

Unit #8 :Circles Self-Check/Tracker

Need help? Use your notes, practice problems, bellringers, and other work.

Level 4 Advanced (Blue) 97% or 100%

Level 3 Proficient (Green) 93%

Level 2 Basic (Yellow) 75% or 85%

Priority Standards

HSG-C.A.2 Circles--Understand and apply theorems about circles

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.*

HSG-C.A.3 Circles--Understand and apply theorems about circles

3. Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.

HSG-C.B.5 Circles--Find arc lengths and areas of sectors of circles

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.

HSG-GPE.A.1 Expressing Geometric Properties with Equations--Translate between the geometric description and the equation for a conic section

1. Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.

SUCCESS CRITERIA

Circle Your Proficiency Level

Level 3

I can...use the equation $degrees = \frac{part}{whole} \cdot 360$

- To find the central angle if given the percent by substituting the $\frac{percent}{100}$ in for $\frac{part}{whole}$ in the equation and then multiplying by 360
- To find the central angle if given the number that takes up the sector by substituting $\frac{number}{total}$ in for $\frac{part}{whole}$ in the equation then multiplying by 360
- To find the percent by substituting in the central angle for the degrees and using $\frac{p}{100}$ for $\frac{part}{whole}$ and then solving for p

CFA #1

CFA #2

CFA #3

TEST

HSG-C.
B.5
A
P
B
B B

HSG-C.
A.2
A
P
B
B B
HSG-C.
A.3
A
P
B
B B
HSG-C.
B.5

- To find the total by substituting in the central angle for the degrees and using $\frac{\text{number}}{t}$ for $\frac{\text{part}}{\text{whole}}$ and then solving for t

I can...find a fraction of the circumference by using the formula $\frac{\theta}{360} \cdot 2\pi R$ or $\frac{\theta}{360} \cdot \pi D$

- by substituting the central angle in for θ dividing by 360 and then multiplying by 2 times π times the radius OR
- substituting the central angle in for θ dividing by 360 and then multiplying by π times the diameter

I can...find a fraction of the area by use the formula $\frac{\theta}{360} \cdot \pi R^2$

- by substituting the central angle in for θ dividing by 360 and then multiplying by the radius being squared

A
P
B
B B

HSG-G
PE.A.1

A
P
B
B B

Level 2

I can... identify parts of a circle

• diameter	• radius
• arc	• sector
• chord	• secant
• tangent	• circumference

HSG-C.

A.2

A
P
B
B B

Level 3

I can... solve for angles formed inside the circle, on the circle, and outside the circle

- Inscribed Angles (on circle) $arc = \frac{1}{2} (angle)$
 - 2 chords
 - chord and secant
 - 2 secants
- Inside Angles $arc = \frac{1}{2} (angle + angle)$
 - 2 Intersecting Chords or Secants
- Outside Angles $arc = \frac{1}{2} (big\ angle - small\ angle)$
 - 2 tangents
 - 2 secants
 - secant and tangent

<p>I can...solve for segment lengths involving</p> <ul style="list-style-type: none"> • 2 intersecting chords <ul style="list-style-type: none"> ◦ $1st\ chord\ piece \cdot chord\ piece = 2nd\ chord\ piece \cdot chord\ piece$ • 2 intersecting tangents <ul style="list-style-type: none"> ◦ $outside\ piece \cdot total = outside\ piece \cdot total$ • 1 tangent and 1 chord <ul style="list-style-type: none"> ◦ $(outside\ piece)^2 = outside\ piece \cdot total$ <p>I can... use the properties of tangents</p> <ul style="list-style-type: none"> • Tangents form a right angle with the radius/diameter • Tangents that come from a common external point are congruent <p>I can... use the properties of chords</p> <ul style="list-style-type: none"> • Minor arcs are congruent if corresponding chords are congruent • If one chord is the perpendicular bisector of another chord then it is a diameter • If a diameter is perpendicular to a chord then it bisects the chord and its arc • Two chords are congruent if they are equidistant from the center 				
<p>Level 3</p> <p>I can...write and use an equation of a circle.</p> <ul style="list-style-type: none"> • If I am given a graph then I can locate the center C(h,k) and the radius r and substitute the values into the equation. • If I am given the equation then I can identify the center C(h,k) and the radius r and make a sketch of the circle. $(x - h)^2 + (y - k)^2 = r^2$ <p>I can...use angle bisectors and perpendicular bisectors to find the center of a circle</p> <ul style="list-style-type: none"> • Circumscribed circle (Circumcenter) - intersection of the perpendicular bisectors of triangle • Inscribed circle (Incenter) - intersection of angle bisectors of triangle 			<p>HSG-G PE.A.1 A P B B B</p> <p>HSG-C. A.3 A P B B B</p>	

