Trinity Armoogam
Mackenzie Swim
EDCI 300

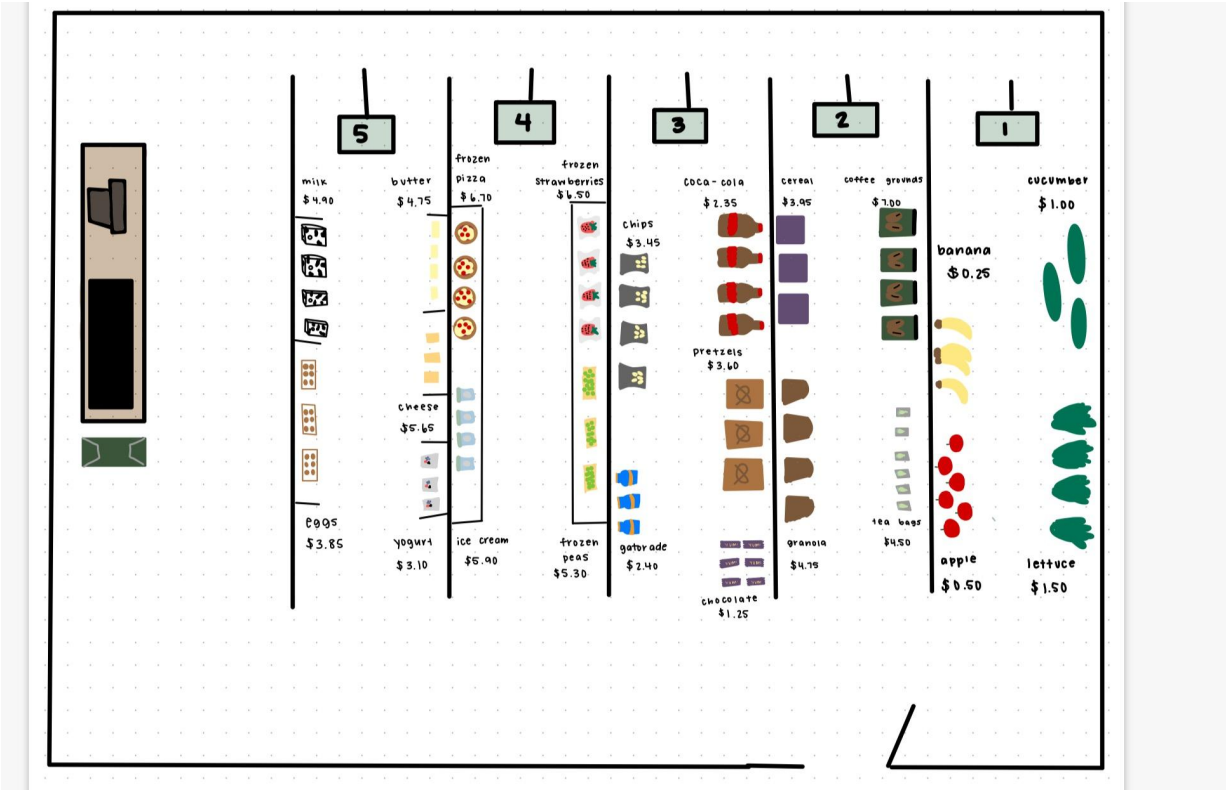
Problem-Solving Activity

Trinity and Mackenzie are at the grocery store. Together, they have $20 to spend. They walk through the grocery store aisles with their cart. Trinity wants to buy 3 items and Mackenzie wants to buy 4 items. They cannot spend more than $20. What might each person buy? You cannot buy two of the same items. Once you have found a solution, explain how you know it is correct.

Using the diagram and your money, list one possible combination of items that Trinity and Mackenzie might buy on their grocery store trip. How do your lists make sense and how is it under $20? What was their total? Did you ever go over 20 while finding solutions? What did you change to make it under their 20$ limit?

