Clarity for Learning

Standard KY.HS.G.16 Understand and apply theorems about circles.

Concepts (Nouns)	**Skills (Verbs)**
circle diameter radius chord inscribed angle central angle circumscribed angle point of tangency tangent line	identify describe recognize understand apply

Learning Progressions

Prerequisites:

- supplementary angles
- Triangle Angle Theorems

Grade level skills:

Identify and describe relationships among angles and segments within the context of circles involving:

- Find the measures of angles and lengths of segments in a circle.
- Recognize differences between and properties of inscribed, central and circumscribed angles.
- Identify key features of a circle including chords, tangent lines, central angles, and inscribed angles.
- Understand relationships between inscribed angles and the diameter of a circle.
- Understand the relationship between the radius of a circle and the line drawn through the point of tangency on that radius.

Clarifications:

Students recognize and apply relationships including the relationship between central, inscribed and circumscribed angles, inscribed angles on a diameter are right angles, the radius of a circle is perpendicular to the tangent where the radius intersects the circle. Students will explore relationships in circles with a variety of tools including technology.

Learning Intentions (I am learning to...)	**Success Criteria (I know I'm successful when...)**
Use relationships in circles to solve problems.	● I can identify lines that are tangent to a circle using angle measures and segment lengths. ● I can solve problems involving tangent lines. ● I can prove and apply relationships between chords, arcs, and central angles. ● I can find lengths of chords given the distance from the center of the circle and use this information to solve problems. ● I can identify and apply relationships between the measures of inscribed angles, arcs, and central angles. ● I can identify and apply the relationships between an angle formed by a chord and a tangent to its intercepted arc.