Course Overview

Elementary School | 1 | 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 First 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 100, and group objects into tens and ones. The curriculum facilitates a deeper understanding of number representation as students are introduced to number bonds and numbers to 100 on a number line. Instructional tasks that develop counting by 1s, 2s, 5s, and 10s forward and backward to 100 help students to demonstrate mastery in counting fluency. These skills are then extended beyond skills levels established in kindergarten. Students engage in lessons to compare and order numbers and to use place-value models to numbers to 100. Multiplication and division concepts are introduced as students engage in repeated addition of the same number and the representation of sharing to make equal groups. Finally, the curriculum reinforces coin identification and incorporates decimal computation in the addition and subtraction of money. The exploration of algebraic concepts facilitates a deeper understanding of patterns, requiring students to identify rules for sorting objects, identifying and extending growing and repeating patterns, and finding missing terms in these patterns. Models (e.g. concrete, pictorial, symbolic) continue to be utilized to reinforce subtraction and addition mastery. Properties are introduced as characteristics of addition/subtraction (e.g. zero identity, associative, and commutative).

Finally, the difference between equalities and inequalities in addition and subtraction number sentences are investigated in further depth. Geometry instruction enhances students' understanding of two-dimensional shapes through ongoing sorting and classifying activities. Students compare, name, and identify shapes through hands-on activities that support their expanding awareness of their properties and in real-world

contexts. Students recognize three-dimensional solid shapes from different perspectives and identify and describe attributes and properties of two-dimensional shapes. Finally, students practice how to compose and decompose both two-dimensional and three-dimensional shapes. In addressing measurement, the curriculum includes hands-on opportunities for students to compare and order lengths and distances utilizing nonstandard units to continue to build conceptual understanding of units of measure. It further introduces students to the concept of transitivity as they compare two measurements, both in length and weight/mass, with a third measurement. Finally, the curriculum provides opportunities for students to practice correctly writing the date and telling time to the hour and half hour.

STANDARDS

Pennsylvania Common Core - Grade 1 - Mathematics

CC.2.1.1.B.1 CC.2.1.1.B.2 CC.2.1.1.B.3 CC.2.2.1.A.1 CC.2.2.1.A.2 CC.2.3.1.A.1

CC.2.3.1.A.2 CC.2.4.1.A.1 CC.2.4.1.A.2 CC.2.4.1.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 1 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
- Use Concrete Representational Abstract
- 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

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RESOURCES

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