**COURSE DESCRIPTION**

**Course Title:** Geometry

**Course Number:** 00212

**Course Prerequisites:** Recommended grade average of 60% in both Algebra 1A and Algebra 1B OR completion of either Algebra 1CP or Algebra II CP with an average between 60% and 70%.

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| **Course Description:** | This course starts with basic concepts related to geometry including but not limited to points, lines, and planes. The course builds on those basic concepts to include parallel and perpendicular lines, polygons, various triangles, transformations, and the study of spheres and solids. Algebraic skills are incorporated with practical applications to concrete problems.  |

**Suggested Grade Level**: Grades 11-12

**Length of Course:** Two Semesters

**Units of Credit:** 1

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

Mathematics (7 – 12) Mathematics CSPG #50

To find the CSPG information, go to [CSPG](https://www.education.pa.gov/Educators/Certification/Staffing%20Guidelines/Pages/default.aspx)

**Certification verified by the WCSD Human Resources Department:** [x] Yes [ ] No

**WCSD STUDENT DATA SYSTEM INFORMATION**

**Course Level:** Academic

**Mark Types:** Check all that apply.

[x] F – Final Average [x] MP – Marking Period [x] EXM – Final Exam

**GPA Type**: [ ]  GPAEL-GPA Elementary [ ]  GPAML-GPA for Middle Level [x]  NHS-National Honor Society

[x]  UGPA-Non-Weighted Grade Point Average [x]  GPA-Weighted Grade Point Average

**State Course Code**: 02071

To find the State Course Code, go to [State Course Code](https://nces.ed.gov/forum/sced.asp), 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 #:**  9780328937639

