WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Mathematics Grade 7
Course Number: 00204
Course Prerequisites: Completion of Mathematics Grade 6

Course Description: In Mathematics Grade 7, instructional time will focus on 5 critical areas: (1) Understanding and applying Proportional relationships; (2) Understanding and applying operations to rational numbers; (3) Creating and solving expressions, equations, and inequalities; (4) Describing and implementing geometric relationships in real world applications; (5) Drawing inferences about populations and developing, using, and evaluating probability models. Students will take the Grade 7 PSSA Math Exam. District marking period assessments are required.

Suggested Grade Level: Grade 7
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,
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: 02037
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 7*
Publisher:	SAVVAS Learning Company LLC.
ISBN #:	978-0-328-88094-2
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: Integers and Rational Numbers, and Proportional Relationships

- Integer Representations
- Rational Number Representations
- Integers: Sum, Difference
- Rational Numbers: Sum, Difference
- Products: Integers, Rational Numbers
- Quotients: Integers, Rational Numbers
- Rational Number Problem Solving
- Ratios, Rates, and Unit Rates
- Proportional Relationships: Equivalent Ratios, Constant of Proportionality
- Graphs of Proportional Relationships
- Proportional Problem Solving
- **Marking Period 1 Review and Assessment**

Marking Period 2: Percent Problems, Expressions, and Equations

- Percents of Numbers
- Percents and Proportions
- Percent Equation
- Percent Change and Percent Error
- Markup and Markdown
- Simple Interest
- Algebraic Expressions: Write, Evaluate, Equivalence
- Simplification of Expressions
- Expressions: Expansion, Factorization
- Expressions: Sum, Difference
- Problem Solving with Expressions
- Two-Step Equations
- **Marking Period 2 Review and Assessment**

Marking Period 3: Inequalities, Statistics, and Probability

- One-Step Inequalities
- Two-Step Inequalities
- Multi-Step Inequalities
- Populations and Samples
- Inferences from Data
- Comparative Inferences about Populations
- Likelihood and Probability
- Theoretical Probability
- Experimental Probability
- Probability Models
- Compound Events
- **Marking Period 3 Review and Assessment**

Marking Period 4: Geometry, Grade 7 PSSA Preparation and Assessment, Pre-Algebra 8 Preparation, and Mathematics Placement Exam(s) for Honors Algebra 1 Grade 8

- Scale Drawings
- Drawings of Geometric Figures
- Triangles
- Geometric Problem Solving: Angle Relationships, Circle Circumference and Area
- Cross Sections
- Problem Solving: Surface Area, Volume
- **Grade 7 PSSA Math Preparation and Assessment**
    - The Number System
    - Ratios and Proportional Relationships
    - Expressions and Equations
    - Geometry
    - Statistics and Probability
- Pre-Algebra Grade 8 Preparation
    - Expressions: Rational Numbers (Additional practice and Enrichment)
    - Equations: (Additional practice and Enrichment)
- Mathematics Placement Exam(s) for Honors Algebra 1 Grade 8

