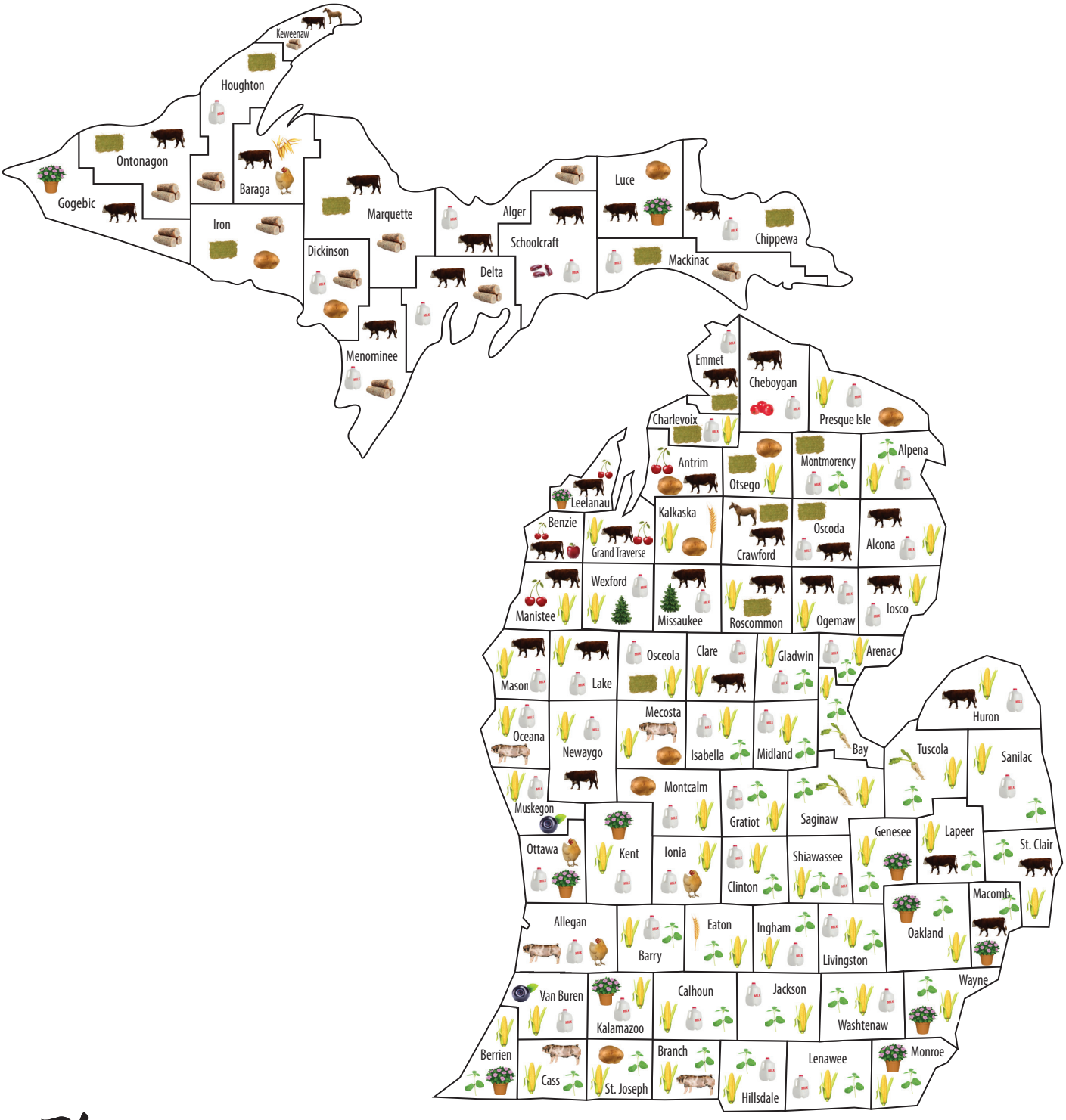
Michigan Food: From Farm to You



Michigan Agriculture in the Classroom

www.miagclassroom.org

Table Of Contents

Michigan Agriculture in the Classroom

Lesson Outline

Objective:

Students will:

1. Locate the different regions of Michigan and the five Great Lakes.
2. Understand and employ cardinal directions.
3. Define agriculture products, including examples.
4. Identify what major commodities are grown in each region of Michigan.
5. Describe food processing and recognize the general steps.
6. Discuss careers related to agriculture and food processing.

