

**Geometry Software Lesson Opener**

For use with pages 396–402

**Use geometry software to experiment with three basic transformations—translations, reflections, and rotations. Before you begin, select the option to keep the preimage displayed.**

1. Draw a square with a side length of 1 in. Translate the square three times: (1) 1 inch horizontally and 0 inches vertically; (2) 0 inches horizontally and 1 inch vertically; (3)  $-1$  inch horizontally and 0 inches vertically. On paper, sketch your final figure and shade the original square.
2. Draw a square with a side length of 1 inch. Use *translations* to draw a rectangle as shown at the right. Explain your steps.
3. Draw a right triangle  $ABC$  with right angle at  $C$ . Reflect  $\triangle ABC$  in  $\overline{BC}$ . Label the new vertex  $A'$ . Reflect  $\triangle A'BC$  in  $\overline{CA'}$ . Label the new vertex  $B'$ . Reflect  $\triangle A'B'C$  in  $\overline{CB'}$ . On paper, sketch your final figure and shade  $\triangle ABC$ . Name the shape of figure  $ABA'B'$ .
4. Draw a scalene obtuse triangle  $ABC$ . Mark  $A$  as the center of rotation and rotate  $\triangle ABC$   $180^\circ$ . Label the new vertices  $B'$  and  $C'$ . Construct segments  $\overline{BC'}$  and  $\overline{CB'}$ . On paper, sketch your final figure and shade  $\triangle ABC$ . Name the shape of figure  $BCB'C'$ .