Standards/Eligible Content and Skills

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Relate integers and their opposites.	M07.A-N.1.1.1	MP1
Understand rational numbers.	M07.A-N.1.1.1	MP1
Add Integers.	M07.A-N.1.1.1	MP1
Subtract Integers.	M07.A-N.1.1.1	MP1
Add and subtract rational numbers.	M07.A-N.1.1.1	MP1
Represent addition and subtraction on a horizontal number line or vertical number line.	M07.A-N.1.1.2	MP1
Multiply integers.	M07.A-N.1.1.1	MP1
Multiply rational numbers.	M07.A-N.1.1.3	MP1
Divide integers.	M07.A-N.1.1.1	MP1
Divide rational numbers.	M07.A-N.1.1.3	MP1
Use properties of operations with rational numbers.	M07.A-N.1.1.3	MP1
Solve real-world and mathematical multi-step problems with rational numbers.	M07.A-N.1.1	MP1
Determine the reasonableness of answer(s) and interpret the solution(s) in the context of the problem with multi-step problems with rational numbers.	M07.B-E.2.3.1	MP1
Unit rates: find, use, compare, problem solve.	M07.A-R.1.1.1	MP1
Find unit rates involving fractions.	M07.A-R.1.1.1	MP1
Find and apply unit rates involving fractions.	M07.A-R.1.1.1	MP1
Solve real-world and mathematical problems using unit rates.	M07.A-R.1.1.1	MP1
Recognize proportional relationships.	M07.A-R.1.1.2	MP1
Decide whether quantities are proportional.	M07.A-R.1.1.2	MP1
Solve real-world and mathematical problems with proportions.	M07.A-R.1.1	MP1
Write equations with a constant of proportionality to represent proportional relationships.	M07.A-R.1.1.3 M07.A-R.1.1.4	MP1
Solve real-world and mathematical problems with proportion equations.	M07.A-R.1.1	MP1
Graph to recognize proportional relationships.	M07.A-R.1.1.2 M07.A-R.1.1.3 M07.A-R.1.1.5	MP1
Interpret graphs of proportional relationships.	M07.A-R.1.1.2 M07.A-R.1.1.3 M07.A-R.1.1.5 M07.B-E.2.3.1	MP1
Identify graphs of proportional relationships.	M07.A-R.1.1.2 M07.A-R.1.1.3 M07.A-R.1.1.5	MP1
Use proportional reasoning to solve problems.	M07.A-R.1.1	MP1

Performance Indicator	**PA Core Standard and/or Eligible Content**	**Marking Period Taught**
Recognize when to use proportional reasoning.	M07.A-R.1.1 M07.B-E.2.3.1	MP1
Apply proportional reasoning.	M07.A-R.1.1 M07.B-E.2.3.1	MP1
Marking Period 1 Review and Assessment		**MP1**
• Review and demonstrate knowledge of Integers and Rational Numbers.		MP1
• Review and demonstrate knowledge of Proportional Relationships.		MP1
Find the percent of a number.	M07.A-R.1.1.6	MP2
Use percent greater than 100%.	M07.A-R.1.1.6	MP2
Use percent less than 1%.	M07.A-R.1.1.6	MP2
Use real-world and mathematical problems involving a proportion: to find the percent, to find the part, to find the whole.	M07.A-R.1.1.6	MP2
Use real-world and mathematical problems involving the percent equation: to find the percent, to find the part, to find the whole.	M07.A-R.1.1.4 M07.A-R.1.1.6	MP2
Determine the reasonableness of answer(s) and interpret the solution(s) in the context of the problem involving a proportion or the percent equation.	M07.B-E.2.3.1	MP2
Solve percent change and percent error problems.	M07.A-R.1.1.6	MP2
Find the percent markup.	M07.A-R.1.1.6	MP2
Find the selling price.	M07.A-R.1.1.6	MP2
Find markdown and sales tax.	M07.A-R.1.1.6	MP2
Solve real-world and mathematical problems by applying properties of operations to calculate between numbers in any form.	M07.A-N.1.1 M07.A-R.1.1 M07.B-E.2.1.1	MP2
Determine the reasonableness of answer(s) and interpret the solution(s) in the context of the problem applying properties of operations to calculate between numbers in any form.	M07.B-E.2.3.1	MP2
Apply percent reasoning to solve simple interest problems: simple interest, percent of interest, principal.	M07.A-R.1.1.6 M07.B-E.2.1.1 M07.B-E.2.3.1	MP2
Write and evaluate algebraic expressions.	M07.B-E.1.1.1	MP2
Use properties of operations to write equivalent expressions.	M07.B-E.1.1.1	MP2
Identify equivalent expressions.	M07.B-E.1.1.1	MP2
Use properties of operations to simplify expressions.	M07.B-E.1.1.1	MP2
Expand expressions using the Distributive Property.	M07.B-E.1.1.1	MP2

