

## High School Algebra Playlist: Identifying Circle Relationships

Aligns with [CCSS.Math.Content.HSG.C.A.2](#): Identify and describe relationships among inscribed angles, radii, and chords. *Include 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.*

### Related Standards

- [CCSS.Math.Content.HSG.CO.A.1](#): Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.
- [CCSS.Math.Content.HSG.C.A.3](#): Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.
- [CCSS.Math.Content.HSG.C.A.4](#): Construct a tangent line from a point outside a given circle to the circle.

PREVIEW



## Objectives

In this module, you will learn and practice the following skills:

- identify relationship among circle features
- identify the relationship between the tangent and the circle's radius at the point of tangency

Let's get started!

## Key Terms

- A **central angle** has its vertex at the center of the circle.
- An **inscribed angle** is formed by two chords that meet at a point on the circle.
- A **circumscribed angle** has rays that are tangent to a circle.
- A **chord** is a line segment with endpoints on a circle.
- The **tangent** to a circle at a point is a straight line that touches the circle at one point.



## Identifying Circle Relationships

([CCSS.Math.Content.HSG.C.A.2](#))

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If your students...

### Confuse inscribed angles with central angles:

Remind students that a central angle of  $90^\circ$  is a right angle and that it cuts off a quarter of the circle,  $90^\circ$  of arc. You can help them remember that an inscribed angle of  $90^\circ$  cuts off half the circle,  $180^\circ$  of arc.

WATCH: **Inscribed and Central Angles**

<https://www.opened.com/video/inscribed-and-central-angles/366280>

### Confuse inscribed angles with circumscribed angles:

The general relationship for both is that the angle is half the difference between the arcs cut off of the circle. For an inscribed angle, the students can think of one of those arcs as having a measure of 0, and so the inscribed angle is half the “other” arc.

<https://www.khanacademy.org/math/geometry/cc-geometry-circles/central-inscribed-circumscribed/v/measure-of-circumscribed-angle>

