

# G-CO Defining Reflections

## Task

Carlos finds the following definition of a reflection in a math book:

The reflection  $r_\ell$  about a line  $\ell$  takes each point  $P$  on  $\ell$  to itself and takes each point  $Q$  not on  $\ell$  to the point  $r_\ell(Q)$  such that  $\ell$  is the perpendicular bisector of  $\overline{Qr_\ell(Q)}$ .

Carlos does not find this definition very helpful. He says "the reflection about a line  $\ell$  sends each point to its mirror image on the other side of  $\ell$ ."

- In what ways is Carlos' definition of reflection more helpful than one from the math book?
- In what ways is the math book definition of reflection more helpful than Carlos' definition?



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