



PRINTABLES

PREMIUM EDUCATIONAL RESOURCES

Circle Theorems Interactive Notebook Foldables

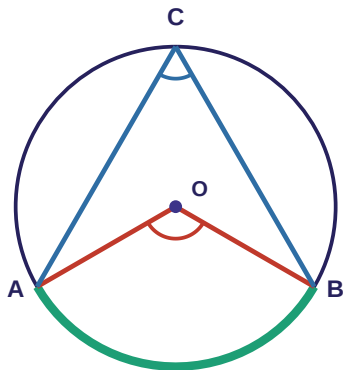
Chords • Tangents • Inscribed Angles

A complete INB unit with Special Education scaffolds aligned to HSG.C.A.2 and the inscribed-quadrilateral component of HSG.C.A.3

7 FOLDABLES + POSTER

WARM-UPS, WORKSHEETS, TASK CARDS

QUIZ, KEYS and IEP TRACKERS



Central angle (red) = arc Inscribed angle (blue) = half the arc

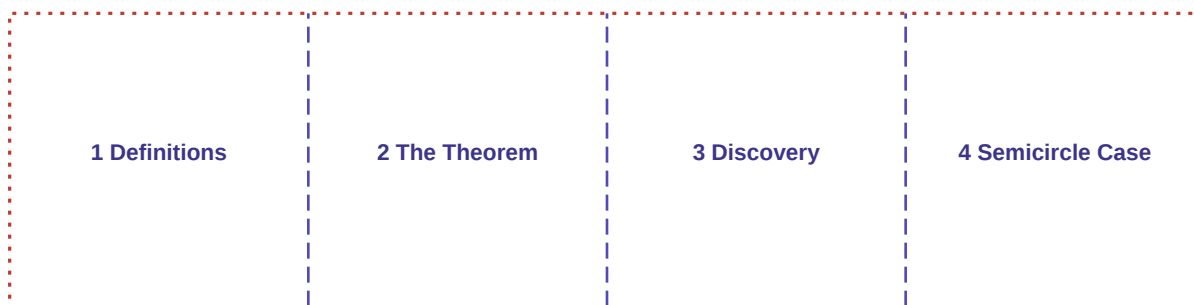
Grades 9-12 | Geometry | Special Education Edition

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Foldable 2: Inscribed Angle Accordion

Type: 4-panel accordion | **SpEd focus:** guided discovery, color coding | **Standard:** HSG.C.A.2



CUT along the dotted line | FOLD along the dashed lines

Panel 1 - Definitions

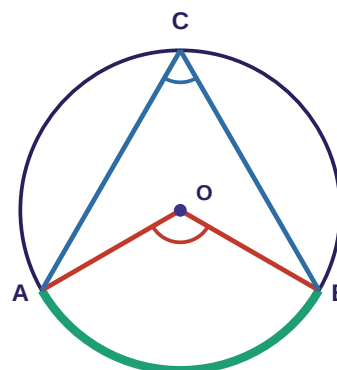
- Central angle: vertex at the CENTER (red).
- Inscribed angle: vertex ON the circle, sides are chords (blue).
- Intercepted arc: the arc inside the angle (green).

Panel 2 - Inscribed Angle Theorem

- Inscribed angle = $\frac{1}{2}$ x central angle on the same arc.
- Inscribed angle = $\frac{1}{2}$ x intercepted arc.
- Two inscribed angles on the same arc are congruent.

Panel 4 - Semicircle case

- If the arc is a semicircle (180°), the inscribed angle is 90° .
- An inscribed angle that intercepts a diameter is always a right angle.



Central angle (red) = arc Inscribed angle (blue) = half the arc

Panel 3 - Discovery (protractor)

- Measure central angle AOB (red). Record it.
- Measure inscribed angle ACB (blue). Record it.
- Compare: the blue angle is half the red angle.
- Sample data in the answer key confirms the pattern.

Worked example (think-aloud)

Step 1. Read: arc AB = 120 degrees. The green arc is intercepted by BOTH angles.

Step 2. Central angle AOB equals its arc: 120 degrees.

Step 3. Inscribed angle ACB is half the arc: $120 / 2 = 60$ degrees.

