**Connecticut Core Geometry**

**Scope and Sequence**

**Made for 45 Minute Classes**

Experience has demonstrated that when introducing a new curriculum, teachers need more time the first year or two to adjust. For this reason, we suggest that 6 of the 8 units be implemented the first year, 7 units the second year, and all 8 units the third year. A total of 170 instructional days are planned, leaving the remaining 10 days of the school year for examinations and other administrative changes to the schedule.

The number of days allocated to each unit is shown in this chart.

|  |  |  |  |
| --- | --- | --- | --- |
| Unit | Year 1 | Year 2 | Year 3 |
| 1-Coordinates and Transformations | 26 | 21 | 19 |
| 2- Congruence, Constructions, Proofs | 26 | 21 | 19 |
| 3- Polygons | 29 | 25 | 23 |
| 4-Similarity and Trigonometry | 29 | 24 | 22 |
| 5- Circles and Other Conics | 29 | 26 | 23 |
| 6- Three-dimensional Geometry | 31 | 27 | 24 |
| 7- Probability | --- | 26 | 24 |
| 8-Additional Topics | --- | --- | 16 |
| Total | 170 | 170 | 170 |

Pacing charts for each of the three years are given below.

**Connecticut Core Geometry**

**Scope and Sequence**

**Made for 45 minute classes**

**Year 1**

**\***The highlighted lessons are for **STEM** intended student classes only. All other classes should use those extra days in planning.

**\*\***Year 1 includes Units 1 – 6

**\*\*\*** Each unit for years 1 and 2 has additional days added to the time for Year 3. These days should be allocated by teacher choice.

**Total:** 170 days

**Unit 1: Coordinates and Transformations**

**Time:** 26 days

\*This unit has an additional 7 days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | The Pythagorean Theorem & Distance Formula | 8.G.6, 8.G.7, 8.G.8, G-GPE.7 | 2 days |
| 2 | Vectors & Translations | G-CO.1, G-CO.2, G-CO.4, G-CO.5 | 3 days |
| 3 | Angles & Rotations | G-CO.1, G-CO.2, G-CO.4, G-CO.5, G-GPE.7 | 2 days |
| 4 | Reflections | G-CO.2, G-CO.4 | 1 day |
| 5 | Composition of Transformations | G-CO.5 | 3 days |
| 6 | Symmetry | G-CO.3 | 2 days |
| 7 | Isometries | G-CO.5, G-CO.6 | 2 days |
| PT | Frieze Patterns |  | 2 days |
| R/T | Review and Test |  | 2 days |

**Unit 2: Congruence, Construction & Proofs**

**Time:**  26 days

\*This unit has an additional 7 days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Identifying Congruent Figures | G-CO.6, G-CO.7 | 2 days |
| 2 | SAS & ASA Congruence | G-CO.8 | 2 days |
| 3 | Isosceles Triangles | G-CO.10 | 2 days |
| 4 | Congruent Triangles by SSS | G-CO.8 | 2 days |
| 5 | Vertical Angles & Parallel Lines | G-CO.9 | 2 days |
| 6 | The Construction Game | G-CO.12 | 3 days |
| 7 | Proving That Constructions Work | G-CO.12 | 2 days |
| PT | Design a Logo |  | 2 days |
| R/T | Review and Test |  | 2 days |

**Unit 3: Polygons**

**Time:** 29 days

\*This unit has an additional 6 days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Sums of Interior Angles of Polygons | G-CO.10 | 3 days |
| 2 | Inequalities in Triangles | G-CO.10 | 2 days |
| 3 | Parallel and Perpendicular Lines | G-CO.9, G-CO.12 | 2 days |
| R/MT | Mid-Unit Test |  | 2 days |
| 4 | Regular Polygons | G-CO.13 | 3 days |
| 5 | Properties of Quadrilaterals | G-CO.11 | 3 days |
| 6 | Polygons with Coordinates | G-CO.10, G-CO.11, G-GPE.4 | 3 days |
| 7 | Introduction to Tessellations | G-CO.5 | 2 days |
| PT | Designing Shape Blocks |  | 1 day |
| R/T | Review and Test |  | 2 days |

