

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Mathematics Grade 6
Course Number: 00203
Course Prerequisites: Completion of Mathematics Grade 5

Course Description: In Mathematics Grade 6, instructional time will focus on five critical areas: (1) Connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) Completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) Writing, interpreting, and using expressions and equations; (4) Solving area, surface area, and volume problems, and (5) developing understanding of statistical thinking. Students will be provided the opportunity to take two district assessments at the end of the school year. Students achieving successful scores based on the district required benchmark will be offered enrollment into Advanced Mathematics 7. Students will take the Grade 6 PSSA Math Exam. District marking period assessments are required.

Suggested Grade Level: Grade 6

Length of Course: Two Semesters

Units of Credit: 1

PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:

CSPG #50 Mathematics (7-12), CSPG #53 Middle Level Mathematics (6-9),

CSPG #70 Grades 4-8 (All Subjects 4-6, Mathematics 7-8),

To find the CSPG information, go to [CSPG](#)

Certification verified by the WCSD Human Resources Department: Yes No

WCSD STUDENT DATA SYSTEM INFORMATION

Course Level: Academic

Mark Types: Check all that apply.

F – Final Average MP – Marking Period EXM – Final Exam

GPA Type: GPAEL-GPA Elementary GPAML-GPA for Middle Level NHS-National Honor Society

UGPA-Non-Weighted Grade Point Average GPA-Weighted Grade Point Average

State Course Code: 02036

To find the State Course Code, go to [State Course Code](#), download the Excel file for SCED, click on SCED 6.0 tab, and choose the correct code that corresponds with the course.

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TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:

Title: *enVisionmath 2.0 Grade 6*
Publisher: SAVVAS Learning Company LLC.
ISBN #: 978-0-328-88090-4
Copyright Date: 2017
WCSD Board Approval Date: 6/29/2020

Supplemental Materials: Kuta Software, Get More Math, SAS pdesas.org, Brainfuse, IXL, Calculator: TI-30XIIS, Online Calculator: DESMOS

Curriculum Document

WCSD Board Approval:

Date Finalized: 5/22/2023
Date Approved: 6/12/2023
Implementation Year: 2023-2024

SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student’s Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

SCOPE AND SEQUENCE OF CONTENT, AND CONCEPTS

Marking Period 1: Positive Rational Numbers, Integers and Rational Numbers, and Numeric and Algebraic Expressions

- Fluent Operation with Decimals:
 - Sum and Difference
 - Product and Quotient
- Operations with Fractions:
 - Product
 - Quotient
- Rational Number Problem Solving
- Understand Integers
- Rational Numbers on the Number Line
- Absolute Value of Rational Numbers
- Coordinate Plane:
 - Rational Numbers
 - Distances
 - Polygons
- Exponents: Understanding, Representation
- Greatest Common Factor and Least Common Multiple
- Numerical Expressions: Write, Evaluate
- Algebraic Expressions: Write, Evaluate
- Equivalent Expressions
- Simplification of Algebraic Expressions
- **Marking Period 1 Review and Assessment**

Marking Period 2: Equations and Inequalities and Ratios, Rates, and Unit Rates

- Solutions of Equations
- Properties of Equality
- One-Step Equations:
 - Addition and Subtraction
 - Multiplication and Division
 - Rational Numbers: Fractions and Decimals
- Understanding Inequalities to Write and Solve
- 4-8 Dependent and Independent Variables
- 4-9 Patterns to Write and Solve Equations
- 4-10 Relationships of Tables, Graphs, and Equations
- 5-1 – 5-4 Ratios: Understanding, Equivalent, Comparison, Representations, Graph
- 5-5 – 5-7 Unit Rates: Understanding, Comparison, Problem Solving
- 5-8 – 5-9 Ratio Reasoning: Conversion of Customary Units, Conversion of Metric Units
- 5-10 Relationships between Customary and Metric Units
- **Marking Period 2 Review and Assessment**

