



First Grade Math Overview

1st Grade Mathematics will focus on the 4 domains outlined in the PA Core Standards:

- Operations and Algebraic Thinking
- Number and Operations in Base Ten
- Measurement and Data
- Geometry

PA Core Math Standards for First Grade

- Extend the counting sequence to read and write numerals to represent objects. (ex. Write 23 after counting 23 objects)
- Use place-value concepts to represent amounts of tens and ones and to compare two digit numbers. (ex. Tell how many tens and ones in the numbers 43 and 26. Which number is greater? How do you know?)
- Use place-value concepts and properties of operations to add and subtract within 100. (ex. Using tens and ones to add $50 + 3$ or $40 + 20$)
- Represent and solve problems involving addition and subtraction within 20. (ex. Solve word problems with equations such as $18 - 2$ or $15 + 5$)
- Understand and apply properties of operations and the relationship between addition and subtraction. (ex. Explain how $2 + 5 = 7$ is related to $7 - 5 = 2$)
- Compose and distinguish between two- and three-dimensional shapes based on their attributes. (ex. Draw and label a hexagon. Tell how it is different from a cube.)
- Use the understanding of fractions to partition shapes into halves and quarters. (ex. Divide a shape into $\frac{1}{2}$ or $\frac{1}{4}$)
- Order lengths and measure them both indirectly and by repeating length units. (ex. Measure items with non-standard units such as cubes and compare the lengths)
- Tell and write time to the nearest hour and half hour using both analog and digital clocks. (ex. Draw the hands on a clock to read 2:30 and write the time.)

The goal is for your child to have mastered these standards by the end of first grade. We use Envision 2.0 as our main resource to teach the standards. However, we also utilize various other resources for additional activities/support when appropriate to teach the standards.



Envision 2.0

Teaching Mathematics with Understanding

**One hallmark of understanding is the ability to justify, in a way appropriate to the student's mathematical maturity. – Pearson*

The primary focus of Envision 2.0 is deepening mathematical understanding. We no longer want the children simply solve problems using a memorized procedure that the teacher taught, without any understanding of why they did what they did to solve the problem. The children must now solve the problem and be able to justify why the solution is correct. The focus of instruction is on the “how and why” instead of just the “how.” Problem solving is embedded into each lesson as a result.

Main Lesson Components:

Step 1- Problem Based Learning – Introduce concepts and procedures with a problem based experience. This is a hands-on learning experience time!

Step 2 – Visual Learning – A video connected to the concept, which is also mirrored in the student book, called the Visual Learning Bridge. This step makes the mathematics explicit with enhanced direct instruction connected to Step 1.

Step 3 – Independent Practice – Allows students to practice the learned concept independently. Opportunities are available for the teacher to assign certain problems for independent practice based on the individual student's math abilities.

Step 4 – Assess and Differentiate – The teacher does a quick check of the independent practice (1 or 2 problems). The teacher then divides the class into various groups for further practice or instruction based on need. Students may be directed to a math center activity (on level or advanced) or to work with the teacher for additional support (intervention).

Additional Components:

Technology – Pearson Realize website (Envision 2.0 link under the Student tab on the district website) for online games, homework support videos, student workbook access, online math tools, etc.

Math and Science Projects – One project at the beginning of each new topic

Math and Literature – Problem-Solving Reading Mats that the students may use at center time or in a teacher-led group

Vocabulary Word Cards – Define important concepts and terms for each topic

Daily Common Core Review - Reviews previously learned concepts