**Unit 4: Similarity & Trigonometry**

**Time:**  29 days

\*This unit has an additional 7 days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Dilations | G-SRT 1a, G-SRT 1b | 2 days |
| 2 | Similar Figures | G-SRT 2, G-C 1 | 2 days |
| 3 | Proving Similar Triangles | G-SRT 3, G-SRT 5 | 3 days |
| 4 | Parallel Lines in Triangles | G-SRT 4, G-SRT 5, G-GPE 6 | 2 days |
| 5 | Similarity in Right Triangles | G-SRT 4, G-SRT 5, G-SRT 8 | 3 days |
| 6 | Right Triangle Trigonometry | G-SRT 6, G-SRT. 7, G-SRT 8 | 3 days |
| 7 | Special Right Triangles | G-SRT 6, G-SRT 7, G-SRT. 8 | 3 days |
| 8 | Indirect Measurement | G-SRT 5, G-SRT 8 | 1 day |
| PT | Measuring Height of Tall Object |  | 1 day |
| R/T | Review and Test |  | 2 days |

**Unit 5: Circles and Other Conics**

**Time:**  29 days

\*This unit has an additional 6 days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Circles in the Coordinate Plane | G-GPE.1, G-GPE.4 | 3 days |
| 2 | Radii and Chords | G-CO.9, G-C.3 | 3 days |
| 3 | Central Angles and Arcs | G-C.5 | 1 day |
| 4 | Tangents to a circle from a point outside the circle | G-C.2, G-GPE.4 | 2 days |
| 5 | Angle Bisectors | G-C 3, G-CO.12 | 3 days |
| 6 | Inscribed Angles and Cyclic Quadrilaterals | G-C.3, G-C.4(+) | 3 days |
| 7 | Parabolas | G-GPE.2 | 3 days |
| 8 | Ellipses and Hyperbolas | G-GPE.3(+) | 3 days |
| PT | Covering a surface with pennies |  | 2 days |
| R/T | Review and Test |  | 2 days |

**Unit 6: Three-Dimensional Geometry**

**Time:** 31 days

\*This unit has an additional 7 days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Polygons and Polyhedral | 6-G.4, 7-G.6, 8-G.9, G-GMD.4 | 3 days |
| 2 | Nets and Surface Area | G-GMD.1 | 2 days |
| 3 | Volume | G-GMD.1, G-GMD 3 | 3 days |
| R/MT | Mid-Unit Test |  | 2 days |
| 4 | Cross Sections and Solids of Rotation | G-GMD.4 | 3 days |
| 5 | Spheres | G-GMD.2(+), G-GMD.3 | 2 days |
| 6 | Geometry on the Sphere | G-GMD.4 | 3 days |
| 7 | Size and Shape in the Real World | G-MG.1, G-MG.2, G-MG.3 | 3 days |
| PT | Constructing Solids with Equal Surface Area |  | 1 day |
| R/T | Review and Test |  | 2 days |

**Connecticut Core Geometry**

**Scope and Sequence**

**Made for 45 minute classes**

**Year 2**

**\***The highlighted lessons are for **STEM** intended student classes only. All other classes should use those extra days in planning.

**\*\***Year 2 includes Units 1 – 7

**\*\*\***Each unit for years 1 and 2 has additional days added to the time for Year 3. These days should be allocated by teacher choice.

**Total:** 170 days

**Unit 1: Coordinates and Transformations**

**Time:** 21 days

\*This unit has 2 additional days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | The Pythagorean Theorem & Distance Formula | 8.G.6, 8.G.7, 8.G.8, G-GPE.7 | 2 days |
| 2 | Vectors & Translations | G-CO.1, G-CO.2, G-CO.4, G-CO.5 | 3 days |
| 3 | Angles & Rotations | G-CO.1, G-CO.2, G-CO.4, G-CO.5, G-GPE.7 | 2 days |
| 4 | Reflections | G-CO.2, G-CO.4 | 1 day |
| 5 | Composition of Transformations | G-CO.5 | 3 days |
| 6 | Symmetry | G-CO.3 | 2 days |
| 7 | Isometries | G-CO.5, G-CO.6 | 2 days |
| PT | Frieze Patterns |  | 2 days |
| R/T | Review and Test |  | 2 days |