**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**

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| **Performance Indicator** | **PA Core Standard and/or Eligible Content** | **Month Taught and Assessed for Mastery**  |
| Find Segment Lengths | G-CO.1, A-CED.1 | AugustSeptember |
| Find the Length of a Segment | G-CO.1, A-CED.1 | AugustSeptember |
| Use the Segment Addition Postulate | G-CO.1, A-CED.1 | AugustSeptember |
| Use the Protractor Postulate to Measure an Angle | G-CO.1, A-CED.1 | AugustSeptember |
| Use the Angle Addition Postulate to Solve Problems | G-CO.1, A-CED.1 | AugustSeptember |
| Use Congruent Angles and Congruent Segments | G-CO.1, A-CED.1 | AugustSeptember |
| Define Vocabulary Related to Basic Constructions | G-CO.12 | AugustSeptember |
| Find a Midpoint | G-GPE.6 | AugustSeptember |
| Derive the Distance Formula | G-GPE.6 | AugustSeptember |
| Find the Distance | G-GPE.6 | AugustSeptember |
| Apply Vertical Angles Theorem | G-CO.9, A-REI.1 | SeptemberOctober |
| Identify Angle Pairs | G-CO.1, G-CO.9 | SeptemberOctober |
| Explore Angle Relationships | G-CO.1, G-CO.9 | SeptemberOctober |
| Find Angle Measures | G-CO.1, G-CO.9 | SeptemberOctober |
| Understand Angle Relationships | G-CO.9, G-CO.10, G-MG.3 | SeptemberOctober |
| Determine Whether Lines are Parallel | G-CO.9, G-CO.10, G-MG.3 | SeptemberOctober |
| Solve a Problem With Parallel Lines | G-CO.9, G-CO.10, G-MG.3 | SeptemberOctober |
| Investigate the Measures of Triangle Angles | HSG-CO.9, G-CO.10 | SeptemberOctober |
| Use the Triangle Angle Sum Theorem | HSG-CO.9, G-CO.10 | SeptemberOctober |
| Apply the Triangle Exterior angle Theorem | HSG-CO.9, G-CO.10 | SeptemberOctober |
| Apply the Triangle Theorems | HSG-CO.9, G-CO.10 | SeptemberOctober |
| Find Slopes of Parallel Lines | G-GPE.5 | SeptemberOctober |
| Check Parallelism | G-GPE.5 | SeptemberOctober |
| Check Perpendicularity | G-GPE.5 | SeptemberOctober |
| Write Equations of Parallel and Perpendicular Lines | G-GPE.5 | SeptemberOctober |
| Identify Rigid Motions | G-CO.4, G-CO.5, G-CO.2 | OctoberNovember |
| Reflect a Figure Across a Line | G-CO.4, G-CO.5, G-CO.2 | OctoberNovember |
| Reflect a Figure on a Coordinate Plane | G-CO.4, G-CO.5, G-CO.2 | OctoberNovember |
| Describe a Reflection on the Coordinate Plane | G-CO.4, G-CO.5, G-CO.2 | OctoberNovember |
| Use Reflections | G-CO.4, G-CO.5, G-CO.2 | OctoberNovember |
| Find the Image of a Translation | G-CO.4, G-CO.5, G.CO.2 | OctoberNovember |
| Write a Translation Rule | G-CO.4, G-CO.5, G.CO.2 | OctoberNovember |
| Compose Translations | G-CO.4, G-CO.5, G.CO.2 | OctoberNovember |
| Relate Translations and Reflections | G-CO.4, G-CO.5, G.CO.2 | OctoberNovember |
| Draw Rotations in the Coordinate Plane | G-CO.4, G-CO.5 | OctoberNovember |
| Use Rotations | G-CO.4, G-CO.5 | OctoberNovember |
| Investigate Reflections and Rotations | G-CO.4, G-CO.5 | OctoberNovember |
| Explore Glide Reflections | G-CO.4, G-CO.5, G-CO.2 | OctoberNovember |
| Find the Image of a Glide Reflection | G-CO.5, G-CO.6 | OctoberNovember |
| Determine a Glide Reflection | G-CO.5, G-CO.6 | OctoberNovember |
| Identify Transformations for Symmetry | G-CO.3, G-CO.6 | OctoberNovember |
| Identify Lines of Symmetry | G-CO.3, G-CO.6 | OctoberNovember |
| Identify Rotational Symmetry | G-CO.3, G-CO.6 | OctoberNovember |
| Determine Symmetries | G-CO.3, G-CO.6 | OctoberNovember |
| Use Symmetry | G-CO.3, G-CO.6 | OctoberNovember |
| Understand Congruence | G-CO.4, G-CO.5, G-CO.2 | NovemberDecember |
| Verify Congruence | G-CO.5, G-CO.6 | NovemberDecember |
| Identify Congruent Figures | G-CO.5, G-CO.6 | NovemberDecember |
| Determine Congruence | G-CO.5, G-CO.6 | NovemberDecember |
| Apply Congruence | G-CO.5, G-CO.6 | NovemberDecember |
| Understand Angles of Isosceles Triangles | G-CO.10, G-SRT.5 | NovemberDecember |
| Use the Isosceles Triangle Theorem | G-CO.10, G-SRT.5 | NovemberDecember |
| Use the Converse of the Isosceles Triangle Theorem | G-CO.10, G-SRT.5 | DecemberNovember |
| Use Perpendicular Bisectors to Solve Problems | G-CO.10, G-SRT.5 | NovemberDecember |
| Show That Equilateral Triangles are Equiangular | G-CO.10, G-SRT.5 | NovemberDecember |
| Find Angle Measures in Isosceles and Equilateral Triangles | G-CO.10, G-SRT.5 | NovemberDecember |
| Explore the Side-Angle-Side Congruence Criterion | G-CO.8 | NovemberDecember |
| Apply the SAS Congruence Criterion | G-CO.8 | NovemberDecember |
| Explore the Side-Side-Side Congruence Criterion | G-CO.8 | NovemberDecember |
| Determine Congruent Triangles | G-CO.8 | NovemberDecember |
| Explore the ASA Congruence Criterion | G-CO.8, G-SRT.5 | NovemberDecember |
| Apply the ASA Congruence Criterion | G-CO.8, G-SRT.5 | NovemberDecember |
| Investigate the AAS Congruence Criterion | G-CO.8, G-SRT.5 | NovemberDecember |
| Use Triangle Congruence Criteria | G-CO.8, G-SRT.5 | NovemberDecember |
| Determine Congruent Polygons | G-CO.8, G-SRT.5 | NovemberDecember |
| Investigate Right Triangle Congruence | G-CO.10, G-SRT.5 | NovemberDecember |
| Use the Hypotenuse-Leg Theorem | G-CO.10, G-SRT.5 | NovemberDecember |
| Identify Corresponding Parts in Triangles | G-CO.10, G-SRT.5 | NovemberDecember |
| Use Common Parts of Triangles | G-CO.10, G-SRT.5 | NovemberDecember |
| Find equidistant points | G-CO.9A-REI.3 | DecemberJanuary |
| Use perpendicular bisector | G-CO.9A-REI.3 | DecemberJanuary |
