

Constructing Discerning Consumers

Merry Ostheimer

Introduction

“Amazing Elastic Plastic! Amazing Elastic Plastic is hours of fun-filled balloon making fun! You can get the Amazing Elastic Plastic! It’s fun and easy for kids of all ages — just roll, stick and blow! You can smash, poke and shape it with your hands and it won't pop like ordinary balloons! Amazing Elastic Plastic is resealable so you can put a secret message or small toy inside! Amazing Elastic Plastic is the perfect way for families and friends to play together and Amazing Elastic Plastic makes a perfect holiday, birthday or "just because" gift! Today, purchase Amazing Elastic Plastic for only \$10 plus \$7.95 shipping and processing and you’ll receive one red, one blue, and one green with color matching blow tubes. As a special BONUS we will double the offer and you’ll receive an additional red, blue, and green Amazing Elastic Plastic with color matching blow tubes, just pay separate \$4.95 S&P. But that’s not all; you will also receive a FREE tube of yellow! Tax will apply to all NY orders. A \$2.00 web surcharge fee will be applied to all orders. A \$10 surcharge will be added to all orders from Alaska and Hawaii.”¹

Any commercial that plays during my child’s TV shows has some kind of great offer: “Buy one, get another free!” “But wait! There’s more!” “If you act now, we’ll throw in...” You have to read between the lines to understand that free does not mean you don’t pay anything. It means that you need to pay for shipping, processing, sales tax, surcharges, and other hidden costs. When I try to explain this to my son, he refers to the exact words in the commercial, as if they were completely true, unmistakably the best deal ever, finishing his argument by humming the hypnotic steel drum Amazing Elastic Plastic theme. When we look at the website together, the “\$10” and “Bonus Set” are oversized and bright green just waiting to say, “I told you so, it’s only \$10 and I get all the other stuff for free!”

My son is just like any other elementary student who hears what he wants to hear, believes commercials, and argues that the offers are genuine. How can we get children to see that many offers on television are dubious? One way to combat manipulation by commercials is to teach children how to become critical and reflective thinkers so they can make informed and reasoned decisions for their own good.

Rationale

I am a second grade teacher in a self-contained classroom at West Park Place Elementary School, a diverse pre-K to 5th grade school uniquely located near the University of Delaware in the Christina School District. With an enrollment of about 370 students, West Park Place is one of several suburban host sites for students in the English as a Second Language Program, Montessori Program, Delaware Autistic Program, and REACH (Realistic Educational Alternatives for Children with Disabilities). West Park Place, in partnership with the University of Delaware, provides English language instruction and support to students representing over 25 countries and languages around the world. Our demographics are diverse with approximately 20% African American, 26% Asian, 46% White, and 4% Hispanic children (Delaware Department of Education, 2014)ⁱⁱ. Other characteristics show 29% of our students are English Language Learners, 6% are identified Special Education students, and 47% are from low-income families.

In our Professional Learning Communities, my 2nd grade team collaborates to create rigorous and relevant programs as we implement Common Core standards in Language Arts and Math, state-created Essential Standards for Social Studies, and Next Generation Science Standards. We gather information about our students through self-reflection, grade level pre- and post-unit assessments, formative and summative assessments, and classroom observations. In my classroom, students have access to three student computers, a document reader, a Smartboard, a TV with a VCR/DVD player, and a CD/cassette player.

My students coming from low-income families face the challenge of using their thinking skills to make good economic choices. Making learning relevant is critical, and since economics is central to our daily lives, it is important for children to learn how to make informed financial decisions. With an improved understanding of economics, students can make better choices, which may help them be more prepared for the future. This unit will integrate math skills with economics. According to the Delaware Economic Standards K-3, the fundamental economic concept of scarcity is at the core of economics. There are never enough natural resources, human resources, or capital resources (man-made goods such as tools, equipment, machinery, factories) to produce everything society wants, therefore, choices must be made on what to produce, how to produce, and for whom to produce. Choices must also be made at the personal level to determine how to spend time, money, and resources to have or to do everything one wants. One way to strengthen their choice making skills is to develop numeracy in my students.

