

Lesson Plan Template

Grade: Secondary Level (9th, 10th, 11th, 12th) grade		Subject: Algebra I	
Materials: Promethean board, pen, paper, pencil and calculator		Technology Needed: Calculator computer promethean board	
Instructional Strategies: <input type="checkbox"/> Direct instruction <input type="checkbox"/> Guided practice <input type="checkbox"/> Socratic Seminar <input type="checkbox"/> Learning Centers <input type="checkbox"/> Lecture <input type="checkbox"/> Technology integration <input type="checkbox"/> Other (list) <input type="checkbox"/> Peer teaching/collaboration/cooperative learning <input type="checkbox"/> Visuals/Graphic organizers <input type="checkbox"/> PBL <input type="checkbox"/> Discussion/Debate <input type="checkbox"/> Modeling		Guided Practices and Concrete Application: <input type="checkbox"/> Large group activity <input type="checkbox"/> Independent activity <input type="checkbox"/> Pairing/collaboration <input type="checkbox"/> Simulations/Scenarios <input type="checkbox"/> Other (list) <input type="checkbox"/> Hands-on <input type="checkbox"/> Technology integration <input type="checkbox"/> Imitation/Repeat/Mimic Explain: Students will be expected to try out practice problems on their own. Then when sufficient time has been allowed to complete them, they can meet with their desk pairs and see if they got the same answer. In addition, they will use their calculators to check if their answers are sufficient.	
Standard(s) 8.EE.7 HS.A- REI.3		Differentiation <p>Below Proficiency: Students below proficiency know basic terms and phrases involved in doing the problems. However, applying what they know in the physical context of doing a problem is difficult. To achieve equity in the class, these students will be placed with students above proficiency who may be able to guide them in the right direction. Thus, if they have questions there is a stronger chance it will get answered as students above proficiency will most certainly be able to help.</p> <p>Above Proficiency: Students who are above proficiency know all the basic terms and phrases. In addition, they are excellent at solving problems using these terms and phrases. Students who are above proficiency will be paired up with those students who otherwise struggle. This unique opportunity gives them the chance to truly show what they know and gain a deeper understanding</p> <p>Approaching/Emerging Proficiency: These students are fully capable and have shown the ability to do everything in our lessons. However, they commonly make minor errors and sometimes mix up terms with one another. These students will be all paired together. This way they can engage in productive conversation with one another. Additionally, they will be able to pass on ideas to one another. Thus, if someone does not know something their partners may and vice versa.</p> <p>Modalities/Learning Preferences: Visual and kinesthetic</p>	
Objective(s) The learner will be able to solve inequalities that involve one or multiple steps using rules of inequalities and previously learned material. Bloom's Taxonomy Cognitive Level: Apply, analyze, evaluation, knowledge		Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.) Students are expected to follow rules and guidelines as outlined in my classroom rules. The number one rule is to show respect and allow for everyone's thoughts to be heard	
Classroom Management- (grouping(s), movement/transitions, etc.) Students will be paired up with their table partners. We will move from one activity to the next by me posing the question " is there any questions at this point." In addition, I will verbalize that we are moving on to the next thing.		Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.) Students are expected to follow rules and guidelines as outlined in my classroom rules. The number one rule is to show respect and allow for everyone's thoughts to be heard	
Minutes	Procedures		
8	Set-up/Prep: Before class begins I will have an image of the answers to the previous days homework set projected onto the screen. At this time students will check their answers from the previous day and pose any questions if they may arise. Because my computer is always connected to the smart board no additional prep time is needed.		
10	Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.) Will pose the bell ringer question; "In the past we have worked exclusively with solving equations. That is solve for "x" or "y." Knowing this, how do you think we might go about finding the solution of the inequality $2/3(x)+25<60$?		

