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Lesson Plan

Learning Segment Focus: Reading Graphs   **Lesson : 1 of 1**

Course & topic addressed: Coordinate Plan   **Date: 3/27/2020   Grade: 5**

Student Outcomes

Specific learning **objectives** for this lesson.	At the end of this lesson students should be able to fill in the table given a graph with four different lines at 90 percent accuracy.
Justify how learning tasks are appropriate using examples of **students' prior academic learning**.	Students will use their previous knowledge of the first quadrant and of plotting coordinates on a graph to read the given graph and learn how to fill in a table and make other graphs using the same information.
Justify how learning tasks are appropriate using examples of **students' personal, cultural, linguistic, or community assets**.	In my class there are two students who are English learners, three students who are IEP/504. With the diversity of students in mind, I will allow for accommodations, modifications, and differential instructions. I will use Spreadsheets in google as non-linguistic representation of data and to show graphs for visual display to facilitate learning.

State Academic Content Standards

List the **state academic content standards** with which this lesson is aligned. Include abbreviation, number & text of the standard(s).	**5-PS1-2 Measure and graph quantities** **AR. Math.Content.5. G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system.** **AR. Math.Content.5. G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant**

Key Vocabulary

What **vocabulary terms/content specific terminology** must be addressed for students to master the content?	**Perpendicular Graph X-axis Vertical** **Coordinate Y-axis Slope Average** **Horizontal Plot Coordinate plane**

Academic Language Support

What are the **Academic Language Function(s)** (the content and language focus of the learning task represented by the active verbs within the learning objectives/outcomes) and explain how they are utilized in the lesson plan? What planned **Academic Language Supports** will you use to assist students in their understanding of key academic language to express and develop their content learning and to	Students will fill in the required table on Google Spreadsheets by transferring information from the given graph. I will do scaffolding by presenting on the projector how to read a point from the graph as an example. The whole class will work together and think aloud with my

| provide varying supports for students at different levels of Academic Language development? How do these supports address all three **Academic Language Demands (vocabulary, syntax, and discourse)?** | guidance to read the second point. Students need to know the x and y axis. I have a Poster on the wall that the students could use to help them find where the axes are located. I will pass around the class as the students do the assignment posted on Google Spreadsheets and see if anyone needs help or is struggling to offer differentiated instructions. After that students are asked to come up with a graph just like the original one to check their work and calculate the slope of each line, represent this information in a graph and a pie chart. At the end of class each student will discuss what he or she learned today with the student sitting next to them, and write in their journals what they have learned today. |

Materials

| Materials needed by **teacher** for this lesson. (such as books, writing materials, computers, models, colored paper, etc.) | Computer, Projector, Google Spreadsheet, internet access, Axis Poster. |
| Materials needed by **students** for this lesson. (computers, journals, textbook, etc.) | Computer, Google Spreadsheet, internet access, Pencil, Journal. |

Lesson Timeline with Instructional Strategies & Learning Tasks

Amount of Time	Teaching & Learning Activities (This should be a BULLETED LIST)	Describe what YOU (teacher) will be doing and/or what STUDENTS will be doing during this part of the lesson. (This should be VERY DETAILED)
5 minutes	**Introduction**:	Good Morning class, In the past couple of lessons we have learned all about the coordinate plane and how to plot points using the given coordinates. Today we will do things a little different. I will give you a graph of four different lines and I want you to read the points and fill in the table for the graph using Google Spreadsheets. To check your work you are asked to insert a graph using the data you filled in.
	Instruction:	I want everyone to open Google Spreadsheets and to look here at the projector. This is a graph of four different lines. I want you to make a table on your spreadsheet and fill it with the coordinates of each point for all four lines. Your table

