Assignments by Skill Level

LEVEL 1:

Points on a Line: A Number Line Tool operates in 3 modes and all three are worked in Level/1.

LEVEL 3:

(X,Y) Coordinates: a5 Shapes are generated on a grid and students enter the (X,Y) Coordinate of each.

Parts of a Graph: has Examples to be animated and discussed showing all the parts of a graph and introducing Functions.

Dollar Per Day Word Problems: Show an example of graphing a word problem by making a Data Table then plotting the points. Instructions explain how to extend this activity for students to get more practice as needed.

LEVEL 4:

Slope and Y-Intercept: Examples define both Slope (M) and Y-Intercept (B) introducing students to these new terms

Make Lines Activity: Print an activity sheet and drop a straight edge on a grid. Draw the line and estimate where it crosses the Y-Axis (B) and the Slope (M), then write y = Mx + B equation.

Make Lines Tool: In Easy Mode one point is on the Y-axis and B may be read, only Slope M need be calculated.

LEVEL 5:

Make Lines Tool: In Hard Mode first the Slope (M) need be calculated same as before. Then one point is substituted into y=Mx+B to solve for Y-Intercept (B).

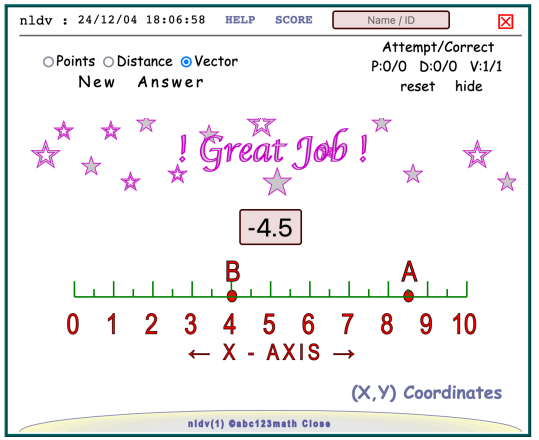
GRAPHING

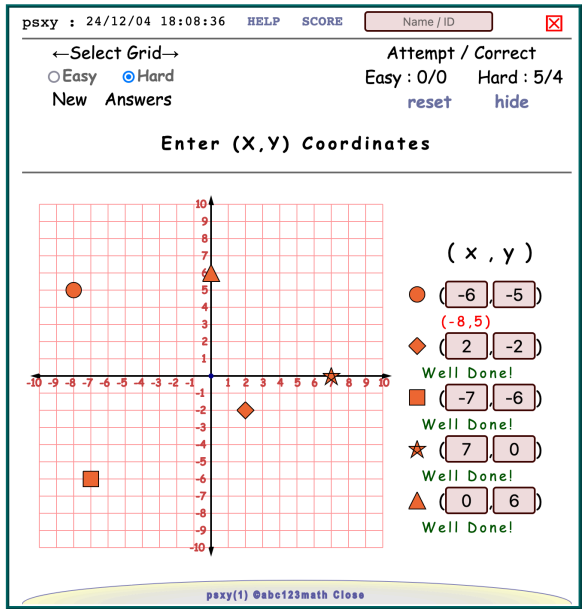
Section Overview

Points and Coordinates

The Graphing section begins with Points and Coordinates featuring two tools.

First is a Number Line Tool where students Identify Points, Distance and Vector Distance, entering .5 for half units.





(X,Y) Coordinates

Second tool displays 5 Shapes on a Grid.

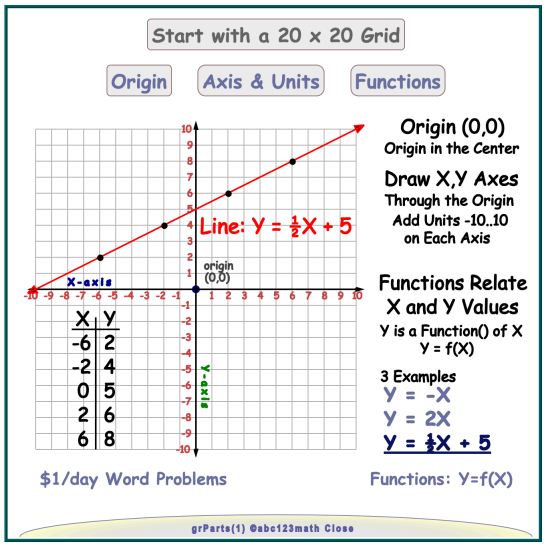
Students locate (X,Y) Coordinates entering them next to each shape.