Full Lesson Time
Approx. 1 hr

Grade Level
3

Link to Posters
MFB website link

The lessons contained within this book can be used as independently from each other, or together. If you wish to use the lessons independently, there are links located in the left column on the lesson pages that can be used for extension activities.

Lesson Outline

1. Regions of Michigan
   - Michigan in the Midwest
   - The Great Lakes and two peninsulas; the effect of the Great Lakes on the climate of Michigan.
   - Cardinal Directions
   - Identify the Upper Peninsula, Northwest, Northeast, Southwest, Southeast, and Central regions.
2. Michigan Products
   - What is a commodity?
   - Where are commodities found in Michigan?
   - Product trivia game
3. Processing a Product
   - What is processing?
   - Processing puzzle activity and discussion.
4. Careers in Agriculture
   - How many types of careers are in agriculture and how many agriculture related jobs are in Michigan?
   - Learn about five different agriculture careers related to the products used in the Processing Puzzle.
5. Conclusion
   - Review cardinal directions, the Great Lakes, regions of Michigan, what a product is, what processing is, and agricultural careers.

Make sure to download the posters “Map of Michigan with regions” and the “Processing Poster” off of Michigan Farm Bureau’s website before beginning the lesson.

Regions of Michigan

Objective:

Students will:

1. Identify the five Great Lakes.
2. Distinguish different regions to which Michigan belongs.
3. Describe climates in Michigan.
4. Use cardinal directions to desribe relative locations.

Time: 10-15 minutes

Grade Level: 3

Link to Posters
MFB website link

Curriculum Standards

Science:

3-ESS2-2

Social Studies:

3-G1.0.1, 3-G1.0.3, 3-G2.0.2.

Other Resources

- Michigan Agriculture Facts - https://www.michfb.com/MI/Ag_Ed_and_Leadership/Ag_Facts/Michigan_Agriculture_Facts/
- More about climate - http://www.education.noaa.gov/Climate/
- More about weather - http://www.nws.noaa.gov/os/edures.shtml

Materials Needed

- ☐ Downloaded Poster Map of Michigan with regions
- ☐ Projector
- ☐ White Board
- ☐ Erasable Markers
- ☐ Products Produced by Region worksheet (p. 4)
- ☐ Colored pencils or crayons
- ☐ Globe (if available)