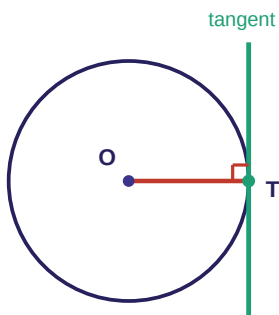
Step 4. Check: 60 is half of 120. The theorem holds.

Foldable 4: Tangent Properties Tri-Fold

Type: tri-fold | **SpEd focus:** anchor visual, equation practice with steps

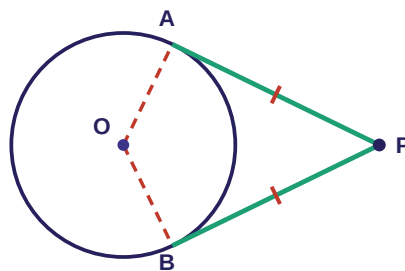


CUT along the dotted line | FOLD along the dashed lines



Radius OT is perpendicular to the tangent at T

Panel 1. A tangent is perpendicular to the radius at the point of tangency (90 degrees).



Tangent segments from P are congruent: $PA = PB$

Panel 3. Tangent segments from the same external point are **CONGRUENT**: $PA = PB$.

Worked example: $PA = 4x - 1$ and $PB = 2x + 9$.

- Set equal: $4x - 1 = 2x + 9$.
- $2x = 10$, so $x = 5$. $PA = 19$. Check $PB = 19$.

Worked example: radius 7, $OP = 25$.

$PT = \sqrt{625 - 49} = \sqrt{576} = 24$.

A common external tangent touches both circles

Panel 2. A common tangent touches two circles; external ones do not cross between the circles.

Daily Warm-Ups (Bell Ringers)

Five quick slips to open each lesson. Solutions are in the answer key. Project them or print quarter-page slips.

Day 1

1. A tangent line touches a circle in exactly how many points?

Answer: _____

2. A circle has radius 7 cm. Find the diameter.

Answer: _____

Day 2

1. A central angle measures 84 degrees. Find the inscribed angle on the same arc.

Answer: _____

Day 3

1. A chord is 14 cm long and the radius is 25 cm. Find the distance from the center to the chord.

Answer: _____

Day 4

1. Tangent segments from P measure $2x + 5$ and $3x - 4$. Find x and the segment length.

Answer: _____

Day 5

1. An inscribed quadrilateral has one angle of 118 degrees. Find the opposite angle.

Answer: _____

Task Card Set (12 Cards) and Recording Sheet

Print, laminate, and cut. Cards work as stations, scavenger hunts, or fast-finisher bins. Recording sheet on the next page.

Card 1

Central angle = 128. Find the inscribed angle on the same arc.

Answer: _____

Card 3

Radius = 6.5. Find the diameter.

Answer: _____

Card 5

Tangent segments: $7x - 3$ and $5x + 11$. Find x and the segment.

Answer: _____

Card 7

Chords intersect inside; arcs 96 and 48. Find the angle.

Answer: _____

Card 9

Inscribed quadrilateral: angle A = 88. Find angle C.

Answer: _____

Card 11

Chords intersect: 5 and 12 on one chord, 10 on a segment of the other. Find the other segment.

Answer: _____

Card 2

Inscribed angle = 28. Find the central angle on the same arc.

Answer: _____

Card 4

Chord = 16, radius = 17. Find the distance from center to chord.

Answer: _____

Card 6

Tangent-chord angle intercepts arc 124. Find the angle.

Answer: _____

Card 8

Two secants outside; arcs 160 and 60. Find the angle.

Answer: _____

Card 10

Inscribed angle intercepts arc 150. Find the angle.

Answer: _____

Card 12

A chord of 18 is 12 from the center. Find the radius.

Answer: _____

IEP Progress Monitoring Tracker

Record each exit ticket score (number correct out of total). Shade the cell when the student meets their goal benchmark for three consecutive sessions.

