.**	**Ongoing**

Instructional Objective	Standard Reference
608.11 Use estimation to predict computation results.	6.M.1.3.1

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Determine the reasonableness of solutions to computation and word problems, choosing an appropriate method (e.g., using estimation, evaluating according to context).	Text	TO

Instructional Objective	Standard Reference
608.12 Recognize when estimation is appropriate and understand the usefulness of the estimate as distinct from an exact answer.	6.M.1.3.2

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Determine whether a given problem situation calls for an estimated or an exact answer.	Text	TO

Instructional Objective	Standard Reference
608.13 Determine whether a given estimate is an overestimate or underestimate.	6.M.1.3.3

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Determine whether a given estimate is an overestimate or underestimate.	Ch. 2,Text	TO

Instructional Objective	Standard Reference
608.14 Use a four-function calculator to solve complex grade-level problems	6.M.1.3.4

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Use a four-function calculator to solve complex grade-level problems	Resource Ref.	TO

Instructional Objective			Standard Reference
608.15 Use appropriate vocabulary.			6.M.1.3.6
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use appropriate mathematical vocabulary.	District List	TO

Mathematics Grade 6		District Reference
		608
Unit 4	**Understand and use a variety of problem-solving skills.**	**Ongoing**

Instructional Objective			Standard Reference
608.16 Use a variety of strategies to compute problems drawn from real world situations.			6.M.1.2.5
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use calculators, computers and other tools to solve mathematical problems.	Text	TO
Instructional Objective			**Standard Reference**
608.17 Solve problems using the four-step process of problem solving (explore, plan, solve, examine).			6.M.1.1.6
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Solve problems using the four-step process of problem solving: explore (understand), plan, solve, examine (look back).	Student Handbook XXVI, Text	TO
Instructional Objective			**Standard Reference**
608.18 Make predictions and decisions based on information.			6.M.5.5.1
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Make predictions and decisions based on information.	Text	TO

Mathematics Grade 6		District Reference
		608
Unit 5	**Use reasoning skills to recognize problems and express them mathematically.**	**Ongoing**

Instructional Objective			Standard Reference
608.19 Use a variety of methods such as words, numbers, symbols, charts, graphs, tables, diagrams and models to explain mathematical reasoning and concepts.			
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Describe or explain a problem situation or a mathematical concept orally or in writing.	Ch.1, 9-10,Text	TO

02	Create or identify an appropriate oral, written, concrete, pictorial, graphic and/or algebraic model for a problem situation.	Text, The Problem Solver	TO
03	Solve problems using the 4-step process of problem solving (explore, plan, solve, and examine).	Text, The Problem Solver	TO
Instructional Objective 608.20 Apply solutions and strategies to new problem situations.		**Standard Reference**	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Apply the solutions or strategies from a problem to similar problems or to new context.	Text	TMA
Instructional Objective 608.21 Formulate conjectures and discuss why they must be or seem to be true.		**Standard Reference** 6.M.1.3.5	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use logic to make a conjecture or draw a conclusion about a situation.	Text	TO

Mathematics Grade 6		**District Reference** 608
Unit 6	**Apply appropriate technology and models to find solutions to problems.**	**Ongoing**

Instructional Objective 608.22 Understand the purpose and capabilities of appropriate technology use as a tool to solve problems.		**Standard Reference**	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use calculators, computers and other tools to solve mathematical problems.	Text, TI calculators, www.eduplace.com	TO
Instructional Objective 608.23 Use computer applications to display and manipulate data.		**Standard Reference**	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use computer applications to display and manipulate data.	MS Excel and MS Access, Internet	TO
Instructional Objective 608.24 Select appropriate models to represent mathematical ideas.		**Standard Reference**	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Select appropriate models to represent mathematical ideas	Text	TO

Mathematics Grade 6		District Reference 608
Unit 7	**Communicate results using appropriate terminology and methods.**	**Ongoing**

