



# YALE NATIONAL INITIATIVE

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Curriculum Units by Fellows of the National Initiative  
2010 Volume IV: The Mathematics of Wallpaper

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## Geometry and the Real World

Guide for Curriculum Unit 10.04.01, published September 2010

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This unit "Geometry and the Real World" is a unit that is designed for sixth- and seventh-graders to teach them how geometry can be seen in the world around us through the concept of isometry and symmetry. This unit can also be used to teach eighth graders as well. It will be taught over approximately two weeks for 90 minutes each day. Instruction will be given to students in a whole- and small-group setting. Students will also receive hands-on mathematics experience that will help them apply what they learn to their everyday scenarios. Students will learn and apply a lot of symmetry and isometry concepts through classroom group exercise and projects. At the end of the unit, students will be able to create and identify symmetries and isometries in wallpaper designs, buildings, and nature. Not only will the students be able to create wallpaper designs that contain symmetries and isometries, they will be able to explain their knowledge of the isometries and symmetries that exist within them. This unit will help them see how the concepts of symmetry and isometry can be easily related to the environment in which they live.

(Developed for Mathematics and Geometry, grade 7; recommended for Mathematics and Geometry, grades 6-8)

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