

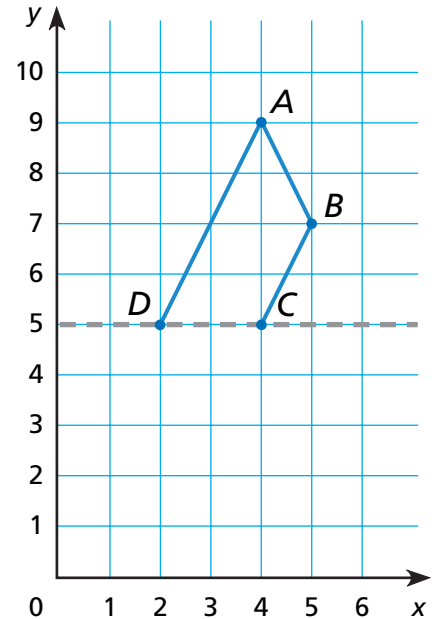
Reflecting Figures on a Grid

NCTM Standards 3, 7, 8, 9, 10

Complete the table below for the figure and its reflection.

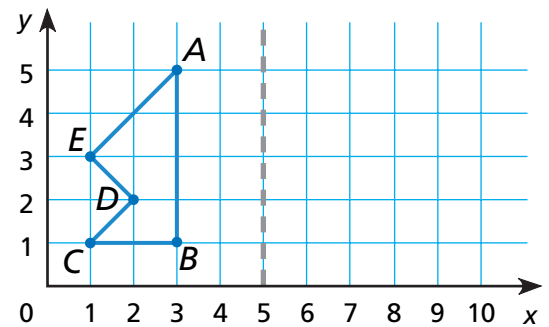
- 1 Record the coordinates of each vertex of the original figure.
- 2 Reflect the figure over the dotted horizontal line.
- 3 Record the coordinates of the corresponding vertices of the reflected image.

| Vertices | Original Figure | Reflected Image |
|----------|-----------------|-----------------|
| <i>A</i> | | |
| <i>B</i> | | |
| <i>C</i> | | |
| <i>D</i> | | |



Complete the table below for the figure and its reflection.

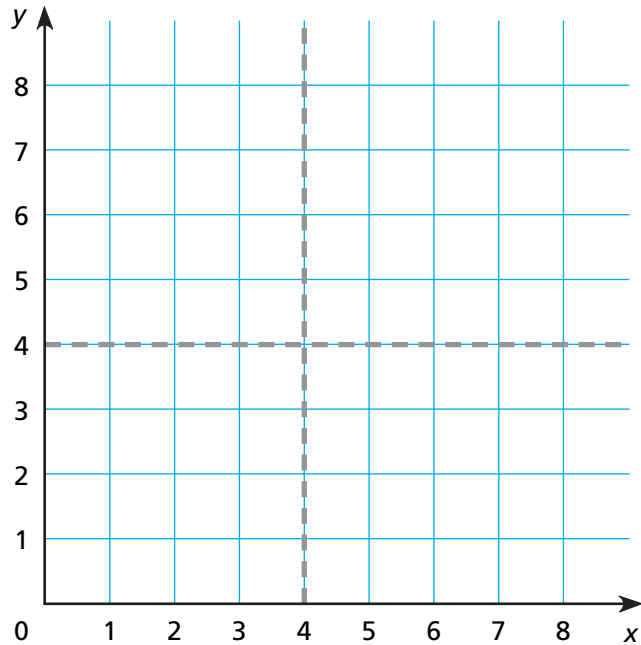
- 4 Record the coordinates for each vertex of the original figure.
- 5 Reflect the figure over the dotted vertical line.
- 6 Record the coordinates of each vertex of the reflected image.



| Vertices | <i>A</i> | <i>B</i> | <i>C</i> | <i>D</i> | <i>E</i> |
|-----------------|----------|----------|----------|----------|----------|
| Original Figure | | | | | |
| Reflected Image | | | | | |

For 7–12, use the table and the grid to help you draw and reflect the figures.

| Vertices | Figure 1 | Figure 2 | Figure 3 |
|----------|----------|----------|----------|
| A | (1,4) | | |
| B | (1,7) | | |
| C | (2,7) | | |
| D | (2,5) | | |
| E | (4,5) | | |
| F | (4,4) | | |



7 Plot the vertices of Figure 1. Label each vertex with its letter.

8 Use a straightedge to connect the vertices.
 $A \rightarrow B \rightarrow C \rightarrow D \rightarrow E \rightarrow F \rightarrow A$. Label it Figure 1.

9 Reflect Figure 1 over the dotted vertical line and draw the result. Label this Figure 2.

10 Record the coordinates of each vertex for Figure 2 in the table. List each reflected vertex next to the original vertex of Figure 1.

11 Reflect Figure 2 over the dotted horizontal line, draw the result, and label it Figure 3.

12 Then write the coordinates of each reflected vertex of Figure 3 next to the original vertex in Figure 2.



13 **Challenge** Predict the result of first reflecting Figure 3 over the dotted vertical line, and then reflecting that image over the dotted horizontal line.
