1.1 Line Symmetry

Explore Lines of Symmetry

The following notes provide guidelines to help you adapt the Explore Lines of Symmetry section from *MathLinks 9*.

- Use the Warm Up to review how to draw reflections, write coordinates of points, and create perpendicular line segments.
- Review the vocabulary *optical illusions*, *2-D shapes* versus *3-D shapes*, and the meaning of *halves*, *symmetry*, *identical*, *equilateral triangle*, *oblique lines*, and *isometric dot paper*.
- If students have dexterity problems, fold the paper in half ahead of time or have them work with a partner.
- Pair strong readers with weaker readers or work through each step as a teacher-led activity.
- Post examples of vertical, horizontal, and oblique lines of symmetry.

Examples

- Have students work in pairs to discuss each example as they work through it.

Working Example 1:

- If Miras™ are not available, provide each pair with a transparent ruler.
- For the solution to part c), use **BLM 1–2 Section 1.1 Working Example 1**. Have students complete each diagram to develop an understanding of vertical, horizontal, and oblique lines of symmetry.
- For the Show You Know, provide students with Miras™ and rulers. Alternatively, have students use **BLM 1–3 Section 1.1 Working Example 1 Show You Know** for paper folding.

Working Example 2:

- Review how to reflect points in a line of reflection using perpendicular lines and how to label the reflected point with prime notation.
- Supply students who have dexterity problems with **BLM 1–4 Section 1.1 Working Example 2** so they can fold the images. Have students work in pairs.
- Provide students with Miras™ and rulers to assist with the Show You Know.

Communicate the Ideas, Practise, and Apply

- Provide students with Miras™ and straight edges.
- In #5 and #6, students who struggle with reflection may need to use paper folding. Provide these students with a photocopy of the page that they can cut out and fold.
- For #8, remind students to consider colours when looking for symmetry.
- For #9 to #11, allow students to work in groups to discuss and brainstorm solutions.
- Provide students who need additional practice with **BLM 1–5 Section 1.1 Extra Practice**.

Math Link

- Students may benefit from creating their designs on **Master 8 Centimetre Grid Paper**.
- Show students examples of cards with symmetrical designs.

Common Errors

- Some students may have difficulty using the Mira™ or ruler.

R_x Encourage students to work with a partner or an aide if available. Have them verbally explain where the lines of symmetry lie, and then have their partner draw them.