| Apply the Perpendicular Bisector Theorem | G-CO.9A-REI.3 | DecemberJanuary |
| Find equidistant points from the sides of a angle | G-CO.9A-REI.3 | DecemberJanuary |
| Apply the Angle Bisector Theorem | G-CO.9A-REI.3 | DecemberJanuary |
| Identify special segments in triangles | G-SRT.5, G-C0.10, G-GPE.5, A-REI.6, A-REI.10 | DecemberJanuary |
| Find length of a median | G-SRT.5, G-C0.10, G-GPE.5, A-REI.6, A-REI.10 | DecemberJanuary |
| Investigate side and angle relationships | G-CO.10A-REI.3 | DecemberJanuary |
| Use the Triangle Longer Side Theorem | G-CO.10A-REI.3 | DecemberJanuary |
| Use the Triangle Larger Angle Theorem | G-CO.10A-REI.3 | DecemberJanuary |
| Use the Triangle Inequality Theorem | G-CO.10A-REI.3 | DecemberJanuary |
| Investigate side lengths in triangles | G-CO.10A-REI.3 | DecemberJanuary |
| Apply the Hinge Theorem | G-CO.10A-REI.3 | DecemberJanuary |
| Apply the Converse of the Hinge Theorem | G-CO.10A-REI.3 | DecemberJanuary |
| Explore polygon interior angle sums | G-SRT.5 | JanuaryFebruary |
| Apply the Polygon Interior Angle-Sum Theorem | G-SRT.5 | JanuaryFebruary |
| Understand exterior angle measures of a polygon | G-SRT.5 | JanuaryFebruary |
| Find an exterior angle measure | G-SRT.5 | JanuaryFebruary |
| Find the measures of interior angles | B.5, B.3 | JanuaryFebruary |
| Investigate the diagonals of a kite | B.3, B.7, B.8 | JanuaryFebruary |
| Use the diagonals of a kite | B.3, B.7, B.8 | JanuaryFebruary |
| Explore parts of an isosceles trapezoid | B.3, B.7, B.8 | JanuaryFebruary |
| Solve problems involving isosceles trapezoid | B.3, B.7, B.8 | JanuaryFebruary |
| Apply the Trapezoid Midsegment Theorem | B.3, B.7, B.8 | JanuaryFebruary |
| Explore opposite sides of parallelograms | C.11 , B.5 | JanuaryFebruary |
| Use opposite sides of parallelograms | C.11 , B.5 | JanuaryFebruary |
| Explore angle measures in parallelograms | C.11 , B.5 | JanuaryFebruary |
| Use angles of a parallelogram | C.11 , B.5 | JanuaryFebruary |
| Explore the diagonals of a parallelogram | C.11 , B.5 | JanuaryFebruary |
| Find unknown lengths in a parallelogram | C.11 , B.5 | JanuaryFebruary |
| Investigate sides to confirm a parallelogram | C.11, B.5 | JanuaryFebruary |
| Explore angle measures to confirm a parallelogram | C.11, B.5 | JanuaryFebruary |
| Find values to make parallelogram | C.11, B.5 | JanuaryFebruary |
| Investigate diagonals to confirm a parallelogram | C.11, B.5 | JanuaryFebruary |
| Identify a parallelogram | C.11, B.5 | JanuaryFebruary |
| Verify a parallelogram | C.11, B.5 | JanuaryFebruary |
| Find diagonals of a rhombus | C.11, B.5, B.3 | JanuaryFebruary |
| Find lengths and angle measures in a rhombus | C.11, B.5, B.3 | JanuaryFebruary |
| Find diagonal lengths of a rectangle | C.11, B.5, B.3 | JanuaryFebruary |
| Find diagonals and angles measures of a square | C.11, B.5, B.3 | JanuaryFebruary |
| Use diagonals to identify rhombuses | C.11, B.5 | JanuaryFebruary |
| Use diagonals to identify rectangles | C.11, B.5 | JanuaryFebruary |
| Identify special parallelograms | C.11, B.5 | JanuaryFebruary |
| Use properties of special parallelograms | C.11, B.5 | JanuaryFebruary |
| Apply properties of special parallelograms | C.11, B.5 | JanuaryFebruary |
| Dilate a figure | A.1, A.2, A.5 | FebruaryMarch |
| Analyze dilations | A.1, A.2, A.5 | FebruaryMarch |
| Find a scale factor | A.1, A.2, A.5 | FebruaryMarch |
| Dilate a figure with the center at the origin | A.1, A.2, A.5 | FebruaryMarch |
| Use scale factor to find length and area | A.1, A.2, A.5 | FebruaryMarch |
| Graph a composition of a rigid motion and a dilation | A.1, A.2, A.5 | FebruaryMarch |
| Describe a composition of a rigid motion and a dilation | A.1, A.2, A.5 | FebruaryMarch |
| Find similarity transformations | A.1, A.2, A.5 | FebruaryMarch |
| Define similarity  | A.1, A.2, A.5 | FebruaryMarch |
| Establish the AA Similarity Theorem | A.3, B.5 | FebruaryMarch |
| Establish the SSS~ Similarity Theorem | A.3, B.5 | FebruaryMarch |
| Verify triangle similarity | A.3, B.5 | FebruaryMarch |
| Find lengths in similar triangles | A.3, B.5 | FebruaryMarch |
| Explore proportions from parallel lines | G-CO.10G-SRT.4 | FebruaryMarch |
| Use the Side-Splitter Theorem | G-CO.10G-SRT.4 | FebruaryMarch |
| Find a length using the Side-Splitter Theorem | G-CO.10G-SRT.4 | FebruaryMarch |
| Use Pythagorean Theorem and its converse | G-SRT.4G-SRT.8, G-SRT.5 | MarchApril |
| Investigate side lengths in 45-45-90 triangles | G-SRT.4G-SRT.8, G-SRT.5 | MarchApril |
| Explore side lengths in a 30-60-90 triangle | G-SRT.4G-SRT.8, G-SRT.5 | MarchApril |
| Apply special right triangle relationships | G-SRT.4G-SRT.8, G-SRT.5 | MarchApril |
| Understand trigonometric ratios using similarity | G-SRT.6G-SRT.7, G-SRT.8 | MarchApril |
| Write trigonometric ratios | G-SRT.6G-SRT.7, G-SRT.8 | MarchApril |
| Find trigonometric ratios of special angles (30, 45, 60) | G-SRT.6G-SRT.7, G-SRT.8 | MarchApril |
| Use trigonometric ratios to find distances | G-SRT.6G-SRT.7, G-SRT.8 | MarchApril |
| Use trigonometric ratios to find angle measures | G-SRT.6G-SRT.7, G-SRT.8 | MarchApril |
| Identify angles of elevation and depression | G-SRT.7G-SRT.8 | MarchApril |
| Use angles of elevation and depression | G-SRT.7G-SRT.8 | MarchApril |
| Use trigonometry to solve problems | G-SRT.7G-SRT.8 | MarchApril |

