# Cobb County School District 2020-21

## Honors Geometry Teaching & Learning Framework

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit 1</strong></td>
<td><strong>Unit 4</strong></td>
</tr>
<tr>
<td>3 weeks</td>
<td>7 weeks</td>
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<tr>
<td><strong>Unit 2</strong></td>
<td><strong>Unit 5</strong></td>
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<tr>
<td>11 weeks</td>
<td>5 weeks</td>
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<tr>
<td><strong>Unit 3</strong></td>
<td><strong>Unit 6</strong></td>
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<tr>
<td>4 weeks</td>
<td>6 weeks</td>
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**Semester 1**

- **Transformations in the Coordinate Plane**
  - MGSE9-12.G.CO.1: Dilations & similarity (Precise definitions)
  - MGSE9-12.G.CO.2: Congruence & similarity (Coordinate plane)
  - MGSE9-12.G.CO.3: Congruence & rigid motions (Figures with rotations & reflections upon itself)
  - MGSE9-12.G.CO.4: Prove geometric theorems (Definitions of transformations)
  - MGSE9-12.G.CO.5: Construct regular polygons inscribed in a circle (Transforming figures)

- **Similarity, Congruence & Proofs**
  - MGSE9-12.G.SRT.1-2: Similar circles; radii, chords, tangents & secants with inscribed, central & circumscribed angles
  - MGSE9-12.G.SRT.3: Sine & cosine of complementary angles
  - MGSE9-12.G.SRT.4: Congruence & similarity (Prove theorems about triangles)

- **Right Triangle Trigonometry**
  - MGSE9-12.G.SRT.5: Trigonometric ratios & Pythagorean Theorem
  - MGSE9-12.G.SRT.6: Elevation & Depression

- **Circles & Volume**
  - MGSE9-12.G.C.1-2: Informal arguments for geometric formulas
  - MGSE9-12.G.C.3-5: Constructing inscribed & circumscribed circles; construct a tangent line; derive arc lengths
  - MGSE9-12.G.GMD.1: Informal arguments for geometric formulas
  - MGSE9-12.G.GMD.2-4: Cavalieri’s principle; volume; cross-sections & rotations

- **Geometric & Algebraic Connections**
  - MGSE9-12.G.MG.1-3: Describe objects; density; design problems
  - MGSE9-12.G.MG.4: Coordinates to prove simple geometric theorems

- **Applications of Probability**
  - MGSE9-12.S.CP.1-4: Set theory; independent probability; conditional probability; two-way tables
  - MGSE9-12.S.CP.5: Recognize & explain conditional probability
  - MGSE9-12.S.CP.6-7: Probability of compound events

**Semester 2**

- **Review & Extend**
  - MGSE9-12.N.CN.1: Loci (Complex numbers)

These units were written to build upon concepts from prior units, so later units contain tasks that depend upon the concepts addressed in earlier units. All units will include the Mathematical Practices and indicate skills to maintain.

**NOTE:** Mathematical standards are interwoven and should be addressed throughout the year in as many different units and tasks as possible in order to stress the natural connections that exist among mathematical topics.

**Grades 9-12 Key:**

- **Algebra Strand:** SSE = Seeing Structure in Expressions, APR = Arithmetic with Polynomial and Rational Expressions, CED = Creating Equations, REI = Reasoning with Equations and Inequalities
- **Functions Strand:** IF = Interpreting Functions, LE = Linear and Exponential Models, BF = Building Functions, TF = Trigonometric Functions
- **Geometry Strand:** CO = Congruence, SRT = Similarity, Right Triangles, and Trigonometry, C = Circles, GPE = Expressing Geometric Properties with Equations, GMD = Geometric Measurement and Dimension, MG = Modeling with Geometry
- **Statistics and Probability Strand:** ID = Interpreting Categorical and Quantitative Data, IC = Making Inferences and Justifying Conclusions, CP = Conditional Probability and the Rules of Probability, MD = Using Probability to Make Decisions