Background

Numeracy is a term coined in 1959 by a committee on education in the United Kingdom, which said that 'numeracy' should 'represent the mirror image of literacy'.ⁱⁱⁱ I have come to understand that a numerate person will be able to be 'at-ease' with all those aspects of mathematics that enable him to cope with the practical demands of everyday life and have the ability to understand information presented in mathematical terms. Numerate

people use mathematical reasoning to achieve some purpose in a particular context and to make sense of the world. In addition, they draw on knowledge of particular contexts and circumstances in deciding when to use mathematics, choosing the mathematics to use, and critically evaluating its use. Lastly, numerate people apply the understandings of number, measurement, probability, data and spatial sense combined with critical mathematical thinking.

In considering how I can interconnect numeracy and social issues, I keep coming back to the phrase, “There is no such thing as a free lunch”. When I interact with young children, I am shocked that most believe they can get something for free. My friend calls them, the ‘goodie-bag generation’ meaning that they have been raised to expect something for nothing. They go to birthday parties and come home with goodie bags containing all sorts of toys and candies. As a teacher, I continue this practice because I must implement my school’s Positive Behavior System by rewarding students for doing what is expected of them. “I see you brought in your homework. Here’s a ticket.” “You got into line. Here’s another ticket.”

In his book, Everyone’s A Winner, Joel Best talks of how our self-congratulatory culture rewards children for completing preschool, kindergarten, and elementary schools with parties, caps, and gowns. “Schools create and award all sorts of status—grades on schoolwork, gold stars for neatness, placement in particular reading groups, graduation ceremonies, and so on (p. 59).”^{iv} I believe that this is a social problem. Children of today do not seem to have a sense of scarcity and opportunity costs. They do not understand that there is a difference between what you want and what you need. What is lacking in these children’s experiences is the knowledge that people need to make choices about what they truly need and what they can afford. There are obvious and hidden costs to all choices we have in life.

In his USA Today news article entitled, “Best things in life are free—unless they’re not”, Christopher Elliott informs that there are three types of free in our society: true free, free with purchase, and free with strings.^v True free is something you get with absolutely no preconditions like a blueberry muffin sample if you walk into the store, take the baked good, and then leave. Free with purchase is a way that businesses build affinity with their customers. For example, if you rent a hotel room, you may receive a voucher for a free drink. Lastly, free with strings is something for which you have to spend more money in order to get. For example, a man checks into his “all-inclusive” resort where doting waiters constantly keep his soda glass filled. It turns out that the food may have been free, but there was a charge for every beverage poured. This man ended up with a 40 euro charge on his room. Even I understand that free internet at a hotel may be free, but unreasonable: the basic, slower Internet connection is so inconvenient, that I would most likely pay for an upgrade so that I could have a faster speed and actually get my work done.

Essentially, our society is driven by money. Manufacturers want to sell their products to inexperienced, impulsive, and uneducated consumers. Advertisers unleash deceptive campaigns that entice uninformed consumers to spend more money. Often times the easiest targets are children as in the previously mentioned Amazing Elastic Plastic advertisement. According to my math, you can get red, green, blue, and a bonus yellow tube of Amazing Elastic Plastic plus the blow straw for \$10.00 plus a \$7.95 shipping and processing charge. So that's 4 tubes of plastic for \$17.95. And if you just pay for additional shipping and processing, you can double your order (not including the other bonus yellow)! Now your total cost is \$22.90 plus a \$2.00 web surplus charge that you can read in the fine print at the very bottom of the screen. Just think—balloon making magic for only \$24.90!

Numbers and statistics are used to dupe consumers by making their claims seem genuine. In Stat-Spotting: A Field Guide to Identifying Dubious Data, Joel Best informs us that having a small store of factual knowledge can prepare us to think critically about statistics.^{vi} By placing specific concentration on number sense and advertisements, my unit will teach my students that even though numbers are used, these numbers may not be a truthful representation and information can be manipulated so that data and reports can tell people what they want to hear.

