C2.0 Geometry Unit 5 Instructional Focus: Circles

Topic	Instructional Foci
Topic 1: Circles and Angles	Students prove basic theorems about circles, including that a tangent line is perpendicular to a radius, the inscribed angle theorem, and theorems about chords, secants, and tangents as they relate to segment lengths and angle measures. They study relationships among segments on chords, secants, and tangents as an application of similarity. ***Concepts:*** SLT 1: Prove that all circles are similar by using dilations and relationships between parts of a circle. SLT 2: Identify and describe relationships among angles, radii, and chords. SLT 3: Determine relationships between radii, chords, and tangents. SLT 4: Determine missing measurements using the relationships among central angles, inscribed angles, and the arcs they intercept. SLT 5: Determine missing measurements by using the relationships among central angles, inscribed angles, circumscribed angles, other angles, and the arcs they intercept. SLT 6: Determine missing measurements by using the relationships among central angles, inscribed angles, circumscribed angles, other angles, and the arcs they intercept. SLT 7: Determine missing measurements by using the relationships among central angles, inscribed angles, circumscribed angles, other angles, and the arcs they intercept. SLT 8: Using definitions, properties, and theorems, prove properties of angles for polygons inscribed in a circle. SLT 9: Construct the circumcenter of a triangle to circumscribe a circle about a triangle. SLT 10: Construct the incenter of a triangle to inscribe a circle within a triangle. SLT 11: Use points of concurrency to solve real world problems. SLT 12: Use points of concurrency to solve real world problems.
Topic 2: Arc Length and Area	Students apply their understandings regarding similarity of all circles to determine the proportional relationship between arc length and radii of circles (i.e., radian measure). They move flexibly and efficiently between degree measure and radian measure of corresponding central angles and the measure of their intercepted arcs. When computing the arc length, the area of a sector, and the area of a segment in a circle, students are able to demonstrate the use of multiple paths to determine the correct length or area. ***Concepts:*** SLT 13: Derive the constant of proportionality between arc length & radii (radian measure). SLT 14: Derive the constant of proportionality between arc length & radii (radian measure). SLT 15: Find the arc length of a circle. SLT 16: Using similarity, derive the formula for the area of a sector. SLT 17: Find the area of a sector and segment in a circle. SLT 18: Find the area of a sector and segment in a circle.