Andrew Schwarz

Math 304

Dr. Olsen

February 11th, 2016

Idea File #2

Let’s go shopping with Algebra

**Mathematical topic**- Solving for variables in a real world situation

**Purpose or objective(s)**- The purpose of the activity is to have the students use not just their algebra skills, but also they’re critical thinking skills. The activity will have multiple scenarios of a grocery list and how much a specific item is worth. Ex carrots=40 cents apples=25 cents etc. and the students will use variables to solve the algebraic equation.

**Overview**- The lesson will be using variables and coefficients. The students will each receive a grocery list. With such list it will have the price of each item and the quantity of each item. The students will be asked to construct an algebraic equation, and then solve such equation. An example will look as such; John goes to the grocery store. He buys 3 bananas, 2 apples, and 12 eggs. Each banana is worth 25 cents, each apple is 50 cents and each egg is 10 cents. The students will be asked to make an equation like 3b+2a+12e=x. then the students will plug in their variables and solve for x.

**Common Core State Standard(s)** –CCSSM: A-SSE. 1. The students will need to interpret expressions that represent a quantity in terms of its context.

**Mathematical Practice**- Model with mathematics, because it is using everyday life problems to solve the equations.

**Grade levels**-8-9th graders

**Background knowledge** **required of students**- The students would need to know how to add or subtract variables. They will also need to know how to set up an equation.

**Source of the activity**-http://www.education.com/activity/article/Shop\_Algebra\_middle/

**Time** -25 minutes

**Materials needed**- Pens/pencils (pencils are preferred) and a notebook.

**Type of activity**- This activity will be based on teacher led in the beginning, than it will go into individual lab work. This way the students can work independently and ask questions if need be.

**Why you picked the activity**- I picked this activity because it helps the students with algebra in the sense of putting in variables. It also helps the students us their problem solving skills.

**Follow up activity and/or extensions**-A follow up activity would be on another assessment by using other types of variables to solve for a specific item.

**Strengths of the activity**- The strengths of this activity is the students understand the real life situation for the subject matter. The students will also be learning different ways to understand solving for a specific variable.

**Weakness(s)/ Limitations of the activity**- A weakness of the activity might be if one student finishes right away and another does not the student that doesn’t might feel not as smart and loss confidence in their self.

**Procedure-detail of what the teacher and students will be doing**

The procedure is as followed:

I will hand out the papers, which will contain 10-15 grocery lists ranging from 1 variable to 5 variables. Each student will be getting his or her own worksheet. I will tell the students to read over all the questions and if you have a question ask others around them or myself. I will then show how to do question 1 so the students get a better understanding of what is asked of them. After that they will be free to work on the worksheet. An example of a question will be: Susie has 10 eggs 13 bananas, 15 yogurts, and 3 apples. You know each egg is 15 cents, each banana is 10 cents, and each yogurt is 25 cents. Susie spent a total of 15 dollars, how much was each apple? Another example will be to solve for the total spent at the grocery store. I will be looking for two equations, one with just variables and coefficients, and the second with the coefficients and numbers implemented into the problem.

To-do list

Each banana is $0.50, a orange is $0.45, 12 eggs are $1.35, milk is $2.25, apples are $0.35, steak is $3.00 a pound, a bag of potatoes is $6.75, and a pound of chicken is $5.45.

You are going to Wal-Mart and you have 9 people to go shopping for. You will need to know how much money to tell each person it will be so you have enough. The list goes:

1. Jim needs 3 bananas, two oranges, and eggs.
2. Amanda needs milk, eggs, and apples.
3. Jon needs 5 bananas, 2 apples, and 2 pounds of steak.
4. Allie needs a pound of chicken, 4 apples, and a bag of potatoes.
5. Andrew needs 5 oranges, 2 apples, a pound of steaks, and potatoes.
6. Ben and Barbara are going in together because Ben owes Barbara $10. So they need 6 bananas, 2 12 eggs, 3 pounds of chicken, and two bags of potatoes. How much will Barbara and Ben each owe?
7. Emily needs twice the amount as Jim.
8. Hannah needs 5 bananas, 2 lbs of steak and chicken, two bags of potatoes, three gallons of milk, and 6 apples.
9. Dave only has $10 can he get a pound of steak, a pound of chicken, 3 bananas, and milk?