

Circles & Angles:

The following series of worksheets were written to help students discover some relationships with angles that are created by tangents, chords, and secants in circles.

Lesson: Central and Inscribed Angles

Grade Level: Secondary Level (Geometry)

Sunshine State Standard: MA.A.1.4.2, MA.A.2.4.2, MA.B.1.4.2, MA.B.2.4.1, MA.B.4.4.1, MA.C.1.4.1, MA.C.2.4.1, MA.D.1.4.1

Materials:

- Students: The use of *GeoGebra* dynamic worksheets
- Teachers: Projection of *GeoGebra* dynamic worksheets

Objectives:

1. Students will discover properties of an angle inscribed in a circle
2. Students will discover properties of the interior angles of a cyclic quadrilateral.
3. Students will discover properties of angles that are formed when two chords of a circle intersect.
4. Students will discover properties of angles formed by two intersecting secants of a circle.
5. Students will be able to find the center of a circle.

Vocabulary: tangent line (segment), secant line (segment), central angle, inscribed angle, cyclic quadrilateral, chord, diameter, radius, right angle, arc (major and minor), intercepted arc, measure (angles and arcs), center, perpendicular bisector

Lesson Plan: (These lessons should be taught during a unit on circles. Each separate dynamic worksheet topic will probably take one class setting, approximately 50 minutes.)

-To start a discussion about circles it may be a good idea to discuss some definition of terms that deal with a circle. Displaying a image similar to one shown below and having students recall what different geometrical figures are called may be one way of starting a lesson on circles.