30 minutes	**Instruction:**	should look like the one here on the projector.
		Now I will demonstrate how to read the first point as an example. Line one passes through (1,1) So on the table this first row represents the x-coordinate and this area represents the y-coordinate. I will write 1 in B3 to represent the y-coordinate for line 1 when the x-coordinate was equal to one. Show me thumbs up if you understand what we just did.
		Now, for the second point on the same line when x-coordinate was 2 what is the value of y?
		Yes, that is right it is 2. Where am I going to write the 2?
		Yes, that is right. On C3 right here.
		Any questions, Please raise your hand if you have a question?
		Great, Now I want you to fill all of the table and calculate the slope of each line after that. To calculate the slope of a line, you need to find two different points on the same line. Find the difference between the ys and xs of those two points then divide. The equation you will use is Y2-Y1/ X2-X1. In spreadsheets you need to write the cell that has this information not the value of x and y. You could also calculate the average of the y-value for extra practice.
		Now, to check your work you need to use the information you entered in the table to come up with a graph just like the one on the projector. I want you to compare the slopes of the four lines in a bar chart and a pie chart to demonstrate different ways of representing the data.
		When you are done share the document with me so that I can grade it and talk with your neighbour about what you have learned today. Don't forget to write in your journals about today's lesson.
		Today, we have learned how to read points from a given graph and to put that

10 minutes	**Closure:** Now ,	information in a table using our knowledge of the coordinate panel.We have also learned that we can use this table to come up with more information such as the slope and the average. we have learned that we can represent the same information in different ways. This will be very helpful to learn how we can compare and analyze data later on. Please clean your desk, get your lunch bags, and line up to get ready to go to lunch within two minutes.

Accommodations/Modifications

How might I **modify** instruction for: *Remediation?* *Intervention?* *IEP/504?* *LEP/ESL?* (All students who have plans mandated by federal and state law.)	.Allow the ESL students to use a dictionary while doing any assignment. Send home a study guide, and allow extended time for the IEP/504 students. Give one student preferential seating to allow him to focus more on his work. Use Google Spreadsheets as a visual representation of data and to enhance learning.

Differentiation

How might you provide a variety of techniques (enhanced scaffolding, explicit instruction, contextualized materials, highlighters/color coding, etc.) **to ensure all student needs are met?** (All students who are not on specific plans mandated by federal and state law.)	I will use Google Spreadsheets to facilitate learning, and allow students to use non-linguistic representation of data. I will use color coding when needed. I will use smaller groups for differentiated instructions for those that need more help.

Assessments: Formative and/or Summative

Describe the **tools/procedures** that will be used in this lesson to monitor students' learning of the lesson objective(s) (include type of assessment & what is assessed).	☒Formative/☐Summative	Show thumbs up if they understand
	☒Formative/☐Summative	Raise hand if there are any questions
	☐Formative/☒summative	Share the Google Spreadsheet they did in class with me for a grade.

Research/Theory

Explain **connections to theories and/or**	

research (as well as experts in the field or national organization positions) that support the approach you choose and justify your choices using **principles of the connected theories and/or research.**	Non-linguistic representation was used in the spreadsheets to summarize the results because it follows **Marzano's** instructional strategies. Scaffolding was used because it follows **Vygotsky's** social-interaction theory and the zone of proximal development.

Lesson Reflection/Evaluation

What went **well**? What **changes** should be made? How will I **use assessment data** for next steps?	*TO BE FILLED IN AFTER TEACHING*

Graph Table							
	1	2	3	4	Y2-Y1	X2-X1	Slope
Line 1	1.0	2.0	3.0	4.0	2.0	2.0	1.0
Line 2	1.5	3.0	4.5	6.0	3.0	2.0	1.5
Line 3	2.0	4.0	6.0	8.0	4.0	2.0	2.0
Line 4	2.5	5.0	7.5	10.0	5.0	2.0	2.5
Average	1.8	3.5	5.3	7.0	3.5	2.0	1.8

Plot line graph

Comparing slopes

Slopes vs Lines

- Line 1
- Line 2
- Line 3
- Line 4

Pie Chart

- Line 1
- Line 2
- Line 3
- Line 4

Line 1

Line 2

Line 3

Line 4