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***Mathematics: The Language of STEM
Great Depression Money Unit***

(The 3rd Grade High Ability Curriculum is not necessary for this lesson, however, background knowledge of the Great Depression and the Wizard of Oz would be helpful)

CONTENT AND TASK DECISIONS

Grade Level(s): 3rd

Description of the Task: Students will solve two step real world problems using the monetary values of coins and bills.

Problem: A child bought some items in Kansas at a local grocery store. The items totaled \$1.14. (Day 1)What items did the child buy at the store? (Day 2)The child gave the cashier \$3.00. How much change will be given back and how will the change be made? How much would you spend buying those same items in Kansas in present day?

Items at the Grocery Store(Prices based off of 1930s Great Depression)-

Apples- (5lbs): \$.19
Bananas- (1lb): \$.15
Butter- (1lb): \$.24
Carrots- (2 bunches): \$.15
Eggs-(1 dozen): \$.15
Flour- (24lb sack): \$.63
Lemons- (1 dozen): \$.15
Lettuce- (1 head): \$.10
Milk- (1 quart bottle): \$.25
Oranges- (1 dozen): \$.15
Potatoes- (15lbs): \$.15
Tomatoes- (4 pack): \$.25

Items at the Grocery Store (Prices based off of Present Day)

Apples- (3lbs): \$2.50
Bananas- (1lb): \$.29
Butter- (4 quarters): \$2.48
Carrots- (32oz bag): \$.88
Eggs- (1 dozen): \$1.98
Flour- (5lb): \$1.49
Lemons (2lbs): \$1.99
Lettuce- (1 head): \$.99
Milk- (gallon): \$3.68
Oranges- (4lbs): \$3.49
Potatoes- (5lbs): \$.99
Tomatoes- (1 lb.): \$.49

Indiana Mathematics Content Standards: 3RD GRADE POWER STANDARDS

3M.4 Find the value of any collection of coins and bills. Write amounts less than a dollar using the ¢ symbol and write larger amounts using the \$ symbol in the form of dollars and cents (e.g. \$4.59). Solve real-world problems to determine whether there is enough money to make a purchase.

3AT.3 Solve two-step real-world problems using the four operations of addition, subtraction, multiplication and division (e.g. by using drawings and equations with a symbol for the unknown number to represent the problem).

Indiana Mathematics Process Standards:

- Make sense of problem and persevere in solving them
- Attend to Precision
- Reason Abstractly and Quantitatively
- Model with Mathematics

Mathematics Content Goals: Students will solve real world problems using the monetary values of coins and bills.

Language Objectives:

Listening:

- Students will be able to listen to monetary symbols/numbers and understand the value of it(e.g. \$1.14 is one dollar and 14 cents)

Speaking:

- Students will be able to orally describe how to add or multiply items together to find a correct sum.
- Students will be able to orally describe how much change they should receive.

Writing:

- Students will be able to write out addition and subtraction equations using proper monetary symbols.
- Students will be able to draw a specific monetary equation using proper monetary symbols.

Reading:

- Students will be able to read word problems and understand what mathematical question/mathematical operation the problem is asking them to solve.
- Students will be able to read monetary symbols and numbers. (e.g. \$4.59)

Materials:

Necessary Materials:

- Plastic Fake Food or Print Outs of Food
- Fake Money- Coins and Bills
- Grocery Prices (Kansas Present and Past)

Optional Materials:

- Wizard of Oz Book
- Great Depression/Dust Bowl Materials (attached)
- Cash Register
- Fake Grocery Basket or Bag

THE LESSON

Before:

Student Actions: Before (Launch)

Day 1: *Previous Knowledge*

- Students have been exposed to a high ability curriculum that utilizes the book *The Wizard of Oz* (*The 3rd Grade High Ability Curriculum is not necessary for this lesson, however, background knowledge of the Great Depression and the Wizard of Oz would be helpful*)
- Students have discussed/researched what an allegory is and compared the *Wizard of Oz* to the Great Depression and the Dust Bowl
- Students have discussed/researched prices of food in a grocery store now in comparison to prices of food in a grocery store in the early 1930s

Definitions, Concepts, or Ideas Students have been exposed to before unit...

- Money Sense (recognition of bills and coins/ money symbols)
- Addition, Subtraction, Multiplication
- Prices of Food Items

Teacher Actions: Before (Launch)

Day 1: *Previous Knowledge*

- Expose students to the high ability language arts curriculum- *Wizard of Oz*
- Expose students to examples of allegories with the book *Wizard of Oz* (Great Depression/Dust bowl)
- Have students compare and contrast grocery prices in the 1930s to prices now

Questions to help access Students' Prior Knowledge

- Do your parents or grandparents ever talk about how prices used to be less?
- What allegories did we compare the *Wizard of Oz* to?
- What was life like during the Great Depression and The Dust Bowl?
- Do you think items were less or more expensive than they are now?
- What do prices look like at the grocery store? What do the numbers mean?
- How do you get the total at a grocery store? What is a total?

