



Let's Supply a Little Demand for Food!

Middle School Food and Agricultural Literacy Curriculum

Precepts:

- B. Relationships:
 - B1. Practice human relations skills including compassion, empathy, unselfishness, trustworthiness, reliability, and listening
- H. Social Growth:
 - H1. Acknowledge that differences exist among people

National Standards

- CS.09.01. Apply economic principles to AFNR systems (e.g., supply, demand and profit).
- NL-ENG.K-12.4 – Communication Skills
- NL-ENG.K-12.12 – Applying Language Skills
- NSS-EC.5-8.7 – Markets and Market Prices
- NSS-EC.5-8.8 – Supply and Demand

Student Learning Objectives

- As a result of this **unit**, the student will be able to...
 - Examine processes involved in food science.
- As a result of this **lesson**, the student will be able to...
 - Discuss the economics of processed versus raw food products.

Content Outline

Objective 1. Discuss the economics of processed versus **raw products**.

- A. The farmer is the one who produces the **raw product**. A **raw product** is a food product that has not had any processing steps performed. It enters the store the same way that it was when it was removed from the plant.
 - 1. In a typical economy, the producer receives the majority of the money when a consumer purchases something from a store. In the agricultural industry, the economics are actually different. To produce the food we know today, many costs are factored into the price of food, none of which come from the farmer.

Time

Instruction time for this lesson: 45 minutes.

Resources

National FFA Organization. (2009). LifeKnowledge Online. Retrieved September 1, 2009 from <http://agedlearning.org>. — Hayes, K. Introduction to Food Science, Purdue University CopyMat, 2005. — Jacobsen, D. Farmers get only a small share of what consumers pay. CFBF.com, 15, September 2004.

Tools, Equipment, and Supplies

- Overhead projector/transparencies
- Writing surface
- Writing utensil
- Paper Plate – one for each student, marked with either a P or an R
- MS.FS.2.8.AS.A – one per student
- MS.FS.2.8.AS.B – one per student
- MS.FS.2.8.TM.A – one per teacher
- MS.FS.2.8.TM.B – one per teacher
- MS.FS.2.8.ASSESS.A – one per student

Key Terms

The following terms are presented in this lesson and appear in **bold italics**:

Raw product

Processed product

Price-maker

Price-taker

- 2. For example: Nectarine farmers are receiving only about 4 cents per pound of fruit, while consumers pay an average of \$1.99 per pound at the grocery store. The farmers' portion accounts for only 2 percent of the price consumers pay. Packing charges, pre-cooling and handling at the packing shed, and sales commissions account for 20 percent of the costs, while retail markup accounts for 78 percent of the costs. (California Farm Bureau Federation)
- 3. The farmer is known as a **price-taker**. A **price-taker** is an individual or company that is not influential enough to affect the price of an item.
- 4. Therefore, even when **raw products** are sold at farmer's markets or local grocery stores straight from the fields, prices on raw foods are significantly lower because the individual farmer takes the price he can get for his sales. This only changes if the farmer



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offers specialty products such as organic or rare foods.

- B. **Raw products** are often hard to sell because of their low shelf-life and inability to be sold in areas a great distance away. Instead, food product companies turn to **processed products** to sell.

Processed products are food products that have undergone physical or chemical treatment resulting in a substantial change in the original state of the food. A majority of the retail costs consumers pay at the store goes to processing, packaging, marketing, sales and distribution, taxes, and wholesale and retail markup to cover such expenses as labor and store operation.

1. Food processing companies, on the other hand such as General Mills or Kraft, are **price makers**. **Price makers** are an individual or company which is influential enough to affect the price of an item.
2. For example, on **processed products** such as Fig Newtons, fig growers receive about 14 cents from a \$3.79 bag of the popular fig bars or about 3.7 percent. In Red Vines candy, wheat farmers receive 8 1/2 cents or about 1.2 percent of the 5-pound container costing \$6.99. (California Farm Bureau Federation)
3. These companies can demand higher prices because of factors such as brand name, packaging, advertising, and processing costs. Most consumers will pay these higher prices because of the ease of consumption compared to raw foods that have to be cooked at home.
4. Eventually, these prices may increase to a point where consumers are no longer willing to purchase the product. Instead of buying expensive processed foods, consumers may purchase raw foods from the local level to save on costs.

