WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Geometry College Preparatory
Course Number: 00250
Course Prerequisites: Recommended grade of 75% of higher in Algebra II CP or Honors Algebra II OR teacher recommendation from Algebra II or Algebra 1B.

Course Description: Geometry College Preparatory is an academic course designed to provide an opportunity for students to reason mathematically. Throughout this class, students will learn about geometric shapes and structures and how to analyze their characteristics and relationships in order to solve problems. Study of two- and three-dimensional objects and their properties and measurements is the foundation of this course. Students will use these skills in representing and solving problems in other areas of mathematics and real-world situations.

Suggested Grade Level: Grades 10-12
Length of Course: Two Semesters
Units of Credit: 1
PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:
CSPG #50 Mathematics
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: 02072
To find the State Course Code, go to State Course Code, download the Excel file for *SCED*, click on SCED 6.0 tab, and chose the correct code that corresponds with the course.

TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:

Title:	envision Geometry
Publisher:	Pearson
ISBN #:	978-0-328-93155-2
Copyright Date:	2018
WCSD Board Approval Date:	6/29/2020

Supplemental Materials: KutaSoftware.com

Curriculum Document

WCSD Board Approval:

Date Finalized:	6/5/2020
Date Approved:	6/29/2020
Implementation Year:	2020-2021

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, CONCEPTS, AND SKILLS

Performance Indicator	PA Core Standard and/or Eligible Content	Month Taught and Assessed for Mastery
Name and describe undefined and defined terms. (Perpendicular & angle bisector)	G-CO.1, A-CED.1, G-CO.12	August September
Find segment lengths.	G-CO.1, A-CED.1	August September
Use the Segment Addition Postulate.	G-CO.1, A-CED.1	August September
Use the Protractor Postulate to measure an angle.	G-CO.1, A-CED.1	August September
Use the Angle Addition Postulate to solve problems.	G-CO.1, A-CED.1	August September
Identity and use congruent angles and congruent segments.	G-CO.1, A-CED.1	August September
Measure segments and angles.	G-CO.1, A-CED.1	August September
Define and identify perpendicular bisectors.	G-CO.1, A-CED.1	August September
Define and identify angle bisectors.	G-CO.1, A-CED.1	August September
Solve real-world problems measuring segments and angles	G-CO.1, A-CED.1	August September
Use the Midpoint Formula.	G-GPE.6	August September
Find the midpoint.	G-GPE.6	August September
Partition a segment.	G-GPE.6	August September
Derive the Distance Formula.	G-GPE.6	August September
Find the distance.	G-GPE.6	August September
Use and apply the vertical angles, congruent supplements, congruent complements, right angles, and linear pairs theorems.	G-CO.9, A-REI.1	August September
Identify pairs of angles formed by parallel lines and transversals.	G-CO.9, A-REI.1	September October
Find angle measures created by parallel lines and transversals.	G-CO.9, A-REI.1	September October
Justify lines are parallel.	G-CO.9, G-CO.10, G-MG.3	September October
Find angle measures.	G-CO.1, G-CO.9	September October
Apply the transitive property of parallel lines.	G-CO.9, G-CO.10, G-MG.3	September October
Solve problems with parallel lines.	G-CO.9, G-CO.10, G-MG.3	September October
Apply the Triangle Angle-Sum and Triangle Exterior Angle Theorems.	HSG-CO.9, G-CO.10	September October
Use slope to solve problems about parallel and perpendicular lines.	G-GPE.5	September October