During:

Student Actions: During (Explore)

Day 1: Students will explore their “Great Depression” Grocery Store. It will contain fake food items that they can go “shopping for”. Students will select items that total up to \$1.14. Students will explore various combinations of food that will total \$1.14.

Day 2: Students will be given \$3.00 to check out at the cash register. Students will come up with a way to “make change” with their total (\$1.14) and the money “they gave the cashier (\$3.00). Students will also “go shopping” in a “present day grocery store”. Students will shop for all of the same items from their “Great Depression” shopping list and grab all of the same items. The students will add all of the items up to see what the total is in the present day.

***Side Note:** Students can also look at the Quantity of the items to see if they are getting the same amount of the item in the present day as they did in the Great Depression. (Students will discover that they get a lot less for more money in the present day)

***Side Note:** Student can also calculate and discuss their difference in regards to total in the “Great Depression” to their total in the “Present Day”.

Teacher Actions: During (Explore)

Day 1/2: The teacher will guide children in their exploration in the “Great Depression” Grocery Store. The teacher will anticipate student responses to challenging mathematical tasks and misconceptions/errors that will occur during the task.

Ways the Task Can be Solved

- Addition, Subtraction, Multiplication

(I think most students will use addition and subtraction to solve the problem)

Misconceptions

- Students may wonder if they can use the same item twice which may affect their answer
- Students may wonder how many items they can buy which may affect their answer
- Students may wonder if they have to make change a certain way which may affect their answer
- Students may wonder if they have to convert the weight/amount of the item when figuring out the price in the present day

Errors

- Students may add, subtract, or multiply numbers wrong
- Students may have the wrong price for the wrong item
- Students may not make change correctly
- Students may use the wrong prices to figure out the problem
- Students may decide they cannot total the amount the child spent with the items that are given
- Students may not understand the value of the money they are using

After:

Student Actions: After (Summarize)

Day 1: Students will share and discuss the items they could buy at the grocery store with \$1.14. Students will discuss if they are able to buy as many items at the grocery store in the present with \$1.14.

Day 2: Students will share and discuss ways they could make change with the class. Students will share and discuss the total of their items in the present.

***Side Note:** Students could also share the difference between their total in “Great Depression” and their total in the “Present Day”

Teacher Actions: After (Summarize)

Day 1: The teacher will lead a meaningful class discussion concerning the different items the students could buy with \$1.14. The teacher will ask purposeful questions to the students while they are discussing their various options.

Questions may include:

- Did you have to buy more than 1 of the same item?
- How many items did you buy in comparison to your classmates?
- Were there some items that cost the same amount of money?
- Was it hard to find an exact total of \$1.14? What was the process you had to use to find it?

Day 2: The teacher will lead a meaningful class discussion concerning the different ways change can be made when taking \$1.14 from \$3.00. The teacher will ask what types of coins/dollars were given in return and if there were other ways to make change with the \$3.00.

The teacher will lead meaningful discussion concerning the total of their items in present day and the difference between their total in the Great Depression and their total in the Present Day. The teacher will ask purposeful questions including...

- Can you buy as many items in the present day with the amount of money in the Great Depression?
- Do you get as many items/ quantity of items in the present day as you did in the Great Depression?
- Is there a reason why prices were so much cheaper back then? Why are prices so much more now?

ASSESSMENT: Students will be assessed in a discussion format based around Day 1 and 2 After (Summarize)

Students will also be assessed with an Exit Question set up similar to the inquiry based above. Exit Question is attached and is graded for each individual child.



Grocery Store Prices Past and Present

Items at the Grocery Store(Prices based off of 1930s Great Depression)-

Apples-	(5lbs):	\$.19
Bananas-	(1lb):	\$.15
Butter-	(1lb):	\$.24
Carrots-	(2 bunches):	\$.15
Eggs-	(1 dozen):	\$.15
Flour-	(24lb sack):	\$.63
Lemons-	(1 dozen):	\$.15
Lettuce-	(1 head):	\$.10
Milk-	(1 quart bottle):	\$.25
Oranges-	(1 dozen):	\$.15
Potatoes-	(15lbs):	\$.15
Tomatoes-	(4 pack):	\$.25

Items at the Grocery Store (Prices based off of Present Day)

Apples-	(3lbs):	\$2.50
Bananas-	(1lb):	\$.29
Butter-	(4 quarters):	\$2.48
Carrots-	(32oz bag):	\$.88
Eggs-	(1 dozen):	\$1.98
Flour-	(5lb):	\$1.49
Lemons	(2lbs):	\$1.99
Lettuce-	(1 head):	\$.99
Milk-	(gallon):	\$3.68
Oranges-	(4lbs):	\$3.49
Potatoes-	(5lbs):	\$.99
Tomatoes-	(1 lb.):	\$.49



Exit Ticket

You have \$20 to spend on grocery items in the present day. How many items can you buy and come as close to \$20 as possible? You can buy any item as many times as you would like.

Items at the Grocery Store (Prices based off of Present Day)

- Apples- (3lbs): \$2.50
- Bananas- (1lb): \$.29
- Butter- (4 quarters): \$2.48
- Carrots- (32oz bag): \$.88
- Eggs- (1 dozen): \$1.98
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Show your work.