Teaching Strategies

In order to train my students to be discerning consumers, I need to teach them how to think. My unit will focus on the seven skills of the Practice Standards that are embedded within the Common Core Standards for Mathematics:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.^{vii}

I believe it is essential to teach these skills and apply them to our everyday routines and procedures. During instruction, students need repeated opportunities to apply these practices to what they are doing in mathematics and they should be aware that these practices will make them more successful scholars. Direct instruction, modeling, guided practice, and individual practices will be core tactics I use to help students learn thinking skills and transfer them over to other situations. More specific strategies include Read Aloud Texts, Number Talks, Estimation Jar, and Problems of the Week.

Read Aloud Texts

I believe that reading books to my class is the best way to motivate students to read on their own for many different reasons. By modeling good reading, this strategy not only promotes critical thinking skills, but also builds stamina and imagination. As we gain a sense of empathy about characters, my students can experience the joy of getting a toy they want, or the disappointment of not. They can imagine how they would solve problems like in TV Trouble when Arthur tries to earn money by moving his neighbor's newspapers to the curb.^{viii} My students knew right away that Arthur should have used twine to bundle the newspapers so they would not blow away. I love to create a safe and close setting by having my students come sit on the rug in front of me while I read to them. Each time I read aloud, my students and I achieve a sense of community where we are all invested in the same story and the same characters.

Number Talks

Number Talks are daily 10-minute discussions where computational fluency and number sense are practiced.^{ix} A number string comprising of several problems that are related in some way are presented to help students build upon prior knowledge. Here is one example of a number string:

$$7 + 7 =$$

$$7 + 8 =$$

$$7 + 6 =$$

$$7 + 5 =$$

Students are shown the problem and allowed think time. All computations are done mentally. When they have an answer, the students will hold a thumb up to their chest. All answers are written on the board and are accepted without praise or criticism. Students are encouraged to explain how they got their answer as other students listen. Questioning others and self-correcting are encouraged. Finally, the students name and label the strategy that they used. Suggested questions to support Number Talks include, "Who would like to share their thinking?", "Does anyone have questions about this?", "Who did it another way?", and "How did you figure it out?" By having these Number Talks, students learn to attend to precision by considering whether solutions are reasonable or effective. Additionally, students become confident in explaining their reasoning with mathematical language and supporting evidence.

Number Talks also target the practice standards "look for and make use of structure" and "look for and express regularity in repeated reasoning". Number strings are contrived to assist students to see patterns. By making learning concrete and predictable, I have seen my students become more confident in explaining their solutions. For example, my student with weak reading and writing skills can see how doubles and near doubles facts

can help him solve $9 + 6$ easily and he can explain his reasoning with great aptitude and clarity.

Estimation Jar

I believe that teaching estimation is essential in our current age of calculators, smart phones, and tablets. Children need to do mental math when numbers are involved and have a breadth of experience when it comes to estimating objects. One book I find very helpful is Great Estimations by Bruce Gladstone. Gladstone informs us that a great estimate is close to the real number and you can train your eyes and your mind to help you make really great estimations. His picture book does just that as it shows photographs of real objects and he even challenges us, the readers, to hold the book upside down and reflect on whether it looks the same or not. Teaching students how to make logical mathematical estimates is critical. One simple idea is to have an estimation jar activity. For this daily ritual, have a jar filled with one type of items with slips of paper available for your students to write their estimation down and check results at the end of the day. As my students examine the estimation jar, they are “using appropriate tool of estimation strategically”.

Problem of the Week (POWk)

The Problem of the Week^x provides student with the opportunity to better prepare for the more rigorous, multi-step math word problems in Common Core and SBAC assessments. The POWk are designed to be used for a week and allow students to become comfortable with solving multi-step word problems over the course of a week. This unit will include topics on money, scarcity, and wants/needs. The procedures are as follows:

1. On the first day, post the problem. Either read or have a student read aloud the material posted. Ask the class what they notice or wonder about the information before them.
2. On days 2-5, post the problem and assign one question to complete. Students may work in pairs or triads.
3. Note:
 - a. Allow 5-10 minutes per problem.
 - b. There are three days of questions.
 - c. Students may be given more problems to complete but it is suggested to keep the number of problems limited to no more than three to allow for sharing.
4. On day 5, the students will work on a written response about the problem.

