



Calculating the Midpoint of a Line Segment

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Math
Grades 9–12



Introduction

Students will work on various types of learning activities as they move through centers to develop and grow knowledge about calculating the midpoint of line segments.

Learning Objectives

([CCSS.MATH.CONTENT.HSG.GPE.B.6](#))WALT find the point on a directed line segment between two given points that partitions the segment in a given ratio.

Materials Needed

- Centers (links all provided)
- Interactive Notebook Cutout
- Chromebooks/tablet/device

Procedure

1. Put a Do-Now on the board that has students review calculating the midpoints of line segments. Remind students what the formula for finding a midpoint on a line is. Keep the formula on the whiteboard, Promethean Board, or give students the attached sheet to keep in their notebooks (if you have students keep an interactive notebook for math concepts).
 - Find the midpoint of the line segment with the endpoints $(-4, 2)$ and $(7, -9)$.
 - Find the midpoint of the line segment with the endpoints $(5, -5)$ and $(1, -1)$.
2. Review the skill of calculating the midpoint of a line segment. Here are some different videos you can share with the students to do so. You can either show to the class, or a better option if you have class devices is to have students watch on their chromebooks while they listen with headphones. Make sure to preview the videos before you watch.
 - [How to Calculate the Midpoint of a Line Segment](#)
 - [Finding the Midpoint](#)
 - [Khan Academy: Midpoint Formula](#)
3. Practice using the midpoint formula with [these four problems online](#).

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4. Students will then work on different Math Centers. These centers vary in difficulty. You can use all or some of the centers to help students practice this skill. You can also use these activities to differentiate instruction and help your gifted and struggling learners.
 - [Midpoint Formula Worksheet](#): Students are given coordinates and must determine the midpoint using the formula.
 - [Midpoints of Line Segments on a Grid](#): Students must locate the endpoints of the line and then determine the midpoint of the line using the formula.
 - [Battleship](#): There are five options for worksheets to choose from. This is a more challenging activity as it brings in a few other skills such as slope.
 - [The Midpoint Formula](#): This worksheet is the most challenging and students must pull in skills from the first three centers. Students will find midpoints on a graph, use given endpoints to determine the midpoint, find a missing endpoint when given one endpoint and the midpoint, and a critical thinking section. This can be used as a quiz grade, as it pulls from all the skills acquired.
5. For early finishers:
 - [This is a great extension activity](#) that can be completed on a Chromebook, tablet, phone, etc. Students work through various prompts on this online activity.
 - Prodigy, Freckle, or any other online platform for individual goals
 - Games to Extend Learning
 - [2048](#)
 - [Race for Distance](#)
 - [Review Games](#)

Evaluation

There is no rubric with this activity. The fourth center can be used as a quiz grade. The other centers and activities can be used as classwork grades.

Use [this great visual](#) from Khan Academy to give to students to put in their interactive notebooks, or share it with the students in Google Classroom.