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Lesson Plan Template

Learning Segment Focus: Graphing

Lesson 1 of 1 Topic: Graphing with a Calculator Date: May 3, 2021 Grade: 8th

Student Outcomes

Specific learning **objectives** for this lesson.	By the end of this lesson students will be able to quickly graph all types of algebraic graphs by using a calculator.
Justify how learning tasks are appropriate using examples of **students' prior academic learning**.	Students should already know how to solve expressions and graph them by hand. This will help students in being able to quickly solve the problems.
Justify how learning tasks are appropriate using examples of **students' personal, cultural, linguistic, or community assets**.	This allows students to use technology to learn. It keeps them motivated and meets them at their needs.

State Academic Content Standards

List the **state academic content standards** with which this lesson is aligned. Include abbreviation, number & text of the standard(s).	AR.Math.Content.8.F.B.4: • Construct a function to model a linear relationship between two quantities: o Determine the rate of change and initial value of the function from: ▪ a verbal description of a relationship ▪ two (x, y) values ▪ a table ▪ a graph o Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. AR.Math.Content.8.F.B.5:

	• Describe the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear) • Sketch a graph that exhibits the features of a function that has been described verbally

Key Vocabulary

What **vocabulary terms/content specific terminology** must be addressed for students to master the content?	- Function - Expression - Quadrant - Table - Linear

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 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)?**	Students will solve systems of equations in slope intercept form and then graph them, they will also learn how to calculate these graphs on a calculator using an online tool. We will make sure to review on when and how to solve.

Materials

Materials needed by the teacher for this lesson. (such as books, writing materials, computers, models, colored paper, etc.)	- SmartBoard/Markers - Desmos Website
Materials needed by **students** for this lesson. (computers, journals, textbook, etc.)	- School Issued Devices - Desmos App/website - Graph Paper/Pencil

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)**
20 Minutes	**Introduction**: - Students will come in and complete bell ringer - Go over Bell Ringers with class. - Transition	I will welcome students as they come in and direct them to work on the bell ringer which will be a review on solving functions into slope intercept form. As students to begin to complete the bell ringer, go over it with them, have a student come up to the Smart Board, and complete the problems. We will correct the student work If necessary and go over their work. I will remind them that their test is coming up and that they will need to know this.
30 Minutes	**Instruction:** -Review on Graphing -Introduce Graphing Calculator -Work on Problems	I will also remind them that we can graph these solved equations and I will pull graph paper on the Smart Board and ask students to help me graph these based on the answers from the Bell ringers. I will then ask, "Don't you wish there was an easier way to graph these?" "Well, there is" You can use a calculator. I will then pull up a calculator on a website called Desmos, I will mention that there is an app on iPad, and they can also pull up the website. Once they do this, I will go over how to enter it into the calculator, I will use one of the bellringers as an example. I will also show them that they can do inequalities as well. I want to see them do it on their own and transport it to their own paper, so I will put a few problems on the board that they must first solve, and then

		graph. Once they are done with this we will go over them and students will come up to smart board to solve. After this I will assign them their homework.
25 Minutes	**Closure:** -Students will begin to work on their homework assignment.	I will remind students that tomorrow we will begin our review for their test, which they will be able to use their calculator for some of the test, but not all of it. After this invite students to begin their homework if they don't have any questions.

Technology Integration

Provide your **rationale** for your technology choices that accurately reflects those choices within your teaching context. **Identify** what technology(s) you are using as part of your lesson plan. **Describe** how the use of technology aligns to your learning objectives, content standards, and central focus. **Explain** how technology-based instructional strategies are essential to students accomplishing the learning objectives (beyond what could be accomplished without using the technology). **Specify** how the technology selections meet or exceed the needs/strengths of all students**. Justify the "fit"** of chosen technologies, showing how the content, instructional strategies, and technology "fit" together.	Students love the chance to use technology, Normal calculators are not as intriguing to use as an application or website. The Smart Board gets students involved, out of their seats and active, I believe that students will be motivated to learn. I believe that the technology helps improves the lesson and also makes it quicker and easier to understand, if it works. If these technologies was not being used, I would have to write the problems as we go over them, with the Smart Board, I can have them saved and ready to go on the Smart application. The application for the calculator is easy to use and explain if they have it directly in front of them instead of on an actual calculator.

Accommodations/Modifications

How might I **modify** instruction for: *Remediation?* *Intervention?* *IEP/504?*	I will check in with these students to make sure they are understanding how to use the technology, I will be calling them up while they are working on their homework. I will assign less homework to those who are behind if necessary. If they continue to struggle with the content after this lesson, I will work with them to find a solution with using advanced scaffolding techniques.

LEP/ESL? (All students who have plans mandated by federal and state law.)	

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 scaffolding to give students hints or suggestions in how to complete problems. I will also demonstrate techniques as well.

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~~	Students will be asked to complete a homework assignment where they will show understanding of learned concepts
	~~☐ Formative~~/☐ **Summative**	Students will have to complete an assessment where they will have to demonstrate what they learned today.

Research/Theory

Explain **connections to theories and/or researc**h (as well as experts in the field or national organization positions) that support the approach you chose and justify your choices using **principles of the connected theories and/or research.**	Vygotsky: This theorist stated the scaffolding technique is beneficial and effective when used in the classroom to help students succeed to higher standards. Students will be shown by me how to do something by me during the lesson, and will know what is expected of them, I'm looking for students to show that they are capable of applying something demonstrated to them on to paper on their own. If they fail, then we will walk back through it.

Lesson Reflection/Evaluation

What went **well**? What **changes** should be made?	*TO BE FILLED IN AFTER TEACHING*

How will I **use assessment data** for next steps?	

Include supporting material such as slides, pictures, copy of textbook, and handouts for any activities students will be using as part of your lesson.

*adapted from: http://webcache.googleusercontent.com/search?q=cache:EsQcNWuG1ZoJ:web.mnstate.edu/harms/StudentTeachers/edTPA-LessonPlan.doc+&cd=2&hl=en&ct=clnk&gl=us; http://www.moreheadstate.edu/getmedia/cd3fd026-939f-4a47-a938-29c06d74ca01/Lesson-Plan-and-Reflections.aspx; http://www.mcneese.edu/f/c/9cb690d2/Lesson%20Plan%20Rubric%20Aligned%20with%20InTASC.docx;https://www.uwsp.edu/education/Documents/edTPA/Resource12.pdf; https://www.uwsp.edu/education/Documents/edTPA/Resource11.pdf; https://www.uwsp.edu/education/Documents/edTPA/Resource11a.pdf; https://www.uwsp.edu/education/Documents/edTPA/LessonPlanTemplateSOE.docx; https://www.uwsp.edu/education/Documents/edTPA/SpecEdLessonPlanGuide.docx; https://www.uwsp.edu/education/Documents/edTPA/SpecEdLessonPlanTemplate.docx