Easy Mode uses a grid with units 0 to 10 and all coordinates are positive numbers.

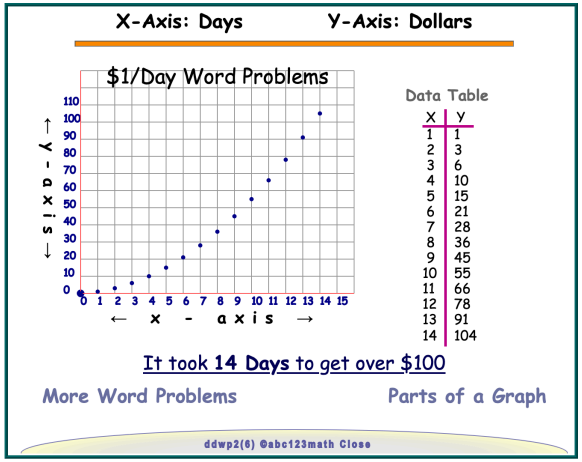
Parts of a Graph

Parts of a graph is a series of Examples and Activities starting with a 20x20 Grid.

Animations add Origin, Axis & Units, Functions and a graphic showing Y as a function of X and explaining dependent relationship of Y, and the independent X.



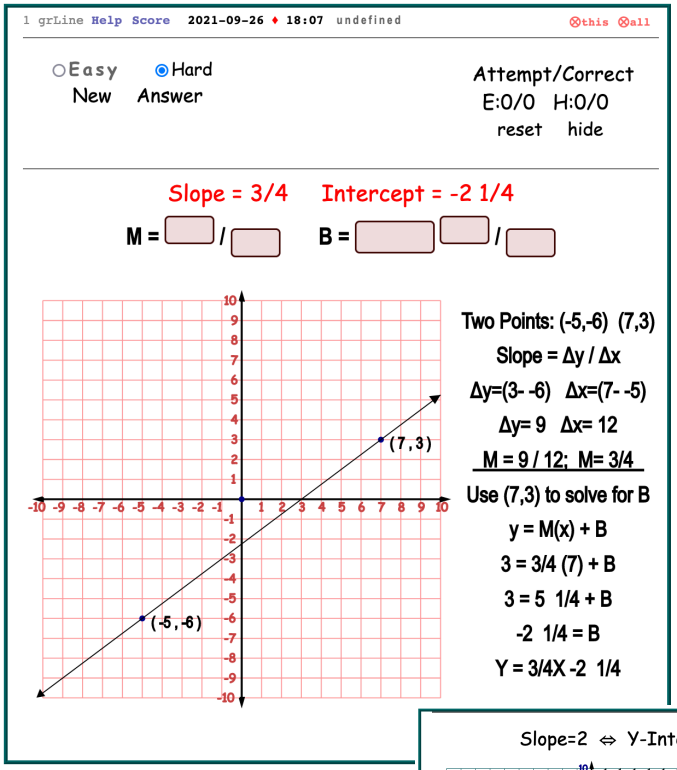
The Dollar per Day Word Problems Activity, has students use Functions to calculate Y when X=1,2,3..etc, and produce Neatly Labelled Graphs. Print activity sheets for each student as needed.



Slope and Y - Intercept

The Slope and Y-Intercept section features a Tool where students determine slope(M) and y-intercept(B) from two points. In easy mode one point is on the Y-Axis and only the slope need be calculated and entered in lowest terms. In Hard mode one (X,Y) point is substituted into the Slope Intercept Equation Y=mX+b to solve for Intercept (B). Detailed Solutions are shown for all lines.

Slope and Y-Intercept Tool



An example of Slope (M) shows how to determine Rise over Run.

Lines with the same slope highlight the effect of changing Y-Intercept(B).

An Estimate Slope Intercept Activity ties the concepts together by having students drop a toothpick on a grid - mark dots on the ends - draw a line through the dots, and estimate the y=Mx+B equation. Print an activity sheet for each student.