Marking Period 3: Percent, Geometry, and Statistical Data and Displays

- 6-1 Understanding Percent
- 6-2 Relationships with Fractions, Decimals, and Percent
- 6-3 Representation of Percent Greater Than 100 or Less Than 1
- 6-4 Estimation to Find Percent
- 6-5 Percent of a Number
- 6-6 Whole Given a Part and the Percent
- Area:
 - Parallelograms and Rhombuses
 - Triangles
 - Trapezoids and Kites
 - Polygons
- 7-5 Nets of Solid Figures
- 7-6 Surface Area of Prisms
- 7-8 Volumes of Prisms
- 8-1 Statistical Questions
- 8-2 Data Summaries: Measures of Center, Range
- 8-3 – 8-4 Statistical Displays
- **Marking Period 3 Review and Assessment**

Marking Period 4: Statistics: Measures and Distribution, Grade 6 PSSA Math Preparation and Assessment, Mathematics Grade 7 Preparation, and Mathematics Placement Exams for Advanced Math 7

- 8-5 Data Summaries: Measures of Variability
- 8-6 Appropriate Statistical Measures
- 8-7 Data Distribution Summaries
- **Grade 6 PSSA Math Preparation and Assessment:**
 - Review and demonstrate knowledge of The Number System
 - Review and demonstrate knowledge of Ratios and Proportional Relationships
 - Review and demonstrate knowledge of Expressions and Equations
 - Review and demonstrate knowledge of Geometry
 - Review and demonstrate knowledge of Statistics
- Mathematics Grade 7 Preparation:
 - Integers on the Number Line
 - Operations with Integers
- Mathematics Placement Exams for Advanced Math 7
- **Marking Period 4 Review and Assessment**

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PLANNED INSTRUCTION

Standards/Eligible Content and Skills

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Fluently add, subtract, multiply, and divide decimals	M06.A-N.2.1 M06.A-N.2.1.1	MP1
Fluently divide whole numbers and decimals	M06.A-N.2.1 M06.A-N.2.1.1	MP1
Solve real-world and mathematical problems involving operations with decimals	M06.A-N.2.1.1	MP1
Multiply fractions	M06.A-N.1.1.1	MP1
Understand and divide with fractions	M06.A-N.1.1.1	MP1
Divide mixed numbers	M06.A-N.1.1.1	MP1
Solve real-world and mathematical problems with rational numbers	M06.A-N.1.1	MP1
Solve multi-step problems with fractions and decimals	M06.A-N.1.1	MP1
Define integers and opposites	M06.A-N.3.1 M06.A-N.3.1.1 M06.A-N.3.1.2	MP1
Compare and order integers	M06.A-N.3.1.3	MP1
Use integers to represent quantities	M06.A-N.3.1.1	MP1
Represent rational numbers on the number line	M06.A-N.3.1.3	MP1
Understand, compare, and order rational numbers	M06.A-N.3.2 M06.A-N.3.2.1	MP1
Interpret rational numbers in real-world contexts	M06.A-N.3.2.1	MP1
Describe quantities using absolute value	M06.A-N.3.2.2	MP1
Find and interpret absolute value	M06.A-N.3.2.2	MP1
Graph points with integer coordinates	M06.A-N.3.1.3 M06.A-N.3.2.3	MP1
Locate and identify points with rational coordinates	M06.A-N.3.1.3 M06.A-N.3.2.3	MP1
Reflect points across the axes	M06.A-N.3.2.3	MP1
Find horizontal and vertical distance on the coordinate plane	M06.A-N.3.1.3	MP1
Solve problems involving distance on the coordinate plane	M06.A-N.3.2.3	MP1
Find the perimeter of a rectangle	M06.A-N.3.2.3	MP1
Find the perimeter of an irregular polygon	M06.A-N.3.2.3	MP1
Apply distance to Geometry	M06.A-N.3.2.3 M06.B-E.1.1.1	MP1
Understand and represent exponents	M06.A-N.2.2 M06.B-E.1.1.1	MP1
Evaluate exponents	M06.A-N.2.2 M06.B-E.1.1.1	MP1
Evaluate expressions with exponents	M06.A-N.2.2 M06.B-E.1.1.1	MP1