Interest Approach

The purpose of this interest approach is to lightly discuss the differences students already know about raw and processed foods. This information CAN be used later in the lesson, but the purpose is to get them merely thinking about the contrast of the two. Distribute paper plates, marked with a "P" or "R," to students as they enter the classroom. Students will be throwing their paper plates into the middle of the circle then selecting a new plate when the cue is given. Before students enter the room, re-arrange the desks to form a circle; students can sit on the floor in front their desks for this activity.

It's great to see everyone today. Each of us has a paper plate with either the letter "R" or the letter "P" written on it." "R" represents raw food products found at a grocery store. "P" represents processed foods found at the grocery store.

When I say ITEMIZE, you will have 15 seconds to write down the name of a food product. If you have a plate with the letter "R" then you will list a raw food product. If you have a plate with the letter "P" then you will list a processed food product. After you write the food product, place your initials next to it. What questions are there? ITEMIZE!

Stop! Now let's throw our plates into the center of the circle.

Students throw plates into center of the circle.

You will find a different plate from the one we threw in and write another food item. Once you are finished, wait for instructions to throw again. How can I clarify? Let's go!

After repeating this four or five times, have students group up with like plates. Ask them to think of how many differences there are between raw and processed foods.

Let's list some your responses on the writing surface. While I'm doing this on the writing surface, jot down the same list on the paper plate that you have.

Write student responses on the writing surface keeping the raw and processed foods in separate columns. For **raw products**, students should have items such as tomatoes, sugar cane, eggs, milk, etc.

Once the list is gathered, have students draw a line connecting all the processed foods that contain eggs, for example. Lead them through this process by modeling it on the writing surface.

Let's look at a popular **raw product** – eggs. Draw a line connecting all the processed foods that contain eggs. We'll do this together.

After matching the items, pose the following question:

Who do you think makes the largest profit? The farmer who raises the hens that lay the eggs or one of the manufacturing companies who use the eggs for their product?



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Allow time for students to give their opinion.

Why do you think this?

Today we will be learning how purchasing raw and/or processed foods affects our economy.

Be prepared to take notes and work diligently throughout today's lesson because we will be discovering new and exciting economic concepts. While we move back to our seats be thinking about some food products that your parents frequently buy from the grocery store.

Summary of Content and Teaching Strategies

Objective 1. Discuss the economics of processed versus **raw products**.

We buy a wide range of processed and raw foods. As we share different food products we buy at the grocery store, respond by providing a thumbs-up or thumbs-down on those items we would prefer to buy.

Allow time for students to respond after calling out each item.

Snack cakes
Chips
Donuts
Apples
Steak
Milk
Bologna
Bananas
Canned meat

As we look at those items, we see that many are probably processed or packaged foods. Our American culture and economy play into the idea of a processed food being superior to a raw one. In other countries, that is not the case. Actually, in Japan and other Asian cultures, foods that are raw are more preferred to packaged foods.

Some Japanese believe that a food wrapped in cellophane is another way a marketer tries to sell spoiled goods. Seriously! While farmer's markets are often preferred by the pickiest of shoppers, we are a far cry away from the Asian cultures' take on foods.

Use the *Me, You, Us e-Moment®* to share information found in **MS.FS.2.8.AS.A**. In this activity, students will record their own thoughts, share their responses with a partner then share with the whole class.

Let's talk about the mindset we have with raw and processed foods. We'll examine how this affects our economy.

Distribute **MS.FS.2.8.AS.A**.

In front of us, we will find worksheets with a table on it. One side is raw and the other, processed. On each side, list the affects we see – or maybe overlook. For example – Twinkies are processed foods that have a long shelf life, whereas raw strawberries may rot quickly. We'll take three minutes.

