The coordinate plane is a two-dimensional surface made up of two lines: horizontal and vertical.

First, let’s look at the horizontal line: The X-axis.

From the origin, the positive X values go right.

(show)

…and the negative X values go left.

(show)

Now, the vertical line: The Y-axis.

From the origin, the positive Y values go up.

(show)

…and the positive Y values go down.

When you pair the X and Y values together, you get a point on the coordinate plane.

The point is where the two axis lines intersect. Watch the two values change as Robert moves.

Next up, we will go over the quadrants.

(go to next level)

The quadrants are the four sections of the coordinate plane.

(show)

As you can see, the quadrants are divided by the X and Y axis from the origin.

Each one determines the sign values of the X and Y: positive or negative.

Now let’s help Robert move from Quadrant 1 to Quadrant 2.

(tutorial stuff)

Nice! Next stop: Quadrant 3.

(tutorial stuff)

One last destination: Quadrant 4.

(tutorial stuff)

Excellent! Now we are ready to patch the system!

(victory, next level)

Now we will go over reflection.

A point is reflected by flipping the signs of its values: positive to negative, and vice-versa.

(show X)

Here you can see the X value reflected across the Y-axis.

(show Y)

The same goes for the Y value, which is reflected across the X-axis.

(show XY)

By reflecting a point, you can see that the line connecting the reflection will run across the origin.

Both the original and reflected points have an equal distance from the origin.

(hide)

(show gameplay)

Now let’s put this into practice! Place the matching reflections on the highlighted tiles.