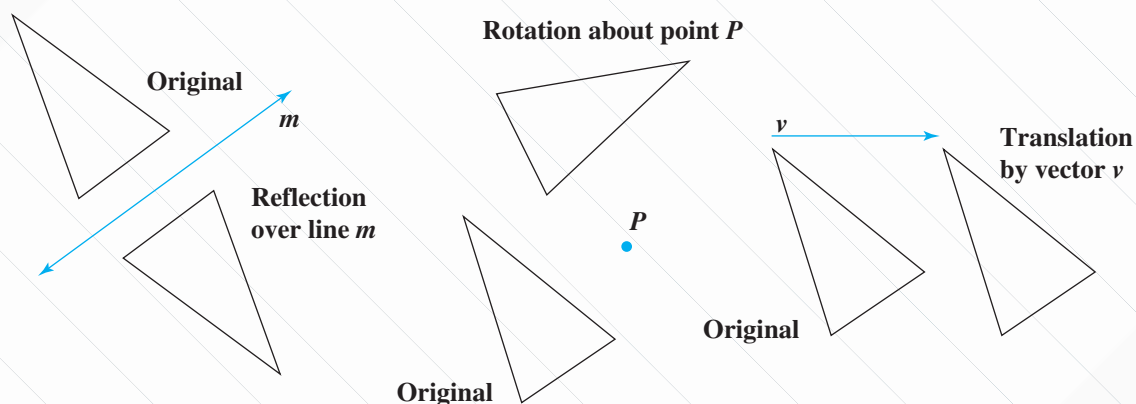


# Family Letter

Dear Student and Family Members,

Our next chapter in mathematics is about *transformational geometry*. We will learn about four basic transformations that can be applied to two-dimensional objects: reflections (flips), rotations, translations (slides from one place to another), and dilations (enlargements and size reductions). Using these transformations, we can move an object, reposition it, or place it on top of another object of the same shape. We will learn to recognize these types of transformations, describe them, and create symmetric designs using them.



Some of the most interesting border patterns, wallpaper designs, and quilt patterns are created by combinations of transformations.

**Vocabulary** Along the way, we'll be learning about several new vocabulary terms.

dilation  
image  
line of reflection  
line of symmetry  
perpendicular bisector

reflection over a line  
reflection symmetry  
rotation  
rotation symmetry  
scale drawing

scale factor  
transformation  
translation  
vector

## What can you do at home?

In class, your student will be creating designs by performing transformations. You might ask your student to show you some of these. Also, be on the lookout, for patterns or figures with symmetry and arrangements of dilated figures on buildings, in wallpaper and quilts, and other places in your home and neighborhood. It's really quite surprising to see how many examples exist!