

# MATH

LENGTH OF TIME: one year

GRADE LEVEL: 1

## COURSE STANDARDS:

Students will:

CC.2.1.1.B.1: Extend the counting sequence to read and write numerals.

CC.2.1.1.B.2: Use place value concepts to represent amounts of tens and ones and to compare two digit numbers.

CC.2.1.1.B.3: Use place value concepts and properties of operations to add and subtract within 100.

CC.2.2.1.A.1: Represent and solve problems involving addition and subtraction within 20.

CC.2.2.1.A.2: Understand and apply properties of operations and the relationship between addition and subtraction.

CC.2.3.1.A.1: Compose and distinguish between two- and three-dimensional shapes based on their attributes.

CC.2.3.1.A.2: Use the understanding of fractions to partition shapes into halves and quarters.

CC.2.4.1.A.1: Order lengths and measure them both indirectly and by repeating length units.

CC.2.4.1.A.2: Tell and write time to the nearest half hour using both analog and digital clocks.

CC.2.4.1.A.4: Represent and interpret data using tables/charts.

## RELATED PA ACADEMIC STANDARDS FOR MATHEMATICS

CC.2.1.1 Numbers and Operations

CC.2.2.1 Algebraic Concepts

CC.2.3.1 Geometry

CC.2.4.1 Measurement, Data and Probability

## PERFORMANCE ASSESSMENTS:

Students will demonstrate achievement of the standards by:

1. Completing unit tests, pre/post grade level tests, and RSA in journals using pencil, paper, and calculator activities with/without rubrics. (Course Standards 1-4)
2. Demonstration of the problem solving process with routine and non-routine problems. (Course Standards 1-4)
3. Oral questioning and interviewing. (Course Standards 1-4)
4. Self and peer assessment provided by the Everyday Math series. (Course Standards 1-4)
5. Teacher observation at completion of task or activity. (Course Standards 1-4)

6. Student portfolio to maintain student work. (Course Standards 1-4)
7. Math journal. (Course Standards 1-4)
8. Oral or written presentation to demonstrate a solution, concept, project, survey, etc. with/without rubrics. (Course Standards 1-4)
9. Open-ended response questions with/without rubrics. (Course Standards 1-4)
10. Class and homework assignments. (Course Standards 1-4)

#### DESCRIPTION OF COURSE:

This course stresses the fundamentals, application, and appreciation of mathematics. The course focuses on the Pennsylvania Common Core State Standards suggested for first grade to include problem solving, communication with the use of math language, reasoning, estimation, number sense and numeration, whole number concepts and computation, geometry, measurement, fractions, patterns, statistics, and probability. Technology will be integrated throughout the course.

This course will be presented to students in a manner that appropriately follows the districts differentiated instruction initiative. Instruction will include, but not be limited to: recognize and continue patterns; skip counting by 2s, 5s and 10s; identify even and odd numbers; compare and order whole numbers to 1,000; use place value concepts to represent amounts of hundreds, tens and ones; addition facts through twenty, with fluency through ten; subtraction facts through twenty, with fluency through ten; addition and subtraction of whole numbers without regrouping; compare and count pennies, nickels, dimes, and quarters; tell time by hour and half hour; identify days of the week, months of the year; use linear measurement in inches and centimeters; measure temperature to the nearest 10°C/F; identify triangles, rectangles, circles, squares, hexagons, rhombuses, cubes, cylinders, spheres, pyramids and cones; identify fractions  $\frac{1}{2}$ ,  $\frac{1}{3}$ , and  $\frac{1}{4}$ ; describe events using certain, likely, unlikely or impossible; represent and interpret data using tables, graphs and charts. Students will apply core knowledge in open-ended problem solving activities and tasks.

#### TITLES OF UNITS:

Spiral program – on-going throughout the year

1. Number and Numeration
2. Operations and Computation
3. Data and Chance
4. Measurement
5. Geometry
6. Technology, estimation and problem solving (including algebra, graphs, charts, functions, and patterns) are integrated throughout the course.