Background

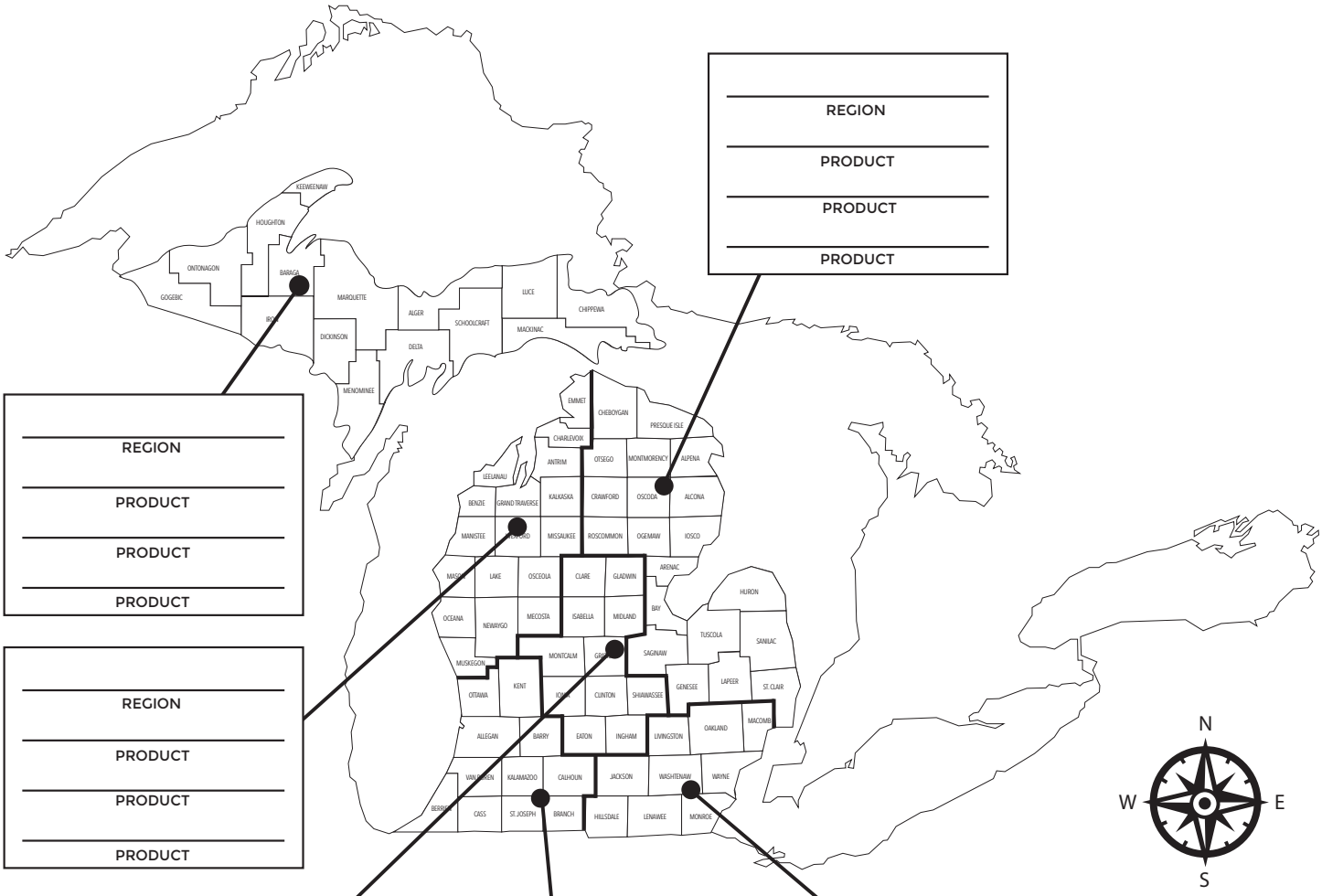
Michigan is located within the Midwest region of the U.S. It is a unique state being surrounded by four of the five Great Lakes, which creates two peninsulas connected by the Mackinac bridge. Being surrounded by the lakes creates different climates across the state, allowing for us to produce many different agricultural commodities. Cardinal directions are used to describe the different regions of the state.