Instructional Objective 608.25 Use a variety of methods such as words, numbers, symbols, charts, graphs, tables, diagrams and models to communicate mathematical information.			Standard Reference
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use a variety of methods such as words, numbers, symbols, charts, graphs, tables, diagrams and models to communicate mathematical information.	Text	TO
Instructional Objective 608.26 Use appropriate vocabulary to communicate mathematical information.			**Standard Reference**
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use appropriate vocabulary to communicate mathematical information.	District vocabulary list	TO
Instructional Objective 608.27 Use appropriate notation.			**Standard Reference**
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use appropriate notation to communicate mathematical information.	Text	TO

Mathematics Grade 6		District Reference 608
Unit 8	**Use algebraic symbolism as a tool to represent mathematical relationships.**	**Ongoing**

Instructional Objective 608.28 Explore the meaning and use of variables of simple expressions and equations.			Standard Reference 6.M.3.1.1
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Substitute a given number for a variable in simple algebraic expressions and equations.	Ch 1, 11	TMA
Instructional Objective 608.29 Translate simple word statements and story problems into algebraic equations.			**Standard Reference** 6.M.3.1.2
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Translate an English phrase or sentence into an	Ch 1	TMA

	algebraic expression or equation.		
Instructional Objective 608.30 Use symbols (>, <, =) to express relationships.		**Standard Reference** 6.M.3.1.3	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use symbols (>, <, =) to express relationships.	Ch.1,4,11,17	TMA

Mathematics Grade 6		**District Reference** 608
Unit 9	**Evaluate algebraic expressions.**	**Ongoing**

Instructional Objective 608.31 Explore and use the following properties in evaluating mathematical and algebraic expressions: commutative, associative, identity, zero, inverse, and distributive.		**Standard Reference** 6.M.3.2.1	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use the commutative, associative, identity, zero, inverse, and distributive properties to evaluate expressions.	Ch. 1-2	TMA
Instructional Objective 608.32 Explore the order of operations.		**Standard Reference**	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use the order of operations to evaluate expressions.	Ch. 2	TMA

Mathematics Grade 6		**District Reference** 608
Unit 10	**Solve algebraic equations and inequalities.**	**Ongoing**

Instructional Objective 608.33 Evaluate simple algebraic expressions using substitutions		**Standard Reference** 6.M.1.1.7	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Evaluate simple algebraic expressions using substitution	Text Hands on Equations	TO
Instructional Objective 608.34 Solve one-step equations using inverse operations with whole numbers.		**Standard Reference** 6.M.3.3.1	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Write and/or solve one-variable addition, subtraction, multiplication, and/or division equations.	Text Hands on Equations	TMA

Mathematics Grade 6		District Reference 608
Unit 11	**Understand data analysis.**	**1 week**

Instructional Objective 608.35 Read and interpret tables, charts, and graphs (line graphs, bar graphs, frequency lines or line plots, and circle graphs).			Standard Reference 6.M.5.1.1
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Interpret data given in a list, table, or symbolic graph.	Ch. 9,10,13	TMA

Instructional Objective 608.36 Explain and justify conclusions drawn from tables, charts, and graphs.			Standard Reference 6.M.5.1.2
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Explain and justify conclusions drawn from tables, charts, and graphs.	Ch. 9,10,13	TO, TMA

Instructional Objective 608.37 Use appropriate vocabulary.			Standard Reference 6.M.5.1.3
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use appropriate mathematical vocabulary.	District List	TO

Mathematics Grade 6		District Reference 608
Unit 12	**Collect, organize, and display data.**	**Ongoing**

Instructional Objective 608.38 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).			Standard Reference 6.M.5.2.1
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Create or identify graphic representations of given or collected data.	Ch. 9,10	TMA

Mathematics Grade 6		District Reference 608
Unit 13	**Apply simple statistical measurements.**	**1 week**

Instructional Objective 608.39 Find measures of central tendency – mean, median, and mode – with simple sets of data.			Standard Reference 6.M.5.3.1
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**

01	Compute the mean, median, or mode for information presented in a table, graph, or data set.	Ch. 9,10	TMA
Instructional Objective 608.40 Determine the range of a set of data.		**Standard Reference** 6.M.5.3.2	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Determine the range of a set of data.	Ch. 9,10	TMA

Mathematics Grade 6		**District Reference** 608
Unit 14	**Understand the concept of functions.**	**1 week**

