

Pequannock Township School District Curriculum Syllabus

Mathematics Grade 3

Course Description:

In this third grade mathematics course, students will gain a deep understanding and strong foundation in mathematics. They will develop number sense while also gaining fluency in addition and subtraction. Students' understanding of place value will deepen as they explore methods of adding and subtracting numbers up to 10,000, which include the use of estimation and mental math. Students will begin their study of fractions with a strong foundation, which includes the concepts of ordering fractions and equivalent fractions. Topics such as time, money, length, measurement, and data interpretation will also be understood at a higher level than previous years. Students will also explore topics such as congruence and symmetry as they explore types of polygons. Problem solving and 21st century skills will be used throughout the course to keep mathematics relevant to students' real world experiences.

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 multiplication and division.
3.OA.A.1, 3.OA.A.2, 3.OA.A.3, 3.OA.A.4
2. Understand properties of multiplication and the relationship between multiplication and division.
3.OA.B.5, 3.OA.B.6
3. Multiply and divide within 100.
3.OA.C.7
4. Solve problems involving the four operations, and identify and explain patterns in arithmetic.
3.OA.D.8, 3.OA.D.9

Number & Operations in Base Ten

5. Use place value understanding and properties of operations to perform multi-digit arithmetic.
3.NBT.A.1, 3.NBT.A.2, 3.NBT.A.3

Number & Operations -- Fractions

6. Develop understanding of fractions as numbers.
3.NF.A.1, 3.NF.A.2, 3.NF.A.2a-b, 3.NF.A.3, 3.NF.A.3a-d

Measurement & Data

7. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
3.MD.A.1, 3.MD.A.2
8. Represent and interpret data. 3.
MD.B.3, 3.MD.B.4
9. Understand concepts of area and relate area to multiplication and to addition. 3.
MD.C.5, 3.MD.C.5 a-b, 3.MD.C.6, 3.MD.C.7, 3.MD.C.7a-d
10. Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. 3.
MD.D.8

Geometry

11. Reasons with shapes and their attributes. 3.
G.A.1, 3.G.A.2

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

<p>Unit 1: Introduction to Multiplication and Division (Trimester 1)</p> <p>Students build fluency with their multiplication and division facts with 100. They use properties of multiplication and division to extend their understanding of the two operations. Students represent and solve problems involving multiplication and division.</p>
<p>Unit 2: Multiplication and Division & Geometry, Area and Perimeter of Shapes (Trimesters 1 and 2)</p> <p>Students build fluency with their multiplication and division facts with 100. They use properties of multiplication and division to extend their understanding of the two operations. Students represent and solve problems involving multiplication and division.</p>

Students then learn to classify polygons and use the names given to special polygons and quadrilaterals. They also learn about the concepts of perimeter and area. Finally, they will notice the difference in finding perimeter and area and use counting to determine perimeter and area of various shapes.

Unit 3: Exploring Fractions (Trimester 2)

Students use their understanding of multiplication and use bar models to solve two-step word problems involving multiplication and division. Students use their understanding of fractions to represent parts of a whole, point or distances on a number line and parts of a set. They identify equivalent fractions and use reasoning to compare fractions that have the same numerator or the same denominator.

Unit 4: Time, Measurement, and Graphs (Trimesters 2 and 3)

Students will recognize and record time and temperature. Students will recognize the need for units of measure (length, mass and volume) and using measurement tools in real-world scenarios. Students will familiarize themselves with these tools. They will interpret data and record data using a line plot and bar graphs.

Unit 5: Addition and Subtraction (Trimester 3)

Students learn how to count, read, and write numbers up to 10,000. Their number sense is built using place-value concepts and by learning to round to the nearest ten or hundred. Students learn to add and subtract two 4-digit numbers to 10,000 with or without regrouping, while being introduced to greater numbers. They learn how to solve word problems by applying addition concepts and subtraction concepts to solve two-step word problems on addition and subtraction.

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: Grades Two and Three

Number Talks: Whole Number Computation, Grades K-5

Math in Practice: Teaching Third-Grade Math

Math in Practice: A Guide for Teachers

Additional Technology Resources:

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

Georgia Lessons for Grade 3: <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/3/numbers>
 - <http://www.sheppardsoftware.com/math.htm>
- Tutorials:
 - Kahn Academy (how-to videos and practice problems): <https://www.khanacademy.org/math/cc-third-grade-math>
 - 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>