



Accelerated 7th 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: Accelerated 7th Grade Mathematics

GRADE LEVEL: 7th Grade

CONTENT AREA: Mathematics

Course Description:

This course differs from the non-accelerated 7th Grade course in that it contains content from 8th grade. While coherence is retained, in that it logically builds from the 6th Grade, the additional content when compared to the non-accelerated course demands a faster pace for instruction and learning. The critical areas are as follows: Critical Area 1: Students develop a unified understanding of number, recognizing fractions, decimals, and percents as different representations of rational numbers. Critical Area 2: Students use linear equations and systems of linear equations to represent, analyze, and solve a variety of problems. Critical Area 3: Students build on their previous work with single data distributions to compare two data distributions and address questions about differences between populations. And Critical Area 4: Students continue their work with area from Grade 6, solving problems involving the area and circumference of a circle and surface area of three-dimensional objects.

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: Rational Numbers and Exponents (Approx. 30 class periods)	Unit 2: Proportionality and Linear Relationships (Approx. 30 class periods)	Unit 3: Introduction to Sampling and Inference (Approx. 30 class periods)
Unit 4: Creating, Comparing, and Analyzing Geometric Figures (Approx. 30 class periods)		

Essential Terminology/Vocabulary

Absolute value, acute triangle, additive inverse, area, circle, regular polygon, quadrilateral, triangle, axis, circumference, coefficient, commissions, complementary angles, compound events, coordinate plane, coordinate system, coordinates, cube, data, degree of visual overlap, diagram, distributive property, equation, equilateral triangle, estimate, evaluate, event, expression, factor, frequency, geometric figure, graph, gratuities, inequality, inference, integers, isosceles triangle, likely event, long division, markdowns, markups, mean absolute deviation, measure of center, measure of variation, non-zero divisor, number line, obtuse triangle, ordered pair, origin, percent, percent decrease, percent error, percent increase, plan sections, polygon, populations, prediction, prism, probability, proportion, proportional relationship, protractor, pyramid, quadrants, quadrilateral, quotient, random sample, rate, ratio, rational coefficient, rational number, relative frequency, repeating decimal, right prism, right rectangular prism, right rectangular pyramid, right triangle, sample space, scale, scale drawing, scalene triangle, signed number, simple interest, simulations, solution set, spread, statistical variability, statistics, substitution, supplementary angles, surface areas, right prism, tax, terminating decimal, tree diagrams, triangle, nit rate, unlikely event, variable, vertical angel, volume, x-axis, x-coordinate y-axis, y-coordinate

Unit Objectives

Unit 1: Rational Numbers and Exponents (Approx. 30 class periods)

1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
3. Solve real-world and mathematical problems involving the four operations with rational numbers.
4. Know that there are numbers that are not rational, and approximate them by rational numbers.
5. Work with radicals and integer exponents.

Unit 2: Proportionality and Linear Relationships (Approx. 30 class periods)

1. Analyze proportional relationships and use them to solve real-world and mathematical problems.
2. Use properties of operations to generate equivalent expressions.
3. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
4. Understand the connections between proportional relationships, lines, and linear equations.
5. Analyze and solve linear equations and pairs of simultaneous linear equations.

Unit 3: Introduction to Sampling Inference (Approx. 30 class periods)

1. Use random sampling to draw inferences about a population.
2. Draw informal comparative inferences about two populations.
3. Investigate chance processes and develop, use, and evaluate probability models.

Unit 4: Creating, Comparing, and Analyzing Geometric Figures (Approx. 30 class periods)

1. Draw, construct and describe geometrical figures and describe the relationships between them.
2. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
3. Understand congruence and similarity using physical models, transparencies, or geometry software.
4. Solve real-world and mathematical problems involving volume of cylinders, cones and spheres

Approved Course Materials and Resources:

Glencoe Math Accelerated: A Pre-Algebra Program

McGraw Hill Education

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