Understand and apply theorems about circles (Standards G.C.1-4)

**Standard II.G.C.1:** Prove that all circles are similar.

### Concepts and Skills to Master

- Recognize that any two circles are related by a dilation, possibly along with a translation.
- Write up a formal argument explaining their reasoning for why two circles must be similar.

### Related Standards: Current Course

- II.G.C.2; II.G.C.5; II.G.SRT.3; II.G.SRT.2; II.G.SRT.5; II.G.GPE.1; II.G.GPE.4

### Related Standards: Future Courses

- III.F.TF.1; III.G.MG.1; III.G.MG.3

### Support for Teachers

#### Critical Background Knowledge

- Correctly name shapes (K.G.2)
- Know the area and circumference of a circle (7.G.4)
- Know precise definition of circle (I.G.CO.1)

### Academic Vocabulary

### Resources

- **Curriculum Resources:** [https://www.uen.org/core/core.do?courseNum=5620#71552](https://www.uen.org/core/core.do?courseNum=5620#71552)
Understand and apply theorems about circles (Standards G.C.1-4)

**Standard II.G.C.2:** Identify and describe relationships among inscribed angles, radii, and chords. *Relationships 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.*

### Concepts and Skills to Master
- Explore various properties related to circles (include measures of central, inscribed and circumscribed angles)
- Form conjectures about the relationships they find.
- Develop justifications for why their conjectures work.

### Related Standards: Current Course
- II.G.C.1; II.G.C.3; II.G.C.4; II.G.C.5; II.G.GPE.1; II.G.GPE.4; II.G.CO.9, II.G.CO.10, II.G.CO.11

### Related Standards: Future Courses
- III.G.MG.1; III.G.MG.3

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**Support for Teachers**

### Critical Background Knowledge
- Correctly name shapes (**K.G.2**)
- Draw points, lines, lines segments, ray, angles, and parallel and perpendicular lines. Identify these in two-dimensional figures. (**4.G.1**)
- Know the area and circumference of a circle (**7.G.4**)
- Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment (**I.G.CO.1**)

### Academic Vocabulary
- inscribed angle, central angle, circumscribed angle, chord, tangent line

### Resources
- Curriculum Resources: [https://www.uen.org/core/core.do?courseNum=5620#71552](https://www.uen.org/core/core.do?courseNum=5620#71552)