Challenge:
After adding a tax of 10% at checkout, are you over or under your 20$ limit? If so, how can you fix this? Show calculations

Aisle 1: Lettuce- $1.50 Apple- $0.50 Banana- $0.25 Cucumber- $1.00	Aisle 2: Cereal- $3.95 Granola- $4.75 Teabags- $4.50 Coffee grounds- $7.00	Aisle 3: Coca Cola- $2.35 Chips- $3.45 Pretzels- $3.60 Chocolate- $1.25 Gatorade- $2.40	Aisle 4: Frozen pizza- $6.70 Icecream- $5.90 Frozen strawberries- $6.50 Frozen peas- $5.30	Aisle 5: Milk- $4.90 Eggs-$3.85 Butter- $4.75 Cheese- $5.65 Yogurt- $3.10



Materials:

For this problem, we would provide all students with a worksheet that includes the problem, a chart of prices, and the diagram of the grocery store. We would also provide manipulative money with different bills and coins representing different amounts to both visualize how much they can spend, and learn about price values.

Description

This problem would be beneficial to introduce many different concepts in a classroom. The first being using decimals in addition. Our prices are not even dollar amounts and students must add together these prices. The next concept could be learning about money and the different coin values. One way to solve this could be working with money manipulatives and to do so you must know the values and what equals a dollar. This activity could also be used to introduce the idea of budgeting, they have a limited amount of money to spend and cannot go over it. Budgeting is an essential life skill to learn and practice! Lastly, those students who attempt the extra challenge will have to work with rounding numbers. Adding tax may result in a price with a cent value not ending in either 5 or 0. Because we don't have pennies in Canada, the student will have to round up or down to solve for the price.

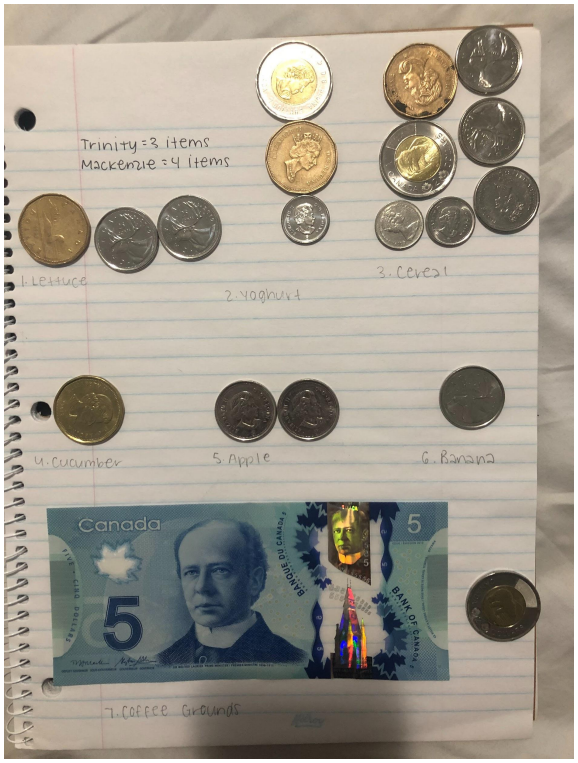
Samples

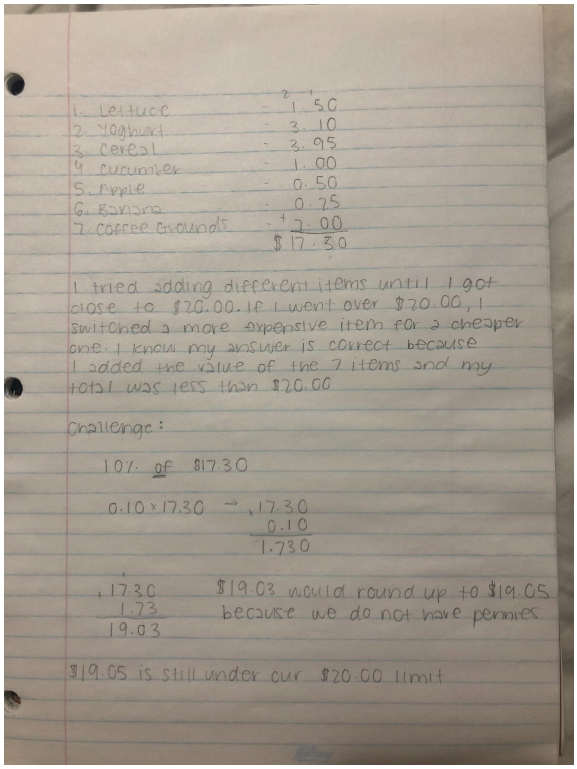
Example 1:

Under $1	$1-$2	$2-$3	$3-$4	$4 and above
apple	lettuce	Coca-cola	eggs	milk
banana	cucumber	Gatorade	cereal	granola
	chocolate		chips	Teabags
			pretzels	Coffee grounds
			yogurt	Frozen pizza
				Ice cream
				Frozen strawberries
				butter
				cheese
				Frozen peas

Trinity and Mackenzie need to buy a total of 7 items. If I add the first 7 lowest priced items, it will probably be under $20.
Apple $0.50 + Banana $0.25 + Lettuce $1.50 + Cucumber $1.00 + Chocolate $1.25 + coca cola $2.35 + gatorade $2.40
Added together that equals $9.25 which is under $20.
Trinity might buy Gatorade, a banana, and lettuce. Mackenzie might buy a cucumber, an apple, chocolate, and coca-cola.
I know this is correct because I calculated the 7 lowest items and the solution was less than $20. I also know this is correct because I had two items from the ‘under $1’ section which would equal $2 or less in total because $1 x 2 items = $2. I also did this for the ‘$1-$2’ column and knew the three items would not equal more than $6 because $2 x 3 items = $6. The last column was ‘$2-$3’ so I did $3 x 2 items = $6. Those three columns have 7 items and could not equal more than $2+$6+$6, which is $14.

Example 2:





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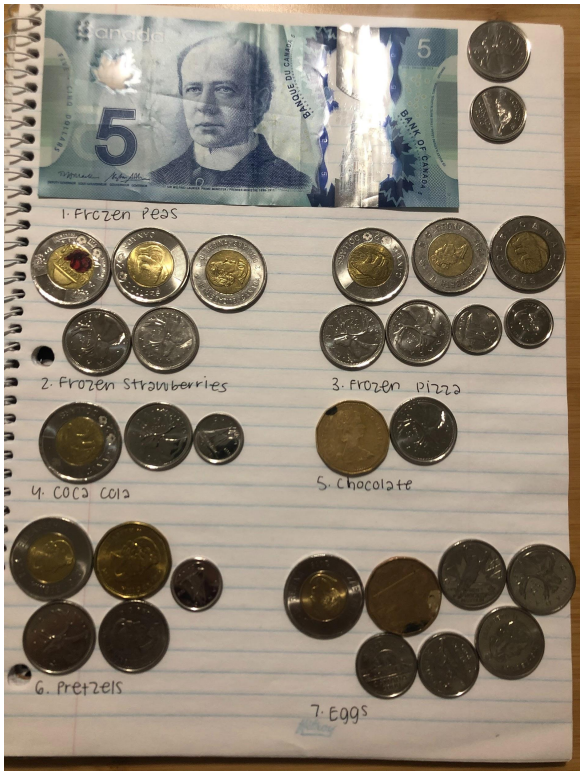

