Course Overview

Elementary School | K | 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 Kindergarten math 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 counting, sorting, and number sense that are embedded within each of the four focus areas. Further, these skills are reinforced through computation, song, rhymes, and hands-on activities. Through exploration of the first domain, number and operations, students utilize concrete models and pictures to create sets and numbers, use numbers to represent quantities to 20, use cardinal and ordinal numbers, and count sequences and number names to 100. These skills are then applied to more complex mathematical concepts, including comparing and ordering, number composing/decomposing, place value, addition/subtraction. Finally, these foundational concepts are applied to real-world contexts (e.g. money, word problems). The exploration of algebraic concepts introduces students to patterns, whereby students develop mastery of repeating shape patterns, missing terms in repeating patterns, and counting by 2s and 5s. Models (e.g. concrete, pictorial, symbolic) are utilized to reinforce subtraction and addition mastery. Finally, students are introduced to addition and subtraction number sentences and the meaning of the = sign in number sentences. Geometry instruction introduces students to two-dimensional shapes through sorting and classifying activities. Students compare, name, and identify shapes through hands-on activities that support their awareness of their properties and in real-world contexts. Finally, students analyze, describe, compare, name, and sort three-dimensional solid shapes. In addressing measurement, the curriculum includes hands-on opportunities for students to compare and order lengths and distances utilizing nonstandard units to build conceptual understanding. It further provides opportunities for students to engage in exploratory exercises to compare objects by weight/mass and capacity/volume. Finally, the curriculum introduces students to the name and order of days and months of the year and covers the concepts of events in a time sequence (e.g. yesterday, today, tomorrow).

STANDARDS

Course Overview

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Pennsylvania Common Core - Kindergarten - Mathematics

CC.2.1.K.A.1 CC.2.1.K.A.2 CC.2.1.K.A.3 CC.2.1.K.B.1 CC.2.2.K.A.1 CC.2.3.K.A.1

CC.2.3.K.A.2 CC.2.4.K.A.1 CC.2.4.K.A.4

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 K Mathematics.

ASSESSMENT TYPES

The following assessment types will be used during the course:

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