Instructional Objective 608.41 Extend patterns and identify a rule (function) that generates the pattern using whole numbers, decimals, and fractions.		**Standard Reference** 6.M.3.4.1	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Identify the function rule that represents the relationship in a series of related numbers.	Ch. 1,13	TMA
Instructional Objective 608.42 Discover, describe, and extend patterns by using manipulatives and pictorial representations.		**Standard Reference** 6.M.3.4.2	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Discover, describe, and extend patterns by using manipulatives and pictorial representations.	Text	TMA
Instructional Objective 608.43 Use appropriate vocabulary.		**Standard Reference** 6.M.3.4.4	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use appropriate mathematical vocabulary.	District List	TO
Instructional Objective 608.44 Use mathematical models to show change in real context.		**Standard Reference** 6.M.3.4.3	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use mathematical models to show change in real context.	Ch. 9,10,11,13	TMA

Mathematics Grade 6		**District Reference** 608
Unit 15	**Apply functions to a variety of problems.**	**1 week**

Instructional Objective	Standard Reference
608.45 Use patterns and functions to represent and solve simple problems.	6.M.3.6.1

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Use patterns and functions to represent and solve simple problems.	Ch. 1,2,13	TMA

Mathematics Grade 6		District Reference 608
Unit 16	**Understand and use numbers.**	**2-3 weeks**

Instructional Objective	Standard Reference
608.46 Read, write, order, and compare whole numbers, **fractions**, and decimals.	6.M.1.1.1

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Identify the largest or smallest fractions in a given set of fractions.	Ch. 4	TMA
02	Identify or write a set of fractions arranged in order from greatest to least or least to greatest.	Ch. 4	TMA

Instructional Objective	Standard Reference
608.47 Understand the use of fractions and decimals and their interrelationship.	6.M.1.1.4

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Convert decimals and fractions interchangeably.	Ch. 4	TMA

Instructional Objective	Standard Reference
608.48 Expand the use of decimals and fractions to explore the use of percents and ratios.	

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Expand the use of decimals and fractions to explore the use of percents and ratios.	Ch. 4,16,17,18	TMA

Instructional Objective	Standard Reference
608.49 Show a sense of magnitudes and relative magnitudes of real numbers (whole numbers, **fractions** and decimals).	6.M.1.1.1

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Place fractions on a number line.	Ch. 4	TMA

Instructional Objective	Standard Reference
608.50 Develop and apply number theory concepts (prime, composite, greatest common factor, lowest common multiple and prime factorization.)	6.M.1.1.5

No.	Performance Objective	Resource Reference	Assessment Correlation

01	Identify the greatest common factor of two whole numbers.	Ch. 3	TMA
02	Identify the least common multiple of two whole numbers.	Ch. 3	TMA
03	Identify prime numbers between 1 and 100.	Ch. 3	TMA
04	Identify the prime factors of a numbers.	Ch. 3	TMA

Mathematics Grade 6		**District Reference** 608
Unit 17	**Perform computations accurately.**	**4-5 weeks**

Instructional Objective 608.51 Add and subtract fractions with unlike denominators and simplify as necessary.			**Standard Reference** 6.M.1.2.2
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Add and subtract fractions with unlike denominators and simplify as necessary.	Ch. 5	TMA
Instructional Objective 608.52 Explore the use of exponents.			**Standard Reference**
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Evaluate numerical expressions using exponents.	Ch. 1,7	TMA
Instructional Objective 608.53 Explore multiplication and division of fractions.			**Standard Reference** 6.M.1.2.2
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Find the product or quotient of fractions and mixed numbers.	Ch. 6	TMA

Mathematics Grade 6		**District Reference** 608
Unit 18	**Understand basic concepts of probability.**	**1 week**

Instructional Objective 608.54 Predict, perform, and record results of simple probability experiments.			**Standard Reference** 6.M.5.4.1
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Determine the probability of a particular outcome of a specific event (e.g., choosing an object, spinning a spinner) and represent the probability as a ratio, decimal, proportion, or percent.	Ch. 19	TMA