Directions/Discussion Guide

1. Give a background on Michigan within the Midwest of the U.S.
2. Project Michigan map onto whiteboard (or smart board).
3. Identify the Great Lakes and how they make Michigan unique, giving the state 2 peninsulas.
   - **Q:** Can anyone name the Great Lakes? **A:** HOMES (acronym to remember the lakes): Huron, Ontario, Michigan, Erie, and Superior.
   - **Q:** What connects the two peninsulas of Michigan? **A:** Mackinac Bridge. Has anyone been on the Mackinac Bridge?
   - **Q:** What country is north of Michigan? **A:** Canada
4. Use the word bank on the poster to label the lakes and Canada on the whiteboard. Pass out the Products Produced by Region worksheet.
5. Michigan has a special climate due to the lakes.
   - **Q:** What is climate? **A:** The weather conditions typical to our area.
   - The varying climate across the state allows us to produce many different commodities.
   - **Q:** Does anyone know how many? **A:** 300 (MDARD, 2016).
   - **Q:** Does anyone know what a commodity is? **A:** A raw agricultural product that can be bought and sold
   - Michigan is the 2nd most diverse state in agriculture commoditities. This provides over $100 billion (MDARD 2014) to Michigan's economy.
6. Explain the cardinal directions and how these are used to navigate points on a map or on the Earth. Label the cardinal directions on the board.
   - Example **Q:** Which direction is Lake Superior from Lansing? **A:** North.
7. Direct students to color in and label the different regions on their maps. Use the wordbank on the poster to label the different regions of Michigan on the whiteboard to check everyone's work.
   - Southwest yellow, southeast purple, central red, northwest green, northeast orange, Upper Peninsula blue.

WORD BANK

Huron	Northwest	Corn
Ontario	Northeast	Tomato
Michigan	Central	Beans
Erie	Southeast	Milk
Superior	Southwest	Beef
Upper Peninsula	Canada	



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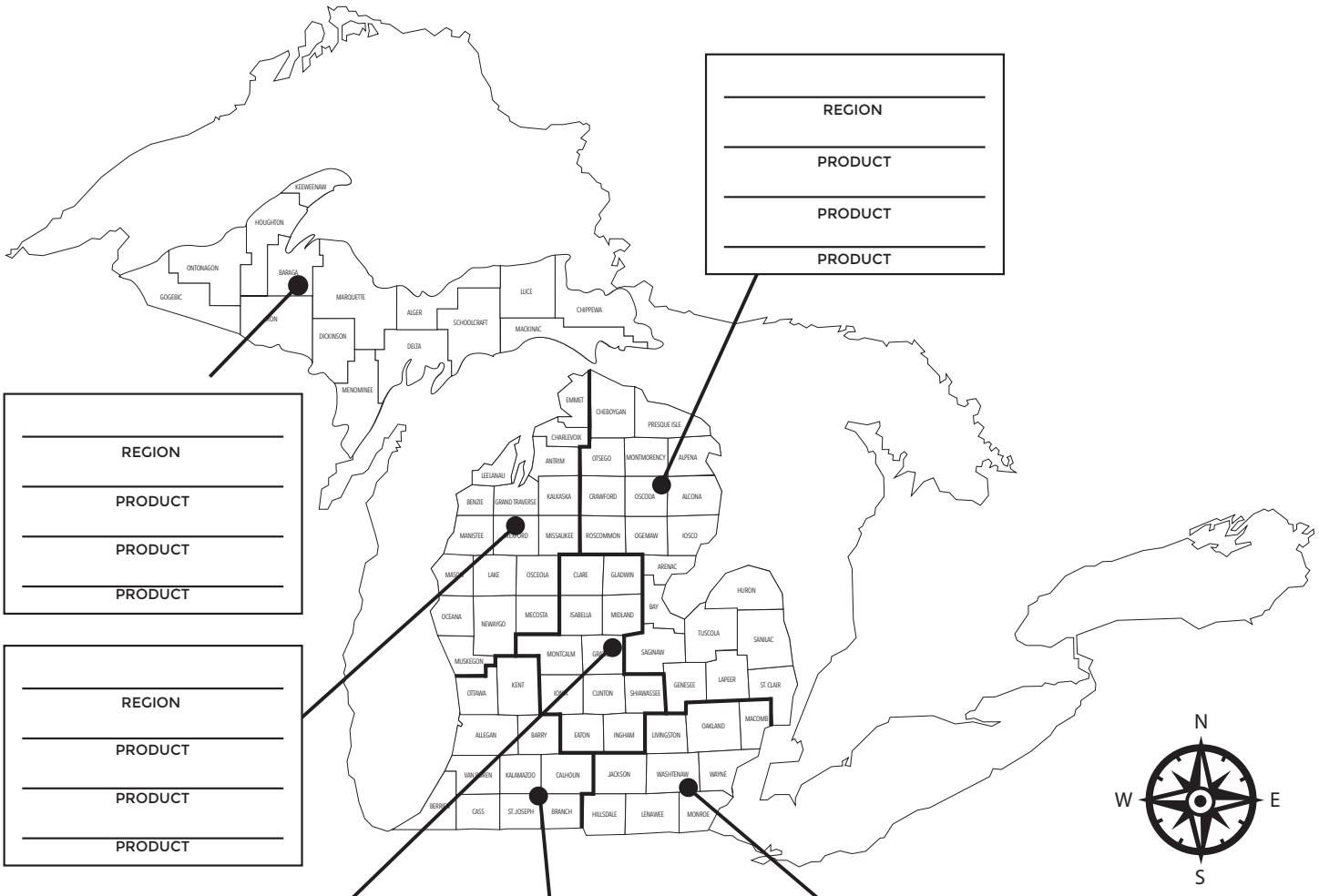
NAME _____

