10.1 Exploring Angles in a Circle

Explore Relationships Between Angles in a Circle

The following notes provide guidelines to help you adapt the Explore Relationships Between Angles in a Circle section from *MathLinks 9*.

- Discuss the meaning of *chord*, *central angle*, *inscribed angle*, and *arc*. Post a diagram with these words labelled on a circle.
- Have students work in pairs. Have one student draw the first inscribed angle, then have the partner draw the second inscribed angle.
- Provide students with **BLM 10–2 Section 10.1 Explore Circles**. Label the centre C.
- Discuss #7 as a class. Use the angles students have created as examples.

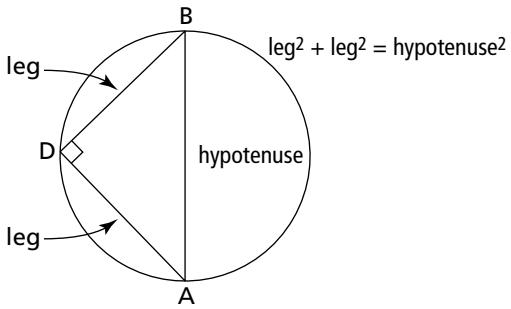
Examples

Working Example 1:

- Review the meaning of *central angle* and *inscribed angle*.

Working Example 2:

- Review the meaning of *chord*.
- Use the Warm Up to review how to use the Pythagorean relationship to find the measure of the unknown leg or the unknown hypotenuse. You may wish to provide additional practice questions if needed.
- Use the following diagram to show students how the triangle within the circle relates to the Pythagorean relationship:



Working Example 3:

- You may wish to use a flashlight and a camera to demonstrate the concept of *field of view*.

Communicate the Ideas, Practise, and Apply

- For #1, remind students that AB is the arc with the same endpoints for both angles.
- For #7b), review the different types of triangles (isosceles, equilateral, scalene).
- For #9b), remind students that the sum of angles in a triangle is 180°.
- Provide students who need additional practice with **BLM 10–3 Section 10.1 Extra Practice**.

Math Link

- Review and demonstrate the difference between *inscribed* and *central angles*.
- If students require a larger circle, use **BLM 10–2 Section 10.1 Explore Circles**.

Common Errors

- Some students may have difficulty identifying which angle they are measuring.

R_x Provide students with coloured pencils so they can outline the required angle. For example, to find ∠ABC, start at A, trace to B, and then to C. Shade the point of the angle. Students can trace the inscribed angle in one colour and the central angle in a different colour.