**Solving Linear Equations Card Activity**

**Brief Description**

Game cards help pair up students to solve linear equations for the value of a variable.

**Objectives**

Students practice solving linear equations for one variable.

**Keywords**

equation, linear equation, variable, algebra

**Materials Needed**

* a set of cards with equations written on them (see **Before the Lesson** below)
* notebooks/paper
* chalk and blackboard, or markers and whiteboard

**The Lesson**

**Before the Lesson**  This game is planned for use with 30 students; however, more cards can be made for play in a larger-sized class. Students might help you to prepare the 30 game cards, or the cards might be prepared in advance. Each card should have a letter of the alphabet (in this case, *A* to *O)* written on it along with a linear expression; there will be two different cards with the same letter and different linear expressions. For example, see the list below. For the letter A there are two cards:

one card has *A* written on it with the linear expression 4*x* + 2 -8*x*

the other card has *A* written on it with the linear expression 3*x* Create additional pairs of cards with the following letters and linear expressions.

If you have a class of 30 students, shuffle the set of 30 cards and distribute a card to each student. (If you have fewer or more students, shuffle a set of letter cards for each pair of students.) Allow students who get the same alphabet cards to sit together and solve the equation for the value of the variable. For example, the pair of students who got the two cards with the letter *A* on them will solve for *x* in the linear equation

4*x* + 2 - 8*x* = 3*x*

Once students have solved their equations, you might place lettered slips (in this games example, one slip with each letter *A* to *O)* in a bowl or hat. Draw out a slip and read the letter that is written on it. Invite the pair of students who have that letter on their cards to come up to the board to show how they solved their equation. If they do it correctly they win that round of the game.

**Assessment**

Let all student pairs who correctly solved their equations play another round of the game (with new cards or the same ones). With each repeat of the game, you will eliminate more pairs of students. Play until you have a final winner (a pair of champions).

Thus, the game can be used to motivate *and* provide drill in solving linear equations in one variable.

Below you will find the step-by-step solution to each of the equations.

Every letter should have two cards

**Card A** 4x + 2 - 8x; **Card A** 3x / Students match up to solve 4x+2=3x

**Card B** 6x -7 = 0

**Card C** 7 - 10z = 17

**Card D** 6x + 16 = 2x

**Card E** 6 - 5x = 13x

**Card F** 14y + 7 = -6 14y

**Card G** 8x -4 = -6 8x

**Card H** 7 - 5x = -10 -5x

**Card I** 6x +17 = 9x

**Card J** 10x + 7 = 17 10x

**Card K** 20x + 10 = 4 -10

**Card L** 15p- 5 = 10p + 10

**Card M** 11x + 33 = 55

**Card N** (6x-5)/2 = (3x+6)/2

**Card O** 5x -3x + 7 = -7 + 8x

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