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| **Applying and Visualizing Translations and Reflections** | | | |
| Identifies translations and reflections of 2-D shapes on a grid.    “The first image shows a translation, and the second grid shows a reflection.” | Identifies the translation/reflection used to move a shape and the line of reflection.    “The shape has been translated 5 squares right and down 3 squares. The hexagon was reflected because the shape and the image are the same distance from the line of reflection.” | Describes and performs translations and reflections on a grid using labelled vertices.    “The image is a reflection of the shape because matching vertices on the shape and its image are the same distance from the line of reflection. The vertices on the image are labelled in the  opposite direction.” | Visualizes, predicts, and describes image of a shape after a translation or reflection.    “The hexagons are congruent and matching vertices are the same distance from the line of reflection. The line of reflection is the diagonal line halfway between the  two hexagons.” |
| **Observations/Documentation** | | | |
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| **Applying and Visualizing Rotations on a Grid (cont’d)** | | | |
| Identifies rotated 2-D shapes on a grid with a point of rotation on  the shape.    “This grid shows a rotation of a tun about vertex P.” | Identifies rotated 2-D shapes on a grid with a point of rotation outside the shape.    “The shape has been rotated a turn around the point of rotation P, located outside the shape.” | Describes and performs rotations/turns, both clockwise and counterclockwise.    “The shape was rotated by a turn counterclockwise about P. The matching vertices on the shape and its image are the same distance from the point of rotation.” | Visualizes, predicts, and describes where the image of a shape will be after a rotation.    “I visualized and predicted where the images of the pentagon would be after a rotation of a turn clockwise about P (on the shape) and after a rotation of a turn counterclockwise about Q (off the shape). I rotated the shape to check. I know each image is correct because corresponding points are the same distance from the point of rotation.” |
| **Observations/Documentation** | | | |
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