Unit Plan by Prioritized Standards

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)
● **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.** ● **Use the properties of similarity transformations to develop the criteria for proving similar triangles: AA.** ● **Use AA, SAS, SSS similarity theorems to prove triangles are similar.** ● **Prove a line parallel to one side of a triangle divides the other two proportionally, and its converse.** ● **Use similarity theorems to prove that two triangles are congruent.** ● **Prove vertical angles are congruent** ● **Prove when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent.** ● **Prove points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.** ● **Prove the measures of interior angles of a triangle have a sum of 180o.** ● **Prove base angles of isosceles triangles are congruent.** ● **Prove the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length.** ● **Prove the medians of a triangle meet at a point.** ● **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? ● Under what conditions are similar figures congruent? ● How do I know which method to use to prove two triangles congruent? ● How do I know which method to use to prove two triangles similar? ● How do I prove geometric theorems involving lines, angles, triangles, and parallelograms?

Essential Unit Vocabulary
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