DELAWARE VALLEY SCHOOL DISTRICT

# PLANNED INSTRUCTION

## A PLANNED COURSE FOR:

## Mathematics

## Grade Level: 5

**Date of Board Approval: 2017**

**DELAWARE VALLEY SCHOOL DISTRICT**

# Planned Instruction

## Title of Planned Instruction: Grade 5 Mathematics

## Subject Area: Mathematics Grade: 5

**Course Description:**

Grade 5 Mathematics focuses on (1) understanding and applying place value concepts (2) developing fluency with adding, subtracting, multiplying and dividing whole numbers, decimals and fractions (3) applying problem-solving strategies (4) applying algebraic and geometric concepts (5) reading, interpreting and analyzing data (6) developing an understanding of volume

**Time/Credit for the Course:** 1 Year

**Curriculum Writing Committee:** Gail Atchinson; Kelly Salus; Christine Towle

**DELAWARE VALLEY SCHOOL DISTRICT**

# Curriculum Map

1. **Marking Period One**
   Place Value, Multiplication and Expressions (17 Days)
   Divide Whole Numbers (14 Days)
   Add and Subtract Decimals (12 Days)
   * Classroom Diagnostic Tool (2 Days)

2. **Marking Period Two**
   Add and Subtract Decimals (5 Days)
   Multiply Decimals (13 Days)
   Divide Decimals (9 Days)
   Add and Subtract Fractions with Unlike Denominators (15 Days)
   Multiply Fractions (3 Days)

3. **Marking Period Three**
   Multiply Fractions (12 Days)
   Divide Fractions (10 Days)
   Algebra: Patterns and Graphing (8 Days)
   Convert Units of Measure (7 Days)
   Geometry and Volume (6 Days)
   * Classroom Diagnostic Tool (2 Days)

4. **Marking Period Four**
   Geometry and Volume (6 Days)
   Getting Ready for Grade 6
   - Median and Mode (3 Days)
   - Finding the Average (3 Days)
   - Model Percent (3 Days)
   - Relate Decimals and Percent's (3 Days)
   - Fractions, Decimals, and Percent's (3 Days)
   - Ratios (4 Days)
   - Equivalent Ratios (4 Days)
   - Rates (4 Days)
   - Understanding Integers (2 Days)
   - Write and Evaluate Expressions (3 Days)
   - Understand Inequalities (4 Days)

   * PSSAs (3 Days)

**DELAWARE VALLEY SCHOOL DISTRICT**

# Curriculum Plan

**Mathematical Standard Areas:**
Numbers and Operations (Numbers and Operations in Base Ten)
Algebraic Concepts (Operations and Algebraic Thinking)

**Standards Addressed:**
CC.2.1.5. B.1; CC.2.1.5. B.2; CC.2.2.5. A.1

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Apply place-value concepts to show an understanding of operations as they pertain to whole numbers
Extend an understanding of operations with whole numbers to perform operations
Interpret and evaluate numerical expressions using order of operations.

**Objectives:**

Students will be able to:

- Recognize the 10 to 1 relationship among place-value positions. (DOK Level 1)
- Read and write whole numbers through hundred million. (DOK Level 1)
- Write and evaluate repeated factors in exponent form. (DOK Level 2)
- Multiply by 1- and 2-digit numbers using properties and a standard algorithm. (DOK Level 1)
- Use multiplication to solve division problems. (DOK Level 2)
- Use the strategy solve a simpler problem to solve problems. (DOK Level 2)
- Write numerical expressions and evaluate numerical expressions using order of operations. (DOK Level 2)

# DELAWARE VALLEY SCHOOL DISTRICT

**Mathematical Standard Areas:**
Numbers and Operations (Numbers and Operations in Base Ten)

**Standards Addressed:**
CC.2.1.5. B.1; CC.2.1.5. B.2

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Apply place-value concepts to show an understanding of operations and rounding as they pertain to whole numbers
Extend an understanding of operations with whole numbers to perform operations

**Objectives:**

Students will be able to:

- Divide 3- and 4-digit dividends by 1-digit divisors using a variety of strategies. (DOK Level 1)
- Divide by 2-digit divisors using base-ten blocks, place value, and other strategies. (DOK Level 2)
- Estimate quotients using compatible numbers. (DOK Level 2)
- Solve division problems and decide when to write a remainder as a fraction. (DOK Level 3)
- Solve problems by using the strategy draw a diagram. (DOK Level 3)

# DELAWARE VALLEY SCHOOL DISTRICT

**Mathematical Standard Areas:**
Numbers and Operations (Numbers and Operations in Base Ten)
Algebraic Concepts (Operations and Algebraic Thinking)

**Standards Addressed:**
CC.2.1.5. B.1; CC.2.1.5. B.2; CC.2.2.5. A.4

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Apply place-value concepts to show an understanding of operations and rounding as they pertain to and decimals.
Extend an understanding of operations with whole numbers to perform operations including decimals.
Analyze patterns and relationships using two rules.

