***This is a sample 3-day unit plan of Algebra 1. This unit plan is not perfect, however very well done. I included my feedback to give you an idea of what I expect to see in your unit plan.***

***Section 1: Lesson Preparation***

**Teacher Candidate Name:**

**Grade Level: 9**

**Unit/Subject: Mathematics / Algebra 1**

**Title of Unit and Brief Summary: The Units are based on equations based on word problems, both algebraically and graphically. The lessons review the necessary knowledge needed beforehand and opportunities for engagement and participation by all students are provided.**

**Classroom and Student Factors/Grouping: The classroom consists of IEP’s that are based on computational struggles and emotional behavior issues. Due to these demographics, concepts are thoroughly addressed and readdressed in the lessons and opportunities to check for understanding are continuous. The grouping opportunities in the classroom are intentional so that all groups have opportunities for capable learning. Students with IEP’s are allowed to have their pre-determined tools to help them succeed.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Day 1** | **Day 2** | **Day 3** |
| **National/State Learning Standards**  *List specific grade-level standards that are the focus of the lesson being presented.* | A-CED.A.1: Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. | A-CED.A.2: Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. | A-CED.A.2: Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. |
| **Specific Learning Target(s)/Objectives Your written standards were very well chosen. By not creating measurable objectives, performance driven can’t be determined.** | Given a word problem, students will create an equation to solve for an unknown variable correctly within two attempts, without the use of notes or textbook. | Students will graph an equation on an online program and define the relationship by stating the slope correctly within two attempts, without the use of other online resources, notes, or textbook. | Given a word problem, students will create an equation to solve for an unknown variable by graphing it on an online program correctly within two attempts, without the use of other online resources, notes, or textbook. |
| **Academic Language** Vocabulary words are different than academic language. Including your vocabulary words is fine, it’s important to sprinkle in some academic words as well. Please review this site <http://www.ascd.org/publications/books/114004/chapters/Academic-Language.aspx> | Variables  Expression  Equation  Relationship | Variables  Coordinates  Equation  Slope  Point-Slope Form  Standard-Form | Variables  Expression  Equation  Relationship  Coordinates  Slope  Point-Slope Form  Standard Form |
| **Unit Resources, Materials, Equipment, and Technology**  **Will you have a book or worksheets every day or just one day? Will students need a calculator? It’s a good idea to include websites that the students or you will use in the lesson. It’s just a good habit to include everything in the lesson plan in case you have a substitute and so you don’t have to scramble looking for everything.** | Projector  Mini-White-Boards  Algebra tiles  Colored Paper  Pencils  Laptops | Projector  Mini-White-Boards  Laptops | Projector  Mini-White-Boards  Laptops  Graphing paper |
| **Depth of Knowledge Lesson Questions**  **Similar to your objectives, DOK questions also need to include a Bloom’s verb. You may not always reach level 3 and 4 every day. However, as the unit progresses students should be able to reach those higher levels. To work at a Level Three or Four requires foundation.**  **This site may help you get more practice**  <https://iowacore.gov/content/depth-knowledge-levels-descriptions-reading-and-writing> | **How do we solve a word problem?**  **What terms in a word problem tell you how to set up an equation?**  **What are the identities used to solve an algebraic equation?**  **How can we check to make sure our solution is correct?** | **What is the slope of a given line?**  **What is the difference between a slope of zero and an undefined slope?**  **How would the slope differ for a line that is perpendicular?**  **What is the difference between point-slope form & standard form?** | **What is the relationship between the two sets of data?**  **Do you prefer the algebraic or graphical approach to solve a problem?**  **How would you test the accuracy of your graph?**  **How can the slope indicate the value of a word problem?** |

