"I" have a Choice Board ;

Coordinate Algebra "Equation of a Line in Slope-Intercept Form" **Standard: MCC9-12.A.CED.2**

Complete the center "Interpersonal" rectangle plus two other rectangles (your choice). Each rectangle is worth 4 points. A grading rubric will be provided. If you prefer, you may complete additional rectangles and I will count the Interpersonal group task plus the two highest grades from the rectangles you select.

Idea for an "I " Choice Board adapted from a Tic-Tac-Toe board:
http://www1.cbsd.org/sites/teachers/middle/csikora/DI%20Handouts/Choice%20Boards%20Packet.pdf

***Students should obtain parental permission before going to any online website.**

Spatial **(graphs, drawings, visualization, pictures, …)** ***Make a poster to illustrate the procedure for finding the equation of a line in slope-intercept form when you have the coordinates of two points on the line. Please include the procedure and at least one numeric example. Also include the graph for the numeric example.***	**Logical-Mathematical** **(procedures, exercises, puzzles, games…)** • ***Play the online game "Algebra vs. Cockroaches"*** • ***Play at least 6 rounds.*** • ***Print the report for your teacher (type your name before printing).*** *http://hotmath.com/hotmath_help/games/kp/kp_hotmath_sound.swf	**Linguistic** **(discussion, journals, word games, lecture...)** ***View the given online Prezi for linear equations. * http://prezi.com/_rsno-6b9vxi/linear-equation-poem/*** ***Write your own poem for finding the equation for a line in slope-intercept form and share it with your teacher. Note: This is not a Prezi assignment.***
	Interpersonal **(collaboration, group work, peer sharing, …)** **Flexible Grouping mini-Project: Choose a Partner from your class and complete the state task "Cara's Candles Revisited." Each student must submit their own paper. Document Link: Cara's Candles**	
Musical **(songs, raps, chants, …)** ***Find a school-appropriate "Equation for a line" song online (YouTube etc) for slope-intercept form and decide how you would improve it (if needed), then sing it (or your improved version) for your teacher.***	**Existential** **(real world connection, big picture)** ***Suppose that I rent a car for the day and pay $25 to rent the car plus a mileage fee of $0.40 per mile driven. Make a table and graph the relationship between the independent variable x, representing miles driven that day, and the dependent variable y, representing cost in dollars. Write an equation for the relation in slope-intercept form.***	**Intrapersonal** **(independent study, individualized project, personal connection,…)** ***Research the connection between degrees Celsius and degrees Kelvin. Graph this linear relationship on graph paper. Using two points from your line, write an equation in slope-intercept form for the real world relationship between degrees Celsius and degrees Kelvin.***

Cara's Candles Revisited (State of Georgia Coordinate Algebra Group Task/Mini-Project)

Name_____ **Date**_____

Cara likes candles. She also likes mathematics and was thinking about using algebra to answer a question that she had about two of her candles. Her taller candle is 16 centimeters tall. Each hour it burns makes the candle lose 2.5 centimeters in height. Her short candle is 12 centimeters tall and loses 1.5 centimeters in height for each hour that it burns.

Cara started filling out the following table to help determine whether these two candles would ever reach the same height at the same time if allowed to burn the same length of time. Finish the table for Cara. Use the data in the table to determine what time the two candles will be at the same height.

Also, she wants to know what height the two candles would be at that time. If it is not possible, she wants to know why it could not happen and what would need to be true in order for them to be able to reach the same height. To help Cara understand what you are doing, justify your results. You will explain your thinking using the table and create a graphical representation of the situation.

Time (hours)	16 cm candle height (cm)	12 cm candle height (cm)
0	16	12
1	13.5	10.5
2		
3		
4		
5		
6		
7		

1. Complete the table, and use it to write an equation for the height of each candle in terms of the number of hours it has burned. Be sure to include any constraints for the equation.

2. Create a graphical representation of your data, taking into account natural restrictions on domain, range, etc.

3. Cara has another candle that is 15 cm tall. How fast must it burn in order to also be 6 cm tall after 4 hours? Explain your thinking.

4. If Cara had a candle that burned 3 cm every hour, how tall would it need to be to also reach the same height as the other three candles after 4 hours? Explain your thinking.