The POWk strategy forces students to look very closely at problems in order to “make sense” of them. When we examine the Amazing Elastic Plastic ad, we will notice there is an inconsistency about the shipping and processing cost in the video loop and in the offer

details. My students will begin hunting for hidden numbers and reread parts of the ad to figure out what information is ambiguous and what is clear.

Pairing students for discussion effectively helps students “construct viable arguments and critique the reasoning of others”. In one conversation, I overheard two girls talking about the potential choking hazard that Amazing Elastic Plastic poses to their younger siblings. Both girls were adamant about not letting this product come into the hands of younger children.

Teacher-led discussions guide students to “reason abstractly and quantitatively”. For example, when the students come across the characters S&P, we will discuss what this means and whether they had ever heard of it before. We will talk about “shipping and processing” and how it relates to “shipping and handling”.

During POWk activities, we “model with mathematics” as we set up number expressions for the problems. When I present the POWk problems on my Smart Board, I will use Smart Notebook so that we can write on the ad. My students love using the highlighters to hunt for hidden costs.

Classroom Activities

Day 1: Laying the Foundations of Basic Economics

Vocabulary: wants, needs, income, save, spend, choice, product, scarcity

Opening Read Aloud: To kick-off this unit, I will read Needs and Wants by Gillia M. Olson to develop the idea that needs are things that humans must have in order to survive such as clothes, food, water, shelter, medicine, and transportation. After we explore the difference between a need and want by listening to me read Needs and Wants, we will discuss the concept of scarcity and how it means that you cannot always have everything you want because time and money are limited resources. Next, I will send each student back to his or her desk with a blank sheet of paper. I will direct the student to put the paper so that it is horizontal and fold the paper in half. On the left side they will write the word Needs and on the right side the word Wants. Then, I will direct the class to write down a list of things they need in order to survive on the left side and write down a list of things they want on the right side. Finally, I will bring the group back to the rug with their papers to discuss their lists and the differences between Needs and Wants.

Day 2: Numeracy Instruction: Examining Numeracy with Estimation Jar

Vocabulary: estimation, big numbers, clump counting

Opening Read Aloud: I will read Great Estimations by Bruce Gladstone to the group and discuss how a great estimate is close to the real number. We will practice training our eyes to see how pennies look inside our estimation jar. Each day, students will estimate the number of pennies in the jar. I will start with more than 20 pennies and add some or take some out each day. I would like the class to train their eyes by looking at the

container and making reasonable estimates by looking at the fraction of the container that is filled. If they can remember what half the container filled with pennies looks like, then they can double that number if the entire jar is full. For instance, if 73 pennies is almost half of the container, we can make a reasonable guess that if the whole container is full, there are about 140-150 pennies in the container.

I will direct students to make an estimate on a scrap of paper that they will fold one time and put it in the submission box. Then, as a class we will arrange the pennies in ten-frames for easy counting. When we arrive at the actual amount, I will write the number on the board and write two lines with commas before and after it. I will ask the class to tell me the two numbers that come before the actual and the two numbers that come after the actual. We will have a number line that looks like this:

____, ____, **73¢**, ____, ____
71¢, 72¢, **73¢**, 74¢, 75¢

We will call this the range and any student who estimates one of those five numbers will be a winner and collect a small prize. As we gain experience from this daily ritual, we will be able to see what one-dollar in pennies looks like.

Days 3-5: Examining Amazing Elastic Plastic Advertisement

Vocabulary: consumers, offer details, shipping, processing, taxes, hidden costs, price
Opening Read Aloud: I will read Arthur's TV Trouble, by Marc Brown to the group to begin our investigation of advertisements and the ways consumers can get duped into wanting products that they don't really need.