***Section 2: Instructional Planning***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Day 1** | **Day 2** | **Day 3** |
| **Anticipatory Set**  **The first lesson should have a pre-test to start. The purpose of the anticipatory set is to provide a review/refresher as you have done. It is also important to provide a hook to engage students of the upcoming lesson. Maybe use Khan Academy video or a song** [http://www.schooltube.com/video/adabcffde14c17b9c412/Quadratic%20Formula...](http://www.schooltube.com/video/adabcffde14c17b9c412/Quadratic%20Formula%20Song%20Rockford%20Christian)  **This site will explain the anticipatory set:**  [**https://www.cultofpedagogy.com/anticipatory-set/**](https://www.cultofpedagogy.com/anticipatory-set/) | Bell Ringer Problem: Students will have the first five minutes of class to complete a word problem by writing an expression on their mini-whiteboard. | Bell Ringer Problem: Students will have the first five minutes of class to write down the value of the slopes given onto their mini-whiteboard. | Bell Ringer Problem: Students will have the first five minutes to graph 3 given equations on a sheet of graph paper. |
| **Presentation of Content** | | | |
| **Multiple Means of Representation**  **Very well done explaining what the teacher will be doing. The representation section (I do), the engagement section (we do) and the expression section (they do). The flow of a lesson plan is I do, we do and they do.**  **Bring in real-world applications, here are some examples** [**https://www.quora.com/What-are-some-applications-of-parabola-in-real-life**](https://www.quora.com/What-are-some-applications-of-parabola-in-real-life)  **This site will give you some differentiated ideas:**  [**https://www.kinvert.com/applied-math-problems-real-world-math-examples/#linear**](https://www.kinvert.com/applied-math-problems-real-world-math-examples/#linear) | * A PowerPoint presentation will be given to discuss how work problems are approached. * A video will then be shown how to solve word problems by create linear equation and finding the solution. <https://youtu.be/-EwUcnZx4dI> | * Watch “Slope Dude” video and have students participate in game about slope. <https://youtu.be/ZcSrJPiQvHQ> * They will be reminded of the types of slope and will be engaged in a fun game. * The projector will be used, and the teacher will show a few examples of how to utilize the online resource of “Geogebra” | * I will first show a fun Parody video on the topic of Graphing lines. <https://youtu.be/TTYKcHJyLN4> * Think-Pair-Share will begin at the beginning of this lesson. There will be a word problem on the board and the students will be asked to solve it individually using any method they choose. * Next, they will check with their shoulder partner and discuss both of their findings. * Lastly, they will come together as a class and will guide the teacher to complete the problem on the board. * The problem will be solved intuitively, algebraically, and graphically. If students’ answers do not cover one of the strategies, then the teacher will guide the class. * Class will take notes during the whole-group discussion. * They then will pair back up and solve two word problems using the “Geogebra” site. |
| **Multiple Means of Representation Differentiation** | * Students will be able to read the key terms and ideas and hear them spoken by the teacher. * Writing notes will help concepts become more concrete for students and allow for review later if necessary. | * Students with computational struggles will be able to observe the other students during the game/activity to better comprehend slope. * There will be extra allotted time to those groups who need it based on their needs. | * The teacher will use knowledge of students’ strengths and weaknesses to offer help to those pairs. * Writing notes will help concepts become more concrete for students and allow for review later if necessary. * There will be extra allotted time to those groups who need it based on their needs. |
| **Application of Content** | | | |
| **Multiple Means of Engagement**  **This section outlines what the teacher and students will be doing. I really like the idea of groups decipher the physical features and the game. It would be nice to see this in your objectives. Will students be taking notes during representation time, so they know what to do during engagement time? It’s important to visualize and write out what you expect to be occurring throughout the class period.**  **I appreciate the full description of how accommodations and differentiation will be implemented.** | They will be provided opportunities to display their knowledge during individual work and group work during the “Roam the room” activity.  They will be going around the room to complete different activities at each of the four tables that have them   * define vocabulary terms, * visual practice of solving equations, * solving equations by utilizing manipulatives, * and working as a group to solve a word problem. | * Participation in this game similar to “Simon Says” except it is all about demonstrating slope with gestures of the arms. * Using “Geogebra”, Students will work individually to graph 5 problems on their own. Then they will be allowed to choose their own partner to complete 5 more. They also will have to state the slope of the problems that are solved with their partner. | * The fun video will refresh the ideas that have been learned and will be applied today while keeping students engaged. * During the Think-pair-share activity, students will have opportunities to work individually, discuss findings with a partner, and draw conclusions as a whole-group. * While solving the word problems on the “Geogebra” web tool, they will have opportunities to manipulate the slope to answer some Depth of Knowledge questions. |