**Objectives:**

Students will be able to:

- Model, read, and write decimals to thousandths. (DOK Level 1)
- Compare and order decimals to thousandths using place value. (DOK Level 2)
- Round decimals to any place. (DOK Level 2)
- Add and subtract decimals using base-ten blocks and place value. (DOK Level 2)
- Make reasonable estimates of decimal sums and differences. (DOK Level 2)
- Identify, describe, and create numerical patterns with decimals. (DOK Level 2)
- Solve problems using the strategy make a table. (DOK Level 3)

# DELAWARE VALLEY SCHOOL DISTRICT

**Mathematical Standard Areas:**
Numbers and Operations (Numbers and Operations in Base Ten)
Algebraic Concepts (Operations and Algebraic Thinking)

**Standards Addressed:**
CC.2.1.5. B.1; CC.2.1.5. B.2; CC.2.2.5. A.4

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Apply place-value concepts to show an understanding of operations as they pertain to whole numbers and decimals.
Extend an understanding of operations with whole numbers to perform operations including decimals.
Analyze patterns and relationships using two rules.

**Objectives:**

Students will be able to:

- Multiply a decimal and a whole number using drawings and place value. (DOK Level 1)
- Solve problems using the strategy draw a diagram to multiply money. (DOK Level 2)
- Multiply decimals using drawings and place value. (DOK Level 2)

# DELAWARE VALLEY SCHOOL DISTRICT

**Mathematical Standard Areas:**
Numbers and Operations (Numbers and Operations in Base Ten)
Algebraic Concepts (Operations and Algebraic Thinking)

**Standards Addressed:**
CC.2.1.5. B.1; CC.2.1.5. B.2; CC.2.2.5. A.4

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Apply place-value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.
Extend an understanding of operations with whole numbers to perform operations including decimals.
Analyze patterns and relationships using two rules.

**Objectives:**

Students will be able to:

- Estimate decimal quotients. (DOK Level 2)
- Divide decimals by whole numbers using drawings and place value. (DOK Level 2)
- Model division by decimals using drawings and place value. (DOK Level 2)
- Solve multistep decimal problems using the strategy work backward. (DOK Level 3)

# DELAWARE VALLEY SCHOOL DISTRICT

**Mathematical Standard Areas:**
Numbers and Operations (Numbers and Operations - Fractions)
Algebraic Concepts (Operations and Algebraic Thinking)

**Standards Addressed:**
CC.2.1.5. C.1; CC.2.2.5. A.4

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Use the understanding of equivalency to add and subtract fractions.
Analyze patterns and relationships using two rules.

**Objectives:**

Students will be able to:

- Add fractions with unlike denominators using models, drawings, properties, and equivalent fractions. (DOK Level 2)
- Subtract fractions with unlike denominators using models, drawings, and equivalent fractions. (DOK Level 2)
- Make reasonable estimates of fraction sums and differences. (DOK Level 2)
- Add and subtract mixed numbers with unlike denominators. (DOK Level 1)
- Identify, describe, and create numerical patterns with fractions. (DOK Level 3)
- Solve problems using the strategy work backward. (DOK Level 3)

# DELAWARE VALLEY SCHOOL DISTRICT

**Mathematical Standard Areas:**
Numbers and Operations (Numbers and Operations - Fractions)

**Standards Addressed:**
CC.2.1.5. C.2

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Apply and extend previous understandings of multiplication and division to multiply fractions.

**Objectives:**

Students will be able to:

- Model to find the fractional part of a group. (DOK Level 2)
- Multiply fractions and whole numbers using models, drawings, and other strategies. (DOK Level 2)
- Multiply fractions using models, drawings, and other strategies. (DOK Level 2)
- Multiply mixed numbers using drawings and other strategies. (DOK Level 2)
- Relate the size of the product compared to the size of one factor when multiplying fractions less than one and greater than one. (DOK Level 3)
- Solve problems using the strategy guess, check, and revise. (DOK Level 3)

# DELAWARE VALLEY SCHOOL DISTRICT

**Mathematical Standard Areas:**
Numbers and Operations (Numbers and Operations - Fractions)

**Standards Addressed:**
CC.2.1.5. C.2

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Apply and extend previous understandings of multiplication and division to divide fractions.

**Objectives:**

Students will be able to:

- Divide a whole number by a fraction and divide a fraction by a whole number using models, drawings, and other strategies. (DOK Level 2)
- Solve problems using the strategy draw a diagram. (DOK Level 3)
- Interpret a fraction as division and solve whole-number division problems that result in a fraction or mixed number. (DOK Level 2)
- Represent division by drawing diagrams and writing story problems and equations. (DOK Level 3)

# DELAWARE VALLEY SCHOOL DISTRICT

**Mathematical Standard Areas:**
Numbers and Operations (Numbers and Operations - Fractions)
Algebraic Concepts (Operations and Algebraic Thinking)
Geometry
Measurement, Data, and Probability (Measurement and Data)

**Standards Addressed:**
CC.2.1.5. C.1; CC.2.1.5. C.2; CC.2.2.5. A.4; CC.2.3.5. A.1; CC.2.4.5. A.2; CC.2.4.5. A.4

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Use the understanding of equivalency to add and subtract fractions.
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
Analyze patterns and relationships using two rules.
Graph points in the first quadrant on the coordinate plane and interpret these points when solving real world and mathematical problems.
Represent and interpret data using appropriate scale.
Solve problems involving computation of fractions using information provided in a line plot.

