

WEST CHESTER UNIVERSITY LESSON PLAN TEMPLATE	
<b>Lesson Day</b>	Tuesday 11/19 Solving Linear Equations using substitution
<b>How will this lesson support the learning goal?</b>  (1c: Setting Instructional Outcomes)	This lesson will help students gain a better understanding of how to find solutions for linear equations using substitution.
<b>PA Standards and Other Appropriate Professional Standards</b>  (1c: Setting Instructional Outcomes)  <a href="http://www.pdesas.org/Standard/view">http://www.pdesas.org/Standard/view</a> or <a href="https://www.pdesas.org/Page?pageld=11">https://www.pdesas.org/Page?pageld=11</a>  <i>List the Pennsylvania Standard(s) relevant for this lesson</i>	Standard - CC.2.2.8.B.2  Understand the connections between proportional relationships, lines, and linear equations.  Standard - CC.2.2.8.B.3  Analyze and solve linear equations and pairs of simultaneous linear equations.

<p style="text-align: center;"><b>ISTE (Technology) Standards (IF APPROPRIATE)</b></p> <p style="text-align: center;"><b>(1c: Setting Instructional Outcomes)</b></p> <p style="text-align: center;"><a href="http://www.iste.org">www.iste.org</a> / <a href="#">ISTE Standards for Educators</a></p> <p><i>When addressing this section, you should include the standard number and the sub-component (e.g., 3a, 4a-c, etc.). Also, explain how the unit or lesson explicitly incorporates at least one standard (standard 3-7 only). Describe where in the learning plan there will be evidence that the standard selected will be integrated into the learning experience.</i></p>	<p style="text-align: center;">Facilitator 6b:Manage the use of technology and student learning strategies in digital platforms, virtual environments, hands-on makerspaces or in the field.</p> <p style="text-align: center;">This will be integrated in the anticipatory set.</p>
<p style="text-align: center;"><b>Objective(s)</b></p> <p style="text-align: center;"><b>(1c: Setting Instructional Outcomes)</b></p> <p><i>Taking into consideration the learning goal, what is the objective(s)</i></p> <p><i><b>of this lesson</b> that will support the progress toward the learning goal?</i></p> <p><i>The statement should be directly observable (use verbs that can be measured).</i></p>	<p style="text-align: center;">1. When given a linear equations worksheet with 8 problems, the student will be able to accurately find the solutions for 6 of the linear equations.</p>

**Academic Language**

**(1a: Demonstrating Knowledge of Content and Pedagogy)**

*What language will students be expected to utilize by the end of the lesson?  
Consider Language function and language demands (see Lesson Plan User Guide).*

*What key terms are essential?*

*What key terms are essential to develop and extend students' academic language?*

*What opportunities will you provide for students to practice the new language and develop fluency, both written and oral?*

1. Solution
2. System of equations
3. Variables
4. Substitution
5. Distribution

**Materials/Resources**

**(1d: Demonstrating Knowledge of Resources)**

*What texts, digital resources, & materials will be used in this lesson? How do the materials align with the learning objectives/outcomes? If appropriate, what educational technology will be used to support the learning outcomes of this lesson? How do the resources support the learning objectives?*

*Cite publications and any web resources.*

1. White board
2. Dry erase markers
3. Pencil
4. Sticky notes
5. Exit activity
6. Food substitutions  
<https://www.youtube.com/watch?v=l26-q3VFg7I>
7. Linear Equations Worksheet  
<https://www.bcsOH.org/cms/lib3/OH01001261/Centricity/Domain/425/sub%20method%201.doc>

**Anticipatory Set**

**(1a: Demonstrating Knowledge of Content and Pedagogy)**

*5 minutes*

*How will you set the purpose and help students learn why today's lesson is important to them as learners?*

*How will you pique the interest or curiosity regarding the lesson topic?*

*How will you build on students' prior knowledge?*

*How will you introduce and explain the strategy/concept or skill?*

*Provide detailed steps*

1. Students will watch a video on food substitutions  
<https://www.youtube.com/watch?v=l26-q3VFg7I>
2. Teacher will ask students "based on the video, how would you define the word substitution?"
3. The teacher will allow students time to answer.
4. "We've learned how to find solutions for linear equations using other methods, like the elimination method. Today we will be using the substitution method to help find solutions for linear equations."
5. "Let's Begin!"