PRODUCTS PRODUCED BY REGION

LAB SHEET #1



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Michigan Agriculture in the Classroom

Michigan Products

Objective:

Students will:

1. Describe different regions of Michigan.
2. Recognize agriculture as a major economic activity in Michigan.
3. Define agriculture products and identify examples.
4. Discuss major products grown in each region of Michigan.

Time: 15 minutes

Grade Level: 3

Link to Posters
MFB website link

Curriculum Standards:

Science:

3-ESS2-2

Social Studies:

3-G2.0.1, 3-G4.0.1

Other Resources

- Operation: Dairy, the game - http://www.operationdairy.com/
- From Grass to Grain, Exploring What [Beef] Cattle Eat game - http://www.explorebeef.org/GrasstoGrain.aspx
- Information about Beef products - http://viewer.epageview.com/Viewer.aspx?docid=668e5f66-a159-4948-95c1-a2ad00c00515#?page=0
- Sue's Tomato Farm game - www.agame.com/game/sue-tomato-factory

Materials List

- ☐ Downloaded poster Map of Michigan with regions
- ☐ Projector
- ☐ Whiteboard
- ☐ Markers
- ☐ Samples of tomato products
- ☐ Samples of milk products
- ☐ Samples of corn products
- ☐ Samples of bean products
- ☐ Products Produced by Region worksheet (p. 4)
- ☐ Michigan Commodity Map worksheet (p. 7)

Background

Michigan farmers grow and raise many different commodities. A commodity is a raw agricultural product that can be bought and sold, such as wheat that is then milled (or ground) into flour. Different regions of the state raise different commodities due to different geographic or climate conditions of the region. This lesson reviews some of Michigan's major agriculture commodities and where they are grown within the state.

Directions/Discussion Guide

1. Define a commodity:
   - A raw agricultural product that can be bought and sold.
2. Project the Michigan map onto the whiteboard, pass out the Michigan Commodity Map worksheet and have students take out their partially filled out Products Produced by Region worksheet.
3. Play the product trivia game with the students:
   - Start by displaying the samples of products for the commodity.
   - Use the commodity information below to give students hints about what commodity is an ingredient in these products, but don't give away the answer.
   - Allow students to guess what commodity it is.
   - Once they guess correctly, show on the Michigan map which region the commodity comes from and have them write it on the product line for that region on their Products Produced by Region map.
   - Have the students use their Michigan Commodity Map to find other commodities for that region to record on the other product lines.
   - Move on to the next product and repeat.

Commodity Information:

4. **Beef**

   Hints:
   - This comes from cattle, is often grilled in the summer, and can be made into hamburgers.

