21st 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 many equations do we need to solve a problem?

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

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

Link to Exit Card:

http://msltam.weebly.com/uploads/5/5/7/3/55739509/exit_card.pdf

Link to Investigation of Systems of Equations Activity:

http://msltam.weebly.com/uploads/5/5/7/3/55739509/investigating_systems_of_equations.pdf

Expected Time: One Class (75 minutes)

Resources: (Tools & Tech)	**Lesson Procedure**

Prior knowledge screencasts linked to teacher website. Students can preview this prior to the lesson, or they can watch it in class if needed. Investigating Systems of Equations **BYOD:** To allow students the opportunity to work at a pace that best suits their learning, they will watch the video on their own devices (with headphones).	***I do:*** 1. Review **prior knowledge** that is directly applicable to this lesson: - Order of Operations - Solving Linear Equations - Rearranging Equations 2. Assign the "Investigating Systems of Equations" Activity. - First, have students read the scenario and think about the questions on their own. They may wish to jot down their initial thoughts while they are considering the questions. *Note: This corresponds to the "You Do" part of the lesson* - Then, have students pair up with another student to discuss questions and to write down their answers. *Note: This corresponds to the "We Do" part of the lesson*
	☐ find, validate ☐ **critical thinking** ☐ remember, understand ☐ analyze, synthesize ☐ **collaborate, communicate**
	You do: Students consider the "Investigating Systems of Equations" Activity individually, jotting down initial thoughts.
	☐ find, validate ☐ **critical thinking** ☐ remember, understand ☐ analyze, synthesize ☐ **collaborate, communicate**
	We do: Working in pairs, students will discuss the questions. They will write their answers down (this will be submitted to the teacher before the end of class).
	☐ find, validate ☐ **critical thinking** ☐ remember, understand ☐ evaluate, leverage ☐ **collaborate, communicate** ☐ analyze, synthesize
Online Sticky-Note Page	***We share:*** At the end of class, students will have a final debrief. Groups will be given the opportunity to share their problem-solving strategies, along with their findings from the activities. The class can create an online

	sticky-note page (the teacher will need to sign up for a free account at linoit.com), which can be saved to the teacher's website for students to make use of later if they need it. Alternatively, groups can be given real sticky notes to write down their ideas, which they would then stick on a piece of chart paper. Any questions or issues will be discussed to make sure that all students have met the goal of the activities.
	☐ find, validate ☐ remember, understand ☐ **collaborate, communicate** ☐ analyze, synthesize ☐ **critical thinking** ☐ evaluate, leverage ☐ **create**, publish

WRAP UP/REMINDERS:

Students will be asked to review all of today's material for homework in preparation for tomorrow's class. Students will complete an exit card, which will allow students to tell the teacher where they are in their understanding of linear systems of equations, prior to leaving class.

Differentiation:

Modification: Allowing students to watch the video on their own devices allows them to work at their own pace. If students need to re-watch a step they have the ability to do so.	Enrichment: Students who are able to understand the requirements for two-variable systems of equations (the focus of today's lesson) will be encouraged to look into problems involving more than two variables. Although they won't be able to solve them at this point, they can investigate bigger problems to see if what applies to two-variable systems also applies to bigger ones.

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 share their answers with the class. Before leaving the class, students will be asked to complete the **exit card**, which will allow students the opportunity to let the teacher know what they understand and what they still need help with. As well, students will be handing in their answers for the "Investigating Systems of Equations" Activity done in pairs

Teacher Reflection:

On-Line Resources:
Online Sticky-Note Page created free through linoit.com