Write equations of parallel and perpendicular lines.	G-GPE.5	September October
Application of parallel and perpendicular lines.	G-GPE.5	September October
Identify rigid motion.	G-CO.4, G-CO.5, G-CO.2	October November
Perform, describe, and use reflections.	G-CO.4, G-CO.5, G-CO.2	October November
Perform, describe, and use translations.	G-CO.4, G-CO.5, G-CO.2	October November
Perform, describe, and use rotations.	G-CO.4, G-CO.5, G-CO.2	October November
Classify and perform rigid motions.	G-CO.4, G-CO.5, G-CO.2	October November
Identify and perform symmetries.	G-CO.4, G-CO.5, G-CO.2	October November
Apply transformations.	G-CO.4, G-CO.5, G-CO.2, G-CO.6	October November
Understand, verify, and identify congruence in figures.	G-CO.4, G-CO.5, G-CO.2	October November
Describe congruence as a composition of rigid motion.	G-CO.4, G-CO.5, G-CO.2	October November
Apply theorems about isosceles and equilateral triangles to solve problems.	G-CO.10, G-SRT.5	October November
Use SAS, SSS, ASA and AAS to determine whether triangles are congruent.	G-CO.8, G-SRT.5	November December
Use HL to determine whether triangles are congruent.	G-CO.8, G-SRT.5	November December
Use CPCTC.	G-CO.8, G-SRT.5	November December
Use triangle congruence to solve problems with overlapping triangles.	G-CO.8, G-SRT.5	November December
Apply theorems of triangles congruence to solve problems.	G-CO.8, G-SRT.5	November December
Find equidistant points.	G-CO.9 A-REI.3	November December
Use perpendicular and angle bisectors to solve problems.	G-CO.10 A-REI.3	December January
Use triangle bisectors to solve problems.	G-CO.10 A-REI.3	December January
Identify and investigate circumscribed circles and inscribed circles.	G-CO.10 A-REI.3	December January
Find the points of concurrency for the medians of a triangle and the altitudes of a triangle.	G-SRT.5, G-C0.10, G-GPE.5, A-REI.6, A-REI.10	December January
Apply theorems to compare the sides and angles in one triangle.	G-CO.10 A-REI.3	December January
Use the Triangle Inequality Theorem.	G-CO.10 A-REI.3	December January
Investigate side lengths in two triangles.	G-SRT.5, G-C0.10, G-GPE.5, A-REI.6, A-REI.10	December January
Apply the Hinge Theorem and Converse of the Hinge Theorem.	G-CO.10 A-REI.3	December January
Apply relationship theorems of triangles to solve problems.	G-CO.10 A-REI.3	December January

Find the sums of the measures of the exterior angles and interior angles of polygons.	G-CO.10 A-REI.3	December January
Find an exterior angle and interior angle measure.	G-CO.10 A-REI.3	December January
Apply triangle congruence to understand kites and trapezoids.	B.3, B.7, B.8	January February
Use properties of kites.	B.3, B.7, B.8	January February
Use properties of trapezoids and isosceles trapezoids.	B.3, B.7, B.8	January February
Apply the Trapezoid Midsegment Theorem.	B.3, B.7, B.8	January February
Use properties of parallel lines, diagonals, and triangles to investigate parallelograms and find side lengths and angle measures.	C.11 , B.5	January February
Use properties of sides, angles, and diagonals to identify and verify a parallelogram.	C.11 , B.5	January February
Identify and use properties of rhombuses, rectangles, and squares to solve problems.	C.11 , B.5	January February
Find segment lengths and angle measures of rhombuses, rectangles, and squares.	C.11, B.5, B.3	January February
Identify rhombuses, rectangles, and squares by the characteristics of their diagonals.	C.11, B.5, B.3	January February
Solve real-life problems with quadrilaterals, parallelograms, rhombuses, rectangles, and squares.	C.11, B.5, B.3	January February
Dilate figures and identify characteristics of dilations.	A.1, A.2, A.5	February March
Find a scale factor.	A.1, A.2, A.5	February March
Determine whether figures are similar.	A.1, A.2, A.5, B.5	February March
Prove triangles similar with AA~, SSS~, and SAS~ Theorems.	A.3, B.5	February March
Verify Triangle Similarity.	A.3, B.5	February March
Find lengths in similar triangles.	A.3, B.5	February March
Solve problems involving similar triangles.	A.3, B.5	February March
Use similarity and geometric mean to solve problems	A.3, B.5	February March
Explore proportions from parallel lines in triangles.	G-CO.10 G-SRT.4	February March
Use and apply the Side-Splitter, Triangle Midsegment, and Triangle-Angle-Bisector Theorems.	G-CO.10 G-SRT.4	February March
Explore proportionality with angle bisectors.	G-CO.10 G-SRT.4	February March
Use the Pythagorean Theorem and its Converse.	G-SRT.4 G-SRT.8, G-SRT.5	March April
Explore side lengths in 45-45-90 and 30-60-90 triangles.	G-SRT.4 G-SRT.8, G-SRT.5	March April
Apply special right triangle relationships to solve problems.	G-SRT.4 G-SRT.8, G-SRT.5	March April
Identify the trigonometric ratios.	G-SRT.4 G-SRT.8, G-SRT.5	March April