Resource : [PowerPoint Presentation](#), [Quizizz](#), [Circle Relationship Reference Sheet](#)

Week 1 of Circles

Day 1: Circumference and Area

- [Quizizz Pre-test](#)
- [Quizizz-Circles Lesson](#)
[Circumference, Area, Volume of Cylinders](#)
- Start Practice [Sheet 1](#)

LT: I will learn to...

- identify parts of a circle
- find the circumference and area of a circle

SC: I can...

- identify the diameter, radius, arc, sector, chord, secant, tangent, and circumference of a circle
- Use $C = \pi D$ or $2\pi R$ to calculate the circumference of a circle
- Use $A = \pi R^2$ to calculate the area of a circle

Day 2: Finding Central Angles

- [Video](#)
- [Practice: Drawing Pie Charts](#)
- Finish Practice [Sheet 1](#)

LT: I will learn to...find central angles, percents, or totals using a Circle Graph

SC: I can...use the equation

$$\text{degrees} = \frac{\text{part}}{\text{whole}} \cdot 360$$

- To find the central angle if given the percent by substituting the $\frac{\text{percent}}{100}$ in for $\frac{\text{part}}{\text{whole}}$ in the equation and then multiplying by 360
- To find the central angle if given the number that takes up the sector by substituting $\frac{\text{number}}{\text{total}}$ in for $\frac{\text{part}}{\text{whole}}$ in the equation then multiplying by 360
- To find the percent by substituting in the central angle for the degrees and

- using $\frac{p}{100}$ for $\frac{part}{whole}$ and then solving for p
- To find the total by substituting in the central angle for the degrees and using $\frac{number}{t}$ for $\frac{part}{whole}$ and then solving for t

Week 2 of Circles

Day 3: Arc Length and Sector Area

- Use Quizizz to teach the [Lesson on Arc Length and Sector Area](#)
- Practice [Sheet 2](#)

LT: I will learn to...

- Find arc length
- Find sector area

SC:

I can...find a fraction of the circumference by using the

formula $\frac{\theta}{360} \cdot 2\pi R$ or $\frac{\theta}{360} \cdot \pi D$

- by substituting the central angle in for θ dividing by 360 and then multiplying by 2 times π times the radius OR
- substituting the central angle in for θ dividing by 360 and then multiplying by π times the diameter

I can...find a fraction of the area

by use the formula $\frac{\theta}{360} \cdot \pi R^2$

- by substituting the central angle in for θ dividing by

Day 4: CFA #1 & Parts of a Circle

- Review Quizizz [Arc Length & Sector Area](#)
- CFA #1 in Mastery Connect
- [Parts of a circle](#)
- Quizizz Practice [Parts of a Circle](#)

LT: I will learn to...

- Define parts of a circle including radius, diameter, secant, arc, chord, sector, segment, circumference, tangent.

SC: I can....

- Define parts of a circle including formulas for diameter, circumference and area.
- Demonstrate my ability to find arc length and area on the checkpoint.

Day 5: Central Angles and Inscribed Angles

- Use Quizizz to teach the [Lesson on Central Angles and Inscribed Angles](#)
- Practice [Sheet 3](#)

LT: I will learn...

- about central angles and arcs of a circle
- about inscribed angles

SC:

I can...

- Identify a minor arc (less than half the circle)
- Identify a major arc (equal to or more than half the circle)
- solve for angles formed at the center of the circle
 $arc = angle$
- solve for angles formed on the circle
 - Inscribed Angles (on circle)
 $arc = \frac{1}{2} (angle)$
 - 2 chords

Day 6: Angles Formed Inside and Outside the Circle

- Use Quizizz to teach the [Lesson on More Angles](#)
- Practice [Sheet 4](#)

LT: I will learn about other angle relationships in a circle

SC:

I can... solve for angles formed inside the circle and outside the circle

- Inside Angles
 $arc = \frac{1}{2} (angle + angle)$
 - 2 Intersecting Chords or Secants
- Outside Angles
 $arc = \frac{1}{2} (big\ angle - small\ angle)$
 - 2 tangents
 - 2 secants
 - secant and tangent