#### Unit Pacing Completion

Unit 1 – Establishing Routines – middle September

Unit 2 – Everyday Uses of Numbers – middle October

Unit 3 – Patterns and Counting – middle November

Unit 4 – Measurement and Basic Facts – middle December

- Unit 5 – Place Value, Number Stories and Basic Facts – middle January
- Unit 6 – Developing Fact Power – middle February
- Unit 7 – Geometry and Attributes – middle March
- Unit 8 – Mental Arithmetic, Money and Fractions – middle April
- Unit 9 – Place Value and Fractions – middle May
- Unit 10 – Year end review - June

**SAMPLE INSTRUCTIONAL STRATEGIES:**

1. Teacher/student made activities
2. Teacher/student led discussions and activities
3. Problem solving strategies
4. Calculators and computer software
5. Individual and group explorations and investigations
6. Games and manipulatives
7. Written explanations and journal activities
8. Teacher/peer modeling
9. Math Word Wall

**MATERIALS:**

1. Common Core State Standards Everyday Mathematics: The University of Chicago School Mathematics Project, Everyday Learning Corporation, 2012, Chicago, Illinois.
2. Calculators, TI-108
3. Computer software and websites
4. Materials suggested by Everyday Math, including EDM online
5. Computer software
6. Standard related games and manipulatives
7. Base 10 blocks
8. Various children’s literature books
9. Number lines and number grids
10. Counters
11. Everyday Math templates
12. Student reference books

**METHODS OF ASSISTANCE AND ENRICHMENT:**

- A. Assistance
  1. IST
  2. Cooperative groups
  3. Peer helpers
  4. Volunteer helpers/tutors
  5. Flexible/modified grouping (differentiated groups based on recommendation in Differentiation Handbook)
  6. Re-teaching with alternative strategies
  7. Extended instructional time
  8. Modified tests

- B. Enrichment
1. Enhanced curriculum
  2. Peer tutoring
  3. Modified testing
  4. Math journal and/or projects
  5. Individual mathematical investigations
  6. IST
  7. PAL
  8. Differentiated lessons, paper and pencil tests and activities, games suggested in Differentiation Handbook
  9. Differentiated assessment – Everyday Math online

**PORTFOLIO DEVELOPMENT:**

1. Teacher/student assessments
2. Math journals
3. Individual/group investigations, projects, and/or activities
4. Written explanation of problem solving strategies
5. Student reflections
6. Pre and post district grade level assessment

**METHODS OF EVALUATION:**

1. Written unit assessments – Everyday Math
2. Recognizing student achievement checklists
3. Self-assessments – Everyday Math
4. Investigations, projects, and/or journals – on-going assessments
5. Problem solving activities – open-ended responses provided by Everyday Math
6. Written and oral presentations
7. Pre and Post district grade level assessment

**INTEGRATED ACTIVITIES:**

1. Concepts
  - demonstrate knowledge of the basic concepts and principles for the above mentioned standards
2. Communication
  - compose and make oral presentations using appropriate mathematical language
  - written entries in math journal using appropriate mathematical terms and vocabulary
  - explain solutions and strategies clearly and logically with supporting evidence
  - listen to, and understand, oral math presentations
3. Thinking/Problem Solving
  - apply the concepts of the above mentioned standards to formulate and solve problems

- make critical judgments using the learned skills
  - draw conclusions and show relationships in mathematical settings
  - make decisions and predictions based upon the application of learned skills
4. Application of Knowledge
- use learned skills to solve authentic problems
  - exhibit skills with calculators and computer software and application programs
  - examine, evaluate, and solve routine and non-routine problems
5. Interpersonal Skills
- work cooperatively with others on projects and investigations
  - work effectively with others on projects and investigations
  - communicate effectively using appropriate mathematical language