Performance Indicator	**PA Core Standard and/or Eligible Content**	**Marking Period Taught**
Use common factoring and the Distributive Property to factor expressions.	M07.B-E.1.1.1	MP2
Add and subtract expressions that represent real-world and mathematical problems.	M07.B-E.1.1.1	MP2
Write equivalent expressions.	M07.B-E.1.1	MP2
Analyze and interpret equivalent expressions in real-world and mathematical problems.	M07.B-E.1.1 M07.B-E.2.3.1	MP2
Write two-step equations.	M07.B-E.2.2 M07.B-E.2.2.1	MP2
Interpret quantities and operations in two-step equations.	M07.B-E.2.2.1 M07.B-E.2.3.1	MP2
Solve two-step equations.	M07.B-E.2.2.1	MP2
Solve real-world and mathematical problems with two-step equation.	M07.B-E.2.2.1	MP2
Solve equations using the Distributive Property.	M07.B-E.2.2.1	MP2
Marking Period 2 Review and Assessment		**MP2**
• Review and demonstrate knowledge of Percent Problems.		MP2
• Review and demonstrate knowledge of Expressions.		MP2
• Review and demonstrate knowledge of Equations.		MP2
Write, solve, and graph inequalities using addition or subtraction.	M07.B-E.2.2 M07.B-E.2.2.2	MP3
Write, solve, and graph inequalities using multiplication or division.	M07.B-E.2.2 M07.B-E.2.2.2	MP3
Write, solve and graph two-step inequalities.	M07.B-E.2.2 M07.B-E.2.2.2	MP3
Write, solve, and graph multi-step inequalities.	M07.B-E.2.2 M07.B-E.2.2.2	MP3
Solve real-world and mathematical problems with inequalities.	M07.B-E.2.2 M07.B-E.2.2.2	MP3
Understand populations and samples.	M07.D-S.1.1.1 M07.D-S.1.1.2	MP3
Describe a representative sample.	M07.D-S.1.1.1 M07.D-S.1.1.2	MP3
Generate a random or multiple random samples.	M07.D-S.1.1.1 M07.D-S.2.1.1	MP3
Draw qualitative inferences from data.	M07.D-S.1.1.1 M07.D-S.2.1.1	MP3
Compare inferences based on different samples.	M07.D-S.2.1.1	MP3
Make an estimate from sample data.	M07.D-S.1.1.2	MP3
Use box-and-whisker plots to compare populations.	M07.D-S.2.1.1	MP3

Performance Indicator	**PA Core Standard and/or Eligible Content**	**Marking Period Taught**
Draw inferences and compare using median and interquartile range.	M07.D-S.2.1.1	MP3
Draw inferences and compare using measures of center and variability.	M07.D-S.2.1.1	MP3
Use dot plots to compare populations.	M07.D-S.2.1.1	MP3
Use measures of center and variability to compare populations.	M07.D-S.2.1.1	MP3
Use statistical measures to make predictions.	M07.D-S.1.1.2	MP3
Use probability to describe chance.	M07.D-S.3.1.1	MP3
Use probability and likelihood to describe situations.	M07.D-S.3.1.1	MP3
Use probabilities to examine fairness.	M07.D-S.3.1.1	MP3
Determine the theoretical probability of an event to make predictions.	M07.D-S.3.2.1 M07.D-S.3.2.2	MP3
Determine the experimental probability of an event to make predictions.	M07.D-S.3.2.1 M07.D-S.3.2.2	MP3
Compare theoretical and experimental probability.	M07.D-S.3.2.1	MP3
Explain the differences between theoretical and experimental probability.	M07.D-S.3.2.1	MP3
Use probability models to find probabilities of events to evaluate and estimate situations.	M07.D-S.3.2.1 CC.2.4.7.B.E	MP3
Find all possible outcomes.	M07.D-S.3.2	MP3
Use a table and organized lists to represent sample spaces.	M07.D-S.3.2.3	MP3
Find the probability of compound events: using tables, using a tree diagram, using an organized list.	M07.D-S.3.2.3	MP3
Simulate a compound event to approximate its probability.	M07.D-S.3.2.3	MP3
Marking Period 3 Review and Assessment		**MP3**
• Review and demonstrate knowledge of Inequalities.		MP3
• Review and demonstrate knowledge of Statistics.		MP3
• Review and demonstrate knowledge of Probability.		MP3
Find actual lengths using scale drawings.	M07.C-G.1.1.1	MP4
Use scale factor to solve real-world and mathematical area problems.	M07.C-G.1.1.1	MP4
Draw geometric figures with given conditions.	M07.C-G.1.1.1	MP4
Draw a geometric figure to solve a real-world and mathematical problem.	M07.C-G.1.1.1	MP4
Draw triangles when given information about their side lengths and angle measures.	M07.C-G.1.1.2	MP4
Use and apply the Triangle Inequality Theorem: The sum of any 2 sides of a triangle must be greater than the measure of the third side.	M07.C-G.1.1.3	MP4

