Investigation Lesson: Week 3 Day 1

by  *Grizel Macias and Rebecca Breeding*

* **Grade Levels:** *8th grade*
* **Time Requirements:**
  + Approximately 1 **hour** Preparation Time and  **50 minutes**  Class Time
* **State Standards:****8.EE.C.7b**

**8.EE.C.7a: U3-11**

* *Math/Objective:   
  Students will be able to accurately apply the properties of operations to examples using the given materials.*
* **Brief Overview:** In this investigation lesson, the students will solve one-step equation. They will also have to identify which property was used in every step. During this lesson, the students will work is solving one step equations applying the properties of operations on their own. Later, the students will come together in different small groups and compare their answers and the process they used to solve the equations.
* **Lesson Features:**Cooperative Learning: cooperative and collaborative learning are instructional approaches in which students work together in small groups to accomplish a common learning goal.
* Materials Required For This Lesson:

Problem Worksheets  
 Math Journal

Investigation Lesson: Week 3 Day 2-3

by  *Grizel Macias and Rebecca Breeding*

* **Grade Levels:** *8th grade*
* **Time Requirements:**
  + Approximately 1 **hour** Preparation Time and  **50 minutes**  Class Time
* **State Standards:****8.EE.C.7b**

**8.EE.C.7a: U3-11**

* *Math/Objective:   
  Students will be able to accurately write algebraic expression from word problems using the given materials.*
* **Brief Overview:** In this investigation lesson, the students will write one-step equations from the word problems provided using the “translating words into algebraic expressions” handout. Additionally, the students will solve the one-step equation writing justification for each step. The justifications should contain the properties of operations covered in previous classes.
* **Lesson Features:**[Critical Thinking](http://pedagogy.merlot.org/CriticalThinking.html) - Critical thinking is a collection of mental activities that include the ability to intuit, clarify, reflect, connect, infer, and judge. It brings these activities together and enables the student to question what knowledge exists.
* **Materials Required For This Lesson:**

Word Problems Worksheet

Math Journal

Translating Words into Algebraic Expressions handout

Paper

Pencil

Investigation Lesson: Week 3 Day 4

by  *Grizel Macias and Rebecca Breeding*

* **Grade Levels:** *8th grade*
* **Time Requirements:**
  + Approximately 1 **hour** Preparation Time and  **50 minutes**  Class Time
* **State Standards:****8.EE.C.7b**

**8.EE.C.7a: U3-11**

* *Math/Objective:   
  Students will be able to accurately write algebraic expression from word problems using the given materials.*

*Students will be able to relate one-step equations to real world applications*

*using the materials provided.*

* **Brief Overview:** In this investigation lesson, the students will research for examples of real world problems solved with one-step equations. The students will be working in pairs. The main activity is that the students will write a one page report using google drive docs about their findings. The key features in the report are which field is the real world problem, how they approach the problem, how they set up the one step equation and how they solve it.
* **Lesson Features:**[Critical Thinking](http://pedagogy.merlot.org/CriticalThinking.html) - Critical thinking is a collection of mental activities that include the ability to intuit, clarify, reflect, connect, infer, and judge. It brings these activities together and enables the student to question what knowledge exists.

Cooperative Learning: Cooperative and collaborative learning are instructional approaches in which students work together in small groups to accomplish a common learning goal. They need to be carefully planned and executed, but they don't require permanently formed groups. Later, the students will meet with their teams and discuss how can they represent their real world problem into a one step equation and look for the variable. They should write a half page report of how they would represent their one-step equation using what they researched.

* **Materials Required For This Lesson:**

Math Journal

Translating Words into Algebraic Expressions handout

Paper

Pencil