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Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Find the prime factorizations of a number	M06.A-N.2.2.1 M06.B-E.1.1.1	MP1
Find the Greatest Common Factor (GCF) of two numbers	M06.A-N.2.2.1	MP1
Use the Greatest Common Factor (GCF) and the Distributive Property to find the sum of two numbers	M06.A-N.2.2.1 M06.A-N.2.2.2	MP1
Find the Least Common Multiple (LCM) of Two Numbers	M06.A-N.2.2.1	MP1
Use the Order of Operations to evaluate numerical expressions with decimals and fractions	M06.B-E.1.1	
Insert grouping symbols in a numerical expression	M06.B-E.1.1.3	MP1
Write algebraic expressions	M06.B-E.1.1.2	MP1
Identify parts of an expression	M06.B-E.1.1.3	MP1
Evaluate algebraic expressions: With Whole Numbers, With Decimals, With Fractions	M06.A-N.1.1.1 M06.A-N.2.1.1 M06.B-E.1.1.4 M06.B-E.2.1.2	MP1
Write equivalent expressions	M06.B-E.1.1.5	MP1
Identify equivalent expressions	M06.B-E.2.1.1	MP1
Justify equivalent expressions using substitution	M06.B-E.2.1.1	MP1
Simplify algebraic expressions: With Combining Like Terms, With Fractions, With Parentheses, With Decimals	M06.B-E.1.1.5	MP1
Marking Period 1 Review and Assessment		MP1
<ul style="list-style-type: none"> Review and demonstrate knowledge of Positive Rational Numbers 		MP1
<ul style="list-style-type: none"> Review and demonstrate knowledge of Integers and Rational Numbers 		MP1
<ul style="list-style-type: none"> Review and demonstrate knowledge of Numeric and Algebraic Expressions 		MP1
Determine whether a value is a solution of an equation	M06.B-E.2.1.1	MP2
Use substitution to show no values are a solution	M06.B-E.2.1.1	MP2
Define properties of equality	M06.B-E.1.1.5	MP2
Apply multiplication and division properties of equality	M06.B-E.2.1.3	MP2
Apply addition and subtraction properties of equality	M06.B-E.2.1.3	MP2
Write and solve addition and subtraction equations	M06.B-E.2.1.3	MP2
Solve real-world and mathematical problems using addition and subtraction equations	M06.B-E.2.1.3	MP2
Write and solve multiplication equations	M06.B-E.2.1.3	MP2
Write and solve division equations: For the Dividend, For the Divisor	M06.A-N.1.1.1 M06.B-E.2.1.3	MP2
Solve real-world and mathematical problems using multiplication and division equations	M06.A-N.1.1.1 M06.B-E.2.1.3	MP2

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Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Solve addition, subtraction, multiplication, and division equations with fractions	M06.A-N.1.1.1 M06.B-E.2.1.3	MP2
Solve addition, subtraction, multiplication, and division equations with decimals	M06.A-N.1.1.1 M06.B-E.2.1.3	MP2
Solve real-world and mathematical problems using addition, subtraction, multiplication, and division equations with rational numbers	M06.A-N.1.1.1 M06.B-E.2.1.3	MP2
Understand inequalities	M06.B-E.2.1.4	MP2
Write inequalities	M06.B-E.2.1.4	MP2
Graph solutions of an inequality	M06.B-E.2.1.4	MP2
Graph to solve an inequality	M06.B-E.2.1.4	MP2
Substitute to solve an inequality	M06.B-E.2.1.4	MP2
Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world and mathematical problem	M06.B-E.2.1.4	MP2
Understand and identify dependent and independent variables	M06.B-E.3.1	MP2
Find a pattern to write an equation	M06.B-E.3.1.1	MP2
Make an analyze a table to write an equation	M06.B-E.3.1.2	MP2
Relate quantities using a table, a graph, and an equation	M06.B-E.3.1.2	MP2
Relate an equation with two operations to a table and a graph	M06.B-E.3.1.2	MP2
Write ratios to compare quantities	M06.A-R.1.1.1	MP2
Use a data display to solve a ratio problem	M06.A-R.1.1.3	MP2
Find equivalent ratios using multiplication and division	M06.A-R.1.1.2	MP2
Compare ratios	M06.A-R.1.1.3	MP2
Solve real-world and mathematical problems by comparing ratios	M06.A-R.1.1	MP2
Represent and graph ratios	M06.A-R.1.1.3	MP2
Find equivalent rates	M06.A-R.1.1.3	MP2
Compare quantities in two ways	M06.A-R.1.1.1	MP2
Solve real-world and mathematical problems using unit rates	M06.A-R.1.1	MP2
Compare to find the greater and lesser unit rates	M06.A-R.1.1.3	MP2
Solve real-world and mathematical unit rate problems: Constant Speed, Unit Price	M06.A-R.1.1.4	MP2
Use an equation to represent unit rate problems	M06.A-R.1.1.2	MP2
Convert customary units using ratio reasoning: Length, Capacity, Weight	M06.A-R.1.1 CC.2.1.6.D.1	MP2
Convert metric units using ratio reasoning: Length, Capacity, Mass	M06.A-R.1.1 CC.2.1.6.D.1	MP2
Convert from metric units to customary units	M06.A-R.1.1 CC.2.1.6.D.1	MP2

