10.2 Exploring Chord Properties

Explore Chords in a Circle

The following notes provide guidelines to help you adapt the Explore Chords in a Circle section from *MathLinks 9*.
- Use the Warm Up to practise drawing perpendicular bisectors before doing the Explore exercise.
- You may wish to provide students with **BLM 10–4 Circles Template** and draw two chords for them.
- Demonstrate how to draw the perpendicular bisector of a chord using a ruler and a protractor, or a right triangle ruler.
- You may wish to have students work in pairs or small groups.

Examples

Working Example 1:
- Students may assume that chord AB bisects radius CD. Give students **BLM 10–4 Circles Template** and have them draw the angles in this circle so that they understand that the radius is bisecting the chord. Remind them to use tick marks to show equal line segments.

Communicate the Ideas, Practise, and Apply

- For #8, review how to find the area of a triangle.
- Encourage students to use coloured pencils to highlight triangles, angles, radii, and chords.
- Students may benefit from doing the Apply questions in pairs.
- Provide students who need additional practice with **BLM 10–5 Section 10.2 Extra Practice**.

Math Link

- Discuss the meaning of *mandala*. Use an overhead projector or interactive whiteboard to show pictures of various mandalas and discuss how they were created. Show students how artists use chords and perpendicular bisectors to create mandalas.
- Provide students with **BLM 10–6 Section 10.2 Math Link**.
- Alternatively, students can research mandalas before completing this project.
- Encourage students to check off each step as they complete it in part b).