<p>360 and then multiplying by the radius being squared</p>		<ul style="list-style-type: none"> ○ chord and secant ○ 2 secants 	
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Week 3 Circles

<p>Day 7: Segment Lengths Inside and Outside the Circle</p> <ul style="list-style-type: none"> ● Use Quizizz to teach the Lesson on Segment Lengths ● Practice Sheet 5 <p>LT: I will learn about... segment lengths in a circle</p> <p>SC:</p> <p>I can...solve for segment lengths involving</p> <ul style="list-style-type: none"> ● 2 intersecting chords <p>$1st\ chord\ piece \cdot chord\ piece = 2nd\ chord\ piece \cdot chord\ piece$</p> <ul style="list-style-type: none"> ● 2 intersecting tangents <p>$outside\ piece \cdot total = outside\ pie$</p> <ul style="list-style-type: none"> ● 1 tangent and 1 chord <p>$(outside\ piece)^2 = outside\ piece \cdot$</p>	<p>Day 8: Properties of Tangents</p> <ul style="list-style-type: none"> ● Use Quizizz to teach Tangent Properties ● IXL Practice <p>LT: I will learn to...</p> <ul style="list-style-type: none"> ● use the properties of tangents <p>SC:</p> <p>I can... use the properties of tangents</p> <ul style="list-style-type: none"> ● Tangents form a right angle with the radius/diameter ● Tangents that come from a common external point are congruent 	<p>Day 9: Properties of Chords</p> <ul style="list-style-type: none"> ● Use Quizizz to teach Chord Properties ● IXL Practice <p>LT: I will learn to...</p> <ul style="list-style-type: none"> ● use the properties of chords <p>SC:</p> <p>I can... use the properties of chords</p> <ul style="list-style-type: none"> ● Minor arcs are congruent if corresponding chords are congruent ● If one chord is the perpendicular bisector of another chord then it is a diameter ● If a diameter is perpendicular to a chord then it bisects the chord and its arc ● Two chords are congruent if they are equidistant from the center 	<p>Day 10: Review Parts of a Circle, Angles in Circles, Segments in Circles Properties of Tangents and Chords & CFA #2</p> <ul style="list-style-type: none"> ● Review Quizizz Circle Vocab (10 Questions) ● Review Quizizz Angles in Circles (10 Questions) ● Review Quizizz Special Segments in Circles (10 Questions) ● Review Quizizz Arcs, Angles, Chords and Tangents (10 Questions) ● CFA #2 in Mastery Connect <p>LT: I will review what I have learned so far about circles</p> <p>SC: I will demonstrate what I know about circles on the checkpoint.</p> <p>THANKSGIVING BREAK</p>
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Week 4 Circles

Day 11: Write and Graph Equations of Circles

- [Use Quizizz to teach Equations of Circles](#)
- Practice [Quizizz Equations of Circles](#)

LT: I will learn about...an equation of a circle

SC:

I can...write and use an equation of a circle.

- If I am given a graph then I can locate the center C(h,k) and the radius r and substitute the values into the equation.
- If I am given the equation then I can identify the center C(h,k) and the radius r and make a sketch of the circle.

$$(x - h)^2 + (y - k)^2 = r^2$$

Day 12: Circumscribed and Inscribed Circles

- Bellringer [M.3 Identify medians, altitudes, angle bisectors, and perpendicular bisectorsJWN](#)
- [Centers of Triangles](#)
- Quizizz [Inscribed and Circumscribed Circles](#)

LT: I will learn... to find the center of inscribed and circumscribed circles

SC: I can...use angle bisectors and perpendicular bisectors to find the center of a circle

- Circumscribed circle (Circumcenter) - intersection of the perpendicular bisectors of triangle
- Inscribed circle (Incenter) - intersection of angle bisectors of triangle

Day 13: Review & CFA #3

- **CFA #3 in Mastery Connect**
- [Google Slides Review](#)
- [Google Form for Review](#)
- [Answer Key](#)

LT: I will review... circles

SC: I can...demonstrate what I have learned so far about circles on the checkpoint.

Day 14: Continue Review

[Kuta Review Worksheet](#)

LT: I will continue to review circles by getting organized as I work through the review sheet.

SC: I can easily go through my notes to ensure success on my test next class.

Week 5 Circles

Day 15: Test

<ul style="list-style-type: none">• <p>LT: I will learn to.. Show what I know. .</p> <p>SC: I can.. Demonstrate my learning throughout this unit.</p>			
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