**Unit 2: Congruence, Construction & Proofs**

**Time:**  21 days

\*This unit has 2 additional days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Identifying Congruent Figures | G-CO.6, G-CO.7 | 2 days |
| 2 | SAS & ASA Congruence | G-CO.8 | 2 days |
| 3 | Isosceles Triangles | G-CO.10 | 2 days |
| 4 | Congruent Triangles by SSS | G-CO.8 | 2 days |
| 5 | Vertical Angles & Parallel Lines | G-CO.9 | 2 days |
| 6 | The Construction Game | G-CO.12 | 3 days |
| 7 | Proving That Constructions Work | G-CO.12 | 2 days |
| PT | Design a Logo |  | 2 days |
| R/T | Review and Test |  | 2 days |

**Unit 3: Polygons**

**Time:** 25 days

\*This unit has 2 additional days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Sums of Interior Angles of Polygons | G-CO.10 | 3 days |
| 2 | Inequalities in Triangles | G-CO.10 | 2 days |
| 3 | Parallel and Perpendicular Lines | G-CO.9, G-CO.12 | 2 days |
| R/MT | Mid-Unit Test |  | 2 days |
| 4 | Regular Polygons | G-CO.13 | 3 days |
| 5 | Properties of Quadrilaterals | G-CO.11 | 3 days |
| 6 | Polygons with Coordinates | G-CO.10, G-CO.11, G-GPE.4 | 3 days |
| 7 | Introduction to Tessellations | G-CO.5 | 2 days |
| PT | Designing Shape Blocks |  | 1 day |
| R/T | Review and Test |  | 2 days |

**Unit 4: Similarity & Trigonometry**

**Time:**  24 days

\*This unit has 2 additional days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Dilations | G-SRT 1a, G-SRT 1b | 2 days |
| 2 | Similar Figures | G-SRT 2, G-C 1 | 2 days |
| 3 | Proving Similar Triangles | G-SRT 3, G-SRT 5 | 3 days |
| 4 | Parallel Lines in Triangles | G-SRT 4, G-SRT 5, G-GPE 6 | 2 days |
| 5 | Similarity in Right Triangles | G-SRT 4, G-SRT 5, G-SRT 8 | 3 days |
| 6 | Right Triangle Trigonometry | G-SRT 6, G-SRT. 7, G-SRT 8 | 3 days |
| 7 | Special Right Triangles | G-SRT 6, G-SRT 7, G-SRT. 8 | 3 days |
| 8 | Indirect Measurement | G-SRT 5, G-SRT 8 | 1 day |
| PT | Measuring Height of Tall Object |  | 1 day |
| R/T | Review and Test |  | 2 days |

**Unit 5: Circles and Other Conics**

**Time:**  26 days

\*This unit has 3 additional days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Circles in the Coordinate Plane | G-GPE.1, G-GPE.4 | 3 days |
| 2 | Radii and Chords | G-CO.9, G-C.3 | 3 days |
| 3 | Central Angles and Arcs | G-C.5 | 1 day |
| 4 | Tangents to a circle from a point outside the circle | G-C.2, G-GPE.4 | 2 days |
| 5 | Angle Bisectors | G-C 3, G-CO.12 | 3 days |
| 6 | Inscribed Angles and Cyclic Quadrilaterals | G-C.3, G-C.4(+) | 3 days |
| 7 | Parabolas | G-GPE.2 | 3 days |
| 8 | Ellipses and Hyperbolas | G-GPE.3(+) | 2 days |
| PT | Covering a surface with pennies |  | 1 day |
| R/T | Review and Test |  | 2 days |

