6th Grade
Mathematics

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Hazelwood School District

Mission Statement

We are a collaborative learning community guided by a relentless focus to ensure each student achieves maximum growth.

Vision Statement

HSD will foster lifelong learners, productive citizens and responsible leaders for an ever-evolving society.

Board of Education on January 5, 2010

Goals

Goal #1: Hazelwood students will meet or exceed state standards in all curricular areas with emphasis in reading, writing, mathematics, science and social studies.

Goal #2: Hazelwood staff will acquire and apply skills necessary for improving student achievement.

Goal #3: Hazelwood School District, the community and all families will support the learning of all children.

Mathematics Curriculum Overview

2015 MAP data indicates a need for strengthening our current mathematics curriculum as the district's mathematics students scoring proficient and advanced fell to 37.1% from 41.8%.

Additionally, a change in state standards and learning progressions has resulted in a need for intensive curriculum revision to ensure Hazelwood's students are adequately prepared to meet grade-level learning expectations.

After a careful review of annual data it was determined by the Curriculum Department that a revised curriculum was a high-priority necessity.

The committee members aligned the curriculum with the 2010 Missouri Learning Standards published by DESE. The curriculum meets all of the state and district requirements for research, technology, workplace readiness skills, gender/racial equity, and disability awareness.

The curriculum contains unit assessments that are rigorous and outline clear expectations. As the curriculum is implemented and taught, the assessments will be revised. **The assessments are required**; the learning activities are suggested. Teachers are encouraged to select the learning activities which meet the needs of their students. Some of the learning activities are very sequential and, when all of them are used, a student should be able to successfully complete the unit assessment. Other activities provide a menu of suggestions, and the teacher should select from those offered or design his/her own.

The plan for professional development includes multiple opportunities for training to help ensure that the middle school mathematics curricula are implemented effectively and with fidelity. Initial training will be provided during district professional development opportunities to cover content and pedagogy. Beyond initial training, ongoing professional development to familiarize teachers with specific curriculum activities and expectations. In addition to professional development days, ongoing training will be provided during Professional Learning Community (PLC) meetings to assist with upcoming skills and nuances in learning objectives. The Mathematics District Curriculum Coach and District Coordinator will provide teachers training to familiarize them with curriculum activities and expectations. Finally, ongoing training during PLC meetings will assist teachers with upcoming skills and nuances in the learning objectives.

COURSE TITLE: 6th Grade Mathematics

GRADE LEVEL: 6th Grade

CONTENT AREA: Mathematics

Course Description:

In Grade 6, instructional time should focus on four critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking.

Course Rationale:

Mathematics is the foundation of science, technology and engineering. Everyone needs mathematics in order to function in society and the world of work. Therefore, the Hazelwood School District curriculum reflects the understanding that mathematical literacy is important for all students to possess and apply. The curriculum, based on the National Council of Teachers of Mathematics Standards, Missouri Learning Standards and the Missouri Show Me Standards, will allow our students to explore, discover, analyze and apply mathematics.

Our students will learn from a variety of teaching techniques and strategies which use all modes of learning, involving various resources, hands-on activities, audiovisual aides, and the use of computer technology and calculators. Our students will be prepared to function in a global society through the use of problem solving, communication, and reasoning by integrating the mathematical concepts across the curriculum areas in real-world situations.

Course Scope and Sequence		
Unit 1: Rates, Ratios, and Proportions (Approx. 17 class periods)	Unit 2: Area of Polygons (Approx. 12 class periods)	Unit 3: Operations with Whole Numbers, Fractions, and Decimals (Approx. 20 class periods)
Unit 4: Area and Surface Area (Approx. 8 class periods)	Unit 5: Expressions and Equations (Approx. 24 class periods)	Unit 6: Volume (Approx. 8 class periods)
Unit 7: Ratios and Rates with Fractions, Decimals, and Percents (Approx. 20 class periods)	Unit 8: Descriptive Statistics (Approx. 19 class periods)	Unit 9: Rational Numbers and the Coordinate Plane (Approx. 10 class periods)

