# Unit Plan by Prioritized Standards

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| **Content Area** | Geometry |
| **Grade/Course** | 10th |
| **Unit of Study** | Similarity, Congruence, and Proofs |
| **Duration of Unit** | 24-32 days |

Insert priority standards below (include code). **CIRCLE or Highlight** the **SKILLS** that students need to be able to do and **UNDERLINE** the **CONCEPTS** that students need to know. **(address "supporting" standards in daily lesson plans)**

**MGSE9-12.G.SRT.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.**

**MGSE9-12.G.CO.8 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions. (Extend to include HL and AAS.)**

**MGSE9-12.G.CO.9 Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.**

**MGSE9-12.G.CO.10 Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180 degrees; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.**

**MGSE9-12.G.CO.11 Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.**

| **Skills** (what must be able to do) | **Concepts** (what students need to know) | **DOK Level / Bloom's** |
|---|---|---|
| ● Use Congruence and similarity criteria for triangles | ● Solve problems and prove relationships in geometric figures that are similar and congruent | 2 |
| ● Explain triangle congruency | ● ASA, SAS, SSS, HL, AAS congruency theorems | 2 |
| ● Prove Theorems | ● Lines and angle theorems, triangle theorems, parallelogram theorems | 3/4 |

| **Step 5: Determine BIG Ideas** (enduring understandings students will remember long after the unit of study) | **Step 6: Write Essential Questions** (these guide instruction and assessment for all tasks. The big ideas are answers to the essential questions) |
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| ● **Given two figures determine whether they are similar and explain their similarity based on the equality of corresponding angles and the proportionality of corresponding sides.**<br>● **Use the properties of similarity transformations to develop the criteria for proving similar triangles: AA.**<br>● **Use AA, SAS, SSS similarity theorems to prove triangles are similar.**<br>● **Prove a line parallel to one side of a triangle divides the other two proportionally, and its converse.**<br>● **Use similarity theorems to prove that two triangles are congruent.**<br>● **Prove vertical angles are congruent**<br>● **Prove when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent.**<br>● **Prove points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.**<br>● **Prove the measures of interior angles of a triangle have a sum of 180o.**<br>● **Prove base angles of isosceles triangles are congruent.**<br>● **Prove the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length.**<br>● **Prove the medians of a triangle meet at a point.**<br>● **Prove properties of parallelograms including: opposite sides are congruent, opposite angles are congruent, diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.** | ● What strategies can I use to determine missing side lengths and areas of similar figures?<br>● Under what conditions are similar figures congruent?<br>● How do I know which method to use to prove two triangles congruent?<br>● How do I know which method to use to prove two triangles similar?<br>● How do I prove geometric theorems involving lines, angles, triangles, and parallelograms? |

| Essential Unit Vocabulary |
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| **Circumcenter, Congruent, Complementary angles, corresponding angles, corresponding sides, incenter, inscribed polygon, linear pair, midsegment, perpendicular bisector, remote interior angles of a triangle, same-side interior, same-side exterior, similar figures, supplementary angles, transversal, vertical angles** |
| **Next step, create assessments and engaging learning experiences** |