Course Overview

Elementary School | 2 | Math - *Last Updated on October 17, 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 Second Grade curriculum is a comprehensive framework 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. Each area is carefully structured to build upon students' existing knowledge, while also introducing new concepts and skills that are essential for academic success and real-world problem-solving. Foundational concepts include basic facts, place value, mental math, and geometry concepts that are embedded within each of the four focus areas. Through exploration of the first domain, number and operations, students utilize concrete and pictorial models to create sets and numbers, use numbers to represent quantities to 1000, and group objects into hundreds, tens, and ones as well as into equal groups. The curriculum facilitates a deeper understanding of number representation as students are challenged to use place value models to create equivalent representations, to represent numbers in expanded form, and to represent numbers to 1,000 on a number line. Instructional tasks develop counting in multiples of ones, tens, and hundreds up to 1,000 to help students to demonstrate mastery in counting fluency. Students engage in lessons to use <, >, = to compare and order numbers and to use base-ten and place-value models to represent numbers to 1,000. The curriculum reinforces paper bills, counting combinations of coins and bills, comparison of money amounts, and money word problems. The curriculum emphasizes skills that continue to develop whole number computation, with the focus on multiplication and division concepts, including multiplication/division with 2, 3, 4, 5, and 10. Students will practice using ×, ÷, and = symbols to represent relationships. Finally, fraction concepts are introduced with a focus on unit fractions (e.g. halves, thirds, and fourths) and practice with comparing and ordering using bar models. The exploration of algebraic concepts facilitates a deeper understanding of patterns, requiring students to identify rules for number patterns, identify and extend growing and repeating patterns, and skip count by 2s, 3s, 4s, 5s, and 10s. Models (e.g. concrete, pictorial, symbolic) continue to be utilized to reinforce multiplication/division in addition to subtraction/addition mastery. Ongoing practice extends students' application of addition and subtraction properties and includes the introduction of the distributive property. Finally, students use and create models and number sentences that include <, >, and = to represent number

relationships. Geometry instruction enhances students' understanding of two-dimensional shapes through ongoing sorting and classifying activities in which they are taught to recognize and draw shapes based on specified attributes. The identification of triangles, quadrilaterals, pentagons, hexagons, and cubes is practiced. Through the composing and decomposing of two-dimensional shapes, students develop the foundation for understanding area. Students recognize three-dimensional solid shapes from different perspectives and identify and describe attributes and properties of two-dimensional shapes. Finally, students compare geometric shapes to identify the characteristics of slide, stack, and roll. In addressing measurement, the curriculum includes hands-on opportunities for students to use rulers to measure length in meters, centimeters, feet, and inches. It further introduces both the Metric and U.S. Customary systems and provides practice measuring and computing length in both. Finally, the curriculum introduces the concept of a.m./p.m. and provides opportunities for students to solve both mass and volume problems and to solve problems involving elapsed time.

STANDARDS

Pennsylvania Common Core - Grade 2 - Mathematics

CC.2.1.2.B.1 CC.2.1.2.B.2 CC.2.1.2.B.3 CC.2.2.2.A.1 CC.2.2.2.A.2 CC.2.2.2.A.3

CC.2.3.2.A.1 CC.2.3.2.A.2 CC.2.4.2.A.1 CC.2.4.2.A.2 CC.2.4.2.A.3 CC.2.4.2.A.4

CC.2.4.2.A.6

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 2 Mathematics.

ASSESSMENT TYPES

The following assessment types will be used during the course:

- Curriculum-based Measures
- Formative Assessments
- Performance-based Assessments
- Summative Assessments

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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
- Concrete Representational Abstract (CRA) approach
- Guided Learning - allows for students to check their learning while working with guidance from instructor
- Independent Practice - students practice skills independently
- Use of manipulative, models, and technology to practice skills
- Communication of reasoning processes

RESOURCES

District Approved Program Resources	District Approved Supplemental Resources	District Approved Technology Resources
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