Student	ET1	ET2	ET3	ET4	ET5	ET6	ET7	Notes

Student Self-Assessment (after the unit)

I can statement	4 teach it	3 got it	2 almost	1 help
identify every part of a circle from a diagram.	☐	☐	☐	☐
apply the inscribed angle theorem (half the central angle).	☐	☐	☐	☐
use chord properties (bisector, distance, intersecting products).	☐	☐	☐	☐
use tangent properties (perpendicular radius, equal segments).	☐	☐	☐	☐
find missing angles in inscribed quadrilaterals.	☐	☐	☐	☐
choose the right angle-arc rule by vertex location.	☐	☐	☐	☐

Interactive Notebook Rubric

Criteria	4 Excellent	3 Proficient	2 Developing	1 Beginning
Foldables (7)	All 7 complete	5-6 complete	3-4 complete	0-2 complete
Math accuracy	No errors	1-2 errors	3-4 errors	5+ errors
Color coding	Always red/blue/green	Usually	Sometimes	Rarely
Organization	Neat, labeled, dated	Minor mess	Some missing labels	Disorganized

Answer Keys and Detailed Solutions

Exit Ticket 1 - Vocabulary

#	Answer	Detailed solution
1	radius	By definition, a radius runs from the center to the circle; all radii of one circle are equal.
2	tangent	A tangent touches in exactly one point; a secant cuts two points; a chord is a segment, not a line.
3	True	A diameter is a chord through the center, so every diameter is a chord.

Exit Ticket 2 - Inscribed Angles

#	Answer	Detailed solution
1	58 degrees	Inscribed = $1/2 \times$ central: $116 / 2 = 58$.
2	90 degrees	A diameter cuts a 180-degree arc; $180 / 2 = 90$ (angle in a semicircle).
3	35 degrees	Inscribed angles on the same arc are congruent.

Exit Ticket 3 - Chords

#	Answer	Detailed solution
1	24 cm	Half-chord = $\sqrt{169 - 25} = \sqrt{144} = 12$; chord = 24 cm.
2	8	$6 \times 4 = 3 \times ED$, so $ED = 24 / 3 = 8$.
3	True	A radius perpendicular to a chord bisects it and its arc.

Exit Ticket 4 - Tangents

#	Answer	Detailed solution
1	90 degrees	A tangent is perpendicular to the radius at the point of tangency.
2	$x = 5$, $PA = 17$	$3x + 2 = 5x - 8$ gives $10 = 2x$, $x = 5$; $PA = 17$; check $PB = 17$.
3	48 degrees	Tangent-chord angle = half the arc: $96 / 2 = 48$.

Exit Ticket 5 - Inscribed Quadrilaterals

#	Answer	Detailed solution
1	78 degrees	$C = 180 - 102 = 78$.
2	85 degrees	$D = 180 - 95 = 85$.
3	Sample sentence	The opposite angles open on arcs that together make the full 360-degree circle; each angle is half its arc, so the pair is half of $360 = 180$.

Exit Ticket 6 - Pocket Sort Rules

#	Answer	Detailed solution
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TPT PREVIEW - WHAT'S INSIDE THE FULL RESOURCE

Circle Theorems Interactive Notebook Foldables

GRADES 9-12 • GEOMETRY • SPECIAL EDUCATION EDITION

Focused on chords, tangents, inscribed angles, and related circle theorems.

INTERACTIVE NOTEBOOK CORE

- 7 foldables + a Circle Theorems poster
- Parts of a Circle Flip Book
- Inscribed Angle Accordion
- Chord Properties 4-Tab Foldable
- Tangent Properties Tri-Fold
- Inscribed Quadrilaterals Discovery
- Angle-Arc Relationships Pocket Sort
- Circle Theorems Cheat-Sheet One-Pager

PRACTICE + ASSESSMENT

- 5 Daily Warm-Ups / Bell Ringers
- 3 leveled practice worksheets: A, B, C
- 12 task cards + recording sheet
- Unit Quiz: Multiple Choice + Free Response
- 7 student exit tickets
- Detailed answer keys and worked solutions

SPED / TEACHER SUPPORTS

- Special Education scaffolds throughout
- Pacing guide + accommodations checklist
- IEP progress monitoring tracker
- Student self-assessment
- Interactive notebook rubric
- Color-coded visual supports + guided examples

STANDARDS

- HSG.C.A.2 support
- Inscribed-quadrilateral component of HSG.C.A.3
- Grades 9-12 Geometry placement
- Designed for print, cut, fold, and notebook use

This preview contains selected sample pages. The full resource contains all components listed above.

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