

## Lesson Plan Template

<b>Grade:</b> 9 <sup>th</sup> grade		<b>Subject:</b> Algebra	
<b>Materials:</b> Computers, Notebooks		<b>Technology Needed:</b> Computers	
<b>Instructional Strategies:</b> <input checked="" type="checkbox"/> Direct instruction <input type="checkbox"/> Peer teaching/collaboration/ <input type="checkbox"/> Guided practice                      cooperative learning <input type="checkbox"/> Socratic Seminar <input type="checkbox"/> Visuals/Graphic organizers <input type="checkbox"/> Learning Centers <input type="checkbox"/> PBL <input type="checkbox"/> Lecture <input type="checkbox"/> Discussion/Debate <input type="checkbox"/> Technology integration <input checked="" type="checkbox"/> Modeling <input type="checkbox"/> Other (list)		<b>Guided Practices and Concrete Application:</b> <input type="checkbox"/> Large group activity <input type="checkbox"/> Hands-on <input checked="" type="checkbox"/> Independent activity <input type="checkbox"/> Technology integration <input type="checkbox"/> Pairing/collaboration <input type="checkbox"/> Imitation/Repeat/Mimic <input type="checkbox"/> Simulations/Scenarios <input type="checkbox"/> Other (list) Explain: Students will watch the video and take notes on it. Then they will be expected to complete a worksheet associated with it on their own.	
<b>Standard(s)</b> <b>A.REI.C.6</b> – Solve systems of linear equations exactly and approximately, focusing on pairs of linear equations in two variables.		<b>Differentiation</b> <b>Below Proficiency:</b> Students who are below proficiency may struggle to understand some of the concepts in the video. Since this is a flipped classroom, they will bring their questions to class and ask a teacher for help. Then, someone will sit down with them to work through one of the problems and check for understanding.  <b>Above Proficiency:</b> Students who are above proficiency may move through this lesson quickly. Their challenge will be to continue moving forward into more difficult lessons.  <b>Approaching/Emerging Proficiency:</b> Students who are approaching proficiency may be able to complete more simple problems, but they may struggle when fractions are introduced or if they discover their answer is incorrect when they verify it. These students will also be expected to ask questions, and a teacher will come over to work with them if necessary.  <b>Modalities/Learning Preferences:</b> PowerPoint, Modeling how to solve problems	
<b>Objective(s)</b> In this lesson, students will learn how to solve systems of linear equations that have infinitely many solutions or no solution.  <b>Bloom's Taxonomy Cognitive Level:</b> Understanding, Applying			
<b>Classroom Management- (grouping(s), movement/transitions, etc.)</b>  <ul style="list-style-type: none"> <li>• Students will be expected to listen to the lecture quietly</li> <li>• Students should work independently on their assignment</li> </ul>		<b>Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)</b>  <ul style="list-style-type: none"> <li>• Students will be expected to listen to the lecture quietly</li> <li>• Students should work independently on their assignment</li> </ul>	
<b>Minutes</b>	<b>Procedures</b>		
<b>2 min</b>	<b>Set-up/Prep:</b> The only set-up that will be required will be for students to take out their notes and their computers.		
<b>3 min</b>	<b>Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)</b> To begin the lesson, we will go over the standard above and the driving question, "How can I solve a system of equations that has no solution or infinitely many solutions by using substitution?"		
<b>10-15 min</b>	<b>Explain: (concepts, procedures, vocabulary, etc.)</b> We will begin the explanation part of the lesson by defining what it means to have infinitely many solutions or no solution.  "If you get an answer, like $2=2$ , when you solve a system of equations, then the system has infinitely many solutions. If you get a false statement, like $8 = -2$ , then the system has no solution."  Then, we will go over some examples of solving this type of system of equations. Students will observe that the procedure for solving these systems of equations is the same as solving other systems of equations: <ol style="list-style-type: none"> <li>1. Solve for one of the variables.</li> <li>2. Substitute for the variable in the other equation.</li> </ol>		

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	<p>3. Verify the solution and write is as an ordered pair</p> <p><math>X + -2Y = 4</math> and <math>3.5X + 7Y = 14</math>  <math>Y = 3X - 11</math> and <math>Y - 3x = -13</math>  <math>6Y + 5X = 8</math> and <math>2.5X + 3Y = 4</math></p>	
<p><b>20 min</b></p>	<p><b>Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)</b>          Since this is a video lesson, we will skip the explore section until after the lesson has been completed. Then, students will return to this section as they will complete a worksheet to practice the techniques they have just learned.</p>	
<p><b>5 min</b></p>	<p><b>Review (wrap up and transition to next activity):</b>          To review, students will write a summary of how to solve systems of linear equations with infinitely many solutions or no solution by using substitution.</p>	
<p><b>Formative Assessment: (linked to objectives)</b>  <b>Progress monitoring throughout lesson- clarifying questions, check- in strategies, etc.</b>          I will not be able to monitor students very well as they are watching the video, but I will walk around as they are watching it to check for questions. I will continue walking around as they are working on the worksheet to evaluate their progress.</p> <p><b>Consideration for Back-up Plan:</b>          None</p>	<p><b>Summative Assessment (linked back to objectives)</b>  <b>End of lesson:</b>          Students will be assessed based on their completion of the worksheet.</p> <p><b>If applicable- overall unit, chapter, concept, etc.:</b>          N/A</p>	
<p><b>Reflection (What went well? What did the students learn? How do you know? What changes would you make?):</b></p>		