

Pequannock Township School District Curriculum Syllabus

Mathematics Grade 1

Course Description:

This first grade mathematics course will provide students the opportunity to develop a strong base and deep understanding of the beginning mathematical concepts that will be needed in future grades. These students will develop an understanding of, and strategies for, addition and subtraction up to 100. Students will understand the connection between addition and subtraction as they explore the concepts of counting on, take apart, and comparing for example. Students will also learn how to use strategies to add and subtract within 100 as well as add and subtract multiples of 10. They will use their increasing number sense to compose and decompose numbers into tens and ones. Measurement is explored in terms of iterating lengths of equal sizes and using a standard unit for measurement. Students will also explore two- and three-dimensional shapes in terms of composing and decomposing shapes to make other shapes. This will lead to an understanding of geometric attributes and how shapes are alike and how they are different.

Course Proficiencies:

The following is a list of proficiencies that describe what students are expected to know and be able to do as a result of successfully completing this course. The following proficiencies are the basis of the assessment of student achievement. The learner will demonstrate mastery of:

Operations & Algebraic Thinking

1. Represent and solve problems involving addition and subtraction.
1.OA.A.1, 1.OA.A.2
2. Understand and apply the properties of operations and the relationship between addition and subtraction.
1.OA.B.3, 1.OA.B.4
3. Add and subtract within 20.
1.OA.C.5, 1.OA.C.6
4. Work with addition and subtraction equations.
1.OA.D.7, 1.OA.D.8

Number & Operations in Base Ten

5. Extend the counting sequence.
NBT.A.1
6. Understand place value.

- 1.NBT.B.2a-c, 1.NBT.B.3*
7. Use place value understanding and properties of operations to add and subtract. *1.*
- NBT.C.4, 1.NBT.C.5, 1.NBT.C.6*

Measurement & Data

8. Measure lengths indirectly and by iterating length units. *1.*
- 1.MD.A.1, 1.MD.A.2*
9. Tell and write time. *1.*
- MD.B.3*
10. Represent and interpret data. *1.*
- MD.C.4*

Geometry

11. Reason with shapes and their attributes. *1.*
- G.A.1, 1.G.A.2, 1.G.A.3*

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them. *SMP1*
2. Reason abstractly and quantitatively. *SMP2*
3. Construct viable arguments and critique the reasoning of others. *SMP3*
4. Model with mathematics. *SMP4*
5. Use appropriate tools strategically. *SMP5*
6. Attend to precision. *SMP6*
7. Look for and make use of structure. *SMP7*
8. Look for and express regularity in repeated reasoning. *SMP8*

Scope and Sequence

Unit 1: Numbers to 10 (Trimester 1)

Students will get the foundation to compose and decompose numbers to 10 using part / whole analysis, number bonds, counting objects in sets, counting on and counting back, as well as developing the inverse relationship between addition and subtraction.

Unit 2: Measurement and Geometry (Trimesters 1 and 2)

In this unit, students will investigate and understand the differences between plane and solid shapes, and the attributes that make up both. They will also learn how to break apart a shape into equal portions, using the vocabulary of half, fourths, and quarters. Students will also practice telling time to the hour and half-hour. Basic charts and graphs are introduced, as well as collecting simple data.

Unit 3: Numbers to 120 (Trimester 2)

In this unit, students will be asked to count, compare, and order numbers to 120, as well as match a number to their written word. Place value is explored by introducing “tens” and “ones.” These place values are used to begin to break apart numbers, using “bundles” of tens and place value blocks and charts.

Unit 4: Addition and Subtraction Strategies and Word Problems (Trimester 3)

Using strategies, students will learn ways to add and subtract numbers to 20. Place value charts, number bonds, and manipulatives will be used until full understanding is met. Various mental addition and subtraction strategies will also be explored. Students will also use these strategies to solve addition and subtraction word problems.

Unit 5: Addition and Subtraction to 100 & Money (Trimester 3)

In this unit, students will add and subtract numbers to 100 and explore coin amounts. Students will use their knowledge of place value, tens, and ones to break down these numbers. Using these breakdowns, students will learn ways to add and subtract these numbers. Place value charts, number bonds, and manipulatives will be used until full understanding is met. Students will also explore coin values. Students will begin regrouping with addition after they have mastered these mental math strategies. They will begin to explore subtraction strategies in preparation for 2nd grade when they use regrouping to solve subtraction problems with larger numbers.

Assessments

Evaluation of student achievement in this course will be based on the following:

- a. Observational data collected by teachers as students are learning
- b. Formative assessments given by teachers to gauge progress toward each standard
- c. Math standards-based report card rubrics
- d. Districtwide Trimester math assessments

Curriculum Resources

Instructional Resources:

Math in Focus: Grade One

Number Talks: Whole Number Computation, Grades K-5

Math in Practice: Teaching First-Grade Math

Math in Practice: A Guide for Teachers

Additional Technology Resources:

NC Lessons for Learning: <http://tools4ncteachers.com/first-grade/>

Georgia Lessons for Grade 1: <https://www.georgiastandards.org/Georgia-Standards/Pages/Math-K-5.aspx>

Illustrative Mathematics: www.illustrativemathematics.org

Home and School Connection

The following are suggestions and/or resources that will help parents support their children:

- Educational games:
 - <https://www.abcya.com/grades/1/numbers>
 - <http://www.sheppardsoftware.com/math.htm>
- Tutorials:
 - Learnzillion (how-to videos, search by topic):
<https://learnzillion.com/resources/99913-math-instructional-videos/>
- Other parent resources:
 - YouCubed parent resources: <https://www.youcubed.org/resource/parent-resources/>
 - Table Talk Math parent resources:
<https://www.tabletalkmath.com/resources.html>