| **Multiple Means of Engagement Differentiation**  *Explain how materials will be differentiated for each of the following groups:*   * *English Language Learners (ELL)* * *Students with special needs* * *Students with gifted abilities* * *Early finishers (those who finish early and may need additional sources/support)* | * The groups are selected by design of the teacher to enhance learning for all students. * The students with gifted abilities are given opportunities to help the other students with the content. * Students with computational struggles will be allowed to use a calculator or a times table worksheet. | * The game will include a practice run so that everyone has a fair chance. * The utilization of “Geogebra” will allow both partners to take turns and teacher will be walking around to assist. * The students with gifted abilities are given opportunities to help the other students with the content. * Students with computational struggles will be allowed to use a calculator or a times table worksheet. | * The students with gifted abilities are given opportunities to help the other students with the content. * Students with computational struggles will be allowed to use a calculator or a times table worksheet. |
| **Assessment of Content** | | | |
| **Multiple Means of Expression**  **This section outlines all of your assessments. You’re your card and game from engagement section be a formative assessment. The assessments you listed I did not see in your objectives. Usually the first day is a pre-test at the start of a unit, that can be listed here as well. Will you have a summative assessment at the end of your unit?**  **Only if the IEP states extra time on assessments can that be granted. This is not an automatic accommodation.**  **It is essential your standards, objectives, activities and assessments all align together. Then you will have flow and sequence.** | * Students will work on “Tina’s Garden.” They will be advised to work individually and simply do their best. This part of the lesson will be graded based upon participation and not for accuracy. * During this lesson students are continually assessed. They will be provided opportunities to display their knowledge during individual work and group work during the “Roam the room” activity. * They will be going around the room to complete different activities at each of the four tables that have them define vocabulary terms, visual practice of solving equations, solving equations by utilizing manipulatives, and working as a group to solve a word problem. * The final activity is to restart the “Tina’s Garden” worksheet and self-evaluate their own progress by comparing their first and second attempts. | * The game will allow the teacher to observe the classes understanding based upon how well the game is played. * Students will be saving their graphs of the equations and stated slopes and turning them in via the online google classroom. The teacher will be able to assess students’ comprehension of graphing equations and make decisions about the following lesson that builds on this topic. | * The teacher will be able to observe the findings of the students individually, in pairs, and as a whole group. In each part, students will be asked to use the white board. * The teacher will be able to assess the groups findings of the word problems and graph through “GeoGebra”. The teacher will also see their answers to the Depth of Knowledge questions that are asked along with the word problem. * Since this is the end of a mini-unit, the students will be asked to rate their confidence (1-5) based on the objectives of each lesson, as an “Exit Ticket”. |
| **Multiple Means of Expression Differentiation**  *Explain how materials will be differentiated for each of the following groups:*   * *English Language Learners (ELL)* * *Students with special needs* * *Students with gifted abilities* * *Early finishers (those who finish early and may need additional resources/support)* | * The students with gifted abilities are given opportunities to help the other students with the content. * Students with computational struggles will be allowed to use a calculator or a times table worksheet. | * The game will include a practice run so that everyone has a fair chance. * The utilization of “Geogebra” will allow both partners to take turns so that the teacher can assess both students’ abilities. | * Students who need it will be provided help by the aid or a peer. * If students have a difficult time writing their ideas onto the white board, they can choose to have a peer/aid write their thoughts for them. |
| **Extension Activity and/or Homework** | | | |
| **This section is extensions or homework. I like the paragraph idea; you should include links to websites for reference.**  **For this assignment, involvement of student’s parents was required. This part was missed by many students and I can easily understand. However, it is good practice to involve parents on your assignment/homework.** | Extra practice on Khan Academy. Khan academy provides videos and extra practice problems for free online. The extra videos may present it in a different way than the teacher provided and can enhance the understanding of the concepts. Students who understand the topic well are able to work on more advanced topics. Teachers and parents can login on the website and monitor student’s progress at home for free and see what they may be struggling on. | Extra practice on Khan Academy. Khan academy provides videos and extra practice problems for free online. The extra videos may present it in a different way than the teacher provided and can enhance the understanding of the concepts. Students who understand the topic well are able to work on more advanced topics. Teachers and parents can login on the website and monitor student’s progress at home for free and see what they may be struggling on. | Extra practice on Khan Academy. Khan academy provides videos and extra practice problems for free online. The extra videos may present it in a different way than the teacher provided and can enhance the understanding of the concepts. Students who understand the topic well are able to work on more advanced topics. Teachers and parents can login on the website and monitor student’s progress at home for free and see what they may be struggling on. |