Grade 1 Mathematics
Course Syllabus
Prince George's County Public Schools

Prerequisites: None

Course Description: In Grade 1, instructional time should focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.

1. Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers. They use a variety of models, including discrete objects and length-based models (e.g., cubes connected to form lengths), to model add-to, take-from, put-together, take-apart, and compare situations to develop meaning for the operations of addition and subtraction, and to develop strategies to solve arithmetic problems with these operations. Students understand connections between counting and addition and subtraction (e.g., adding two is the same as counting on two). They use properties of addition to add whole numbers and to create and use increasingly sophisticated strategies based on these properties (e.g., "making tens") to solve addition and subtraction problems within 20. By comparing a variety of solution strategies, children build their understanding of the relationship between addition and subtraction.

2. Students develop, discuss, and use efficient, accurate, and generalizable methods to add within 100 and subtract multiples of 10. They compare whole numbers (at least to 100) to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing the numbers 11 to 19 as composed of a ten and some ones). Through activities that build number sense, they understand the order of the counting numbers and their relative magnitudes.

3. Students develop an understanding of the meaning and processes of measurement, including underlying concepts such as iterating (the mental activity of building up the length of an object with equal-sized units) and the transitivity principle for indirect measurement.1

4. Students compose and decompose plane or solid figures (e.g., put two triangles together to make a quadrilateral) and build understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine shapes, they recognize them from different perspectives and orientations, describe their geometric attributes, and determine how they are alike and different, to develop the background for measurement and for initial understandings of properties such as congruence and symmetry.

Standards for Mathematical Practice
Parents' Guide

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. As your son or daughter works through homework exercises, you can help him or her develop skills with these Standards for Mathematical Practice by asking some of these questions:

1. Make sense of problems and persevere in solving them.
- How would you describe the problem in your own words?
- How did you tackle similar problems?
- Would it help you to create a diagram? Make a table? Draw a picture?

2. Reason abstractly and quantitatively.
- Can you tell why that is true?
- How did you reach your conclusion?
- How does your answer connect to the question? Does it make sense?

3. Construct viable arguments and critique the reasoning of others.
- Can you convince me that your answer makes sense?
- Tell me what your answer means.
- If I told you I think the answer should be (offer a wrong answer), how would you explain to me why I'm wrong?

4. Model with mathematics.
- How would you model the situation with a diagram, picture, table, graph, equation or words?
- Can you use color, words, or diagrams to show the connections between these ideas?
- How do the different models connect or related to each other (i.e. table to graph, graph to equation)?

5. Use appropriate tools strategically.
- What tools will you need?
- What strategies will you use?
- Will a calculator help? Will paper and pencil help? Will using a number line, table, diagram or picture help?

6. Attend to precision.
- Can you guess and check?
- Can you represent the definition or rule?
- What units of measure are you using? (for measurement problems)

7. Look for and make use of structure.
- What relevant information in the problem shows you what relationship (i.e. change, group, compare, ratio, or proportion) exists between the elements or parts of the problem?
- How do you know that your rule or equation always works?
- Are you actively comparing, reflecting on, and discussing multiple solution methods?

8. Look for and express regularity in repeated reasoning.
- What pattern(s) do you notice? How would you describe the pattern(s)?
- What calculations, patterns, or principles are repeated?
- What mathematical principles will help you in solving the problem?

** Details for each practice may be found at
http://mdk12.msde.maryland.gov/instruction/academies/resources/Mathematics/MathD1/Standards_for_Mathematical%20_Practice.pdf

Fluency Definition: Skill in carrying out procedures flexibly, accurately, efficiently and appropriately.

Grade 1 Fluency Expectation: Students will be able to add and subtract within 20 and fluently within 10, using multiple strategies.

INSTRUCTOR INFORMATION:

NAME:

E-MAIL ADDRESS:

PLANNING TIME:

SCHOOL PHONE NUMBER:

CLASS INFORMATION:

COURSE NUMBER:

CLASS MEETS:

ROOM:

TEXT:

End of the Year Assessments:

GRADING POLICY:

Elementary Mathematics
(Grades K and 1)

Overview: The goal of grading and reporting is to provide the students with feedback that reflects their progress toward the mastery of the indicators and objectives found in the Mathematics Curriculum Framework Progress Guide.

