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.

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
   Date(s) Revised: 6/10/2024
   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

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 horizonal 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

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 containing whole numbers, decimals, and 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: combining like terms, fractions, parentheses, decimals.	M06.B-E.1.1.5	MP1
Marking Period 1 Review and Assessment		**MP1**
• Review and demonstrate knowledge of Positive Rational Numbers.		MP1
• Review and demonstrate knowledge of Integers and Rational Numbers.		MP1
• 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 and 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

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

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**
• Review and demonstrate knowledge of Equations and Inequalities.		MP2
• 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 and 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

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. (No Pyramids)	M06.C-G.1.1.6	MP3
Solve real-world and mathematical surface area problems of triangular and rectangular prisms and cubes.	M06.C-G.1.1.3	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 right rectangular prisms and cubes.	M06.C-G.1.1.3 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.1.1.2	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.1.1.1	MP3
Display numerical data in a box plot.	M06.D-S.1.1.3	MP3
Interpret a box plot.	M06.D-S.1.1.1	MP3
Display data in frequency tables and histograms.	M06.D-S.1.1.3	MP3
Solve real-world and mathematical data problems using frequency tables and histograms.	M06.D-S.1.1.1	MP3
Display numerical data on number lines and dot plots.	M06.D-S.1.1.1	MP3
Marking Period 3 Review and Assessment		**MP3**
• Review and demonstrate knowledge of Percents.		MP3
• Review and demonstrate knowledge of Geometry.		MP3
• 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

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Grade 6 PSSA Math Preparation and Assessment		**MP4**
• 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
• Review and demonstrate knowledge of Ratios and Proportional Relationships.	M06.A-R.1.1	MP4
• Review and demonstrate knowledge of Expressions.	M06.B-E.1.1 M06.B-E.2.1	MP4
• Review and demonstrate knowledge of Equations.	M06.B-E.3.1	MP4
• Review and demonstrate knowledge of Geometry.	M06.C-G.1.1	MP4
• Review and demonstrate knowledge of Statistics.	M06.D-S.1.1	MP4
Introduction to 7th Grade		**MP4**
• Identify and graph integers on a number line.	M07.A-N.1.1	MP4
• Add integers.	M07.A-N.1.1	MP4
• Subtract integers.	M07.A-N.1.1	MP4
• Multiply integers.	M07.A-N.1.1	MP4
• Divide integers.	M07.A-N.1.1	MP4
• Simplify using the order of operations with integers.	M07.A-N.1.1	MP4
Mathematics Placement Exam: Advanced Math 7		**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