

Unit #4 Circles

Content Area: **Math**
Course(s):
Time Period:
Length: **6 weeks**
Status: **Published**

State Mandated Topics Addressed in this Unit

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N/A	N/A

Circles

Learning Objectives

- Objective 1 - Prove that all circles are similar.
- Objective 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.
- Objective 3 - Construct the inscribed and circumscribed circles of a triangle and prove properties of angles for a quadrilateral inscribed in a circle.
- Objective 4 - 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.

Essential Skills

- Essential Skill 1 - Prove all circles are similar.
- Essential Skill 10 - Define radian measure of an angle as constant of proportionality.
- Essential Skill 11 - Derive the formula for the area of sector.
- Essential Skill 2 - Identify inscribed angles, radii, and chords.
- Essential Skill 3 - Describe the relationship among inscribed angles, radii, and chords.
- Essential Skill 4 - Describe the relationship between central angle, inscribed angle and circumscribed angles.
- Essential Skill 5 - Describe that inscribed angles on the diameter of a circle are right angles.
- Essential Skill 6 - Describe that the angle that is formed where the radius of a circle meets the line tangent to a circle is a perpendicular angle.
- Essential Skill 7 - Construct the inscribed and circumscribed circles of a triangle.
- Essential Skill 8 - Prove properties of angles for a quadrilateral inscribed in a circle.

- Essential Skill 9 - Derive using similarity the arc length intercepted by the angle is proportional to the radius.

Standards

MATH.9-12.G.C.A.1	Prove that all circles are similar.
MATH.9-12.G.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.
MATH.9-12.G.C.A.3	Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.
MATH.9-12.G.C.A.4	Construct a tangent line from a point outside a given circle to the circle.

Instructional Tasks/Activities

- G.C.A.1 Worksheet #1 – Circle Similarity
- G.C.A.2 Worksheet #2 – Arc Relationships

Assessment Procedure

- Classroom Total Participation Technique
- Classwork
- DBQ
- Essay
- Exit Ticket/Entrance Ticket/Do Now
- Journal / Student Reflection
- Kahoot
- Other named in lesson
- Peer Review
- Performance
- Problem Correction
- Project
- Quiz
- Rubric
- Teacher Collected Data
- Test
- Worksheet

Recommended Technology Activities

- Appropriate Content Specific Online Resource
- Appropriate Content Specific Online Resource
- Copy/Paste Content Specific Link Here
- Copy/Paste Content Specific Link Here
- Copy/Paste Content Specific Link Here
- Gimkit
- GoGuardian
- Google Classroom
- Google Docs
- Google Slides
- Google Slides
- Kahoot
- MagicSchool AI
- Other- Specified in Lesson
- Quiziz
- Screencastify

Accommodations & Modifications & Differentiation

Accommodations and Modifications should be used to meet individual needs. Their IEP and 504 plans should be used in addition to the following suggestions.

Gifted and Talented

- Compare & Contrast
- Conferencing
- Debates
- Jigsaw
- Peer Partner Learning
- Problem Solving
- Structured Controversy
- Think, Pair, Share
- Tutorial Groups

Instruction/Materials

- alter format of materials (type/highlight, etc.)

- color code materials
- eliminate answers
- extended time
- extended time
- large print
- modified quiz
- modified test
- Modify Assignments as Needed
- Modify/Repeat/Model directions
- necessary assignments only
- Other (specify in plans)
- other- named in lesson
- provide assistance and cues for transitions
- provide daily assignment list
- read class materials orally
- reduce work load
- shorten assignments
- study guide/outline
- utilize multi-sensory modes to reinforce instruction

Environment

- alter physical room environment
- assign peer tutors/work buddies/note takers
- assign preferential seating
- individualized instruction/small group
- modify student schedule (Describe)
- other- please specify in plans
- provide desktop list/formula

Honors Modifications

Resources

- <http://geometrycommoncore.com/>
- <https://education.ti.com/en/timathnspired/us/standards-search>
- <https://www.engageny.org/resource/high-school-geometry>