Now, partner up with someone else. Combine your ideas by circling the items that both of you believe to be the "correct" effects. Be ready to share.

Let's have a recorder. Recorder, create the table on the board. Let's all fill it in with our best thoughts.

Allow the opportunity for students to debate and defend their answers/thoughts to gain more buy-in to the content.

Thanks for the effort and depth of thought. This list will help us in understanding how our economy is affected by products we purchase.

On the delivery of the content, make an effort to revisit the table and acknowledge correct thoughts and ask how to make incorrect ones correct. Distribute **MS.FS.2.8.AS.B** and have students fill in the blanks using **MS.FS.2.8.AS.B** as a guided note sheet.

Today we learned that when prices increase, consumers reach a point where they are no longer willing to purchase the product. A similar principle can be applied to our relationships with others. When negative behaviors increase, others will reach a point of severing ties with an individual, just as high product prices turn people away.



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Review/Summary

Marceau Moment

The *Marcel Marceau e-Moment®* capitalizes on the silence of mime and the brain's associative capabilities. By employing this strategy you'll cement your content into students' minds. It works like this: Students create mime motions for the content. Others guess the answer and explain how the motion helps to remember the content. The *Marcel Marceau e-Moment* lets students create their own motion. By using a *Marcel Marceau e-Moment* you utilize students' visual-spatial and bodily-kinesthetic intelligences as well as their ability to seek patterns and make meaning.

One of the most interesting skills is miming. These performers can do so much with no words at all! Because we have acquired this knowledge about raw and processed foods so quickly this morning, let's see if we can communicate it to others using no words, just miming. On the word GO, get into groups of three and look up front. Choose either raw or processed foods. Create a 30-second bit about the food chosen and whether it is raw or processed using only miming. Be prepared to share and mime it for us all after three minutes. What questions are there? GO!

Share and thank them.

Awesome! We have definitely created a huge supply of knowledge and a great demand for learning. Earlier, we discovered the ways that foods are processed. Today we determined how those processes affect the economics of the food around us! We have also learned that negative behaviors can affect the friendships that we make in our lives and how that is similar to the effect that the price of food products have on demand. It is time to celebrate the success of learning all about food processing and its effects on us as consumers!

Celebrate their learning by having the class applause or snap their fingers.

Application

Extended classroom Activity:

Have students research different types of raw and processed foods that can be purchased in a grocery store. Or students could compare the price of a raw vegetable or fruit versus its processed version. Students should compare the price per pound of the raw version versus the frozen version. In the report, include the amount of goods sold in the United States per year and the price per unit. Have students present these as eyewitness reports upon completion of research.

FFA Activity:

The Ag Sales CDE utilizes a sales and promotion piece that allows students to sell a product from the Ag Production and Processing category. To explore this portion of this SAE, have students pick a food product that has or has not been processed and create a promotion to sell this product to a local grocery store for sales to customers.

SAE Activity:

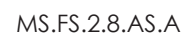
As middle school students, throughout SAE activities, students should be developing an SAE on an exploratory basis. Using the SAE cards from the Core Catalog or the list of potential SAEs from www.ffa.org have students determine which SAEs in the food production and processing areas are sold raw and which are sold processed.

Evaluation

MS.FS.2.8.ASSESS.A

Answers to Evaluation

1. A
2. C
3. B
4. C
5. A



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Guided Notes Sheet

The farmer is the one who produces the _____. A _____ is a food product that has not had any processing steps performed. It enters the store the same way that it was when it was removed from the plant.

In a typical economy, the _____ would be the one to receive the majority of the money that is earned when a consumer purchases something from a store. In the agricultural industry, the economics are actually different. To produce the food we know today, many costs are factored into the price of food, none of which come from the farmer.

The farmer is known as a _____. A _____ is an individual or company which is not influential enough to affect the price of an item.

Therefore, even when raw products are sold at farmer's markets or local grocery stores straight from the fields, prices on raw foods are significantly lower because the individual farmer takes the price he can get for his sales. This only changes if the farmer offers specialty products such as organic or rare foods.

