

Food's Amazing Journey



Farmer



Processor



Trucker



Grocer

4th Grade Lesson

Michigan Farm Bureau Promotion and Education



Food's Amazing Journey

Michigan Farm Bureau Ag in the Classroom - Connections to Michigan Content Standards

4th GRADE LESSON

History

H3 History of Michigan (Beyond Statehood)

Use historical thinking to understand the past.

4-H3.0.1 Use historical inquiry questions to investigate the development of Michigan's major economic activities (agriculture, mining, manufacturing, lumbering, tourism, technology and research) from statehood to present. (C, E)

4-H3.0.3 Describe how the relationship between the location of natural resources and the location of industries (after 1837) affected and continues to affect the location and growth of Michigan cities.

4-H3.0.5 Draw upon stories, photos, artifacts, and other primary sources to compare the life of people in towns and cities in Michigan and in the Great Lakes region during a variety of time periods from 1837 to the present (e.g. 1837-1900, 1900-1950, and 1950-2000). (G)

4.H3.0.8 Describe past and current threats to Michigan's natural resources; describe how Michigan worked in the past and continues to work today to protect its natural resources. (G, C, E)

Economics

E1 Market Economy

Use fundamental principles and concepts of economics to understand economic activity in a market economy.

4-E1.0.1 Identify questions economists ask in examining the United States (e.g. What is produced? How is it produced? How much is produced: Who gets what is produced? What role does the government play in the economy?)

4-E1.0.2 Describe how some characteristics of a market economy (e.g. private property rights, voluntary exchange, competition, consumer sovereignty, incentives, specialization).

4.E1.0.4 Explain how price affects decisions about purchasing goods and services (substitute goods).

4.E1.0.6 Explain how competition among buyers results in higher prices and competition among sellers results in lower prices (e.g. supply, demand).

4.E1.0.7 Demonstrate the circular flow model by engaging in a market simulation which includes households and businesses and depicts the interactions among them.

Food's Amazing Journey

Presented by members of Michigan Farm Bureau

Written by: Laurie Isley and Deb Schmucker

I. Introduction – 1 to 2 minutes

This lesson is designed to help 4th graders understand the economics of farming by following the food system from farmer to grocer.

1. Introduce yourselves and show where you are from (use map or hand).
2. Today we're going to talk about food's amazing journey. Food goes through a lot of changes and to a lot of places before it appears on shelves at grocery stores. Today we will learn how food goes from the field or farm to stores, and the role that economics play in that process.
3. What is economics? Economics is defined as the study of the production, distribution and consumption of products & services. Production means making/growing something. Distribution means moving products from place to place and consumption is use of the products. (ex: such as the cereal you ate for breakfast)

Show poster of definition and post on wall (5 minutes)

First, start with questions...

- Do any of you know a farmer?
- Have you ever visited a farm?
- What products come from farms - (list on the board)
- What about non-food products?

Ex: cotton for clothes, biodegradable packing material from corn, leather from animals

Often times, children list only "food" products. This is a great opportunity to inform them of all the non-food and by-products farms generate. Items might include by-products from soybeans and livestock.

Part I – We're farming now!

**Distribute baggy with 11-17 kernels per student.
Distribute lab sheet (3 minutes)**

1. When farmers sell their products they usually get paid a set amount for it, ex. 100 wt., ton, etc. This is something they don't have much control over. The farmer can't put a price tag on his/her bushel of corn. After they get paid, they still have to pay their expenses on that crop or product. Today, each of you is a farmer and this bag of corn represents your harvest. Ordinarily you would be paid in money not in kernels but for this activity we will use the kernels as cash. You will notice that not all of you have the same number of kernels – this is because farmers don't always harvest the same amount of product. What might affect the yield or amount of product a farmer had to harvest? (weather, insects...) Now it's time to pay your "input" costs. (What it cost you to grow your crop.) Let's start with the obvious ones. _____ & _____ will be our bill collectors. They'll come around and collect your corn cash.

Count the kernels of corn in your bag and then write that number on the first line on part one of the lab sheet.

Have students write the number of kernels of corn in their bag on line one of part 1 on the lab sheet. (10 minutes)

2. Each kernel of corn in your bag represents money. Farmers have "input" costs when they farm. They have to sell for the price offered by the company they sell to.

3. This year, fertilizer and crop protectant prices rose and you had to pay 2 kernels of corn for fertilizer and herbicides. (Instruct them to take 2 kernels of corn out of bag).

Why do farmers use these products?

1) Fertilizer – nutrition

2) Herbicides – bugs, disease, weeds, etc.