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Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Convert from customary units to metric units	M06.A-R.1.1 CC.2.1.6.D.1	MP2
Marking Period 2 Review and Assessment		MP2
<ul style="list-style-type: none"> Review and demonstrate knowledge of Equations and Inequalities 		MP2
<ul style="list-style-type: none"> Review and demonstrate knowledge of Ratios, Rates, and Unit Rates 		MP2
Understand and use percent	M06.A-R.1.1.5	MP3
Express percent and decimals as parts of a whole	M06.A-R.1.1.5	MP3
Express fractions as parts of a whole	M06.A-R.1.1.5	MP3
Use division with equivalent rates to express fractions as part of a whole	M06.A-R.1.1.5	MP3
Represent percent greater than 100 or less than 1: As a Fraction, As a Decimal	M06.A-R.1.1.5	MP3
Use equivalent fractions to estimate	M06.A-R.1.1.5	MP3
Use rounding and compatible numbers to estimate	M06.A-R.1.1.5	MP3
Estimate and find percent	M06.A-R.1.1.5	MP3
Find the part and percent of a number	M06.A-R.1.1.5	MP3
Find the whole when given a part and the percent	M06.A-R.1.1.5	MP3
Find the whole when the percent is greater than 100	M06.A-R.1.1.5	MP3
Find the whole when the percent is a decimal	M06.A-R.1.1.5	MP3
Find the area of parallelograms and rhombuses	M06.C-G.1.1.1	MP3
Use the area formulas of parallelograms and rhombuses to find measurements: Base, Height	M06.C-G.1.1.1	MP3
Solve real-world and mathematical area problems of parallelograms and rhombuses	CC.2.3.6.A.1	MP3
Identify the corresponding base and height of a triangle to find the area	M06.C-G.1.1.1	MP3
Find the area of a triangle	M06.C-G.1.1.1	MP3
Find the area of a right triangle	M06.C-G.1.1.1	MP3
Solve real-world and mathematical area problems of triangles	CC.2.3.6.A.1	MP3
Find the area of trapezoids and kites	M06.C-G.1.1.1	MP3
Solve real-world and mathematical area problems of trapezoids and kites	CC.2.3.6.A.1	MP3
Find the area of irregular or compound polygons: Decomposition, Composition	M06.C-G.1.1.2	MP3
Find the area of a polygon on the coordinate plane: Triangles, Special Quadrilaterals	M06.C-G.1.1.4	MP3
Solve real-world and mathematical area problems of irregular and compound polygons	CC.2.3.6.A.1	MP3

