

PETERS TOWNSHIP SCHOOL DISTRICT

CORE BODY OF KNOWLEDGE MATH GRADE 3

For each of the sections that follow, students may be required to understand, apply, analyze, evaluate or create the particular concepts being taught.

COURSE DESCRIPTION This course focuses on Operations and Algebraic Thinking, Number and Operations in Base Ten, Number and Operations – Fractions, Measurement and Data, and Geometry Concepts. Students will learn and use the 8 Standards for Mathematical Practices: make sense of problems and persevere in solving them, reason abstractly and quantitatively, construct viable arguments and critique the reasoning of others, model with mathematics, use appropriate tools strategically, attend to precision, look for and make use of structure, and look for and express regularity in repeated reasoning.

STUDY SKILLS:

- **Complete nightly assignments.**
- **Practice math facts.**
- **Participate in class and in groups.**
- **Self-assess throughout lessons.**
- **Utilize graphic organizers.**
- **Maintain assignment book and materials.**
- **Acquire new vocabulary.**
- **Ask for help.**
- **Independently read directions.**
- **Utilize the 21st Century Skills**
 - **Communication**
 - **Collaboration,**
 - **Creativity**
 - **Technology**

MAJOR UNIT THEMES:

1. Numeration

- **Representing Numbers**
- **Understanding Number Lines**
- **Counting on the Number Line**
- **Finding the Halfway Number**
- **Rounding**
- **Problem Solving – Make an Organized List**

2. Number Sense: Addition and Subtraction

- **Addition Meaning and Properties**

- **Subtraction Meanings**
- **Using Mental Math to Add**
- **Using Mental Math to Subtract**
- **Estimating Sums**
- **Estimating Differences**
- **Problem Solving – Reasonableness**

3. Using Place Value to Add and Subtract

- **Adding with an Expanded Algorithm**
- **Models for Adding 3-Digit Numbers**
- **Adding 3-Digit Numbers**
- **Adding 3 or More Numbers**
- **Subtracting with an Expanded Algorithm**
- **Models for Subtracting 3-Digit Numbers**
- **Subtracting 3-Digit Numbers**
- **Subtracting Across Zero**
- **Making Sense of Addition Equations**
- **Making Sense of Subtraction Equations**
- **Adding and Subtracting**
- **Problem Solving – Draw a Picture and Write a Number Sentence**

4. Meanings of Multiplication

- **Multiplication as Repeated Addition**
- **Arrays and Multiplication**
- **The Commutative Property**
- **Writing Multiplication Stories**
- **Problem Solving – Writing to Explain**

5. Multiplication Facts: Use Patterns

- **2 and 5 as Factors**
- **9 as a Factor**
- **Multiplying with 0 and 1**
- **Patterns for Facts**
- **10 as a Factor**
- **Multiplying by Multiples of 10**
- **Problem Solving – Two-Question Problems**

6. Multiplication Facts: Use Known Facts

- **The Distributive Property**
- **3, 4, 6, 7 and 8 as a Factor**
- **Multiplying with 3 Factors**
- **Multiplication Facts**
- **Multiplying to Find Combinations**
- **Problem Solving – Multiple-Step Problems**

7. Meanings of Division

- **Division as Sharing**
- **Division as Repeated Subtraction**
- **Finding Missing Numbers in a Multiplication Table**
- **Writing Division Stories**
- **Problem Solving – Choose an Appropriate Equation – Use Objects and Draw a Picture**

8. Division Facts

- **Relating Multiplication and Division**
- **Fact Families with 2, 3, 4, 5, 6, 7, 8, and 9**
- **Making Sense of Multiplication and Division Equations**
- **Dividing with 0 and 1**
- **Multiplication and Division Facts**
- **Problem Solving – Multiple-Step Problems – Draw a Picture and Write a Number Sentence**

9. Understanding Fractions

- **Dividing Regions into Equal Parts**
- **Fractions and Regions**
- **Fractions and Sets**
- **Fractional Parts of a Set**
- **Fraction Number Lines**
- **Locating Fractions on the Number Line**
- **Fractions and Length**
- **Problem Solving – Writing to Explain**

10. Fraction Comparison and Equivalence

- **Using Models to Compare Fractions: Same Denominator**
- **Using Models to Compare Fractions: Same Numerator**
- **Using Fractions**
- **Comparing Fractions on the Number Line**
- **Finding Equivalent Fractions**
- **Equivalent Fractions and the Number Line**
- **Whole Numbers and Fractions**
- **Problem Solving – Draw a Picture**

11. Two-Dimensional Shapes and Their Attributes (Geometry)

- **Polygons**
- **Quadrilaterals**
- **Classifying Shapes**
- **Problem Solving – Make and Test Generalizations – Solve a Simpler Problem**

12. Time Measurement

- **Time to the Half Hour and Quarter Hour**
- **Time to the Minute**
- **Elapsed Time**
- **Problem Solving – Work Backward**

13. Perimeter Measurement

- **Understanding Perimeter**
- **Perimeter of Common Shapes**
- **Perimeter and Unknown Side Lengths**
- **Different Shapes with the Same Perimeter**
- **Problem Solving – Solve a Simpler Problem and Make a Table**

14. Area Measurement

- **Covering Regions**
- **Area and Units**
- **Standard Units**
- **Area of Squares and Rectangles**
- **Area and the Distributive Property**
- **Area of Irregular Shapes**
- **Different Area, Same Perimeter**
- **Same Area, Different Perimeter**
- **Equal Areas and Fractions**
- **Problem Solving – Solve a Simpler Problem – Selecting Appropriate Measurement Units and Tools**

15. Liquid Volume and Mass Measurement

- **Metric Units of Capacity**
- **Measuring Capacity**
- **Units of Mass**
- **Measuring Mass**
- **Problem Solving – Draw a Picture**

16. Data

- **Line Plots**
- **Length and Line Plots**
- **Reading Pictographs and Bar Graphs**
- **Making Pictographs**
- **Ming Bar Graphs**
- **Problem Solving – Use Table and Graphs to Draw Conclusions**

MATERIALS

- **enVision Math Common Core – Realize Edition**
- **Online Web**

September 2014