Topic of Lesson: Linear Equations – Review

Grade / Subject: High School (9th-12th) / Algebra
Length of Lesson: 30 minutes

Purpose:
   This lesson is a review activity of linear equations specifically reviewing calculating slope given 2 points, writing a linear equation in slope-intercept form given the values for slope and the y-intercept, reviewing parallel and perpendicular lines, and reviewing vertical and horizontal lines.

Materials Needed:
   Attached matrix
   Post-it notes (20 for the attached matrix)

Technologies Used:
   Document Reader
   SMART Board

Preparation:
   1) Matrix of questions and answers
   2) Then cover each square with a Post-it note.

Classroom Organization:
   Students in pre assigned groups of 3 or 4

Rules of the Game / Instructions:
   1) This is a game where teams are competing against each other. The objective of the game is to uncover a question and find the corresponding answer. The team must then correctly solve the problem to earn a point. The team with the most points wins.
   2) Project the prepared matrix onto the SMART Board using the document reader.
   3) Determine the order of turns for each team. For example, Team 1 goes first, then Team 2. etc.
   4) The first team takes their turn by selecting 2 squares using the coordinate grid (for example, "A3" and "D1"). Remove the Post-it notes revealing the text underneath for both squares.
   5) Use the zoom feature of the document reader on the 2 uncovered squares so that the class can read them.

Topic of Lesson: Linear Equations – Review (continued)

6) The team needs to determine if the 2 uncovered squares are a
   matching question and answer. If the team correctly determines
   the uncovered squares are a match, the team will go to the SMART
   Board to work out the problem.   If the explanation is correct, they
   earn 1 point. The squares are left uncovered and the team goes again
   calling out 2 new squares to uncover.

   If the explanation is incorrect, the squares are covered up again.

   Or if the team determines the squares are not a match, the 2
   squares are covered up again.

7) The next team takes their turn selecting 2 covered squares.
8) Once all the squares have been uncovered and matches made, the
   game ends.
9) The team with the most points wins.
10) For problems involving the team to draw a line, the document
   reader will project a piece of graph paper onto the SMART Board. The
   students can then graph the line as specified by their question.

Variations:
1) Make this game a true memory test by not allowing teams
   to take notes about the locations of the questions or answers.
2) Or you can handout a blank matrix for each team. They can write down
   the information from the uncovered squares. This will help in
   shortening the length of the game.
3) This game can be customized to any subject/topic.
4) The matrix is also customizable to any number of squares.
5) Another idea is to do something similar as this with the Jeopardy game.

(** See next page for my matrix.)

	1	2	3	4
A	Find the linear equation in slope-intercept form which passes through the point (-4, 2) with slope=-1.	y= 4x + 4 If you found the corresponding square, graph both lines to earn the point.	$m = \dfrac{0}{5}$ If you found the corresponding square, graph the line to earn the point.	What is the slope of the line passing through (-2, 2) and (1,0)?
B	$m = \dfrac{10}{0}$ If you found the corresponding square, graph the line to earn the point.	Find the equation of the line in slope-intercept form whose slope = $\dfrac{-4}{3}$ and y-intercept is -3.	What is the slope of the linear equation, x = -10?	y= 2x + 4 If you found the corresponding square, graph both lines to earn the point.
C	$m = \dfrac{-2}{3}$	y = -x -2	y = -2x -11	Y = 3x + 2
D	What is the slope of the linear equation, y = 4?	Find another linear equation parallel to y = 2x – 4.	Find the linear equation in slope-intercept form which passes through the point (0, 2) with slope=3.	$m = \dfrac{2}{3}$
E	What is the slope of the line passing through (1, 1) and (4,3)?	$y = \dfrac{-4x}{3} -3$	Find the linear equation in slope-intercept form which passes through the point (-3, -5) with slope=-2.	Find another linear equation perpendicular to $y = -\dfrac{1}{4} x + 3$.

Prepared Matrix
(all squares covered with Post-it notes)

	1	2	3	4
A			$m = \dfrac{0}{5}$ If you found the corresponding square, graph the line to earn the point.	
B				
C				
D	What is the slope of the linear equation, $y = 4$?			
E				

Matrix in Play
(called out squares, "A3" and "D1" are uncovered -
use the zoom feature of document reader so that
the students can read the text)