Teachers will determine the range of points for each assignment and place the assignment in SchoolMax; SchoolMax will then convert the points to a percentage and then the percentage will be converted to a grade of a PR, IP, or ND. **Example Scoring Rubric located after Grades K and 1

Factors	Brief Description	Grade Percentage Per Quarter
Class Work	This includes all work completed in the classroom setting. Class work must include, but is not limited to: • Use of manipulatives • Graphic representations • Group work • Student discourse • Class assignments • Problem of the Week	55%
Homework	This includes all work completed outside the classroom to be graded on its completion. Assignments can include, but are not limited to: • **Written assignments** (teacher made, Problem of the Week, text materials, …) • **Problem Solving** (table setting, time problems, measurement, …) • **Observation of natural occurrences of mathematics** (shapes, patterns, symmetry, …)	5%
Assessments	This category encompasses both the traditional (paper and pencil exams) and alternative methods of assessing student learning with the goal of mastery. Assessments can include but are not limited to: • Written exams and quizzes • Portfolios • Projects • Presentations • Problem of the Week • Anecdotal notes of teacher observation • Student interview	40%

Kindergarten and First Grade
Scoring Rubric

Indicator on Child's Work	Teacher's Grade Book	Report Card Equivalent	Description
	9 or 10	**PR** Proficient 90 – 100%	Student can demonstrate indicator independently.
	8	**IP** In Process 80 – 89%	Student can demonstrate indicator with minimal adult support.
	7	**EM** Emerging 70 – 79%	Student demonstrates indicator occasionally with some adult support.
	5 or 6	**ND** Needs Development 50 - 69%	Student cannot demonstrate indicator.

Teachers are to use observations ("kid watching"), anecdotal records and child portfolio entries to support scoring

Grade 1: Curriculum Cluster Map

■ Major Cluster	□ Supporting Cluster	○ Additional Cluster

Quarter 1 (45 days)	Quarter 2 (45 days)	Quarter 3 (43 days)	Quarter 4 (47 days)
Unit 1 (22 suggested days)	**Unit 3** (23 suggested days)	**Unit 5** (21 suggested days)	**Unit 7** (22 suggested days)
■ Extend the counting sequence. 1.NBT.1 ■ Represent and solve problems involving addition and subtraction 1.OA.1 ■ Add and subtract within 20 1.OA.5, 1.OA.6	■ Extend the counting sequence 1.NBT.1 ■ Understand place value 1.NBT.2, 1.NBT.3 ■ Represent and solve problems involving addition and subtraction 1.OA.2 ■ Understand and apply properties of operations and the relationship between addition and subtraction. 1.OA.3 ■ Work with addition and subtraction equations. 1.OA.7, 1.OA.8	■ Add and subtract within 20 ■ Understand and apply properties of operations and the relationship between addition and subtraction. ■ Use place value understanding and properties of operations to add and subtract. 1.NBT.5, 1.NBT.6 ■ Measure lengths indirectly and by iterating length units. 1.MD.1, 1.MD.2 ○ Tell and write time. 1.MD.3 ■ Represent and interpret data 1.MD.4	■ Represent and solve problems involving addition and subtraction. ■ Add and subtract within 20 ■ Use place value understanding and properties of operations to add and subtract. ■ Work with addition and subtraction equations. ○ Tell and write time. 1.MD.3 □ Represent and interpret data 1.MD.4 ○ Reason with shapes and their attributes. 1.G.3
Unit 2 (23 suggested days)	**Unit 4** (22 suggested days)	**Unit 6** (22 suggested days)	**Unit 8** (25 suggested days)
■ Understand and apply properties of operations and the relationship between addition and subtraction. 1.OA.4 ■ Add and subtract within 20 1.OA.5, 1.OA.6 ○ Reason with shapes and their attributes. 1.G.1, 1.G.2	■ Understand place value 1.NBT.3 ■ Use place value understanding and properties of operations to add and subtract. 1.NBT.4, 1.NBT.5 ○ Reason with shapes and their attributes. 1.G.1, 1.G.2	■ Work with addition and subtraction equations. ■ Understand place value ■ Use place value understanding and properties of operations to add and subtract. ○ Tell and write time. □ Represent and interpret data ■ Measure lengths indirectly and by iterating length units. 1.MD.1, 1.MD.2 ○ Reason with shapes and their attributes. 1.G.3	■ Understand place value ■ Use place value understanding and properties of operations to add and subtract. ■ Represent and solve problems involving addition and subtraction. ■ Add and subtract within 20 ■ Use place value understanding and properties of operations to add and subtract. ■ Work with addition and subtraction equations. ■ Measure lengths indirectly and by iterating length units. Step Up to Grade 2 Lessons 1 – 10

Fluency Expectation:

By the end of Grade 1 – Students should be able to add and subtract within 10.

Common Core Curriculum Framework Progress Guide – Mathematics – Grade 1, 2016-2017

Prince George's County Public Schools