## Instructional Activities

(1a: Demonstrating Knowledge of Content and Pedagogy;

1e: Designing Coherent Instruction)

*Exploration (Model): How will students explore the new concepts? How will you model or provide explicit instruction?*

*Guided Practice: How will you provide support to students as they apply the new concept? How will you allow them to practice (with teacher support)?*

*Independent practice: How will students review and solidify these concepts to be able to use this new knowledge? How will you monitor and provide feedback?*

*Provide detailed steps.*

1. The teacher will provide each student with a linear equations worksheet.
2. "Put your name and date on the worksheets. I will collect them at the end."
3. The teacher will complete numbers 5 and 7 in the worksheet with the students on the board, showing them the steps to solving the linear equations.
4. The teacher will pretend she can't write and will ask the students to do a problem of their choice on the board.
5. "Oh no! My fingers seem to stop working and I can't write. I will need a substitute teacher to show how to solve the rest of the problems on the board."
6. "You can pick any problem you would like to solve. Any volunteer to be a substitution for MS. Batichon?"
7. "Remember you can pick any problem you want. The easy problems (Point to them) or the hard problems (Point to them)."
8. Allow students time to volunteer. If the students don't volunteer, pick a student.
9. Assist the student in solving the problem on the board if they are having difficulty and encourage the other students to help also.

<p style="text-align: center;"><b>Closure</b></p> <p style="text-align: center;"><b>(1e: Designing Coherent Instruction)</b></p> <p style="text-align: center;"><i>10 minutes</i></p> <p><i>How will students share or show what they have learned in this lesson?</i></p> <p><i>How will you restate the teaching point and clarify key concepts?</i></p> <p><i>How will you provide opportunities to extend ideas and check for understanding?</i></p> <p><i>How will this lesson leads to the next lesson?</i></p>	<ol style="list-style-type: none"><li>1. The teacher will provide each student with a sticky note.</li><li>2. "You will be completing the rest of the worksheet by yourself."</li><li>3. "I will give you a sticky note with a number on it. Please write the linear equations and the steps to the solution on the sticky note."</li><li>4. "When done, go put your sticky note anywhere in the room where others can see it. The sticky note needs to be visible to others."</li></ol>
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## **Differentiation**

### **(1e: Designing Coherent Instruction)**

*What differentiated support will you provide for students whose academic development is below or above the current grade level?*

*What specific differentiation of content, process, products, and/or learning environment do you plan to employ to meet the needs of all of your students?*

*How does your lesson support student differences with regard to linguistic, academic, and cultural diversity?*

*How will your lesson actively build upon the resources that linguistically and culturally diverse students bring to the experience?*

*How will your lesson will be supportive for all students, including English Language Learners, and build upon the linguistic, cultural, and experiential resources that they bring to their learning?*

*How will your lesson is designed to promote creative and critical thinking and inventiveness?*

1. Tools like a calculator may be used during the lesson.
2. Students will receive extra support from teacher
3. Lesson is relatable to students, food.
4. Small group instruction
5. Heterogeneous grouping



<p style="text-align: center;"><b>Accommodations</b></p> <p style="text-align: center;"><b>(1e: Designing Coherent Instruction)</b></p> <p><i>What classroom <b>accommodations</b> do you plan to employ to increase curriculum <b>access</b> for students identified with special education needs or 504?</i></p> <p><i>Describe how these accommodations align with the current Individualized Education Plan (IEP) for each student as applicable (avoid using actual names of students).</i></p>	<ol style="list-style-type: none"><li>1. Students may sit together to help each other or choose their own seat.</li><li>2. Access to calculators</li></ol>
<p style="text-align: center;"><b>Modifications</b></p> <p style="text-align: center;"><b>(1e: Designing Coherent Instruction)</b></p> <p><i>What <b>curricular modifications</b> and/or changes in <b>performance standards</b>, if any, do you plan to employ to facilitate the participation of students identified with special education needs?</i></p>	<ol style="list-style-type: none"><li>1. Students may complete work with a partner or individually.</li><li>2. Students don't have to complete the entire activities but will just need to attempt some of them.</li><li>3. Answers to questions can be written down or given orally.</li></ol>

<p><b>Assessment (Formal or Informal).</b></p> <p><b>(1f: Assessing Student Learning)</b></p> <p><i>How will you and the students assess where the learning objectives, listed above, were met?</i></p> <p><i>Each formal or informal assessment should describe how it is aligned to the above objective(s).</i></p>	<ol style="list-style-type: none"><li>1. Group discussions</li><li>2. Linear equations worksheet</li><li>3. Sticky note activity</li><li>4. Volunteer opportunity to solve problem on the board</li></ol>

<p style="text-align: center;"><b>Reflection on Instruction</b></p> <p><i>What evidence did you collect to demonstrate that your students have met or are progressing towards the learning outcome?</i></p> <p><i>What changes or adjustments had to be made during the lesson (justify those changes) to ensure students make adequate progress in meeting the learning objective?</i></p> <p><i>What changes will have to be made to the next lesson in order for students to be on pace in meeting the overall goal of the Lesson or Unit?</i></p> <p><i>Taking good notes about each lesson will help as you develop a formal reflective narrative at the end of the SLO.</i></p>	<p>This will be completed after instruction.</p>
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Things to work on

- Switch modifications and accommodations
- Modify:content, accommodate: environment
- Building rapport with students