Instructional Objective 608.55 Use appropriate vocabulary.			Standard Reference 6.M.5.4.2
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use appropriate mathematical vocabulary.	District List	TO

Mathematics Grade 6		District Reference 608
Unit 19	**Make predictions or decisions based on data.**	**1 week**

Instructional Objective 608.56 Make predictions based on simple experimental probabilities.			Standard Reference
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Predict a probable future event based on a table or graph, or predict the probable outcome of a specific event (e.g., choosing an object, spinning a spinner, tossing a coin).	Ch. 9,10,19	TMA

Instructional Objective 608.57 Use appropriate vocabulary.			Standard Reference
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use appropriate mathematical vocabulary.	District List	TO

Mathematics Grade 6		District Reference 608
Unit 20	**Apply concepts of rates and other derived or indirect measurements.**	**1 week**

Instructional Objective 608.58 Explore the use of rates to make indirect measurements.			Standard Reference
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use rates to make calculations.	Ch. 16	TMA

Mathematics Grade 6		District Reference 608
Unit 21	**Apply the concepts of ratios and proportions.**	**1 week**

Instructional Objective 608.59 Explore the use of proportions, ratios, and scales.			Standard Reference 6.M.2.2.1
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use ratios to solve word problems.	Ch. 16	TMA
02	Use proportions to solve word problems.	Ch. 16	TMA

Mathematics Grade 6		District Reference 608
Unit 22	**Apply dimensional analysis.**	**1 week**

Instructional Objective 608.60 Understand units and their relationship to one another and to real-world applications.		Standard Reference	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Understand units and their relationship to one another and to real-world applications.	Ch. 8	TMA

Mathematics Grade 6		District Reference 608
Unit 23	**Apply concepts of size, shape and special relationships.**	**4 Weeks**

Instructional Objective 608.61 Precisely describe, classify, and understand relationships among types of one-, two-, and three-dimensional objects using their defining properties.		Standard Reference 6.M.4.1.1	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Identify or describe the attributes of geometric figures, including two- or three-dimensional shapes, line segments, angles, points, arcs, and rays.	Ch. 8,14,15,20	TMA
02	Use the geometric terminology for figures and their parts (e.g., point, line, plane, angle, diameter, and radius).	Ch. 8,14,15,20	TMA
03	Use of geometric terminology for relationships (e.g. - parallel, perpendicular, vertical, adjacent, complementary, supplementary).	Ch. 8,14	TMA
Instructional Objective 608.62 Construct and measure various angles and shapes using appropriate tools.		**Standard Reference** 6.M.4.1.2	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use a protractor to determine the measure of an angle.	Ch. 14,15	TMA
02	Find the measure of a missing angle using the properties of complementary and supplementary angles and knowledge of the sum of angles.	Ch. 14,15	TMA
03	Draw or construct geometric figures (right, acute, or obtuse angles; right, scalene, isosceles, and	Ch. 14,15	TMA

	equilateral triangles; and quadrilaterals) using appropriate tools.		
Instructional Objective 608.63 Apply fundamental concepts, properties, and relationships among points, lines, angles and shapes.		**Standard Reference** 6.M.4.1.3	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Apply fundamental concepts, properties, and relationships among points, lines, angles and shapes.	Ch. 8,14,15	TMA
Instructional Objective 608.64 Recognize and apply congruence, similarities and symmetry of shapes.		**Standard Reference** 6.M.4.1.5	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Identify lines of symmetry occurring in a geometric figure.	Ch. 15	TMA
02	Identify similar or congruent relationships occurring in geometric figures or the physical world.	Ch. 15	TMA
Instructional Objective 608.65 Use appropriate vocabulary.		**Standard Reference** 6.M.4.1.7	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use appropriate mathematical vocabulary.	District List	TO

Mathematics Grade 6		**District Reference** 608
Unit 24	**Understand and use U.S. customary and metric measurements.**	**2 weeks**

Instructional Objective 608.66 Recognize the differences and relationships between perimeter and area in both systems.		**Standard Reference** 6.M.2.1.4	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Recognize the differences and relationships between perimeter and area in US customary and metric systems.	Ch. 8,20	TMA
Instructional Objective 608.67 Solve problems involving length, **perimeter**, **area**, weight, mass, and temperature.		**Standard Reference** 6.M.2.1.6	
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Calculate the perimeter of a polygon or the circumference of a circle.	Ch. 8,20	TMA

