Mini-Map for M.EE.HS.G.CO.1

Subject: Mathematics
Geometry—Congruence (G.CO)
Grade: 9

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.HS.G.CO.1 Know the attributes of perpendicular lines, parallel lines, and line segments; angles; and circles.	**M.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.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Recognize "same" as the object that shares all of the same attributes as other objects in a group. Recognize "different" as the object that shares some or none of the attributes as other objects in a group. Recognize attributes or characteristics of an object, such as color, orientation, length, width, and weight.	Identify the symbols that represent a point, ray, angle, and right angle.	Recognize the shape that represents a circle. Recognize lines or line segments that intersect at a 90-degree angle as perpendicular lines or line segments. Recognize lines or line segments that are equal distance apart and do not intersect at any point as parallel lines or line segments.	Communicate understanding that perpendicular lines intersect at a 90-degree angle and parallel lines are equal distance apart and do not intersect at any point. Communicate understanding that an angle is a figure (or shape) formed by two rays meeting at a common endpoint, and a circle is a two-dimensional shape that has an outline or circumference that only contains points that are	Communicate understanding that vertical angles are angles that are equal in measure and share a vertex, a straight angle is an angle that has a measurement of 180 degrees, and adjacent angles are angles next to each other that share a ray and a vertex.

© 2021 Accessible Teaching, Learning, and Assessment Systems (ATLAS)

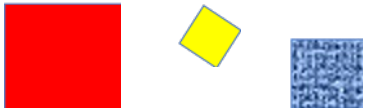
Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
			equidistant from a common point, called the center.	

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

Knowing the attributes of various shapes, angles, and lines requires a student to first recognize when basic objects and shapes are the same or different. Work on this understanding by providing students with a shape and naming it (e.g., "this is a square"). Then, provide multiple examples of the same shape, so students can make comparisons (e.g.,) focusing student attention on the characteristics that make this a particular shape (e.g., a square has 4 sides that are the same size). As students explore shapes, label them and describe them as same or different.

NOTE: When presenting the same shape for comparison, do use shapes with different colors, textures, sizes, and orientation so that students understand the attribute that makes it that shape (e.g., 4 sides that are the same size).



How is the Distal Precursor related to the Target?

As students increase their understanding of what makes shapes the same or different, they will begin to learn about other characteristics that make up a shape. The educator will provide multiple objects and tactuals, helping the student explore them and guide the student using hand-under-hand to draw their attention to where lines start and stop (e.g., points and rays) and where two lines meet to make an angle.

NOTE: Recognizing point should only be taught in the context of a lesson on lines, line segments, and angles.

Instructional Resources

Released Testlets
See the Guide to Practice Activities and Released Testlets.
Using Untested (UN) Nodes
See the document Using Mini-Maps to Plan Instruction.

[Link to Text-Only Map]

M.EE.HS.G.CO.1 Know the attributes of perpendicular lines, parallel lines, and line segments; angles; and circles.