_____ are often hard to sell because of their short shelf-life and inability to be sold in areas a great distance away. Instead, food product companies turn to _____ to sell. _____, or food products that have undergone physical or chemical treatment resulting in a _____ in the original state of the food. A majority of the retail costs consumers pay at the store goes to processing, packaging, marketing, sales and distribution, taxes, and wholesale and retail markup to cover such expenses as labor and store operation.

Food processing companies, on the other hand such as General Mills or Kraft, are _____. _____ are an individual or company that is influential enough to affect the price of an item.

These companies can demand _____ because of factors such as brand name, packaging, advertising, and processing costs. Most consumers will pay these higher prices for processed products because of the ease of consumption compared to raw foods that have to be cooked at home.



Discuss the economics of processed versus raw products.

The farmer is the one who produces the raw product. A raw product is a food product that has not had any processing steps performed. It enters the store the same way that it was when it was removed from the plant.

1. In a typical economy, the main producer would be the one to receive the majority of the money that is earned when a consumer purchases something from a store. In the agricultural industry, the economics are actually different. To produce the food we know today, many costs are factored into the price of food, none of which come from the farmer.
2. For example: Nectarine farmers are receiving only about 4 cents per pound of fruit, while consumers pay an average of \$1.99 per pound at the grocery store. The farmers' share accounts for only 2 percent of the price consumers pay. Packing charges, pre-cooling and handling at the packing shed, and sales commissions account for 20 percent of the costs, while retail markup accounts for 78 percent of the costs. (California Farm Bureau Federation)
3. The farmer is known as a price-taker. A price-taker is an individual or company that is not influential enough to affect the price of an item.
4. Therefore, even when raw products are sold at farmer's markets or local grocery stores straight from the fields, prices on raw foods are significantly lower because the individual farmer takes the price he can get for his sales. This only changes if the farmer offers specialty products such as organic or rare foods.



Raw products are often hard to sell because of their low shelf-life and inability to be sold in areas a great distance away. Instead, food product companies turn to processed products to sell. Processed products are food products that have undergone physical or chemical treatment resulting in a substantial change in the original state of the food. A majority of the retail costs consumers pay at the store goes to processing, packaging, marketing, sales and distribution, taxes, and wholesale and retail markup to cover such expenses as labor and store operation.

1. Food processing companies, on the other hand, such as General Mills or Kraft, are **price makers**. **Price makers** are an individual or company that is influential enough to affect the price of an item
2. For example, on processed products such as a fig bar/cookie, fig growers receive about 14 cents from a \$3.79 bag of the popular fig bars – or about 3.7 percent. In Red Vines candy, wheat farmers receive 8 1/2 cents or about 1.2 percent of the 5-pound container costing \$6.99. (California Farm Bureau Federation)
3. These companies can demand higher prices because of factors such as brand name, packaging, advertising, and processing costs. Most consumers will pay these higher prices for processed products because of the ease of consumption compared to raw foods that have to be cooked at home.
4. Eventually, these prices will increase to a point where consumers are no longer willing to purchase the product. Instead of buying expensive processed foods, consumers will purchase raw foods from the local level to save on costs.



Name _____

Directions: Read each statement and write the letter of the correct choice in the blank provided.

1. _____ **Raw products are products that are not altered in any way, shape, or form.**
A. True
B. False
2. _____ **Price-takers provide a price for consumers to take when purchasing products.**
A. True
B. False
3. _____ **Which type of product has undergone a physical or chemical change?**
A. Raw product
B. Price-taker Product
C. Processed Product
D. Price-maker Product
4. _____ **Which percent of the retail price of the product do farmers actually receive?**
A. 10%
B. 90%
C. 2%
D. 25%
5. _____ **Raw products are often hard to sell because of their low _____ and inability to be sold in areas a great distance away.**
A. shelf life
B. tolerance for heat
C. moisture levels
D. caloric count