

## 21<sup>st</sup> Century Lesson Cycle Template

**Grade:** 10

**Subject:** Math 10 PreIB

**Textbook:** Foundations and Pre-Calculus Mathematics 10  
By Pearson

**Topic 5:** Systems of Linear Equations

### Driving Question:

How can we use the TI-84 Graphing Calculator to solve systems of linear equations?

### Specific Curriculum Outcome:

**RF10** Students will be expected to solve problems that involve systems of linear equations in two variables, graphically and algebraically

### Prior Knowledge:

- Order of Operations and Solving Linear Equations
- Rearranging Equations
- Solving systems of equations algebraically

### Screencast Link(s):

1. Prior knowledge:

Order of Operations and Solving - <https://www.youtube.com/watch?v=jBymEbgDJXM>

Rearranging Equations - <https://www.youtube.com/watch?v=LPjgc3w46b8>

Solving Systems of Equations - <https://www.youtube.com/watch?v=ZmecwD6vhxc&feature=youtu.be>

Entering equations into the graphing calculator - <https://www.youtube.com/watch?v=zCWsNMSImpQ>

2. Solving systems using the TI-84 Graphing Calculator - <https://youtu.be/tDjzl6SbjuA>

### Link to “We Do” Practice Questions:

<http://www.kutasoftware.com/FreeWorksheets/Alg1Worksheets/Systems%20of%20Equations%20Graphing.pdf>

### Link to Exit Card:

[http://msltam.weebly.com/uploads/5/5/7/3/55739509/exit\\_card.pdf](http://msltam.weebly.com/uploads/5/5/7/3/55739509/exit_card.pdf)

**Expected Time:** One Class (75 minutes)

**Resources:**  
(Tools & Tech)

**Lesson Procedure**



<p><a href="#"><u>Practice Questions</u></a> <a href="#"><u>Graphing Calculator Steps</u></a></p>	<p><i>We do:</i></p> <p>In pairs, students will use the suggested website (Mathbits.com) to try and figure out how they might use the graphing calculator to solve a system of equations. A few <b>practice questions</b> will be provided for them. At this point, students have had experience in using the graphing calculator so they should be able to follow the steps. However, the teacher can help students who have any issues.</p>								
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<p><a href="#"><u>Additional Practice</u></a></p>	<p><i>We share:</i></p> <p>At the end of class, volunteers will be asked to demonstrate what they have learned to the class. The teacher will provide one of the <b>additional practice</b> questions to allow students to do their demonstration. This will be done using SmartView Software, which will allow the teacher to project a graphing calculator on the LCD projector so that the entire class can see what is happening. Trouble shooting strategies can be shared if technological difficulties arise during the students' demonstration.</p>								
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<p><b>WRAP UP/REMINDERS:</b></p> <p>Students will be asked to review all of today's material for homework in preparation for tomorrow's class. Students will be reminded that if they require additional time to practice on the graphing calculators that they can come in during extra help.</p>									
<p><b>Differentiation:</b></p>									
<p>Modification:</p> <p>Students who have difficulty figuring out the calculator steps can watch the <b>screencast</b>. If students need to re-watch a step they have the ability to do so.</p>	<p>Enrichment:</p> <p>Students who are able to quickly grasp how to use the graphing calculator will be encouraged to assist their classmates who may be having a difficult time. As well, they will be encouraged to explore other types of systems of equations (Example 3 from the same webpage they used for figuring out the calculator steps is a good starting point for them.)</p>								

**Evaluation:**

During the class, as students are working, the teacher should be circulating and assisting students where necessary. This will provide the teacher with the opportunity to see how students are progressing in this lesson. At the end of the class, the teacher will be able to assess students' understanding of the topic when they are given the opportunity to demonstrate their calculator skills to the class. As well, before leaving class, students will be asked to complete the **exit card** so that students can indicate to the teacher where they are still having difficulty.

**Teacher Reflection:****On-Line Resources:**

[Question on Solving a System of Equations by Substitution](#) from KhanAcademy.org

[Question on Solving a System of Equations by Elimination](#) from KhanAcademy.org

[Question on Solving a System of 2 Linear Equations](#) from KhanAcademy.org

[Graphing Calculator Steps](#) from MathBits.com

["We Do" Practice Questions](#) free from Kuta Software