**Unit 6: Three-Dimensional Geometry**

**Time:** 29 days

\*This unit has 3 additional days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Polygons and Polyhedral | 6-G.4, 7-G.6, 8-G.9, G-GMD.4 | 3 days |
| 2 | Nets and Surface Area | G-GMD.1 | 2 days |
| 3 | Volume | G-GMD.1, G-GMD 3 | 3 days |
| R/MT | Mid-Unit Test |  | 2 days |
| 4 | Cross Sections and Solids of Rotation | G-GMD.4 | 3 days |
| 5 | Spheres | G-GMD.2(+), G-GMD.3 | 2 days |
| 6 | Geometry on the Sphere | G-GMD.4 | 3 days |
| 7 | Size and Shape in the Real World | G-MG.1, G-MG.2, G-MG.3 | 3 days |
| PT | Constructing Solids with Equal Surface Area |  | 1 day |
| R/T | Review and Test |  | 2 days |

**Unit 7: Probability**

**Time:**  26 days

\*This unit has 2 additional days added

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Sample Spaces | S.CP-1, S.CP-7, S-MD.7(+) | 4 days |
| 2 | Theoretical and Experimental Probability | S.CP-1, S-CP.9(+) | 4 days |
| 3 | Independent Events and the Multiplication Rule | S.CP-2, S.CP-5 | 3 days |
| 4 | Conditional Probability | S.CP-3, S.CP-5, S.CP-6 | 3 days |
| 5 | Interpreting Two-Way Tables | S.ID-5, S.CP-4 | 3 days |
| 6 | Using Probability to Make Decisions | S-MD 5, S-MD 6, S-MD 7 | 3 days |
| PT | Happiness Survey |  | 2 days |
| R/T | Review and Test |  | 2 days |

**Connecticut Core Geometry**

**Scope and Sequence**

**Made for 45 minute classes**

**Year 3**

**\***The highlighted lessons are for **STEM** intended student classes only. All other classes should use those extra days in planning.

**\*\***Year 3 includes Units 1 – 8

**Total:** 170 days

**Unit 1: Coordinates and Transformations**

**Time:** 19 days

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | The Pythagorean Theorem & Distance Formula | 8.G.6, 8.G.7, 8.G.8, G-GPE.7 | 2 days |
| 2 | Vectors & Translations | G-CO.1, G-CO.2, G-CO.4, G-CO.5 | 3 days |
| 3 | Angles & Rotations | G-CO.1, G-CO.2, G-CO.4, G-CO.5, G-GPE.7 | 2 days |
| 4 | Reflections | G-CO.2, G-CO.4 | 1 day |
| 5 | Composition of Transformations | G-CO.5 | 3 days |
| 6 | Symmetry | G-CO.3 | 2 days |
| 7 | Isometries | G-CO.5, G-CO.6 | 2 days |
| PT | Frieze Patterns |  | 2 days |
| R/T | Review and Test |  | 2 days |

**Unit 2: Congruence, Construction & Proofs**

**Time:** 19 days

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Identifying Congruent Figures | G-CO.6, G-CO.7 | 2 days |
| 2 | SAS & ASA Congruence | G-CO.8 | 2 days |
| 3 | Isosceles Triangles | G-CO.10 | 2 days |
| 4 | Congruent Triangles by SSS | G-CO.8 | 2 days |
| 5 | Vertical Angles & Parallel Lines | G-CO.9 | 2 days |
| 6 | The Construction Game | G-CO.12 | 3 days |
| 7 | Proving That Constructions Work | G-CO.12 | 2 days |
| PT | Design a Logo |  | 2 days |
| R/T | Review and Test |  | 2 days |

**Unit 3: Polygons**

**Time:** 23 days

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Sums of Interior Angles of Polygons | G-CO.10 | 3 days |
| 2 | Inequalities in Triangles | G-CO.10 | 2 days |
| 3 | Parallel and Perpendicular Lines | G-CO.9, G-CO.12 | 2 days |
| R/MT | Mid-Unit Test |  | 2 days |
| 4 | Regular Polygons | G-CO.13 | 3 days |
| 5 | Properties of Quadrilaterals | G-CO.11 | 3 days |
| 6 | Polygons with Coordinates | G-CO.10, G-CO.11, G-GPE.4 | 3 days |
| 7 | Introduction to Tessellations | G-CO.5 | 2 days |
| PT | Designing Shape Blocks |  | 1 day |
| R/T | Review and Test |  | 2 days |