1. Seed for planting this year cost you 3 kernels of corn.

(instruct them to take three kernels of corn out of the bag).

2. Show pictures of equipment – tractor, combine and corn planter.

a. Of course, we don't plant our crops by hand we need machinery (show posters).

b. Elaborate on tools and their use.

c. New costs – purchase, interest, fuel etc.

d. Used costs – repairs, fuel, interest, etc.

e. Your machinery cost was another 2 kernels.

Show equipment pictures and briefly discuss their use.

Kids generate ideas, then you fill in answers. (3 minutes)

4. We also need someplace to raise our crop. We have to have land or greenhouses/barns. If we buy our land we pay interest, land payment and taxes. If we rent, we pay money to a landlord to use their land. This will cost you 2 more kernels.
5. Can you think of other expenses a farmer might have? Such as insurance, taxes, repairs, improvements, labor etc. (Instruct them to take 1 more kernel out of the bag).

Total kernels taken=10

Write that on the second expense line of your worksheet.

Everything you have left is your profit for that bushel.

Count what you have left and write that number on the third line of part 1 on your lab sheet.

"How many kernels did you make this year? (Students have varying amounts of kernels in each bag. Some students did well this year while others may not have many kernels left). Elaborate – drought, disease – when farmers don't make money. Other years, when input prices are low, weather is good and prices high – farmers can do quite well.

Food's amazing journey lab sheet, part 1. Show sheet with example of part 1.

Part II – Summing It Up!

After all the expenses have been added up, instruct the student to complete the lab sheet for the corn harvesting activity. Next to "number of kernels harvested" fill in the number of kernels initially in the bag before input costs. Next to "number of kernels paid in expenses" fill in the number of kernels they took out of the bag to cover expenses. Next to "number of kernels left (profit/loss)" fill in the total number of kernels left subtracted from the number of kernels they started with. Then, next to "multiplied by \$0.10 each, equals profit per bushel" fill in the total after multiplying the number from blank three by \$0.10.

Collect leftover corn.

Part III – My Job Is...

Pass out cards indicating farmer, grocer, trucker, and processor. Make sure there are four farmers and the rest distributed equally among students. Then, explain what role each "person" plays in food's amazing journey. A summary appears on the back of each card. (10 minutes)

It takes a lot of people to complete food's journey; from the farm to the grocer, farmers, truckers, processors and grocers all participate in food's journey. Today we are going to create a product and take it through this "journey." Our product is G.O.R.P. Does anyone know what that is? (Guesses) It stands for Good old raisins and pretzels. We're going to add a few extras too. We will produce, process and transport our product from the farmer to the grocer. Briefly review jobs based on cards and locations chosen in room.

Distribute the product: M&Ms, pretzels, cereal, raisins. Also hand out pans, nut cups, large spoons, towelettes for washing hands before food is handled.

Next, distribute the "product" (M&M, pretzels, raisins, cereal mixture) to the farmers. After the farmer has harvested their crop it is ready for the trucker to pick it up. The truckers must then load the product and deliver it to the processor. (Transfer "product" from farmer to trucker). The processor's job is to "process" (explain processed food) the raw product into something "ready-to-eat." He then delivers the product to the grocer. The grocer is responsible for creatively presenting the product and repackaging the product in a smaller quantity, such as meat. They must present in a way that entices the consumer and distribute the G.O.R.P. in nut cups for each of the students in the class.

At every stop, explain the role of each person and their contribution to the product's journey.

While different groups are completing their project – talk to the whole group about additional steps that would take place.

Have each group of students stay in their seats until it is their groups' turn. Students should then gather at a designated area after directions. Explain how to make G.O.R.P. & move through activity.

Part IV – Food from farm to you

Refer to part 2 of the lab sheet. (5 minutes)

Now direct their attention to part 2 of the handout. Ask them to list three more parts or individuals who might be involved. Packaging, advertising, accountant, etc. Discuss answers.

Who or what else might have been involved in this process?

Cereal boxes cut into puzzle pieces (1 puzzle per pair of students)

Write answers on part 3 of the lab sheet.

Part V – Piecing the Puzzle Together

(Have the students work in pairs) Next, pass out envelopes containing a cereal box. Give the class an introduction of what the puzzle is before allowing them to start. Explain the cost breakdown of a product, i.e. the farmer doesn't receive the cost of a box of cereal.

How much does a box of cereal cost? For this example, we are going to assume we found a great sale and the cost was \$1.00 per box. (This section of the lesson may be confusing for kids. Be sure to explain clearly and pay particular attention to detail.)

Explain each piece of the puzzle and how it relates to processing of the product.

