UNIT 1: STAGGERED RACES 1: VARYING THE "B" IN Y=MX+B

Activity 1: Staggered Race 1 Part 1
      (SCLFU1A1.8xv

Goal:
Actor B starts at your group number and travels for the same duration and at the same velocity as Actor A.

Remind students to include units!

World
The World will have the number of students collected (or received) +1 Actors (the +1 includes Actor A). Each Actor will start at G ft (G = group number) and travel 2 ft/sec for 6 seconds.

In the example below, there are 13 students in the class. There are two students in Group 1 (starting at 1 foot), two in Group 2, three in Group 3, three in Group 4, and three in Group 5.
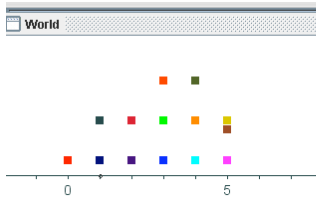
Group (G)	Initial Position	Velocity $[0,6]$	Ending Position
Actor A	0 ft	2 ft/sec	12 ft
1	1 ft	2 ft/sec	13 ft
2	2 ft	2 ft/sec	14 ft
3	3 ft	2 ft/sec	15 ft
4	4 ft	2 ft/sec	16 ft
5	5 ft	2 ft/sec	17 ft
G	G ft	2 ft/sec	$12+G$

<u>Graph</u>

The class' set of functions will create a system of parallel lines. Each group will be represented by a separate, parallel line because each group member will have equivalent functions.

In the example below, there were five groups and Actor A, so it appears there are only six functions because all Group 1's segments coincide, Group 2's segments coincide, Group 3's segments coincide, Group 4's segments coincide and Group 5's segments coincide.
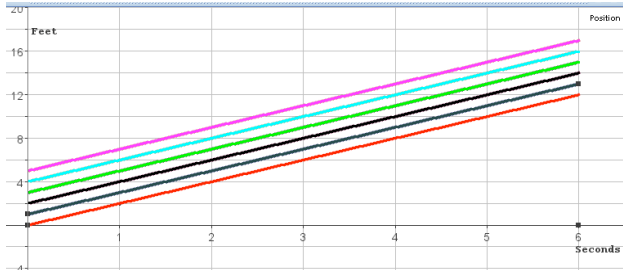
Group	Function	Domain
Actor A	$y = 2x + 0$	$[0,6]$
1	$y = 2x + 1$	$[0,6]$
2	$y = 2x + 2$	$[0,6]$
3	$y = 2x + 3$	$[0,6]$
4	$y = 2x + 4$	$[0,6]$
5	$y = 2x + G$	$[0,6]$
G	$y = 2x + G$	$[0,6]$