# Unit 7 The Coordinate Plane \& Lines 

## Content Area:

 Course(s):Time Period: Length: Status:

Special Education
September 6 weeks
Published

## Enduring Understandings

A function is a relationship between variables in which each value of the input variable is associated with a unique value of the output variable.

Patterns and relationships can be represented graphically, numerically, symbolically, or verbally

## Essential Questions

hat does the y-intercept form of a linear equations tell me about its graph?

How do we create, test and validate a model?

## Content

Vocabulary
Coordinate plane
Ordered pair
Slope
Slope-intercept form
x-intercept
y -intercept
x -axis
$y$-axis
linear

## Skills

Identify the essential parts of the coordinate plane.

Plot points in a coordinate plane.

Use graphs to represent relations and functions.

Graph lines through a variety of methods.

Find and interpret slopes of lines.

Interpret and create graphs representing real-world situations.

Graph and write linear equations in slope-intercept form.

Construct a function to model for a linear relationship between two quantities.

## Resources

## Standards

## CCSS: Mathematics <br> CCSS: Grade 8 <br> Functions

8.F.A. Define, evaluate, and compare functions.
8.F.A.1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
${ }^{\boxtimes}$ Show details
8.F.A.2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.
8.F.A.3. Interpret the equation $y=m x+b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.
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8.F.B. Use functions to model relationships between quantities.
8.F.B.4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two ( $\mathrm{x}, \mathrm{y}$ ) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

MA.8.F
MA.8.F.A
MA.8.F.A. 1

MA.8.F.B. 4

MA.8.F.B. 5

Functions
Define, evaluate, and compare functions.
Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.

Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two $(x, y)$ values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

