TI-Nspire Activity: *Inscribed Angles*
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Activity Overview
The student will explore properties of inscribed angles.

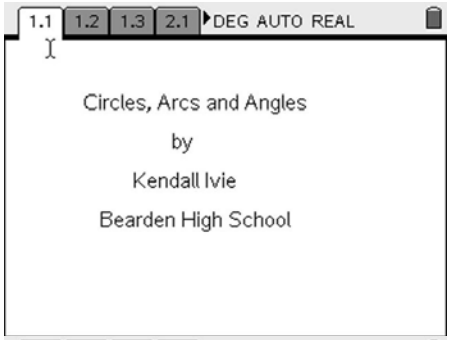
Concepts
The measure of an inscribed angle is half the measure of the intercepted arc.

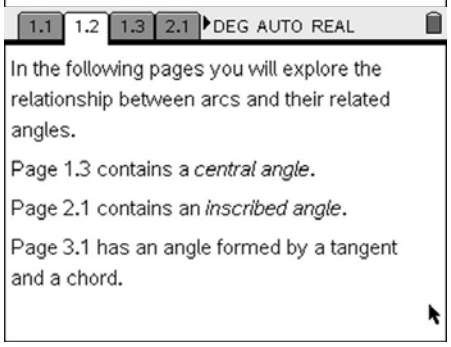
Teacher Preparation
The terms: ***chord, tangent, minor arc****,* ***major arc***, ***central angle*** *and* ***inscribed angle*** *need to be defined prior to this activity.*

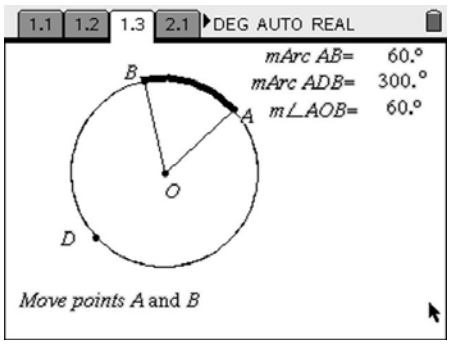
The Classroom.
Students will need to know how to open documents, change pages and move points.

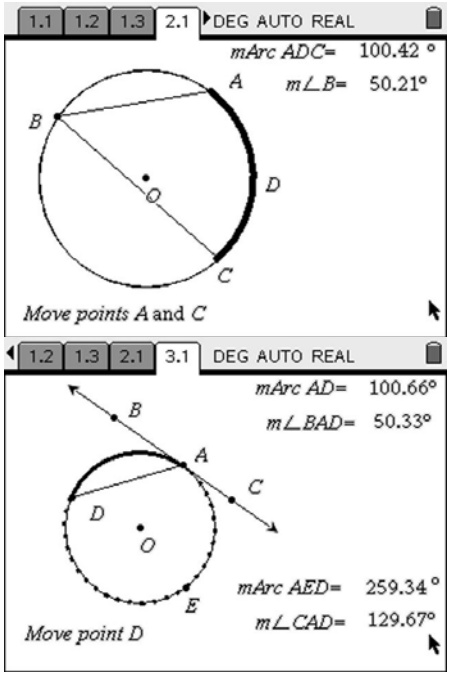
The students will open **Inscribed Angles.tns** *then move the listed points and record the appropriate measures and make conjectures about the relationship of the angles and arcs.*

Central angles will have the same measure as the arcs and angles with their vertices on the circle will have measures one half the arc.








1.1 1.2 1.3 2.1 DEG AUTO REAL
mArc ADC= 100.42 °
m∠B= 50.21°
A
B
D
O
C
Move points A and C
1.2 1.3 2.1 3.1 DEG AUTO REAL
mArc AD= 100.66°
m∠BAD= 50.33°
B
A
C
D
O
E
mArc AED= 259.34 °
m∠CAD= 129.67°
Move point D

In this activity, you will investigate central angles and inscribed angles.

Open file Inscribed Angles.

Problem 1 – Central angles & arcs

On page 1.3, you will see circle ***O*** with central angle ***AOB***, minor arc ***AB***, and major arc ***ADB***.

1. Drag either point ***A*** or ***B***. Record the measurements below.

$m\overset{\frown}{AB}$	$m\overset{\frown}{ADB}$	$m\angle AOB$

2. Complete these conjectures:

- The measure of $\overset{\frown}{AB}$ is _____ the measure of $\angle AOB$.
- The measure of a minor arc is _____ the measure of its central angle
- The measure of $\overset{\frown}{AB}$ and the measure of $\overset{\frown}{ADB}$ add to _____.
- The measures of a minor arc and its associated major arc add to _____.

Problem 2 – Inscribed angles & arcs

On page 2.1, you will see circle ***O*** with inscribed angle ***ABD***.

1. Drag either point ***A*** or ***C***. Record the measurements below.

$m\angle ABD$	$m\overset{\frown}{ADC}$	$m\angle ABD \div m\overset{\frown}{ADC}$

2. Complete these conjectures:

- The measure of $\angle ABD$ is _____ the measure of $\overset{\frown}{ADC}$.
- The measure of an inscribed angle is _____ the measure of its intercepted arc.

Problem 3 – Angles formed by a tangent and a chord

On page 3.1, you will see circle ***O*** with tangent ***AB***, minor arc ***AD***, and major arc ***AED***.

1. Drag point ***D***. Record the measurements below.

$m\angle BAD$	$m\overset{\frown}{AD}$	$m\angle CAD$	$m\overset{\frown}{AED}$

2. Complete these conjectures:

- The measure of $\angle BAD$ is _____ the measure of $\overset{\frown}{AD}$.
- The measure of $\angle CAD$ is _____ the measure of $\overset{\frown}{AED}$.
- The measure of an angle formed by a tangent and a chord is _____ the measure of its intercepted arc.