Critical Thinking Instruction: Problem of the Week (POWk)

We will use the Smart Board to view the video loop and see the Amazing Elastic Plastic advertisement and then discuss what we notice in the ad and find any other prices. The \$10 is prominent, but the added costs are hidden, so we will discuss how the size of numbers can be misleading. We will also examine how \$10 is just a starting point to understanding the entire cost of the product. Most of the important consumer information is at the very bottom of the advertisement in small type. Here we can see all the pertinent information:

Offer Details

Today purchase Amazing Elastic Plastic™ for only \$10.00 plus \$7.95 S&P and receive 1 red, 1 blue, and 1 green with color match blow tubes. As a special BONUS we will double the offer and receive 1 red, 1 blue, and 1 green Amazing Elastic Plastic™ with color match blow tubes, just pay separate \$4.95 S&P. But that's not all, you will also receive a FREE tube of Yellow!

Tax will apply to all NY orders. A \$2.00 web surcharge fee will be applied to all orders. A \$10 surcharge will be added to all orders from Alaska and Hawaii.

On this first day of looking closely at the Amazing Elastic Plastic advertisement, I will tell the class that each day for a week, they will work in partners to deepen their understanding of what this ad is selling and how hidden costs can be found looking closely at all the print. Through this investigation, students will generate new insights and think more critically about advertisements. By the end of the week, students will write down the complete cost of the product with as much transparency as possible.

Numeracy Instruction: Boosting Mental Math Strategies with Number Talks

We will work with number strings to develop mental computational skills. The Amazing Elastic Plastic advertisement uses the numbers \$10, \$7.95, \$4.95, and \$2.00. Using rounding strategies, we can make our mental computations easier by rounding \$7.95 up to \$8 and \$4.95 up to \$5. Now we can add \$10, \$8, \$5, and \$2. We can use the Making Tens strategy to further simplify our problem to $\$10 + (\$8 + \$2) + \5 giving us an even \$25.

Day 6: POWk Writing

Vocabulary:

The final POWk activity for Amazing Elastic Plastic is to “Make a poster for this product that informs exactly what the product is and how much it will cost if you buy it off the internet. I would like my students to learn how to tell about the product and the cost in a transparent way. Here are two examples of my students’ responses:

If you buy this Amazing Elastic Plastic, it is a lot more than ten dollars. It is really 25 dollars. I know this by looking at my teacher’s Smartboard. I see hidden numbers in the offer details. ~ Munir

The Amazing Elastic Plastic Advertisement is a commercial for a toy. Most claims in this ad are false:

- *balloons do pop.*
- *it’s not just \$10.*
- *they want your money so they can be rich. ~ Jolena*

Days 7-9: Making Smart Choices

Vocabulary: trade-off, opportunity costs

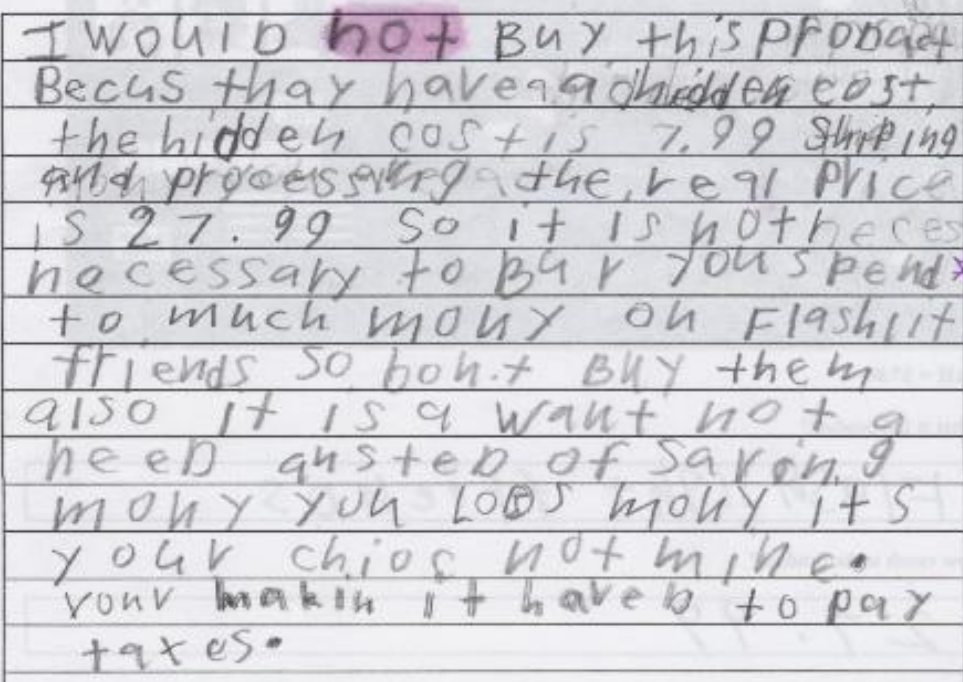
We will continue looking at advertisements that are geared for children. Students will work in partners to deconstruct ads by finding numbers overtly and covertly displayed. Students will make sense of what they would need to pay in order to get the product.