Write the correct answers in part 3 of the lab sheet under the actual amounts.

After explaining the puzzle, instruct them to piece it together. After the majority of the class has completed the task, explain how to match the costs listed on the boxes to the categories in part 3 on your lab sheet. For example, you may think that advertising is \$.30 of each \$1.00 spent on food – so you would write \$.30 on the advertising line. After you use a piece of the puzzle turn that piece over. When you finish, we will share the actual amounts.

(Allow enough time for students to analyze the material, but stop them before they become frustrated. Explain the correct answers for each of them.)

Summary

Remember our definition of economics? Today we have covered the production of a product by paying inputs in corn kernels, the distribution by making G.O.R.P. and the consumption through the cereal box activity. So even though economics may seem "boring," when we recognize that it involves our daily food, we realize how important it really is. Today, we have learned what costs farmers have to pay, how food gets from the farm to the store, the people involved along the way, and some of expenses that become a part of your cost for the final product.

“Foods Amazing Journey” Lab Sheet

Part 1

1. For the corn harvesting activity, fill in the numbers below to show your profit or loss.

Number of kernels harvested	_____
Number of kernels paid in expenses	_____
Number of kernels left (profit or loss)	_____
Multiplied by 10¢ each, equals profit per bushel	\$ _____

Part 2

2. The “Food From Farm to You” activity had four parts: the farmer, trucker, processor, and grocer. List three more parts or individuals who might have been involved.

- A.
- B.
- C.

Part 3

3. Using your cereal box puzzle, match the costs listed with the categories below. Make your best guess first, and then write in the actual amount.

	<i>Your guess</i>	<i>Actual amount</i>
A. Farm value	_____	_____
B. Fuel, electricity, rent (Processing costs)	_____	_____
C. Advertising	_____	_____
D. Labor (Processing costs)	_____	_____
E. Transportation	_____	_____
F. Interest and taxes	_____	_____
G. Packaging (Processing costs)	_____	_____
H. Repairs and depreciation	_____	_____
TOTAL	\$1.00	\$1.00

“Foods Amazing Journey”

Lab Sheet Answers

Part 1

1. For the corn harvesting activity, fill in the numbers below to show your profit or loss.

Number of kernels harvested	_____
Processor	_____
Number of kernels paid in expenses	_____
Number of kernels left (profit or loss)	_____
Multiplied by 10¢ each, equals profit per bushel	\$ _____

Part 2

2. The “Food From Farm to You” activity had four parts: the farmer, trucker, processor, and grocer. List three more parts or individuals who might have been involved.

- A.
- B.
- C.

Part 3

3. Using your cereal box puzzle, match the costs listed with the categories below. Make your best guess first, and then write in the actual amount.

	<i>Your guess</i>	<i>Actual amount</i>
A. Farm value	_____	_____ \$.16
B. Fuel, electricity, rent (Processing costs)	_____	_____ \$.09
C. Advertising	_____	_____ \$.07
D. Labor (Processing costs)	_____	_____ \$.31
E. Transportation	_____	_____ \$.06
F. Interest and taxes	_____	_____ \$.10
G. Packaging (Processing costs)	_____	_____ \$.15
H. Repairs and depreciation	_____	_____ \$.06
TOTAL	_____ \$1.00	_____ \$1.00

“Foods Amazing Journey” 4th Grade Kit Packing List

Based on 35 students per class
Each kit designed for conducting 2 presentations

NEED:

- Lesson outline
- Economics definition poster
- 60 baggies filled with 11-17 kernels of corn
- 3 laminated posters of equipment (tractor, combine and corn planter)
- 60 lab sheets for part I, II & III
- Varying colored designation cards (farmer, grocer, trucker and processor – 9 of each)
- M&M's, pretzels, cereal and raisins
- 2 large aluminum pans for processors
- 9 small cardboard carriers for farmers and truckers
- 60 nut cups
- 4 large spoons
- 1 container of towelettes for washing hands
- 18 cereal boxes cut into puzzle pieces (1 per pair)



Farmer



Farmer



Farmer



Farmer



Farmer



Farmer



Farmer



Farmer

Responsible for producing the raw product and getting it to the manufacturer.

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Processor



Processor



Processor



Processor



Processor



Processor



Processor



Processor

Responsible for mixing together the raw product into a finished product.

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Trucker



Trucker



Trucker



Trucker



Trucker



Trucker



Trucker



Trucker

Responsible for transporting the manufactured product to the grocery store.

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Grocer



Grocer



Grocer



Grocer



Grocer



Grocer



Grocer



Grocer

Responsible for displaying the product and providing it for the consumer.

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