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Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Classify solids (3D figures)	M06.C-G.1.1.5	MP3
Identify a solid (3D figure) figure from a net	M06.C-G.1.1.5	MP3
Represent a net of a solid (3D figure)	M06.C-G.1.1.5	MP3
Find the surface area: Rectangular Prism, Cube, Triangular Prism	M06.C-G.1.1.6	MP3
Find the volume of a rectangular prism and cube with fractional edge lengths	M06.C-G.1.1.3	MP3
Solve real-world and mathematical volume problems of rectangular prisms and cubes	CC.2.3.6.A.1	MP3
Understand and recognize a statistical question	M06.D-S.1.1	MP3
Write a statistical question	M06.D-S.1.1	MP3
Use quantitative measures of center to describe a data set: Mean, Median, Mode	M06.D-S.1.1.2	MP3
Use a measure of variability (range) to describe a data set	M06.D-S.1.1.2	MP3
Display numerical data in a box plot	M06.D-S.1.1.1	MP3
Interpret a box plot	M06.D-S.1.1.3	MP3
Display data in frequency tables and histograms	M06.D-S.1.1.1	MP3
Solve real-world and mathematical data problems using frequency tables and histograms	M06.D-S.1.1.3	MP3
Display numerical data on number lines and dot plots	M06.D-S.1.1.1	MP3
Marking Period 3 Review and Assessment		MP3
<ul style="list-style-type: none"> Review and demonstrate knowledge of Percents 		MP3
<ul style="list-style-type: none"> Review and demonstrate knowledge of Geometry 		MP3
<ul style="list-style-type: none"> Review and demonstrate knowledge of Statistics: Data and Displays 		MP3
Find the mean absolute variation and interquartile range to describe variability	M06.D-S.1.1.2	MP4
Use the mean absolute deviation and interquartile range to find the variability of a data set	M06.D-S.1.1.2	MP4
Choose the best measure of center to describe a data set	M06.D-S.1.1.4	MP4
Choose the best measure of variability to describe a data set	M06.D-S.1.1.4	MP4
Summarize data distributions	M06.D-S.1.1.4	MP4
Grade 6 PSSA Math Preparation and Assessment		MP4
<ul style="list-style-type: none"> Review and demonstrate knowledge of the Number System 	M06.A-N.1.1 M06.A-N.2.1 M06.A-N.2.2 M06.A-N.3.1 M06.A-N.3.2	MP4
<ul style="list-style-type: none"> Review and demonstrate knowledge of Ratios and Proportional Relationships 	M06.A-R.1.1	MP4

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<ul style="list-style-type: none"> Review and demonstrate knowledge of Expressions 	M06.B-E.1.1 M06.B-E.2.1	MP4
<ul style="list-style-type: none"> Review and demonstrate knowledge of Equations 	M06.B-E.3.1	MP4
<ul style="list-style-type: none"> Review and demonstrate knowledge of Geometry 	M06.C-G.1.1	MP4
<ul style="list-style-type: none"> Review and demonstrate knowledge of Statistics 	M06.D-S.1.1	MP4
Introduction to 7th Grade		MP4
<ul style="list-style-type: none"> Identify and graph integers on a number line 	M07.A-N.1.1	MP4
<ul style="list-style-type: none"> Add integers 	M07.A-N.1.1	MP4
<ul style="list-style-type: none"> Subtract integers 	M07.A-N.1.1	MP4
<ul style="list-style-type: none"> Multiply integers 	M07.A-N.1.1	MP4
<ul style="list-style-type: none"> Divide integers 	M07.A-N.1.1	MP4
<ul style="list-style-type: none"> Simplify using the order of operations with integers 		
Mathematics Placement Exam: Advanced Math 7		MP4
Marking Period 4 Review and Assessment		MP4
<ul style="list-style-type: none"> Review and demonstrate knowledge of Statistics: Measures and Distribution 		MP4
<ul style="list-style-type: none"> Review and demonstrate knowledge of Integers 		MP4

ASSESSMENTS

PDE Academic Standards, Assessment Anchors, and Eligible Content: The teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

Formative Assessments: The teacher will utilize a variety of assessment methods to conduct in-process evaluations of student learning.

Effective formative assessments for this course include:

Suggested but not limited to:

- Pre-assessments of prior knowledge (e.g., Entrance cards or KWL chart)
- Bellringers/Problems of the Day (PODs)
- Discussions
- Exit ticket
- Teacher observations/Questioning
- Graphic organizers (e.g., Venn Diagrams, word mapping, webbing, KWL chart, etc.)
- Outlining
- Cooperative learning
- Written work
- Quizzes
- Oral response
- Self-evaluation
- Homework
- Summarizing
- Note-taking

Summative Assessments: The teacher will utilize a variety of assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

Effective summative assessments for this course include:

Suggested but not limited to:

- Performance assessment
- Chapter/unit tests
- Quizzes
- Marking period assessments
- Projects
- Student presentations