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	<p>They will be given some time to try and find the answer to this question. Whether or not they find it does not matter. However, we will use this question to springboard a discussion into solving inequalities.</p>
<p>17</p>	<p>Explain: (concepts, procedures, vocabulary, etc.) NOTE The following examples will be done on a promethean board or smart board. Each page will be saved and then shared as a link on the LMS after class is completed so students have access to the notes after class, and are not missing out on important information to write notes. Here I will introduce the students to some of the basic terms associated with solving inequalities. $<$-less than $>$- greater than \leq- Less than or equal to \geq greater than or equal to Next, I would start with my first example which should serve as a review from the previous day's work Example 1: Write in words what this reads as $x > 5$. Here I expect the students to say, "x is greater than 5." In addition, when they graph it I expect to see an open circle starting at five with an arrow drawn to the right. I would make note of the fact that a \geq or \leq symbol corresponds to a closed circle. I would also pose the question 'does anyone have any questions'?" Example 2: "Now that we have been given a review of yesterday's work let's see if we can solve a simple inequality that only requires one step before solving for x. These inequalities are nearly identical to solving for x. However, now we have an inequality symbol in place of our normal equals sign." $5x + 12 > 62$ 1.) "Subtract 12 from the right and the left sides of the inequality symbol this yields: $5x > 50$" 2.) "Divide by 5. This way we can get x by itself. $x > 10$." "We have now solved this inequality." Now serves as a good time to show them they have found the right answer through the use of a calculator. "We simply plug one number higher into the calculator, and if the resulting statement is true to our given inequality, then we have the right answer. " 1.) "$5(11) + 12 > 62$ 2.) $55 + 12 > 62$ 3.) $67 > 62$. As we can see, $67 > 62$. Thus, we have the right answer. If we would have had \geq we would have plugged in 50. However, because we had $>$ we had to use a number higher than our answer of 50." "Is there any questions now from anyone?" Example 3. "Let us examine the previous problem if x was to be a negative value." $-5x + 12 > 62$ 1.) " Subtract 12 from the right and the left sides of the inequality symbol which yields: $-5x > 50$ 2.) Divide by -5. This way we can get x by itself. However, because we divided by a negative we must "flip" the inequality symbol. Thus, we end up with; 3.) $x < -10$" We would find after checking this answer as in the previous example that our answer is correct. To test their general understanding I would have them insert the numbers into their calculators and discuss with their table partners if they believe the answer we found is correct. For instance, if after inserting in -10.1 for x is our resulting inequalities statement true. That is because it is a $<$ symbol we must insert a number lower than 10. The result being $-50.5 + 12 < -10$. This is true as we get $-38.5 < -10$. I would have them do this on their own as it was shown to them before. This also serves as a good assessment on their conceptual understanding. 4.) " Is there any questions now from anyone?" Example 4. "Now we shall examine a multiple step inequality." $(\frac{2}{3})x + 20 > 80$ 1.) Subtract 20 from both sides of the inequality. $(\frac{2}{3})x > 60$ 5.) Now, we must get x by itself. However, because it is being multiplied by a fraction, we must also multiply it by its reciprocal ($\frac{3}{2}$) in order to get x by itself. Because we multiplied the left hand side by ($\frac{3}{2}$) we also must multiply the right hand side by that. Thus, we get; $x > 90$." " Is there any questions now from anyone?"</p>

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12	<p>Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)</p> <p>Here, I will have the table partners work on two problems I randomly write on the smart board. Once they show me the right answer the remaining time will be spent working on that day's problems. This time period gives me an opportunity to assess if they understand the material, and help with any homework questions they may have. I will select the problems at random this way if I have to solve them on the board my thought process is authentic and students can get an idea for how I solve them when they are just given to me.</p>	
3	<p>Review (wrap up and transition to next activity):</p> <p>Here, I will have the students begin packing up and address any final questions they may have while giving a quick summary of the days lesson.</p>	
<p>Formative Assessment: (linked to objectives) Progress monitoring throughout lesson- clarifying questions, check- in strategies, etc. Several times throughout the lesson I will stop to ask the students if they have any questions. In addition, they will also be able to show me they understand the days lesson when they work in their table groups and answer the random questions I give before they begin on their homework. If they do not show me they know the material I will continue working with them some more.</p> <p>Consideration for Back-up Plan: If it became apparent that students did not have a grasp on solving inequalities, I could have them go back and try their hand at regular equations. To do so, I would simply go back to that section in the book and select the odd problems. Then, I could have them solve the inequality versions of these problems by simply inserting a geq, leq <, or > sign in place of the = sign.</p>	<p>Summative Assessment (linked back to objectives) End of lesson: The summative assessment for this lesson is the homework. Because the homework is completed by the students themselves, I will know whether or not they can do the work on their own or not. In addition, the chapter test also serves as a summative assessment for this lesson.</p> <p>If applicable- overall unit, chapter, concept, etc.: The overall basic concept of this lesson is to use the basic rules of solving inequalities to solve inequalities. In addition, all the rules for solving equations apply to solving inequalities.</p>	
<p>Reflection (What went well? What did the students learn? How do you know? What changes would you make?):</p> <p>When putting together the flipped lesson, I could have used text boxes before starting to record. In addition, could have done a better job of differentiating besides just writing out steps.</p>		