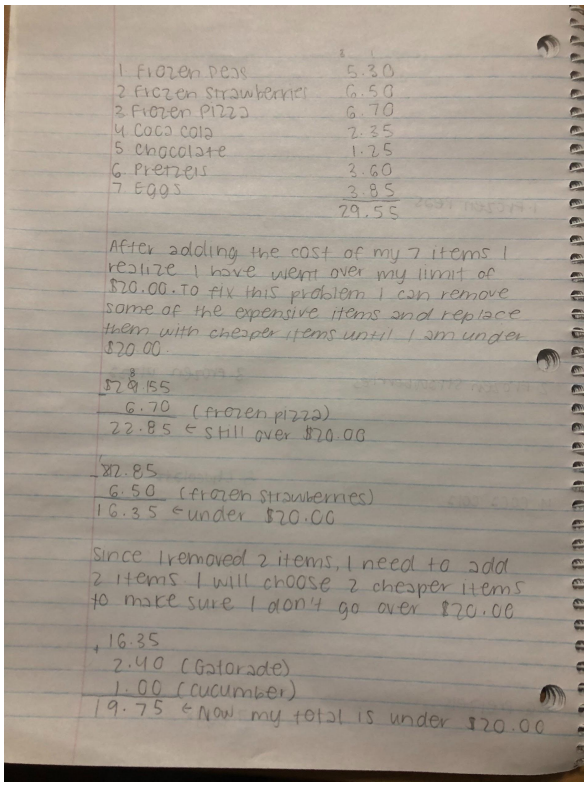

Name: _____ Date: _____

Trip to the Grocery Store!

Trinity and Mackenzie are at the grocery store. Together, they have $20 to spend. They walk through the grocery store aisles with their cart. Trinity wants to buy 3 items and Mackenzie wants to buy 4 items. They cannot spend more than $20. What might each person buy? You cannot buy two of the same items. Once you have found a solution, explain how you know it is correct.

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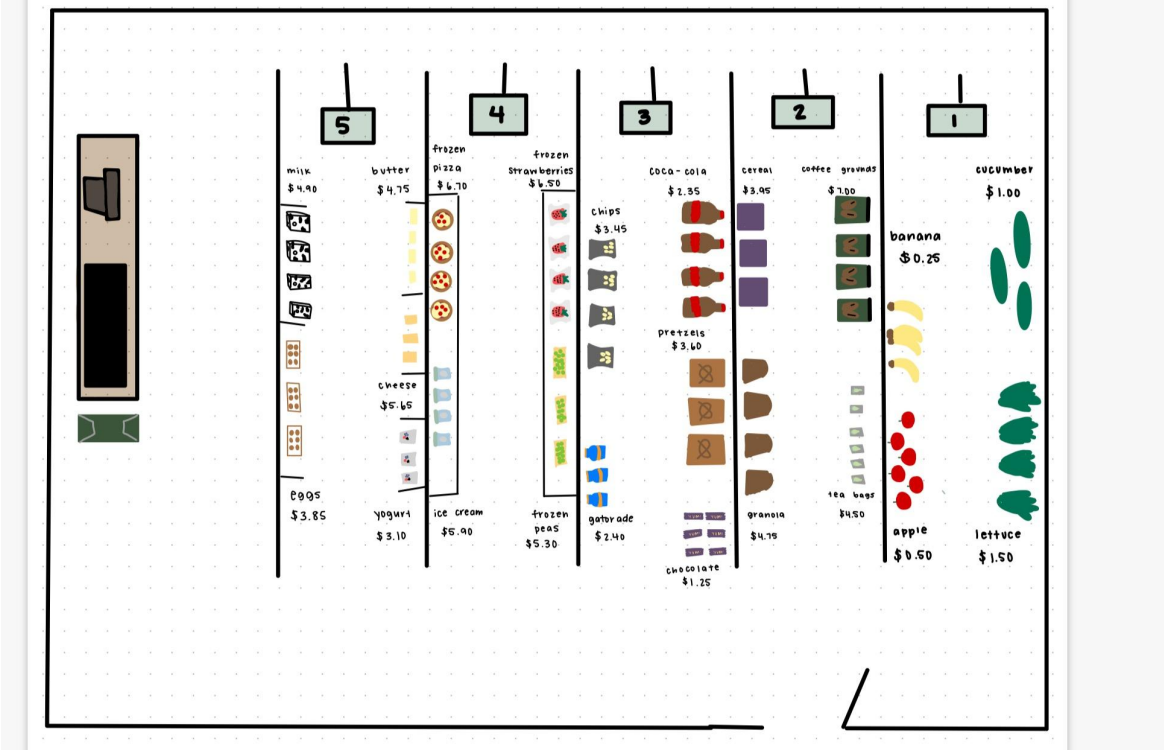

Show your work:

How do your lists make sense and how is it under $20? What was their total? Did you ever go over 20 while finding solutions? What did you change to make it under their 20$ limit?

Explain your answer:

_____

_____

_____

_____

_____

Challenge:
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