Solving One-Step Equations using Addition or Subtraction

Grade: 7	**Subject: Math**
Materials: Chromebook	**Technology Needed: Chromebook, Prjector**

Instructional Strategies:

- ☒ Direct instruction
- ☐ Guided practice
- ☐ Socratic Seminar
- ☐ Learning Centers
- ☒ Lecture
- ☒ Technology integration
- ☐ Other (list)
- ☐ Peer teaching/collaboration/ cooperative learning
- ☐ Visuals/Graphic organizers
- ☐ PBL
- ☐ Discussion/Debate
- ☒ Modeling

Guided Practices and Concrete Application:

- ☐ Large group activity
- ☒ Independent activity
- ☐ Pairing/collaboration
- ☐ Simulations/Scenarios
- ☒ Other (list)
- ☐ Hands-on
- ☐ Technology integration
- ☐ Imitation/Repeat/Mimic

Explain: Group rotations
1. DreamBox,
2. Khan,
3. Calculator Test

Standard

7.EE.4a Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

Objective:

TLW understand inverse operations.
TLW use inverse operations to solve for x.

Bloom's Taxonomy Cognitive Level: Understand, Apply

Differentiation

Below Proficiency: I will give these students a more direct and one-on-one instruction for a deeper understanding of the content.

Above Proficiency: These students will get the opportunity to complete their homework during class time since they won't be needing extra examples.

Approaching/Emerging Proficiency: The content prepared for these students will be enough to challenge them and push them towards further learning

Modalities/Learning Preferences: Visual, Auditory, Kinesthetic

Classroom Management –. Students using Chromebook inappropriately will be losing computer privileges for the rest of the period.

Behavior Expectations- The students are expected to be attentive during the lesson. If their Chromebooks are open, they will be expected to be on the online textbook.

Minutes	Procedures
	Set-up/Prep: Flipchart, Manipulative activity with students.
15	**Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)** We will begin the class by having the students do two problems on the back of the board on a scratch piece of paper. This will be their exit slip. I will be going over some real-life examples with the students explaining how a word problem might look like and connecting the content with them. We will be annotating the word problem to deduce how solve it. From there we will be jumping straight into the lesson.
25	**Explain: (concepts, procedures, vocabulary, etc.)** I will be teaching solving one-step equations using inverse operations. For this lesson we will be focusing on using addition and subtraction to solve equations. I will be using various manipulatives to fit the needs of various learners. Visual - I will be giving visual examples with thinking about a scale. We will also be using manipulative online (link below). Kinesthetic - The students will be standing to imagine how a scale might change if you remove weight from one side. Auditory – I will be describing each step for the students to work on. Key concepts include inverse operations, keeping equations balanced (what you do to one side, you must do to the other), and showing work by funneling down.
15	**Explore: (independent, concreate practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)** I will be modeling for the students this activity on the projector for them to work on individually on their Chromebook They begin working independently, the students will be completing three examples on the website to help them understand inverse operations and manipulating the equation to solve for the variable. .

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	https://www.mathplayground.com/AlgebraEquations.html Once we complete this activity, I will ask the students how they feel about the content. I will ask them to put up a 1, 2, or 3 to understand where they feel they are at. I will be having students work on five problems to demonstrate understanding and application of the content.
5	**Review (wrap up and transition to next activity):** The homework assignment will be the 2.4 video notes on the concept to reinforce the content taught in class.

Formative Assessment: The 7.EE.1 formative assessment will show me whether we need to potentially review concepts with solving one-step equations using inverse operations. **Consideration for Back-up Plan:** If any issue comes up with understanding the content, the students will do more independent examples on whiteboards. Those who are finished will get to work on homework and those who are struggling will receive more one-on-one instruction.	**Summative Assessment:** There will be a 7.EE.1 Summative assessment that will be taken on solving equations

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):

This lesson went very well. The students understood the visual of a scale very well and it contributed towards their learning. The activity online reinforced this visual and was also successful.

There were two students who were not attentive during the lesson and I let them be for the time being since they were not distracting others. When I asked students to give me a 1, 2, or 3 on how they feel they understand the content, both students put up a 1. When the students began their homework, I came over to those two students and discussed focusing during the lesson. I then went ahead and gave them a mini lesson in which they asked me lots of questions with regards to why we need to show work and why we need to get the variable on one side alone.

Afterwards, I got to go around and check some students work to check for understanding and mastery of the content. I answered questions and it went well.

One thing I would have changed or tried to do better is to reinforce focusing on the content by using my proximity to get the two students back on task. Getting them more involved in the discussions would have also helped with this. They were attentive when we were doing more kinesthetic and visual work, so implanting more of that would also be a plus.