

# UNIT 1 - LESSON PLANS

**Class** Geometry    **Topic** U1 – Midpoint and Distance in the Coordinate Plane    **Lesson** 7    **Of** 8

## Objective

Students will:

- be able to calculate midpoint and distance from two endpoints of a line segment both on and off of the coordinate plane.

## “I Can” Statement

I can find the distance between two point on the coordinate plane or on a number line with or without pictures.

Solve problems and give examples related to the distance and midpoint in the real world.

## Common Core Standards

### [CCSS.MATH.CONTENT.HSG.CO.C.9](#)

Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*

### [CCSS.MATH.CONTENT.HSG.CO.D.12](#)

Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). *Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.*

### [CCSS.MATH.CONTENT.HSG.GPE.B.4](#)

Use coordinates to prove simple geometric theorems algebraically. *For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point  $(1, \sqrt{3})$  lies on the circle centered at the origin and containing the point  $(0, 2)$ .*

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## [CCSS.MATH.CONTENT.HSG.GPE.B.6](#)

Find the point on a directed line segment between two given points that partitions the segment in a given ratio.

## [CCSS.MATH.CONTENT.HSG.GPE.B.7](#)

Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.\*

### **Bell Work**

List 5 things in everyday life that require measuring distance and or finding a midpoint. Lead into class discussion on GPS systems in cars and how they have changed the world. How these devices have these formulas built into them. We take for granted how easy and readily available these devices are that use these exact math concepts.

### **Procedures**

1. Start and lead student discussion related to the bell work.
2. Distribute the Guided Notes
3. Present lesson or play a video lesson.
4. Distribute Lesson Assignment.
5. Have students work independently through assignment.

### **Assessment**

Assignment 1-7  
Exit Quiz 1-7

### **Additional Resources**

Khan Academy Quiz