Course Overview

Middle School | 5/6 | Math - *Last Updated on October 28, 2024*

DESCRIPTION

K-12 Content Area | Mission & Philosophy Statement

- With confidence and perseverance, young people can tackle complex and novel mathematical challenges, becoming skilled problem solvers who take ownership over their learning process.
- Young people possess the ability to reason mathematically, make conjectures, solve problems and build understanding through effective dialogue and collaboration.
- Learners exhibit critical inquiry through the deliberate asking of questions and the integration of conceptual understanding, reasoning abilities, and procedural fluency.
- Strategically selecting materials, technology, and other resources support mathematical learning and aid in achieving mathematical goals.

Course Description

The PA Core 5/6 Mathematics course cultivates a strong grasp of numbers, operations, algebraic reasoning, geometry, measurement, data analysis, and foundational algebraic principles. This course is designed to equip students with a deep understanding and proficiency in mathematics, segmented into four critical focus areas: numbers and operations, algebraic concepts, geometry and measurement, and data and probability.

This accelerated course is designed to provide a student with the standards in both the Core 5 and Core 6 Math courses. Students start with a profound exploration of place value systems, advancing through operations with whole numbers, decimals, and fractions. This foundational knowledge is critical for understanding more complex mathematical concepts. Then, students are introduced to algebraic thinking, which includes basic algebraic concepts, expressions, patterns, and the use of variables. These skills are essential for solving real-world problems and lay the groundwork for high school algebra. In the area of geometry and spatial understanding students explore two-dimensional shapes, learn about the coordinate plane, and delve into the basics of volume calculation. These units enhance spatial reasoning and the ability to model geometric relationships. In the area of measurement and data analysis, students are exposed to units of measure, data representation, and analysis, teaching students to interpret and present data effectively. This course includes advanced topics for enrichment in the area of number theory, the concept of integers, ratios, proportions, percents, and rational numbers. These units provide a deeper understanding of mathematical relationships and prepare students for advanced studies.

STANDARDS

Pennsylvania Common Core - Grade 5 - Mathematics

CC.2.1.5.B.1 | CC.2.1.5.B.2 | CC.2.1.5.C.1 | CC.2.1.5.C.2 | CC.2.2.5.A.1 | CC.2.3.5.A.1

CC.2.2.5.A.4 | CC.2.3.5.A.2 | CC.2.4.5.A.1 | CC.2.4.5.A.2 | CC.2.4.5.A.4 | CC.2.4.5.A.5

Pennsylvania Common Core - Grade 6 - Mathematics

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CC.2.2.6.B.1 CC.2.1.6.E.2 CC.2.1.6.E.3 CC.2.1.6.E.4 CC.2.4.6.B.1 CC.2.3.6.A.1

CC.2.1.6.E.1 CC.2.1.6.D.1 CC.2.2.6.B.3 CC.2.2.6.B.2

COURSE OBJECTIVES

Specific objectives for this course are aligned to the Pennsylvania Core Standards for Mathematics and the Common Core State Standards for Mathematics as outlined in the Scope and Sequence for Grade 5 Mathematics and Grade 6 Mathematics

ASSESSMENT TYPES

- Benchmark Assessments
- Diagnostic Assessments
- Formative Assessments
- Summative Assessments

SUGGESTED METHODS OF INSTRUCTION

Below is a list of suggested strategies for high-quality instruction in Mathematics:

- Instructional components outlined in the Framework for Teaching by Charlotte Danielson
- Collaborative Learning
- Differentiation
- Direct and Guided Instruction
- Hands-on Learning
- Independent Practice
- Math Language Development Routines
- Problem-solving and Critical Thinking Tasks
- Real-World Applications
- Sense-Making Routines
- Use of Technology
- Visual Representations

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RESOURCES

District Approved Program Resources	District Approved Supplemental Resources	District Approved Technology Resources
McGraw-Hill Reveal Math. (2025) • Teacher Edition Grade 5: Volume 1 (Print & Digital) • Teacher Edition Grade 5: Volume 2 (Print & Digital) • Student Edition Grade 5: Volume 1 (Print & Digital) • Student Edition Grade 5: Volume 2 (Print & Digital) • Teacher Edition Course 1: Volume 1 (Print & Digital) • Teacher Edition Course 1: Volume 2 (Print & Digital) • Student Edition Course 1: Volume 1 (Print & Digital) • Student Edition Course 1: Volume 2 (Print & Digital)	• McGraw Hill, ALEKS (2025) • IXL Math (2025)	

Unit 1: Math Is

Middle School | 5/6 | Math

STANDARDS

National Common Core - Grade K-12 - Mathematics

- CCSS.Math.Practice.MP1
- CCSS.Math.Practice.MP2
- CCSS.Math.Practice.MP5
- CCSS.Math.Practice.MP3
- CCSS.Math.Practice.MP4
- CCSS.Math.Practice.MP6
- CCSS.Math.Practice.MP7
- CCSS.Math.Practice.MP8

Unit 1: Math Is

Middle School | 5/6 | Math

DESIRED RESULTS

Meaning	
Big Ideas & Understandings	**Essential Questions & Instructional Questions**
Students will ... • discuss the role of math in their lives and in other people's lives. • discuss different approaches for making sense of a problem and determine strategies for solving quantities. • consider different ways to use mathematics to represent a real-world situation. • refine their constructing arguments to support their thinking. Students respond to the ideas and arguments of others. • consider strategies for uncovering patterns and for using patterns to solve problems. Students consider efficient strategies derived from repeated reasoning. • students discuss classroom norms of interactions for a productive learning environment.	**Students will...** • build on their problem- solving skills as they consider alternative strategies for solving the problem presented. • model real-world situations with a range of representations. • construct arguments to critique the reasoning of classmates. • use appropriate units in their calculations. • make generalizations after noticing repeated calculations with operations.

Learning Objectives	
Knowledge	**Skills**
Students will develop understanding of... • the habits of mind that are part of the problem-solving process. • classroom norms that are integral to a productive math learning environment • themselves as doers of math	**Students will be skilled at...** • the habits of mind that are part of the problem-solving practice • constructing arguments to support their mathematical thinking. • using precise language when constructing arguments. **Students will use math language to build skills in...**

Learning Objectives	
	• discussing which tools and strategies, including words, symbols, diagrams, physical models, and technology students know can help them solve a problem and defend their ideas. • comparing and connecting different possible approaches to solving problems. • defining, revising, and refining ideas with the understanding of Math Is... explaining and sharing, verbally and in writing. • making conjectures by reflecting on learning and current understanding through writing words, phrases, or sentences related to prior learning, topical, or future math concepts. • creating, writing or sharing verbally the meaning of Math Is Ours... students discuss classroom norms of interaction for a productive learning environment.

ASSESSMENT EVIDENCE

- Math Attitude Survey
- Exit Tickets

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