02	Calculate the area of a polygon or circle.	Ch. 8,20	TMA

Instructional Objective	Standard Reference
608.68 Use appropriate vocabulary.	6.M.2.1.7

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Use appropriate mathematical vocabulary.	District List	TO

Mathematics Grade 6		District Reference 608
Unit 25	**Apply concepts of size, shape, and spatial relationships.**	**1 week**

Instructional Objective	Standard Reference
608.69 Develop and apply formulas for perimeter, circumference, and area to triangles, quadrilaterals, and circles.	6.M.2.1.4

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Develop and apply formulas for perimeter, circumference, and area to triangles, quadrilaterals, and circles.	Ch. 8,20	TMA

Instructional Objective	Standard Reference
608.70 Explore the relationship between two- and three-dimensional objects.	6.M.4.1.6

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Explore the relationship between two- and three-dimensional objects.	Ch. 14,20	TMA

Instructional Objective	Standard Reference
608.71 Explore reflections, translations and rotations on various shapes.	6.M.4.1.4

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Identify a translation (slide), rotation (flip), or dilation (stretching or shrinking) of a geometric figure.	Ch. 15	TMA

Instructional Objective	Standard Reference
608.72 Use appropriate vocabulary.	6.M.4.1.7

No.	Performance Objective	Resource Reference	Assessment Correlation
01	Use appropriate mathematical vocabulary.	District List	TO

Mathematics Grade 6		District Reference 608
Unit 26	**Apply graphing in two dimensions.**	**1 week**

Instructional Objective 608.73 Identify and plot points on a coordinate plane.			Standard Reference 6.M.4.1.7
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Identify the coordinates of points or plot points given the coordinates on the four-quadrant coordinate plane.	Ch. 11,13	TMA

Mathematics Grade 6		District Reference 608
Unit 27	**Understand and use U.S. customary and metric measurements.**	**Ongoing**

Instructional Objective 608.74 Select and use appropriate units and tools to make formal measurements in both systems.			Standard Reference 6.M.2.1.1
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Choose an appropriate U.S. customary or metric unit of measure for the length, volume, or weight of a given object.	Ch. 8	TMA
02	Measure length, mass, and volume in U.S. customary and metric units.	Ch. 8,21	TMA
Instructional Objective 608.75 Apply estimation of measurement to real-world and content problems using actual measuring devices.			**Standard Reference** 6.M.2.1.2
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Estimate length, mass, or volume in U. S. customary or metric units of measure.	Ch. 8	TMA
Instructional Objective 608.76 Convert unit of measurement within each system.			**Standard Reference** 6.M.2.1.5
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Convert a U.S. customary or metric unit of length, weight, or volume to another specified unit within the same system (e.g. -centimeters to meters, inches to feet).	Ch. 8	TMA
Instructional Objective 608.77 Use appropriate vocabulary.			**Standard Reference** 6.M.2.1.7
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Use appropriate mathematical vocabulary.	District List	TO

Instructional Objective 608.78 Apply understanding of relationships to solve real-world problems related to time.			Standard Reference 6.M.2.1.3
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Apply understanding of relationships to solve real-world problems related to time.	Ch. 8,10,16	TMA

Mathematics Grade 6		District Reference 608
Unit 28	**Explore the use of integers in real world situations.**	**2 weeks**

Instructional Objective 608.79 Show a sense of magnitudes and relative magnitudes of real numbers (whole numbers, fractions and decimals).			Standard Reference 6.M.1.1.1
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Place positive and negative whole numbers and decimals on a number line.	Ch. 1,4,11	TMA
Instructional Objective 608.80 Explore the use of integers in real world situations.			**Standard Reference** 6.M.1.1.7
No.	**Performance Objective**	**Resource Reference**	**Assessment Correlation**
01	Explore the use of integers in real world situations.	Ch. 11	TO

INDEPENDENT SCHOOL DISTRICT OF BOISE CITY
IDAHO ACHIEVEMENT STANDARDS
GRADE 6
MATHEMATICS

Students are expected to know content and apply skills from previous grades.