**Objectives:**

Students will be able to:

- Make and use line plots with fractions to solve problems. (DOK Level 3)
- Graph and name points on a coordinate grid using ordered pairs. (DOK Level 1)
- Analyze and display data in a line graph. (DOK Level 3)
- Use two rules to generate a numerical pattern and identify the relationship between the corresponding terms in the patterns. (DOK Level 3)
- Solve problems using the strategy solve a simpler problem. (DOK Level 3)
- Graph the relationship between two numerical patterns on a coordinate grid. (DOK Level 3)

# DELAWARE VALLEY SCHOOL DISTRICT

**Mathematical Standard Areas:**
Measurement, Data, and Probability (Measurement and Data)

**Standards Addressed:**
CC.2.4.5. A.1

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Solve problems using conversions within a given measurement system.

**Objectives:**

Students will be able to:

- Compare, contrast, and convert customary units of length, capacity, and weight. (DOK Level 2)
- Convert measurement units to solve multistep problems. (DOK Level 1)
- Compare, contrast, and convert metric units. (DOK Level 2)
- Solve problems about customary and metric conversions using the strategy make a table. (DOK Level 3)
- Convert units of time to solve elapsed time problems. (DOK Level 1)

# DELAWARE VALLEY SCHOOL DISTRICT

**Mathematical Standard Areas:**
Geometry
Measurement, Data, and Probability (Measurement and Data)

**Standards Addressed:**
CC.2.3.5. A.2; CC.2.4.5. A.5

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Classify two-dimensional figures into categories based on an understanding of their properties. Apply concepts of volume to solve problems and relate volume to multiplication and to addition.

**Objectives:**

Students will be able to:

- Classify and compare polygons, triangles, and quadrilaterals using their properties. (DOK Level 3)
- Solve problems using the strategy act it out and make a table. (DOK Level 3)
- Identify, describe, and classify three-dimensional figures. (DOK Level 2)
- Understand unit cubes and how they can be used to build a solid figure. (DOK Level 2)
- Estimate volume of a rectangular prism and find the volume of a rectangular prism by counting unit cubes and using a formula. (DOK Level 2)
- Find the volume of combined rectangular prisms. (DOK Level 3)

# DELAWARE VALLEY SCHOOL DISTRICT

**Mathematical Standard Areas:**
Measurement, Data, and Probability (Statistics and Probability)
Numbers and Operations (Ratios and Proportional Relationships); (The Number System)
Algebraic Concepts (Expressions and Equations)

**Standards Addressed:**
CC.2.4.6. B.1; CC.2.1.6. D.1; CC.2.1.6. E.4; CC.2.2.6. B.1; CC.2.2.6. B.2

Link to Standards in SAS
http://static.pdesas.org/content/documents/PA%20Core%Standards%20Mathematics%20PreK-12%20March%202014.pdf

**Goals:**

Demonstrate an understanding of statistical variability by displaying, analyzing, and summarizing distributions.
Understand ratio concepts and use ratio reasoning to solve problems.
Apply and extend previous understandings of numbers to the system of rational numbers.
Apply and extend previous understandings of arithmetic to algebraic expressions.
Understand the process of solving a one-variable equation or inequality and apply it to real-world and mathematical problems.

**Objectives:**

Students will be able to:

- Summarize a data set by using median and mode (DOK Level 1)
- Find the average of a group of values (DOK Level 1)
- Express real world quantities as percent's and use them to solve problems (DOK Level 2)
- Express decimals as percent's and percent's as decimals (DOK Level 1)
- Convert between fractions, decimals, and percent's (DOK Level 2)
- Express real world quantities as ratios (DOK Level 2)
- Determine if two ratios are equivalent (DOK Level 2)
- Find rates and unit rates (DOK Level 2)
- Understand positive and negative numbers and use them to represent real world quantities (DOK Level 1)
- Write and evaluate expressions (DOK Level 2)
- Understand inequalities and use them to solve problems (DOK Level 3)

# DELAWARE VALLEY SCHOOL DISTRICT

**Assessments: See District Assessment Plan**

Core Program Assessments

Classroom Diagnostic Tool

STAR Math

Basic Fact Fluency Assessments

**Extensions:**

Core Program Enrichment/Extension Activities

Study Island

KhanAcademy

SMARTExchange

www.commoncoresheets.com

**Correctives:**

Core Program Reteach/Remediation Activities

Study Island

KhanAcademy

SMARTExchange

www.commoncoresheets.com

**Materials and Resources:**

Core Program Activities

Rocket Math

Study Island

KhanAcademy

SMARTExchange

www.commoncoresheets.com

PDE Mathematics Item and Scoring Sampler

www.pdesas.org

www.drcedirect.com