

East Penn School District

Elementary Curriculum

A Planned Course Statement
for

2nd Grade Mathematics

Length of Period (mins.) 60

Periods per Cycle: 5

Length of Course (yrs.) 1.0

Adopted: June 28, 2010

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Developed by:

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Description of Course

Course Title: K-5 Mathematics

Description:

The East Penn School District Mathematics curriculum will balance the learning of both content and process. The content consists of topics in numbers and operations, measurement, geometry, statistics and probability, and algebra. The processes will focus on problem solving, communication, representation, reasoning and proof, and connections. This curriculum will reflect 21st century skills such as collaboration, critical thinking, and the effective use of technology to prepare students to become lifelong learners and contributors to a global society.

Goals:

1. To use technology as a tool to enrich learning and to enhance achievement.
2. To utilize a differentiated project-based approach grounded through student achievement data that reflects the needs of all learners.
3. To provide career exploration opportunities throughout the mathematics curriculum scope and sequence.
4. To provide a rigorous and relevant learning experience that enables students to meet or exceed state standards and to develop 21st century skills.
5. To encourage and foster collaborative home and school relationships that support students' achievement in mathematics.

Requirements:

None

Key to Levels of Achievement (Listed with each learning objective)

Awareness (A):	Students are introduced to concepts, forms, and patterns.
Learning (L):	Students are involved in a sequence of steps and practice activities which involved further development and allow evaluation of process.
Understanding (U):	Students demonstrate ability to apply acquired concepts and skills to individual assignments and projects on an independent level.
Reinforcement (R):	Students maintain and broaden understanding of concepts and skills to accomplish tasks at a greater level of sophistication

**Use the Standards of Mathematical Practice
on a daily basis when teaching math.**

- Make sense of persevere in solving complex and novel mathematical problems.
- Use effective mathematical reasoning to construct viable arguments and critique the reasoning of others.
- Communicate precisely when making mathematical statements and express answers with a degree of precision appropriate for the context of the problem/situation.
- Apply mathematical knowledge to analyze and model situations/relationships using multiple representations and appropriate tools in order to make decisions, solve problems, and draw conclusions.
- Make use of structure and repeated reasoning to gain a mathematical perspective and formulate generalized problem solving strategies.

Unit	Num	Objective	Level	Content	Evaluation	Standard
2.1 Numbers and Operations	1	The student will compare two three-digit numbers based on meanings of the hundreds, tens and ones digit, using $>$, $=$ and $<$ symbols to records the results of comparisons.	U	<ul style="list-style-type: none"> • Use place value charts • Use hundred chart • Use concrete examples (manipulatives) • Use $>$ and $<$ cards 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.1.2.B.1
	2	<p>The student will count forward and backward using whole numbers and skip count to 1000 (For example by 1's, 2's, 5's, 10's, 25's and 100's.)</p> <p>The student will apply place value concepts to count, order and group to 1000.</p> <p>The student will read and write numbers to 1000 using base-ten numerals, number names and expanded form.</p>	U	<ul style="list-style-type: none"> • Use hundred chart • Counters (real-world objects) • Calculators (to show counting patterns) • Classify objects into groups • Even and odd • Place value charts • Base 10 blocks • Base 10 block rubber stamps • Unifix cubes • Integrate technology 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.1.2.B.2
	3	<p>The student will use place value concepts and properties of operations to add and subtract within 100.</p> <p>The student will choose the correct operation (addition or subtraction) and write an equation to solve a story problem.</p>	U	<ul style="list-style-type: none"> • Place Value Chart • Base ten blocks • Unifix cubes • Integrate Technology • Check if solutions are accurate 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.1.1.B.3
2.2 Operations and Algebraic Thinking	1	<p>The student will represent and solve addition and subtraction problems with two- and three-digit numbers, with or without regrouping within 1000.</p> <p>The student will describe the inverse relationship between addition and subtraction.</p>	L	<ul style="list-style-type: none"> • Model oral story problems that are one step • Solve written one-step problems • Use key word charts • Use number lines • Use triangle flashcards • Fact Families • Manipulatives • Calculators • Integrate technology 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.2.2.A.1

		The student will use addition and subtraction within 100 to solve one- and two-step word problems with unknowns in all positions.				
	2	The student will fluently add and subtract within 20 using mental strategies. The student will explain how to find a missing element that makes an addition or subtraction sentence true.	U L	<ul style="list-style-type: none"> • Practice sheets • Timed tests • Flashcards • Manipulatives • Student generated story problems • Integrate technology 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.2.2.A.2
	3	The student will work with equal groups of objects to gain foundations for multiplication (arrays and skip counting.) The student will recognize and extend repeating patterns based on an attribute (size, shape, color) or number.	A R	<ul style="list-style-type: none"> • Use real-world manipulatives • Integrate technology • Incorporate calculators • Pattern blocks • Shapes • Technology 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.2.2.A.3
2.3 Geometry	1	The student will analyze and draw two- and three-dimensional shapes having specified attributes (faces, vertices, edges.) The student will predict how shapes can be changed by combining or dividing them.	U	<ul style="list-style-type: none"> • Manipulatives • Geoboards • Pattern blocks • Paper cut out shapes • Books related to shapes 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.3.2.A.1
	2	The student will use drawings or models to show the concept of a fraction as part of a whole shape (halves, thirds, quarters of a shape.)	U	<ul style="list-style-type: none"> • Integrate technology • Various paper cut shapes 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.3.2.A.2
2.4 Measurement and Data	1	The student will measure and estimate lengths in standard units (inches, feet, centimeters, meters) using appropriate tools.	U	<ul style="list-style-type: none"> • Rulers, yardsticks, measuring tapes, meter sticks 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.4.2.A.1

	2	The student will tell and write time to the nearest five minute using analog and digital clocks.	U	<ul style="list-style-type: none"> • Judy clocks • Digital clock 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.4.2.A.2
	3	<p>The student will solve addition and subtraction problems using coins and paper currency with appropriate symbols (dollar and cent sign.)</p> <p>The student will identify the penny, nickel, dime, quarter, half dollar and dollar bill and count and compare using a collection of coins and one dollar bills.</p>	U	<ul style="list-style-type: none"> • Use calculator • Menu/sales flyers • Coin manipulatives • Set up a “bank” • Integrate technology • Relate counting patterns to types of coins • Use white board coins to model for students 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.4.2.A.3
	4	The student will represent and interpret data using line plots, picture graphs and bar graphs.	L	<ul style="list-style-type: none"> • Graph paper • Examples of graphs • Technology • Surveys and tally marks • 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.4.2.A.4
	5	<p>The student will extend the concepts of addition and subtraction to problems involving length.</p> <p>The student will compare and estimate measurable characteristics of different objects (perimeter, area.)</p>	L	<ul style="list-style-type: none"> • Rulers • Number lines • Blocks 	<ul style="list-style-type: none"> • Teacher observation • Quizzes • Tests • Assignments 	CC.2.4.2.A.6