

Common Core Standards - Resource Page

The resources below have been created to assist teachers' understanding and to aid instruction of this standard.

Domain	Standard: G.C.5 - Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.
<u>Circles</u> Find arcs lengths and areas of sectors of circles	<p><u>Questions to Focus Learning</u></p> <p>What is a radian? What is the advantage of measuring angles in radians instead of degrees?</p> <p>Radian measure is a way to describe angles that has advantages over using degrees.</p> <p><u>Student Friendly Objectives</u></p> <p><i>Knowledge Targets</i></p> <p>I know one radian is the central angle of an arc equal in length to the radius. I know that ratio between an arc's length and the radius of the circle is the central angle's measure in radians.</p> <p><i>Reasoning Targets</i></p> <p>I can show that that ratio between an arc's length and the radius of any circle is constant for arcs of the same angle. I can derive the formula for the area of a sector when the central is measured in degrees or radians.</p> <p><u>Vocabulary</u></p> <p>arc length circumference proportional radian radius sector</p> <p><u>Teacher Tips</u></p> <p>Emphasize the similarity of all circles. Note that by similarity of sectors with the same central angle, arc lengths are proportional to the radius. Use this as a basis for introducing radian as a unit of measure. It is not intended that it be applied to the development of circular trigonometry in this course.</p>

	<u>Vertical Progression</u>
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The above information and more can be accessed for free on the [Wiki-Teacher](#) website.

Direct link for this standard: [G.C.5](#)