

McClure Middle School Lesson Plans

Teacher: Poole **Topic:** Equations **Date:** SEPTEMBER

Unit: Pre-Units – Solving Multi-Step Equations	Grade/Subject: 8 th / Math
Standard/Element: <u>MCC8.EE.7:</u> Solve linear equations in one variable. b) Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	EQ: What strategies can I use to help me solve equations in one variable that also include rational coefficients? (DOK 2)
Opening	
Launch/Anchor Concepts: <ul style="list-style-type: none"> • Continue to refer to the “PERMDAS” and “Equation Ladder” or “Cleaning Lady” anchor charts to direct students. • <i>Solve:</i> $\frac{1}{3}(y + 2) = \frac{3}{4}$ and $\frac{3}{4}(2x + 1) = 2$ • Introduce equations with “Variables on Both Sides” and work through several skill problems that simplify the equation. {ex. $2x + 1 = 3x - 8$} 	
Work Period	
Practice /task/activity: <ul style="list-style-type: none"> • Students work with a partner to practice the skill of solving multi-step equations with variables on both sides by completing naked problems on the “Super-Star” sheet. Due to the sheet having the answers on the sheet, the students can compare their answers and check for “goofy” mistakes. Questions I want to make sure I am asking: <ul style="list-style-type: none"> • How do you simplify each side? (DOK1) 	
Closing:	
Describe how you will facilitate the closing. <ul style="list-style-type: none"> • Students will walk the class through the process they used to solve the equations with variables on both sides. 	
Data Discussion/Assessment:	
Informal: Observation & discussion Formal: Summative: 8/25/2016	
Differentiation:	
<ul style="list-style-type: none"> • The number/type of problems will be assigned according to the student’s level. • Flexible Grouping: Students are grouped homogenously determined by data from quiz on Friday. • Teacher will ask leading questions that remediate and enrich based on student needs. 	

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Opening	
Launch/Anchor Concepts: <ul style="list-style-type: none"> • Continue to refer to the “PERMDAS” and “Equation Ladder” anchor charts to direct students. • <i>Solve:</i> $2x + 1 = 3x - 8$ and $10(-4 + 4) = 2y$ • Introduce equations with “Variables on Both Sides” and work through several skill problems that simplify the equation. {<i>ex.</i> $2x + 3x + 1 = 2(x + 3)$ & $-2(10 - 6m) = 10(2m - 6)$ } 	
Work Period	
Practice /task/activity: <ul style="list-style-type: none"> • Students work with a partner to practice the skill of solving multi-step equations with variables on both sides by completing naked problems on the “What is the Title of this Picture” sheet. Due to the sheet having the answers on the sheet, the students can compare their answers and check for “goofy” mistakes. <p>Questions I want to make sure I am asking:</p> <ul style="list-style-type: none"> • What do you need to be on the lookout for? (DOK1) • How is this like solving equations with variables on one side? (DOK2) • Does it matter which side you move the variable or the constant? (DOK2) 	
Closing:	
Describe how you will facilitate the closing. <ul style="list-style-type: none"> • Students will walk the class through the process they used to solve the equations with variables on both sides. 	
Data Discussion/Assessment:	
Informal: Observation & discussion Formal: Summative: 8/25/2016	
Differentiation:	
<ul style="list-style-type: none"> • The number/type of problems will be assigned according to the student’s level. • Flexible Grouping: Students are grouped homogenously determined by data. • Teacher will ask leading questions that remediate and enrich based on student needs. 	

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Opening	
Launch/Anchor Concepts: <ul style="list-style-type: none"> • Continue to refer to the “PERMDAS” and “Equation Ladder” anchor charts to direct students. • <i>Solve:</i> $24 - 6k = 6(4 - k)$ and $3(2x - 1) = 9(x + 3)$ 	
Work Period	
Practice /task/activity: <ul style="list-style-type: none"> • Students work with a partner to practice the skill of solving multi-step equations with variables on both sides by completing naked problems using the scavenger hunt activity. Due to the activity having their answers lead them to the next problem, the students can compare their answers and check for “goofy” mistakes (error analysis) <p>Questions I want to make sure I am asking:</p> <ul style="list-style-type: none"> • What do you need to be on the lookout for? • How is this like solving equations with variables on one side? • Does it matter which side you move the variable or the constant? 	
Closing:	
Describe how you will facilitate the closing. <ul style="list-style-type: none"> • Students will walk the class through the process they used to solve the equations with variables on both sides. 	
Data Discussion/Assessment:	
Informal: Observation & discussion Formal: Summative:	
Differentiation:	
<ul style="list-style-type: none"> • The number/type of problems will be assigned according to the student’s level. • Flexible Grouping: Students are grouped homogenously determined by data. • Teacher will ask leading questions that remediate and enrich based on student needs. 	

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Opening	
Launch/Anchor Concepts: Answer the following questions. <ul style="list-style-type: none"> • What does “no solution” mean to you? • What does “one solution” mean to you? • What does “infinite many solutions” mean to you? 	
Work Period	
Practice /task/activity: To summarize the activity from yesterday, a whole class discussion will be led by teacher with the help of a power point. Several examples will be worked in order for students to see the outcome of several equation’s solutions. Student’s will work through the equations with variables on both sides and see what the results will look like when they work equations with No solution, One solution, or Infinite Many Solutions. Questions I want to make sure I am asking: <ul style="list-style-type: none"> • How do you know for sure this equation is never true? (DOK 2) • How do you know for sure this equation is always true? (DOK 2) • How do you know for sure this equation is sometimes true? (DOK 2) 	
Closing:	
Describe how you will facilitate the closing. Students will have a ticket out the door where they will be asked to explain how to determine if an equation has No Solutions, One Solution, or Infinite Many Solutions.	
Data Discussion/Assessment:	
Informal: Observation & discussion and TOD (used to pair for tomorrow) Formal: Summative: 9/23	
Differentiation:	
<ul style="list-style-type: none"> • Students will be given a copy of the power point notes and examples. • Students will be placed in groups of different levels based on TOD data. 	

- Teacher will ask leading questions that remediate and enrich based on student needs.

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Opening	
Launch/Anchor Concepts: Solve. <ul style="list-style-type: none"> $6y + 8 = 6y - 3$ $8m + 13 = 13 + 8m$ $8p - 5(p + 3) = 3(7p - 1)$ 	
Work Period	
Practice /task/activity: Students will practice skill of solving equations with variables on both sides by completing naked problems to determine if the equations have No solutions, One Solution, or Infinite Many Solutions. Questions I want to make sure I am asking: <ul style="list-style-type: none"> How do you know for sure this equation is never true? (DOK 2) How do you know for sure this equation is always true? (DOK 2) How do you know for sure this equation is sometimes true? (DOK 2) 	
Closing:	
Describe how you will facilitate the closing. <ul style="list-style-type: none"> Students will present a problem pointing out what type of solution and what made them come to that conclusion. 	
Data Discussion/Assessment:	
Informal: Observation & discussion during group work and closing Formal: Summative: 9/23	
Differentiation:	
<ul style="list-style-type: none"> The number/type of problems will be assigned according to the student's level. Students will be partnered with a person of comparable level according to the TOD yesterday and their understanding of the 3 types of solutions. 	