Performance Indicator	**PA Core Standard and/or Eligible Content**	**Marking Period Taught**
Identify and describe properties of all types of triangles based on angle and side measures: acute, right, obtuse, equiangular, scalene, isosceles, equilateral.	M07.C-G.1.1.2	MP4
Identify and use properties of adjacent, vertical, complementary, and supplementary angles in multi-step problems to write and solve simple equations for an unknown angle in a figure.	M07.C-G.2.1.1	MP4
Solve real-world and mathematical problems involving adjacent and vertical angles.	M07.C-G.2.1.1	MP4
Solve real-world and mathematical problems involving complementary and supplementary angles.	M07.C-G.2.1.1	MP4
Identify and use properties of angles formed when two parallel lines are cut by a transversal: alternate interior, alternate exterior, vertical, corresponding.	M07.C-G.2.1.2	MP4
Describe parts of a circle.	M07.C-G.1.1 M07.C-G.2.2.1	MP4
Find and use the circumference of a circle to solve real-world and mathematical problems.	M07.C-G.2.2.1	MP4
Find and use the area of a circle to solve real-world and mathematical problems.	M07.C-G.2.2.1	MP4
Use the circumference of a circle to find the area.	M07.C-G.2.2.1	MP4
Determine what the cross section (two-dimensional figure) looks like when a three-dimensional figure is sliced.	M07.C-G.1.1.4	MP4
Find the area of two-dimensional composite shapes.	M07.C-G.2.2.2	MP4
Find the surface area of three-dimensional prisms.	M07.C-G.2.2.2	MP4
Solve real-world and mathematical problems involving surface area.	M07.C-G.2.2.2	MP4
Use the area of the base of a three-dimensional figure to find the volume.	M07.C-G.2.2.2	MP4
Find volumes of composite figures.	M07.C-G.2.2.2	MP4
Solve real-world and mathematical problems involving volume.	M07.C-G.2.2.2	MP4
Grade 7 PSSA Math Preparation and Assessment		**MP4**
• Review and demonstrate knowledge of the Number System.	M07.A-N.1.1	MP4
• Review and demonstrate knowledge of Ratios and Proportional Relationships.	M07.A-R.1.1	MP4
• Review and demonstrate knowledge of Expressions and Equations.	M07.B-E.1.1 M07.B-E.2.1 M07.B-E.2.2 M07.B-E.2.3	MP4

Performance Indicator	**PA Core Standard and/or Eligible Content**	**Marking Period Taught**
• Review and demonstrate knowledge of Geometry.	M07.C-G.1.1 M07.C-G.2.1 M07.C-G.2.2	MP4
• Review and demonstrate knowledge of Statistics and Probability.	M07.D-S.1.1 M07.D-S.2.1 M07.D-S.3.1 M07.D-S.3.2	MP4
Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients (Additional practice and Enrichment)	MO7.A-N.1.1.1 MO7.B-3.1.1.1	MP4
Solve multi-step real-world and mathematical problems posed with positive and negative rational numbers. (Additional practice and Enrichment)	MO7.A-N.1.1 M07.B-E.2.1 M07.B-E.2.3	MP4
Solve two-step equations. (Additional practice and Enrichment)	M07.B-E.2.1 M07.B-E.2.2 M07.B-E.2.3	MP4
Solve equations using the Distributive Property. (Additional practice and Enrichment)	M07.B-E.2.1 M07.B-E.2.2 M07.B-E.2.3	MP4
Solve real-world and mathematical problems with two-step equations and using the Distributive Property. (Additional practice and Enrichment)	M07.B-E.2.1 M07.B-E.2.2 M07.B-E.2.3	MP4
Mathematics Placement Exam: Honors Algebra 1 Grade 8		**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