Day 10: Building Discerning Consumers Summative Assessment

After spending time looking very closely at Amazing Elastic Plastic and several other advertisements, I will give an assessment on another product called GlowPals. First, I will read the introduction to the class:

A need is something that you must have in order to live a healthy and safe life. You need clothes, food, shelter, medicine, and transportation. A want is something that you spend money on and enjoy, but don't really need for survival. When we see a product, we need to compare what we will gain from having this product, and what we give up in order to get it. This is called opportunity cost. Look closely at the advertisement below. Think about product. Then tell what you will gain from getting the product and what you will trade off in order to get it.

Then, I will show the video loop for the students to watch. Finally, I will direct the students to go to their desks to independently answer the questions. The last question requires an extended response with a word box. Here are two samples of student responses:



I would not buy this product because they have a hidden cost, the hidden cost is 7.99 shipping and processing and the real price is 27.99 so it is not necessary to buy you spend too much money on flashlights friends so don't buy them also it is a want not a need instead of saving money you lose money it's your choice not mine. you make it have to pay taxes.

I do not want this product
 because it has hidden cost like
 7 dollars, and if you put 19+7 it will =
 26. Which is the price, I would save
 my money, and it involves taxes too.
 and by the way it is a want. You
 don't need the flashlight friends,
 to survive I would trade off the
 flashlight friends, I do not
 find this is necessary, I would
 spend my money on a silly product
 and I would not spend my
 income money. That is why
 I will not buy it.

Conclusion

In conclusion, I hope that this unit will raise awareness of basic concepts in economics and boost numeracy skills. Through a careful deconstruction of advertisements, students can examine how numbers are used in advertisements. They will seek out and find hidden costs in the offer details of several product commercials. By using quick mental math, children can learn how to become discerning consumers and make smart choices about what they want and what they need.

Appendix A Problem of the Week (POWk)

Problem of the Week
Day 1: What do you notice? What questions do you have? (Discuss the information and numbers.)
Day 2: Think-Pair-Share a. What is this? How would you describe it? b. Have you ever seen anything like this before? c. What numbers do you see? So how much do you think this product costs? d. What do you think s&p means?

Day 3: Think-Pair-Share

- a. What is the product? How much does it cost? Is that all you would need to pay in order to get it?
- b. What are the pictures beside the Order Now button? Where have you seen them before?
- c. Would you want to buy this product? Why? Why not?
- d. If you pay \$10 plus shipping and processing, what will you get?

Day 4: Think-Pair-Share

- a. What mathematical terms do you see in this advertisement? Do you know any shortcuts to help you do mental math?
- b. Explain what the product is and how much you would need to pay in order to get it. Is this something you can just go out to a store and buy?
- c. Can you just get a bonus set for free? What does it cost? Where can we find that information?
- d. Explain how little kids might react to this commercial.

Day 5: Writing

Make a poster for this product that informs exactly what the product is and how much it will cost if you buy it off the internet.

Appendix B Summative Assessment

Name:

Date:

A need is something that you must have in order to live a healthy and safe life. You need clothes, food, shelter, medicine, and transportation. A want is something that you spend money on and enjoy, but don't really need for survival. When we see a product, we need to compare what we will gain from having this product, and what we give up in order to get it. This is called opportunity cost. Look closely at the advertisement below. Think about product. Then tell what you will gain from getting the product and what you will trade off in order to get it.