   Other Facts:
   - There are many cuts of beef we enjoy such as steaks and roasts.
   - Beef is grown all over Michigan but a lot are grown in the Upper Peninsula.
   - Christmas Trees are also grown in the U.P. and Michigan is 3rd in the nation for Christmas Tree porduction (USDA NASS, 2012).
5. **Tomatoes** (show samples of tomato products)

   Hints:

Michigan Agriculture in the Classroom

Michigan Products

Continued

Other Resources

- Ag Across America game - http://www.myamericanfarm.org/classroom/games/?gid=ag_across_america

- Can be red or green, grows on a vine, and can be used for sandwiches or on salads or even made into products like these.

Other Facts:

- It may not be on the commodity map, but lots of tomatoes are grown in Southeast Michigan.
- Lots of vegetables are grown in southern Michigan because the soil is made up of sand and muck (lots of humus soil containing high amounts of organic matter).
- They are both a fruit and a vegetable: biologically tomatoes are fruits, nutritionally (and legally) they are considered vegetables.

6. **Milk** (show samples of milk/dairy products)

Hints:

- This is very important to stay healthy, it's good for your bones, it comes from cows, and lots of people like it chocolate.

Other Facts:

- Cows are milked all over the state but two major areas are the thumb (Northeast region) and Central Michigan.
- What are some products that can be made from milk? Yogurt, ice cream, cheese, and more! These are called dairy products.

7. **Dry Beans** (show samples of bean products)

Hints:

- This product is a good source of fiber, it is used in a variety of products, including many Mexican dishes, and sometimes it is made into soup and sometimes it is refried.

Other Facts:

- There are lots of different kinds of beans, can you name a few? A: Soybeans, navy, green beans, kidney, pinto, and black beans.
- Michigan is a top producer in some varieties of beans.
- It may not look like it on the commodity map, but most dry beans in Michigan are grown in the bay area, part of the Northeast.

8. **Corn** (show samples of corn products)

Hints:

- This is a grain used to make products you wouldn't think go together like pop, gum, cereal, ethanol for fuel, and tortillas.

Other Facts:

- Corn is grown all over Michigan and all over the United States. A big portion of Michigan's corn is grown in the Southwest region.

9. **Cherries**

Hints:

- This product is a small, red fruit that can be sweet or tart. Some people like one on top of their bowl of ice cream!

Other Facts:

- Lake Michigan gives the west side a unique climate that is great for raising lots of fruit, everything from peaches to blueberries. Many cherries are grown in the Northwest region.
- Michigan ranks first in the nation in blueberry and tart cherry production (MDARD, 2014).

NAME _____

MICHIGAN COMMODITY MAP

LAB SHEET #2

SECOND

Michigan's ranking for the state with the most diverse agriculture industry in the nation.

