Unit 1 - Constructions & Transformations

Students will informally explore geometric properties using straightedge and compass constructions in order to build conjectures before formally defining transformations. Students will build on prior knowledge of transforming figures and focus on point-by-point transformations. Finally, they will use definitions to prove statements regarding angles and distances in preparation for congruence proofs.

Construction Basics

A **line segment** is a set of points on a line with two endpoints. Line segments are made with a straightedge, and are named by the endpoints.

A **circle** is a set of all points that are the same distance (radius) from a given point (center). Circles are made with a compass, and are named by the center and radius.

Valid construction moves made with a compass and straightedge include: * Draw points in blank space, on objects, and at intersections * Draw segments, rays, and lines through two points * Draw a circle centered at a point and through another point * Set compass to a length between two points then move the compass

Patterns & Instructions

In order for a construction to be duplicated, there must be precise construction steps. Labeling points and segments assist in eliminating ambiguity from instructions.

Constructing Bisectors