Soft Cuddly Animal + Bright Glow Light		Very Soft! Eases fear of darkness! Cuddly!	
*Batteries not included		Lights don't get hot!	
Glow Pals lasts for hundreds of hours!		only \$19.99 +S&P	
		Collect all 6!	Perfect for birthdays, holidays, & special occasions!
			
			
Rush Delivery Available! Just \$5	Offer Details: Today purchase GlowPals for only \$19.99 plus \$8.95 S&P and receive your choice of GlowPal. As a special BONUS we will add your choice of a second GlowPal for \$15.00, just pay separate \$8.95 S&P. Tax will apply to all Delaware orders. A \$2.00 web surcharge fee will be applied to all orders. A \$10 surcharge will be added to all orders from Alaska and Hawaii.		

Use the information in the advertisement to answer the following questions.

1. What product is being advertised?

2. Is this product a want or a need?

3. What numbers do you see in this advertisement?

4. How much would you have to pay to buy this product?

5. Would you pay that cost to get this product?

Using the words below, explain your answer to question 5.

choice	product	offer details	shipping	processing
taxes	hidden cost	price	trade-off	necessary
wants	needs	income	spend	save

Appendix C Questions to Develop Mathematical Thinking

1. Make sense of problems and persevere in solving them.	How would you describe the problem in your own words? How would you describe what you are trying to find? What do you notice about...? What information is given in the problem? Describe the relationship between the quantities. What are some strategies you would try?
2. Reason abstractly and quantitatively.	What do the numbers in the problem represent? What is the relationship of the quantities? How is __ related to __? What is the relationship between __ and __? What does the symbol/diagram/graph mean to you? What properties might we use to find a solution? How did you decide in this task that you need to use ... Could we have used another operation or property to solve this task?
3. Construct viable arguments and critique the reasoning of others.	What mathematical evidence would support your solution? How can we be sure that...? How could you prove that...? Will it still work if...? What were you considering when...? How did you test whether your approach worked? How did you decide what the problem was asking you to find?

	What is the same/different about...?
4. Model with mathematics.	<p>What number model could you construct to represent the problem?</p> <p>What are some ways to represent the quantities?</p> <p>What is an equation or expression that matches the diagram, number line, chart, table...?</p> <p>Where did you see one of the quantities in the task in your equation or expression?</p> <p>How would it help to create a diagram, graph, table?</p> <p>What are some ways to visually represent...?</p> <p>What formula might apply in the situation?</p>
5. Use appropriate tools strategically.	<p>What mathematical tools could we use to visualize and represent the situation?</p> <p>What information do you have?</p> <p>What do you know that is not stated in the problem?</p> <p>What approach are you considering first?</p> <p>What estimate did you make for the solution?</p> <p>In this situation would it be helpful to use... a graph... number line... ruler... diagram... calculator... manipulative?</p> <p>Why was it helpful to use...?</p> <p>What can using a ___ show us that ___ may not?</p> <p>In what situations might it be more informative or helpful to use...?</p>
6. Attend to precision.	<p>What mathematical terms apply in this situation?</p> <p>How did you know your solution was reasonable?</p> <p>Explain how you might show that your solution answers the problem.</p> <p>What would be a more efficient strategy?</p> <p>How are you showing the meaning of the quantities?</p> <p>What symbols or mathematical notations are important in this problem?</p> <p>What mathematical language... definitions... properties would you use to explain...?</p> <p>How could you test your solution to see if it answers the problem?</p>
7. Look for and make use of structure.	<p>What observation do you make about...?</p> <p>What do you notice when...?</p> <p>What parts of the problem might you eliminate... simplify?</p> <p>What patterns do you find in...?</p> <p>How do you know if something is a pattern?</p> <p>What ideas that we have learned before were useful in solving this problem?</p> <p>What are some other problems that are similar to this one?</p> <p>How does this relate to ...?</p> <p>In what ways does this problem connect to other mathematical</p>

	concepts?
8. Look for and express regularity in repeated reasoning.	<p>Explain how this strategy works in other situations.</p> <p>Is this always true, sometimes true, or never true?</p> <p>How would we prove that...?</p> <p>What do you notice about...?</p> <p>What is happening in this situation?</p> <p>What would happen if...?</p> <p>Is there a mathematical rule for...?</p> <p>What predictions or generalizations can this pattern support?</p> <p>What mathematical consistencies do you notice?</p>

Appendix D Standards

Common Core State Standards for Mathematics

CCSS.Math.Content.2.OA.A.1

Represent and solve problems involving addition and subtraction.