Essential Terminology/Vocabulary

Absolute value, acute triangle, addend, Addition Property of Equality, Additive Identify Property of 0, additive inverse, algebraic expression, algorithm, altitude, area, array, Associate Property of Addition, Associative Property of Multiplication, attribute, axis, bar graph, bar model, base of a polygon, base of a solid figure, base of an exponent, benchmark, box plot, capacity, cluster, coefficient, common denominator, common factor, common multiple, Communicative Property of Addition, Communicative Property of Multiplication, compatible numbers, compose, composite figure, congruent, constant, constant speed, conversion factor, coordinate grid, coordinate pair, coordinate plane, coordinate system, coordinates cube, cube unit, customary system, data, decimal, decimal fraction, decompose, denominator, dependent variable, diagonal, difference, distribution, Distributive Property, dividend, divisible, dot plot, double number line diagram, edge, equiangular triangle, equivalent, equivalent expressions, equivalent fractions, equivalent ratios, evaluate, exponent, expression, face, factor, first quartile, formula, fraction, fraction bar, fraction greater than one, fraction less than one, frequency table, gallon, gap, gram, greater than, greater than or equal to, greatest common factor (GCF), height, histogram, independent variable, inequality, infinite, integers, interquartile range, interval, inverse operations, is not equal to, isosceles triangle, lateral area, lateral face, least common multiple, length, less than, less than equal to, like terms, line of symmetry, line plot, linear equation, liter, lower extreme, lower quartile, magnitude, mass, maximum, mean, mean absolute deviation, measure of center, measure of variability, median, meter, metric system, minimum, minuend, mixed number, mode, multiple, Multiplication Property of Equality, Multiplicative Identity Property, multiplicative inverse, negative numbers, net, number line, numerator, numerical expression, obtuse triangle, opposites, Order of Operations, ordered pairs, origin, ounce, outlier, parallelogram, pattern, percent, pint, plot, polygon, polyhedron, positive numbers, pound, prime factorization, prime number, prism, product, proportion, pyramid, quadrants, quadrilateral, quantity, quart, quotient, range, rate, ratio, rational number, reciprocal, rectangle, regular polygon, relative frequency table, repeating decimal, right rectangular prism, right triangle, scalene triangle, signed number, simplest form, simplify, solid figure, simplify, solution of an equation, solution of an inequality, spread, square, statistical question, statistical variability, statistics, substitution, Subtraction Property of Equality, subtrahend, sum, surface area, table, tape diagram, term, tape diagram, term, terminating decimal, third quartile, three-dimensional figure, ton, trapezoid, two-dimensional figure, unit cube, unit fraction, unit rate, unit square, upper extreme, upper quartile, value, variable, vertex, volume, weight, whole numbers, x-axis, x-coordinate, y-axis, y-coordinate

Unit Objectives

Unit 1: Rates, Ratios, and Proportions (Approx. 17 class periods)
- Understand ratio concepts and use ratio reasoning to solve problems.
- Reason about and solve one-variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.

Unit 2: Area of Polygons (Approx. 12 class periods)
- Solve real-world and mathematical problems involving area, surface area, and volume.
- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one-variable equations and inequalities.

Unit 3: Operations with Whole Numbers, Fractions, and Decimals (Approx. 20 class periods)

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
- Compute fluently with multi-digit numbers and find common factors and multiples.

Unit 4: Area and Surface Area (Approx. 8 class periods)
- Solve real-world and mathematical problems involving area, surface area, and volume.
- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one-variable equations and inequalities.

Unit 5: Expressions and Equations (Approx. 24 class periods)
- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one-variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.
- Compute fluently with multi-digit numbers and find common factors and multiples.

Unit 6: Volume (Approx. 8 class periods)
- Solve real-world and mathematical problems involving area, surface area, and volume.
- Apply and extend previous understandings of arithmetic to algebraic expressions.

Unit 7: Ratios and Rates with Fractions, Decimals, and Percents (Approx. 20 class periods)
- Understand ratio concepts and use ratio reasoning to solve problems.
- Reason about and solve one-variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.

Unit 8: Descriptive Statistics (Approx. 19 class periods)
- Develop understanding of statistical variability.
- Summarize and describe distributions.

Unit 9: Rational Numbers and the Coordinate Plane (Approx. 10 class periods)
- Apply and extend previous understandings of numbers to the system of rational numbers.

Approved Course Materials and Resources:

Glencoe Math Course 1
McGraw Hill Education
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