Mathematical reasoning and problem solving processes should be incorporated throughout all mathematics standards. Students should use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models to communicate mathematical information and to explain mathematical reasoning and concepts.

Standard 1: Number and Operation

Students in Grade 6 read, write, compare, and order whole numbers, fractions, and decimals. Students explain the use of fractions and decimals and their interrelationship. Students add, subtract, multiply, and divide whole numbers and decimals and students add and subtract fractions with unlike denominators and simplify as necessary. Students estimate to predict computation results.

Goal 1.1: Understand and use numbers.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.1.1.1 Compare magnitudes and relative magnitudes of positive rational numbers, including whole numbers through billions, fractions, and decimals.
6.M.1.1.2 Explain the interrelationship of fractions, decimals, and percents.
6.M.1.1.3 Locate the position of integers on a number line.
6.M.1.1.4 Convert between decimals and fractions.
6.M.1.1.5 Apply number theory concepts (prime, composite, prime factorization) and identify common factors and common multiples.
6.M.1.1.6 Solve problems using the 4-step process of problem solving (explore, plan, solve, and examine).
6.M.1.1.7 Describe the use of integers in real-world situations.
6.M.1.1.8 Use appropriate vocabulary.

Goal 1.2: Perform computations accurately.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.1.2.1 Recall basic multiplication and division facts from 12 x 12 Times Table.
6.M.1.2.2 Add, subtract, multiply, and divide whole numbers, decimals, and simple fractions (including unlike denominators).
6.M.1.2.3 Evaluate numerical expressions with whole numbers using the order of operations (excluding exponents).
6.M.1.2.4 Select and use an appropriate method of computation from mental math, paper and pencil, calculator or a combination of the three.
6.M.1.2.5 Use a variety of strategies to solve real life problems.
6.M.1.2.6 Use appropriate vocabulary and notations.

Goal 1.3: Estimate and judge reasonableness of results.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.1.3.1 Estimate to predict computation results.
6.M.1.3.2 Explain when estimation is appropriate.
6.M.1.3.3 Identify whether a given estimate is an overestimate or underestimate.
6.M.1.3.4 Use a four-function calculator to solve complex grade-level problems.
6.M.1.3.5 Formulate conjectures and discuss why they must be or seem to be true.

6.M.1.3.6 Use appropriate vocabulary.

Standard 2: Concepts and Principles of Measurement

Students in Grade 6 select and use appropriate units and tools to make formal measurements in both systems. Students use given formulas for perimeter and area of triangles, circles, and parallelograms, and for circumference and area of circles. Students solve problems involving perimeter and area of rectangles. Students convert unit of measurement within each system in one step problems.

Goal 2.1: Understand and use U.S. customary and metric measurements.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.2.1.1 Select and use appropriate units and tools to make formal measurements in both systems.
6.M.2.1.2 Apply estimation of measurement to real-world and content problems using standard measuring devices.
6.M.2.1.3 Apply understanding of relationships to solve real-world problems related to elapsed time.
6.M.2.1.4 Given the formulas, find the perimeter or circumference and area of triangles, circles and parallelograms (all kinds).
6.M.2.1.5 Convert units of measurement within each system in one-step problems (e.g., quarts to gallons and gallons to quarts).
6.M.2.1.6 Solve problems involving perimeter and area of rectangles.
6.M.2.1.7 Use appropriate vocabulary and notations.

Goal 2.2: Apply the concepts of rates, ratios, and proportions.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.2.2.1 Identify and write ratios and scales (on a map).

Goal 2.3: Apply dimensional analysis.

No objectives at this grade level.

Standard 3: Concepts and Language of Algebra and Functions

Students in Grade 6 read and use symbols of "<," ">," and "=" to express relationships. Students evaluate simple algebraic expressions using substitution. Students extend simple patterns and state a rule that generates the pattern using whole numbers, decimals, fractions as inputs, and students use patterns and functions to represent and solve simple problems.