CCSS.Math.Content.2.OA.B.2

Add and subtract within 20.

CCSS.Math.Content.2.NBT.B.5

Use place value understanding and properties of operations to add and subtract.

CCSS.Math.Content.2MD.C.8

Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies using \$ and ¢ symbols appropriately.

CCSS.Math.Content.3.MD.A.2

Measure and estimate liquid volumes and masses of objects using standard units of grams, kilograms, and liters.

National Standards: Social Sciences: Economics: Grades K-4

NSS-EC.K-4.1 Scarcity

Productive resources are limited. Therefore, people cannot have all the goods and services they want; as a result, they must choose some things and give up others.

Bibliography and Resources

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Notes

ⁱ "Amazing Elastic Plastic." Amazing Elastic Plastic.

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ⁱⁱ Delaware Department of Education,

<http://profiles.doe.k12.de.us/schoolprofiles/School/Default.aspx?checkSchool=332&districtCode=33> 2014.

ⁱⁱⁱ NSW Department of Education and Communities. Numeracy: What is it? (accessed 26 Oct. 2014).

^{iv} Best, Joel. *Everyone's a winner: Life in our congratulatory culture*. Berkeley: University of California Press, 2011. p. 54.

^v Elliott, Christopher. "Best things in life are free-- unless they're not." *USA Today (Wilmington)*, August 4, 2014, sec. B.

^{vi} Best, Joel. *Stat-Spotting: A field guide to identifying dubious data*. Berkeley: University of California Press, 2008.

^{vii} "Standards for Mathematical Practice," Common Core State Standards Initiative, <http://www.corestandards.org/Math/Practice/> (accessed October 26, 2014).

^{viii} Brown, Marc. *Arthur's TV Trouble*. 1995.

^{ix} Christina School District: Second Grade Mathematical Curriculum Map: 2014-15.

^x Christina School District: Second Grade Mathematical Curriculum Map: 2014-15.

Curriculum Unit Title

Constructing Discerning Consumers

Author

Meredith Ostheimer

KEY LEARNING, ENDURING UNDERSTANDING, ETC.

Economics Standard One: Students will analyze the potential costs and benefits of personal economic choices in a market economy.

Enduring Understandings: There are things we need and things we want. If we cannot have everything we want, we must choose those things we want most. Thus, we continuously make choices about how to use money to satisfy our wants. Students will understand that due to scarcity, they must make choices in their activities and consumptions of goods and service

ESSENTIAL QUESTION(S) for the UNIT

What is this product? How much does this product cost? Is this product something I want? Do I need this product?

Is this product worth the cost? How can I make informed choices? Where do I find information to help me know all the costs?

CONCEPT A

CONCEPT B

CONCEPT C

Scarcity

Advertising

Making Smart Choices

ESSENTIAL QUESTIONS A

ESSENTIAL QUESTIONS B

ESSENTIAL QUESTIONS C

What are some things you need to survive?

What are some things you want to have?

What numbers do you see in this advertisement?

Do you think that this is all you need to pay to get this product?

Where can you look for hidden costs?

Where are the offer details in this advertisement?

What is the price of this product?

Are there additional costs?

VOCABULARY A

VOCABULARY A

VOCABULARY A

wants, needs, income, spend, save, choice, product

offer details, shipping, processing, taxes, hidden costs, price, transparent

trade-off, opportunity cost

ADDITIONAL INFORMATION/MATERIAL/TEXT/FILM/RESOURCES

<https://www.amazingelasticplastic.com/?mid=5729139>

<https://www.flashlightfriends.com/?MID=3596828>