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Beyond the Wumps: Exploring Symmetry in Seventh Grade

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Symmetry is everywhere. It is in nature, in buildings, in the tiniest building blocks of the human body. We are naturally drawn to symmetry. The 13-year-olds I teach are surrounded by symmetry, even if they are not aware of it: the McDonalds' arches, the logo on their t-shirt, the rhythm of their favorite song. And while they know more about symmetry than they realize, they really don't know much about the mathematics involved.

This unit will cover the basics of transformational symmetry and take the students beyond what they have learned up to this point about similarity and congruence. They will learn about the idea of *isometry*, a transformation that preserves distance. The ultimate goal is to have them make patterns by moving a single figure around on the coordinate plane, and finally creating a frieze pattern of their own design.

This unit is intended for a seventh-grade classroom. It is a basic, fairly simplified review of transformational symmetry on the middle school level.

(Developed for CMP2 Mathematics, grade 7; recommended for CMP2 Mathematics, grade 7)