Understand the trigonometric ratios using similarity.	G-SRT.4 G-SRT.8, G-SRT.5	March April
Write trigonometric ratios.	G-SRT.4 G-SRT.8, G-SRT.5	March April
Identify trigonometric ratios of special angles.	G-SRT.4 G-SRT.8, G-SRT.5	March April
Solve problems involving the trigonometric ratios.	G-SRT.4 G-SRT.8, G-SRT.5	March April
Use trigonometric inverses to find angle measures.	G-SRT.7 G-SRT.8	March April
Explore the sine ratios using and applying the Law of Sines.	G-SRT.8 G-SRT.10	March April
Explore the cosine ratios using and applying the Law of Cosines.	G-SRT.8 G-SRT.10	March April
Identify and use the angles of elevation and depression.	G-SRT.7 G-SRT.8	March April
Use trigonometry to find triangle area and problem solve.	G-SRT.9	March April
Relate central angles and arc measures in circles.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Relate arc length to circumference.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Apply arc length.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Relate the area of a circle to the area of a sector.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Find the area of a segment of a circle.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Solve problems involving circles.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Understand tangents to a circle.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Use tangents to solve problems.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Find lengths of segments tangent to a circle.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Find measures involving tangent lines.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Relate central angles and chords.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Relate arcs and chords.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Relate chords equidistant from the center.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Solve problems involving chords of a circles.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Relate inscribed angles to intercepted arcs.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Use the inscribed angles theorem and its corollaries.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Explore angles formed by a tangent and a chord.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Use arc measure to problem solve.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Relate secants and angle measures.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May

Use secants and tangents to solve problems.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Develop chord length relationships.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Use segment relationships to find lengths.	G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1	April May
Develop and apply Euler's Formula.	G-GMD.1, G-GMD.2, G-GMD.3, G-GMD.4, G-MG.1, G-MG.2	May June
Find the volumes of prisms and cylinders.	G-GMD.1, G-GMD.2, G-GMD.3, G-GMD.4, G-MG.1, G-MG.2	May June
Apply the volumes of prisms and cylinders to solve problems.	G-GMD.1, G-GMD.2, G-GMD.3, G-GMD.4, G-MG.1, G-MG.2	May June
Solve density problems.	G-GMD.1, G-GMD.2, G-GMD.3, G-GMD.4, G-MG.1, G-MG.2	May June
Find the volume of pyramids and cones.	G-GMD.1, G-GMD.2, G-GMD.3, G-GMD.4, G-MG.1, G-MG.2	May June
Apply the volume of pyramids and cones to solve problems.	G-GMD.1, G-GMD.2, G-GMD.3, G-GMD.4, G-MG.1, G-MG.2	May June
Find the measure of a composite figure.	G-GMD.1, G-GMD.2, G-GMD.3, G-GMD.4, G-MG.1, G-MG.2	May June
Find the volumes of spheres, hemispheres, and composite figures.	G-GMD.1, G-GMD.2, G-GMD.3, G-GMD.4, G-MG.1, G-MG.2	May June
Use the volumes of spheres, hemispheres, and composite figures to solve problems.	G-GMD.1, G-GMD.2, G-GMD.3, G-GMD.4, G-MG.1, G-MG.2	May June

ASSESSMENTS

PSSA 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: Bell-Ringers, Quizzes, Quizzlet, Exit Tickets, Pre-assessments, Observations, Cooperative Learning, Written Work, Oral Response, Self-Evaluation, and Homework

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, and Projects