

Integrated II Unit 13: Circle and Their Properties

Universal Essential Question: Why is resilience crucial for success? How does investigation lead to discovery? (7th)

Content Essential Question: How do mathematical relationships help us make sense of the world?

Learning Objectives At the completion of this unit, I should ...	Self-Rating, what you understand/don't yet understand and (last column only) how you learned it 0 – I have no idea. 1 – I cannot solve problems yet but I am beginning to understand the strategies 2 – I can solve problems but do not yet know why the math works. 3 – I understand why the math works and can solve most problems but still make mistakes. 4 – I understand why the math works and can consistently and accurately solve problems.		
Know – Vocabulary of circles – The arc length and sector relationships – Equation of a circle			
Be able to – Determine the measure of an arc – Determine the length of an arc – Determine the area of a sector – Use and prove properties of chords and radii – Use and prove properties of tangents – Determine the measures of an angle when the vertex is inside/on/outside a circle – Determine the length of a line segment when chords/secants/ tangents intersect inside or outside a circle – Write the equation of a circle in the coordinate plane – Write the equation of a tangent line to a circle			
Understand – The relationships between angles and arcs – The proportional nature between area of sectors and area of a circle – The proportional nature between length of an arc and circumference			

Vocabulary of circles

Circle
Radius
Diameter
Chord
Secant
Tangent
Minor Arc
Major Arc
Semi-circle

Sector
Segment of a circle
Central Angle
Inscribed Angle
Intercepted Arc
Radian
Inscribed Polygon
Circumscribed Polygon

Reflection page

1. Write a story about being a circle living in a world of polygons. Use at least 10 of the vocabulary words in a meaningful manner.
2. Describe two real-world examples that illustrate how circles helps you make sense of the world. Be sure to connect each example to the mathematics in this unit.