

**Chapter 7 Planning Chart: Transformations**

**Cross-Curricular Competency: Uses information and communications technologies.** Lesson 4 makes use of computer software in investigating the effects of a dilatation on the properties of a geometric figure.

**Broad Area of Learning: Consumer Rights and Responsibilities.** Use Lesson 7A as an opportunity to help students develop better consumer sense and understanding. Students can use what they learn in this lesson to make better decisions about the relative value of two different size pizzas, for example.

**General Note:** Transformations that are on a Cartesian plane are beyond Cycle One, so the examples and questions suggested in the planning chart do not involve a Cartesian plane.

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<b>Getting Started:</b> Tessellating Tiles, pp. 220–221			Assessment Opportunity
<b>Lesson 1:</b> Coordinates of Points on a Grid, pp. 222–225		<i>Arithmetic: Working With a Proportional Situation</i> <ul style="list-style-type: none"> <li>Finding ordered pairs in a Cartesian plane [abscissa (<i>x</i>-coordinate) and ordinate (<i>y</i>-coordinate) of a point]</li> </ul>	The work with ordered pairs in this lesson does not deal with proportional situations but does provide the foundation for work with ordered pairs in a Cartesian plane.
<b>Lesson 2:</b> Translations on a Coordinate System, pp. 226–229			Beyond Cycle One. Do not assess.
<b>Lesson 3:</b> Reflections and Rotations, pp. 230–233			Beyond Cycle One. Do not assess.
<b>Mid-Chapter Review:</b> pp. 234–237			Assessment Opportunity Omit the last two Frequently Asked Questions. Use Questions 1–3.
<b>Mental Imagery:</b> Cutting and Forming Shapes, p. 237			Optional
<b>Lesson 4:</b> Exploring Similar Shapes, pp. 238–239	<i>Arithmetic: Understanding Proportionality</i> <ul style="list-style-type: none"> <li>Ratio and rate <ul style="list-style-type: none"> <li>Ratios and equivalent rates</li> </ul> </li> <li>Proportion <ul style="list-style-type: none"> <li>Ratio and proportionality coefficient</li> </ul> </li> </ul> <i>Geometry: Geometric Figures and Spatial Sense</i> <ul style="list-style-type: none"> <li>Plane figures <ul style="list-style-type: none"> <li>Measurement <ul style="list-style-type: none"> <li>Degree: angle and arc</li> <li>Length</li> </ul> </li> <li>Perimeter, circumference <ul style="list-style-type: none"> <li>Area, lateral area, total area</li> </ul> </li> </ul> </li> <li>Congruent and similar figures</li> </ul>	<i>Arithmetic: Working With a Proportional Situation</i> <ul style="list-style-type: none"> <li>Finding ordered pairs in a Cartesian plane [abscissa (<i>x</i>-coordinate) and ordinate (<i>y</i>-coordinate) of a point]</li> </ul> <i>Geometry</i> <ul style="list-style-type: none"> <li>Geometric transformations <ul style="list-style-type: none"> <li>Dilatation with a positive scale factor</li> </ul> </li> <li>Finding unknown measurements <ul style="list-style-type: none"> <li>Lengths <ul style="list-style-type: none"> <li>Perimeter of a figure resulting from a similarity transformation</li> </ul> </li> <li>Segments resulting from an isometry or a similarity transformation</li> </ul> </li> </ul>	<b>Teaching and Learning:</b> Method 1 is beyond Cycle One because the Cartesian coordinate system is used. Students can complete Method 2, however, by constructing triangles and measuring without using a Cartesian coordinate system. Use Questions 2–4.
<b>Lesson A:</b> Transformations: Measurements of Segments	<i>Arithmetic: Understanding Proportionality</i> <ul style="list-style-type: none"> <li>Ratio and rate <ul style="list-style-type: none"> <li>Ratios and equivalent rates</li> </ul> </li> <li>Proportion <ul style="list-style-type: none"> <li>Ratio and proportionality coefficient</li> </ul> </li> </ul> <i>Geometry: Geometric Figures and Spatial Sense</i> <ul style="list-style-type: none"> <li>Plane figures <ul style="list-style-type: none"> <li>Measurement <ul style="list-style-type: none"> <li>Length</li> <li>Perimeter, circumference <ul style="list-style-type: none"> <li>Area, lateral area, total area</li> </ul> </li> </ul> </li> <li>Congruent and similar figures</li> </ul> </li></ul>	<i>Arithmetic: Working With a Proportional Situation</i> <ul style="list-style-type: none"> <li>Solving a proportional situation</li> </ul> <i>Geometry</i> <ul style="list-style-type: none"> <li>Geometric transformations <ul style="list-style-type: none"> <li>Translation, rotation, reflection</li> <li>Dilatation with a positive scale factor</li> </ul> </li> <li>Finding unknown measurements <ul style="list-style-type: none"> <li>Lengths <ul style="list-style-type: none"> <li>Perimeter of a figure resulting from a similarity transformation</li> </ul> </li> <li>Segments resulting from an isometry or a similarity transformation</li> </ul> </li> </ul>	New Lesson Student Resource Teacher Resource

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<b>Lesson 5:</b> Communicating about Transformations, pp. 240–242			Beyond Cycle One. Do not assess.
<b>Curious Math:</b> Distortion Art, p. 243			Beyond Cycle One. Do not assess.
<b>Math Game:</b> Coordinate Racing, p. 244			Beyond Cycle One. Do not assess.
<b>Chapter Self-Test:</b> p. 245			Self-Assessment Opportunity: Select from Questions 1 and 2.
<b>Chapter Review:</b> pp. 246–247			Assessment Opportunity Omit the Frequently Asked Questions. Use Questions 1 and 2.
<b>Chapter Task:</b> Animation, p. 248	<i>Geometry: Geometric Figures and Spatial Sense</i> <ul style="list-style-type: none"> <li>Congruent and similar figures</li> </ul>	<i>Arithmetic: Working With a Proportional Situation</i> <ul style="list-style-type: none"> <li>Finding ordered pairs in a Cartesian plane [abscissa (<math>x</math>-coordinate) and ordinate (<math>y</math>-coordinate) of a point]</li> </ul> <i>Geometry</i> <ul style="list-style-type: none"> <li>Geometric transformations</li> <li>Translation, rotation, reflection</li> </ul>	Assessment Opportunity Using a Cartesian coordinate system is beyond Cycle One, but students could create flip books on plain paper or on grid paper that does not have an $x$ -axis or $y$ -axis.