10.3 Tangents to a Circle

Explore Circles and Their Tangents

The following notes provide guidelines to help you adapt the Explore Circles and Their Tangents section from *MathLinks 9*.

- Use the Warm Up to review the names and characteristics of triangles, to identify chords, and to calculate unknown angles.
- Provide students with **BLM 10–7 Section 10.3 Explore Circles and Their Tangents**. You may wish to photocopy this BLM on 11 × 17 paper and have students work in pairs. Students may also benefit from doing this exercise as a teacher-led activity.
- Encourage students to explore the geometric properties on a computer. Go to **www.mathlinks9.ca** and follow the links.
- Post a large circle with the point of tangency and the tangent line labelled on it.

Examples

Working Example 1:

- Remind students that a straight angle measures 180°.
- For Method 1 part d), explain that they are finding the remaining amount for both angles, and then dividing by 2. Students may need assistance with this part.

Working Example 2:

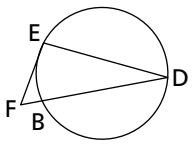
- Review and demonstrate that the diameter is also a straight central angle measuring 180°.
- For the Show You Know, encourage students to use coloured pencils to highlight segments, angles, or triangles.

Working Example 3:

- For the Show You Know, caution students that this problem is slightly different than the Working Example.

Communicate the Ideas, Practise, and Apply

- Review how to name angles. For example, in the diagram below, $\angle EDB = \angle EDF$.



- Encourage students to use coloured pencils to highlight segments, angles, or triangles.
- Have students work in pairs to do #7 to #9.
- Provide students who need additional practice with **BLM 10–8 Section 10.3 Extra Practice**.

Math Link

- Review the expectations for the piece of art.
- Some students may benefit from using a larger sheet of paper.

Common Errors

- Some students may substitute the wrong side measure into the Pythagorean relationship.

R_x Encourage students to draw a small square in the corner of all right angles. Remind them that the hypotenuse is always directly across from the right angle. Have students use coloured pencils to highlight the right triangle.