

Topic: Geometry

Domain: Congruence

Cluster: Experiment with transformations in the plane

Code	Standard	Concepts	Skills
G.CO.1	Know precise definitions of angle , circle , perpendicular line , parallel line , and line segment , based on the undefined notions of point , line , distance along a line, and distance around a circular arc.	Definitions ■ Angle ■ Circle ■ Perpendicular line ■ Parallel line ■ Line segment Undefined notions ■ Point ■ Line ■ Distance along line ■ Distance around circular arc	Know (definitions)
G.CO.2	<i>Represent transformations</i> in the plane using, e.g., transparencies and geometry software; <i>describe transformations</i> as functions that <i>take points</i> in the plane as inputs and give other points as outputs . <i>Compare transformations</i> that <i>preserve distance</i> and angle to those that do not (e.g., translation versus horizontal stretch).	Transformations Functions ■ Input ■ Output Plane Points Distance Angle	Represent (transformations) Describe (transformations as functions) Compare (transformations that preserve distance and angle)
G.CO.3	Given a rectangle , parallelogram , trapezoid , or regular polygon , describe the rotations and reflections that carry it onto itself.	Shapes ■ Rectangle ■ Parallelogram ■ Trapezoid ■ Regular polygon Transformations ■ Rotations ■ Reflections	Describe (rotations/reflections that carry onto self)
G.CO.4	<i>Develop definitions</i> of rotations , reflections ,	Definitions of:	Develop (definitions)

	and translations in terms of angles , circles , perpendicular lines , parallel lines , and line segments .	■ Rotations ■ Reflections ■ Translations In terms of: ■ Angles ■ Circles ■ Perpendicular lines ■ Parallel lines ■ Line segments	
G.CO.5	Given a geometric figure and a rotation , reflection , or translation , <i>draw</i> the transformed figure using, e.g., graph paper, tracing paper, or geometry software. <i>Specify</i> a sequence of transformations that will carry a given figure onto another.	Geometric figures Transformations ■ Rotation ■ Reflection ■ Translation ■ Sequence of	Draw (transformed figure) Specify (sequence of transformations)