The Coca-Cola Economy

Subjects:
Math, Civics.

Investigative Question:
“What is Coca Cola’s impact on global and local economy?”

Standards:
- 2.3.8.D Perform conversions within the metric system and within the customary system, including scale measurements between units of time and between units of temperature.
- 1.9.9.A Use media and technology resources for research and problem solving in content learning.

Objectives:
1. The students will calculate different costs per volume of different packaging styles.
2. The students will compare the associated values from calculations.
3. The students will convert measurements between units of English and Metric measure and between both formats.
4. The students will use a media primary source as a guide for data collection for problem solving.
Duration:

One 50-minute class period

Primary Source Materials:

1. Coca-Cola in various packaging forms (e.g. 2 Liter bottle, 20 oz bottle, 1 liter bottle, 12 oz can, 8 oz can, 12.5 fl oz glass bottle…)

   <http://www.loc.gov/pictures/item/93501063/>

3. Employees of Coca-Cola plant on strike, Sikeston, Missouri, 1940. 1 negative. Black and white. Library of Congress Prints and Photographs Division Washington, D.C. 20540 USA 14 July
   <http://www.loc.gov/pictures/item/fsa1997006391/PP>

Inquiry-Based Learning:

Description of Procedures:

The students will be provided with the picture of Santa Claus ("Serve Coca-Cola--Refreshing surprise--Stock up for the holidays"), in an older Coca-Cola advertisement and be asked the investigative question, “How does Coca-Cola impact the economy?” This refers back to the investigate portion of the IBLM. Students will be given a short wait time to create a response in order with the IBLM. Teacher led discussion will take feedback and reflection to allow students to broaden their thought process. Expected responses will include examples of charitable donations, business models, sales and profits, advertising, and research and development. These thoughts will be logged, students will be prompted that the sales model is what we want to examine. In
this lesson, we will break down costs per unit ounce and compare product

distribution.

The students will be asked to identify packaging and quantity allotments,
from memory, that Coca-Cola is marketing. Further discussion will prompt
students to relate the varying sizes and tie back to the original question thus
asking the students to piece parts of discussion and asking in the domain of the
IBLM. Students will then be provided a laptop and be directed to websites for
various websites of grocers such as Wal-Mart, Target, or Giant Eagle. Students
will investigate the websites, and question their views to select a common ground
website so that future calculations of unit ounces work in a uniform manor.

Visual cues will be provided with a guided website and the sample
packages as noted in materials. Students will be given a data sheet to work on
conversions and cost per ounce. Students will record the cost of each
packaging style and be driven in discussion to use the formula of C/tV, where C
represents cost and tV represents total volume for all containers within the
packaging. (Example, for a 12 pack of 12 ounce cans the students would have
to multiply 12 x 12 to get a total volume of 144 ounces.) Student calculations are
a reflection of the investigation portion of the IBLM.

To direct the learning process, ask students to reflect upon the “new”
idea of unit cost. How does this affect the local economy? The expected answer
would include that different volumes of the same product are priced differently
and depending on convenience and price point may provide a larger return to
local profits.
The students will continue to research and calculate using the web during a guided practice. Students may be partnered and ask peers to find or compare a calculation the student had questioned to increase understanding of the mathematic question. The teacher will present the students with an observation of an oral history related to the learning by inviting a local buyer from a grocer to come in and be interviewed by the teacher or selected students with job roles of interviewer, recorder, and time-keeper. This will prompt further discussion of why would someone purchase one form of package over another and highlight the various packaging styles and cost differences. Students will be required to interview a parent to assess purchasing habits as part of a homework assignment and compare with unit cost data as an open ended response. Questions for the interview will be guided so the students ask regarding packaging before getting into costs analysis.

This is a tidbit of the bigger picture to answer the overall question. The portion sampled today is mathematics focused activity and has students to obtain an oral history from their parents as to have a personal attribute to the shopping habits and may also affect or lead with post transition planning for students with an IEP.

To further the research, the follow-up activity would be a field trip to Heinz Field to visit the Coca-Cola Great Hall. Students would be able to use the field trip activity to obtain a primary oral history from members of the ARAMARK staff and discuss pricing options, licensing agreements, and the effects of the corporate sponsorship by Coca-Cola with the stadium and team. This adds a
local resonating effect and personal learning ownership with the students to further their learning.

Each Library of Congress source is a visual cue to prompt students to think and ask questions prior to knowing the task at hand. These primary sources are both used as anticipatory pieces to grab the students’ attention and spark prior knowledge to begin the learning process. The plan takes into consideration the prior knowledge of the students in basic mathematical concepts, algebraic reason, and geometric reason for the process of comparing and ordering numbers and the calculations and conversions to calculate the unit costs for each packaging variant.

Assessments:
Students will have a 8 Question worksheet related to cost calculation questions. Students will be required to write a summary promoting or disputing shopping habits after conducting a personal interview with parents.
APL: Teaching “Pop Culture” Using Primary Sources: The Coca-Cola Case Study

Data Sheet

Name: _________________________________________ Date: ___________
Source website: _________________________________________________

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<th>Items</th>
<th>Costs</th>
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What is the smallest unit that could be used? __________________________

How could you find the cost for 1 unit of the smallest measure? ___________
1. Calculate the cost per ounce of a six pack of 12 ounce cans and a 2 Liter Bottle. Which is more expensive per ounce? Write as an inequality?

2. Calculate the cost per ounce of a 20 ounce bottle and a 1 Liter Bottle. Which is more expensive per ounce? Write as an inequality?

3. Calculate the cost per ounce of a 2 Liter Bottle and a 12 pack of 20 ounce bottles. Which is less expensive per ounce? Write as an inequality?

4. Predict 2 items that would be close or nearly the same cost per ounce. Write and test your prediction. What is the variance?
5. Predict the largest difference in cost per ounce from that of a 2 Liter Bottle.
   Express algebraically.
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________

6. Can you estimate the cost per ounce? How may this skill be useful?
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________

7. What question would like to ask a distributor of Coca-Cola regarding the
   cost comparison you have performed?
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________

8. What is the least and most expensive packaging of Coca-Cola? Why
   would you buy a more expensive packaging?
Name: ______________________________________ Date: ______________

For follow-up, Interview your parents with the following questions. Write a paragraph about your findings.

1. Which brand of soda do you prefer? ______________

2. What size do you usually Buy? ______________

3. Why do you select that size? ______________

4. Today in school, I learned to do a cost analysis. Would it surprise you to know that some variations in size of a package are more expensive for an equal amount? YES / NO

5. Would you consider changing the way you buy Coca-Cola to save on overall expenses? ______________

6. (Create your own question)

________________________________________________
________________________________________________
________________________________________________

Answer: ______________________________________________
________________________________________________

7. (Create your own question)

________________________________________________
________________________________________________
________________________________________________

Answer: ______________________________________________
________________________________________________

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Writing about it:

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Interview Guide

Background info:
1. For recording purposes, please state your name and occupation.
2. Who is your employer?

Distributions/Cost Analysis
3. How long have you been working in this profession?
4. When you purchase/deliver Coca-Cola, what influences the packaging differences? Do the cost variances affect what needs replenished more often?
5. Do the distribution or unit costs differences affect your income? (bonus for moving certain packs, volumes, etc...)
6. Can you explain your relationship with the supplier?