

Grade: 5 Subject: Mathematics	Unit 10: Patterns and Transformations
Big Idea/Rationale	<ul style="list-style-type: none"> • This unit enhances students’ understanding of patterns and transformations. Students begin the unit by exploring the relationship between geometric and numerical patterns. Activities provide students with opportunities to identify and extend repeating, growing and shrinking patterns. As students proceed through the unit, they apply their knowledge of patterns to transformations in the coordinate plane.
Enduring Understanding (Mastery Objective)	Students will understand that: <ul style="list-style-type: none"> • Congruent figures remain congruent through translations, reflections and rotations. • Numerical and geometric patterns can repeat, grow or shrink.
Essential Questions (Instructional Objective)	<ul style="list-style-type: none"> • How can you verify that two figures are congruent? • What is rotation, reflection and transformation? • How do you use a variety of objects to solve geometrical problems?
Content (Subject Matter)	<ul style="list-style-type: none"> • Describe and extend repeating patterns. • Describe and extend growing and shrinking patterns. • Describe and extend repeating patterns. • Describe and extend growing and shrinking patterns. • Recognize rotations, reflections and translations. • Identify and extend patterns involving transformations. • Recognize that a figure and its transformation are congruent. • Transform figures in Quadrant I of the coordinate plane. • Solve a variety of problems using mathematical concepts and skills.
Skills/ Benchmarks (CCSS Standards)	<ul style="list-style-type: none"> • 5.G.A.1: Use a pair of perpendicular number lines, called axes to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate). • Mathematical Practices
Materials and Resources	<ul style="list-style-type: none"> • Math Expressions, Student Journals, Manipulatives, Math themed literature, BrainPop, IXL Mathematics