Goal 3.1: Use algebraic symbolism as a tool to represent mathematical relationships.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.3.1.1 Discuss the meaning and use of variables in simple expressions and equations.
6.M.3.1.2 Translate simple word statements into algebraic equations.
6.M.3.1.3 Read and use symbols of "<," ">," and "=" to express relationships.

Goal 3.2: Evaluate algebraic expressions.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.3.2.1 Use the following properties in evaluating numerical expressions: commutative, associative, identity, zero, inverse, and distributive.
6.M.3.2.2 Evaluate simple algebraic expressions using substitution.

Goal 3.3: Solve algebraic equations and inequalities.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.3.3.1 Solve one-step equations with whole numbers.

Goal 3.4: Understand the concept of functions.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.3.4.1 Extend simple patterns and state a rule (function) that generates the pattern using whole numbers, decimals, and fractions as inputs.
6.M.3.4.2 Describe and extend patterns by using manipulatives and pictorial representations.
6.M.3.4.3 Use mathematical models to show change in a real world context.
6.M.3.4.4 Use appropriate vocabulary.

Goal 3.5: Represent equations, inequalities and functions in a variety of formats.

No objectives at this grade level.

Goal 3.6: Apply functions to a variety of problems.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.3.6.1 Use patterns to represent and solve simple problems.

Standard 4: Concepts and Principles of Geometry

Students in Grade 6 describe and classify relationships among types of one-, two- and three- dimensional geometric figures using their defining properties. Students identify congruence, similarities, and symmetry of shapes and students identify and plot points in the first quadrant on a coordinate plane.

Goal 4.1: Apply concepts of size, shape, and spatial relationships.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.4.1.1 Describe relationships among types of one- and two- dimensional geometric figures, using their defining properties.
6.M.4.1.2 Draw and measure various angles and shapes using appropriate tools.
6.M.4.1.3 Apply fundamental concepts, properties, and relationships among points, lines, rays, and angles.
6.M.4.1.4 Describe reflections, translations, and rotations on various shapes.
6.M.4.1.5 Identify congruence, similarities, and line symmetry of shapes.
6.M.4.1.6 Discuss the spatial relationship between two- and three-dimensional objects.
6.M.4.1.7 Use appropriate vocabulary and symbols.

Goal 4.2: Apply the geometry of right triangles.

No objectives at this grade level.

Goal 4.3: Apply graphing in two dimensions.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.4.3.1 Identify and plot points in the first quadrant on a coordinate plane.

Standard 5: Data Analysis, Probability, and Statistics

Students in Grade 6 read and interpret tables, charts and graphs, including line graphs, bar graphs, frequency line or line plot, and circle graph. Students collect, organize, and display the data with appropriate notation in tables, charts, and graphs, including line graphs, bar graphs, and frequency line or line plot. Students find measures of central tendency – mean, median, and mode – with simple sets of data and students calculate the range of a set of data. Students predict, perform, and record results of simple probability experiments.

Goal 5.1: Understand data analysis.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.5.1.1 Read and interpret tables, charts, and graphs, including broken line graphs, bar graphs, frequency tables, line plots, and circle graphs.
6.M.5.1.2 Explain and justify stated conclusions drawn from tables, charts, and graphs.
6.M.5.1.3 Use appropriate vocabulary and notations.

Goal 5.2: Collect, organize, and display data.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.5.2.1 Collect, organize, and display the data with appropriate notation in tables, charts, and graphs, including broken line graphs, bar graphs, frequency tables and line plots.

Goal 5.3: Apply simple statistical measurements.

Objective(s): By the end of Grade 6, the student will be able to:

6.M.5.3.1 Find measures of central tendency – mean, median, and mode – with simple sets of data.
6.M.5.3.2 Calculate the range of a set of data.

Goal 5.4: Understand basic concepts of probability.

Objective(s): By the end of Grade 6, the student will be able to:
6.M.5.4.1 Predict, perform, and record results of simple probability experiments.
6.M.5.4.2 Use the language of probability.

Goal 5.5: Make predictions or decisions based on data.

Objective(s): By the end of Grade 6, the student will be able to:
6.M.5.5.1 Make predictions based on data.