**Unit 4: Similarity & Trigonometry**

**Time:**  22 days

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Dilations | G-SRT 1a, G-SRT 1b | 2 days |
| 2 | Similar Figures | G-SRT 2, G-C 1 | 2 days |
| 3 | Proving Similar Triangles | G-SRT 3, G-SRT 5 | 3 days |
| 4 | Parallel Lines in Triangles | G-SRT 4, G-SRT 5, G-GPE 6 | 2 days |
| 5 | Similarity in Right Triangles | G-SRT 4, G-SRT 5, G-SRT 8 | 3 days |
| 6 | Right Triangle Trigonometry | G-SRT 6, G-SRT. 7, G-SRT 8 | 3 days |
| 7 | Special Right Triangles | G-SRT 6, G-SRT 7, G-SRT. 8 | 3 days |
| 8 | Indirect Measurement | G-SRT 5, G-SRT 8 | 1 day |
| PT | Measuring Height of Tall Object |  | 1 day |
| R/T | Review and Test |  | 2 days |

**Unit 5: Circles and Other Conics**

**Time:**  23 days

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Circles in the Coordinate Plane | G-GPE.1, G-GPE.4 | 3 days |
| 2 | Radii and Chords | G-CO.9, G-C.3 | 3 days |
| 3 | Central Angles and Arcs | G-C.5 | 1 day |
| 4 | Tangents to a circle from a point outside the circle | G-C.2, G-GPE.4 | 2 days |
| 5 | Angle Bisectors | G-C 3, G-CO.12 | 3 days |
| 6 | Inscribed Angles and Cyclic Quadrilaterals | G-C.3, G-C.4(+) | 3 days |
| 7 | Parabolas | G-GPE.2 | 3 days |
| 8 | Ellipses and Hyperbolas | G-GPE.3(+) | 2 days |
| PT | Covering a surface with pennies |  | 1 day |
| R/T | Review and Test |  | 2 days |

**Unit 6: Three-Dimensional Geometry**

**Time:** 24 days

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Polygons and Polyhedral | 6-G.4, 7-G.6, 8-G.9, G-GMD.4 | 3 days |
| 2 | Nets and Surface Area | G-GMD.1 | 2 days |
| 3 | Volume | G-GMD.1, G-GMD 3 | 3 days |
| R/MT | Mid-Unit Test |  | 1 day |
| 4 | Cross Sections and Solids of Rotation | G-GMD.4 | 3 days |
| 5 | Spheres | G-GMD.2(+), G-GMD.3 | 2 days |
| 6 | Geometry on the Sphere | G-GMD.4 | 3 days |
| 7 | Size and Shape in the Real World | G-MG.1, G-MG.2, G-MG.3 | 3 days |
| PT | Constructing Solids with Equal Surface Area |  | 2 days |
| R/T | Review and Test |  | 2 days |

**Unit 7: Probability**

**Time:**  24 days

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Title** | **Standards** | **Time** |
| 1 | Sample Spaces | S-CP-1, S-CP-7, S-MD.7(+) | 4 days |
| 2 | Theoretical and Experimental Probability | S-CP-1, S-CP.9(+) | 4 days |
| 3 | Independent Events and the Multiplication Rule | S-CP-2, S-CP-5 | 3 days |
| 4 | Conditional Probability | S-CP-3, S-CP-5, S-CP-6 | 3 days |
| 5 | Interpreting Two-Way Tables | S-ID-5, S-CP-4 | 3 days |
| 6 | Using Probability to Make Decisions | S-MD 5, S-MD 6, S-MD 7 | 3 days |
| PT | Happiness Survey |  | 2 days |
| R/T | Review and Test |  | 2 days |

**Unit 8: Additional Topics**

**Time:** 16 days

Teachers may select which investigations to present or have students choose topics that interest them and complete the suggested project.