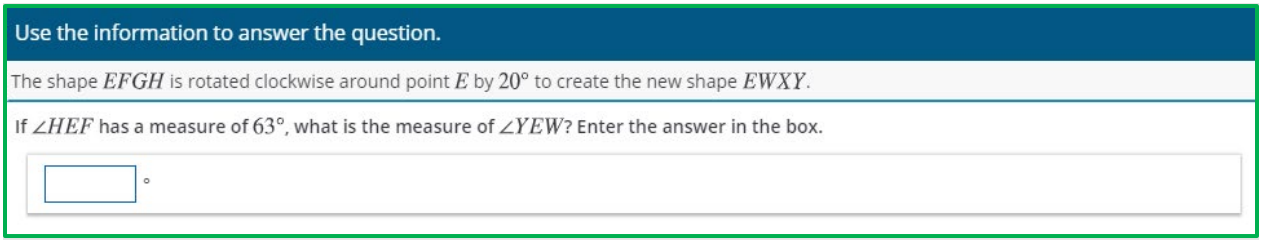
NWEA Assessment Item Illustrating 8.G.A.1.b

Domain: Geometry
8.G.A: Understand congruence and similarity using physical models, transparencies, or geometry software.
Calculator Availability: Yes



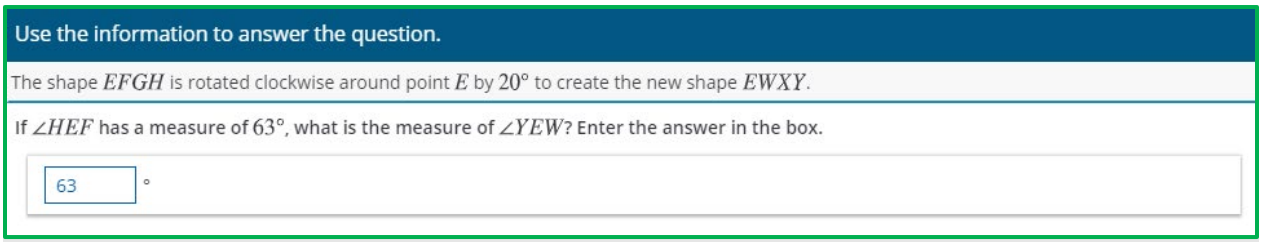
Alignment: 8.G.A.1b: Verify experimentally the properties of rotations, reflections, and translations. Angles are taken to angles of the same measure.

This item gets to the heart of the 8.G.A cluster. Students who have studied the preservation of angle measure with respect to rigid motions will most likely find the question to be easy. This item reminds instructors that the experimental verification of the properties of transformations is a worthwhile investment in the curriculum.

Coherence: In grade 6, students experimented with reflections of points on the coordinate plane[6.NS.C.6b] (e.g., "What are the coordinates of point P if the point is reflected across the x-axis?"). In grade 7, students built on their earlier experiences with angle measurement (most robust in grade 4[4.MD.C.6/7]) to solve problems involving supplementary angles, complementary angles, vertical angles, and adjacent angles.[7.G.B.5] In grade 8, students begin their work with transformations, including describing "the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates."[8.G.A.3] In high school, students will extend this knowledge to work with more advanced transformations, including establishing the explanation of how triangle congruence criteria stems from the definition of congruence in terms of rigid motions.[HSG-CO.A/B]

Rigor: This item attends to conceptual understanding. Students must recall that rotations preserve angle measure in corresponding angles, and they must apply that knowledge to solve the problem.

Answer Key:



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