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| 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 | AprilMay |
| Relate arc length to circumference. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| Apply arc length. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| 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 | AprilMay |
| 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 | AprilMay |
| Solve problems involving circles. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| Understand tangents to a circle. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| Use tangents to solve problems. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| 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 | AprilMay |
| Find measures involving tangent lines. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| Relate central angles and chords. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| Relate arcs and chords. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| Relate chords equidistant from the center. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| 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 | AprilMay |
| Relate inscribed angles to intercepted arcs. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| 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 | AprilMay |
| 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 | AprilMay |
| Use arc measure to problem solve. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| Relate secants and angle measures. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| 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 | AprilMay |
| Develop chord length relationships. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| Use segment relationships to find lengths. | G-C.1, G-C.2, G-C.3, G-C.4, G-C.5, G-CO.1 | AprilMay |
| Develop and apply Euler’s Formula. | G-GMD.1, G-GMD.2, G-GMD.3, G-GMD.4, G-MG.1, G-MG.2 | MayJune |
| 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 | MayJune |
| 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 | MayJune |
| Solve density problems. | G-GMD.1, G-GMD.2, G-GMD.3, G-GMD.4, G-MG.1, G-MG.2 | MayJune |
| 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 | MayJune |
| 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 | MayJune |
| 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 | MayJune |
| 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 | MayJune |
| 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 | MayJune |

 **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, Exit Ticket, Cooperative Learning, Pre-assessments, Observations, Written Work, Quizzes, 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 Assessments, Chapter/Unit Tests, and Projects