Pattern Block Symmetry

Primary
Geometry and Spatial Sense

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Adapted from Moss, Bruce, Caswell, Flynn & Hawes (2016)

Curriculum Goals (From the Ontario Ministry of Education Curriculum Document)

Spatial Reasoning Focus:
- Symmetry
- Geometric shapes
- Transformations

Setting
This is a teacher led activity, which can be conducted with a whole class or small groups. Students should have previous knowledge of symmetry and line of symmetry.

Materials
- Computer and projector
- Pattern Block Symmetry Quick Image PPT (see attachment)
- Assortment of magnetic pattern blocks and a cookie sheet with a line of symmetry drawn (per student)

Summary
In this quick image activity, students will be presented with a series of reflection challenges made of pattern blocks and vertical/horizontal/diagonal line of symmetry. Students will be asked to visualize the images and to create the mirror half of the image from memory.

Instructions
1. Present students with half of a symmetrical design (figure 1) for five seconds.
2. Invite students to create the mirror half of the image from memory, ensuring that each piece they place is symmetric to a piece in the original image. Some students may choose to create the original as well as the reflected image, whereas others might choose to create the reflected image only. Depending on the complexity of the shape, and the needs of the students, the image can be shown again to allow students to notice additional features while they build.
3. After sufficient time for building, show the original image again, and have students compare it with their own.
4. Facilitate discussion and sharing about student’s strategies for how they approached the task.
5. Repeat the process with other half-designs.
6. For challenges with horizontal or diagonal line of symmetry, ask students to rotate the cookie sheet to match the image.

Questions to Extend Student Thinking
- Can you name the pattern blocks that were used for this image?
- Did you find it easy, medium, or difficult to build the mirror half from memory?
- What made the challenge easy/medium/difficult?

References