9.9 MILLION ACRES

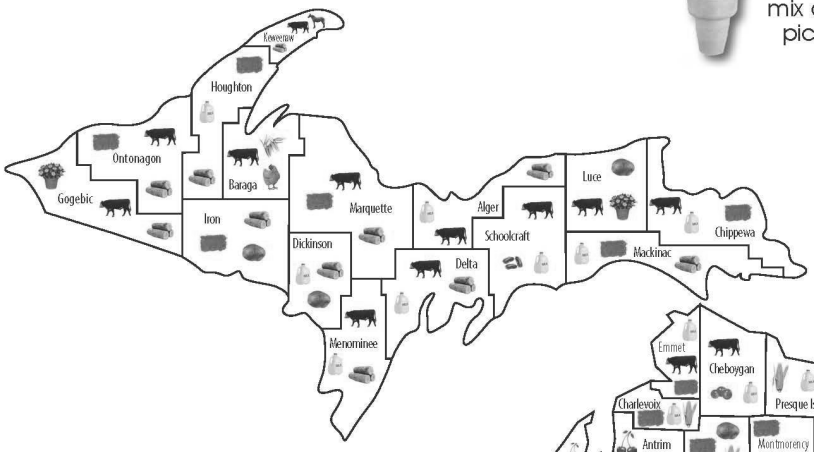
Land in Michigan farms

300

Number of agricultural commodities produced in Michigan

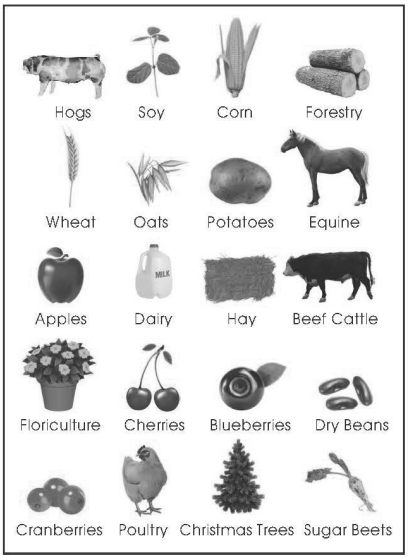
FIRST

Michigan's ranking for the state that produces the most low-fat ice cream mix and grows the most cucumbers for pickles, blueberries and tart cherries.



52,194

Number of farms in Michigan



Processing a Raw Product

Objective:

Students will:

1. Define food processing and discuss the general steps.
2. Describe how resources are combined to produce goods in food processing.

Time: 15-20 minutes

Grade Level: 3

Link to Posters
MFB website link

Curriculum Standards:

Social Studies:

3-G2.0.1, 3-E1.0.4

Materials Needed

- ☐ Downloaded Processing poster
- ☐ Food Products Processing Puzzle worksheet (p. 11)
- ☐ Tape
- ☐ Paper
- ☐ Processing Puzzle pieces printed on cardstock, cut out, and in envelopes labeled by region (Beef - U.P.; Beans - NE; Milk - Central; Tomatoes - SE; Corn - SW)

Background

Many foods have to go through some form of processing before they reach the consumer. Processing is changing or modifying a product into a form that people want to eat or use (emphasize this!) Many products have to go through processing steps just to become ingredients in some other type of food. For example, wheat is milled (or ground) to become flour; milk is homogenized (mixed) and pasteurized (heated) before it can be sold. Let's follow five agriculture products through the stpes of processing to create a taco.

Directions/Discussion Guide

1. Project the processing poster and read the definition out loud.
2. Explain that many commodities must go through processing before becoming usable in forms like chewing gum or nachos.
3. A school in Michigan wants to make homemade tacos and needs all the ingredients to do so.
   - **Q:** What products did we discuss that would go into beef tacos? **A:** Beef, beans, milk for cheese, tomatoes for salsa, and corn for tortillas.
   - These products have to be processed before reaching the school.
4. Divide students into five groups and give each group an envelope of puzzle pieces (the envelopes should be labelled by the region that product came from).
5. These products need to be processed into ingredients for our tacos so I need your help. In your envelope you will find the processing steps for a specific taco ingredient that is produced in the region on your envelope. Work as a group to see if you can put the processing steps in order. Also, your group will need to choose a reporter to share with the class.
6. Have groups tape their puzzle pieces to a strip of paper.
7. After each group finishes, pass out the "Food Products Processing Puzzle" worksheet.
8. Have the reporter from each group talk about their product puzzle and have the rest of the students follow along on the "Food Products Processing Puzzle" worksheet while each group is reporting.
9. Discuss how each final product is brought to the school and all the ingredients are put together to make a taco.

PROCESSING

Changing or ***modifying*** a product into a form that people want to eat or use.

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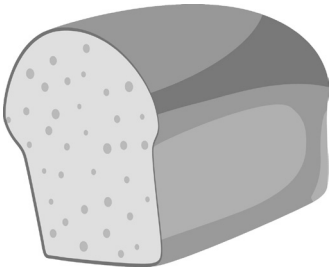

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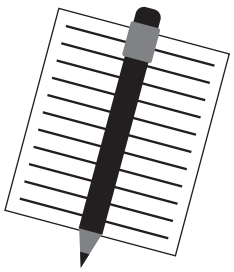

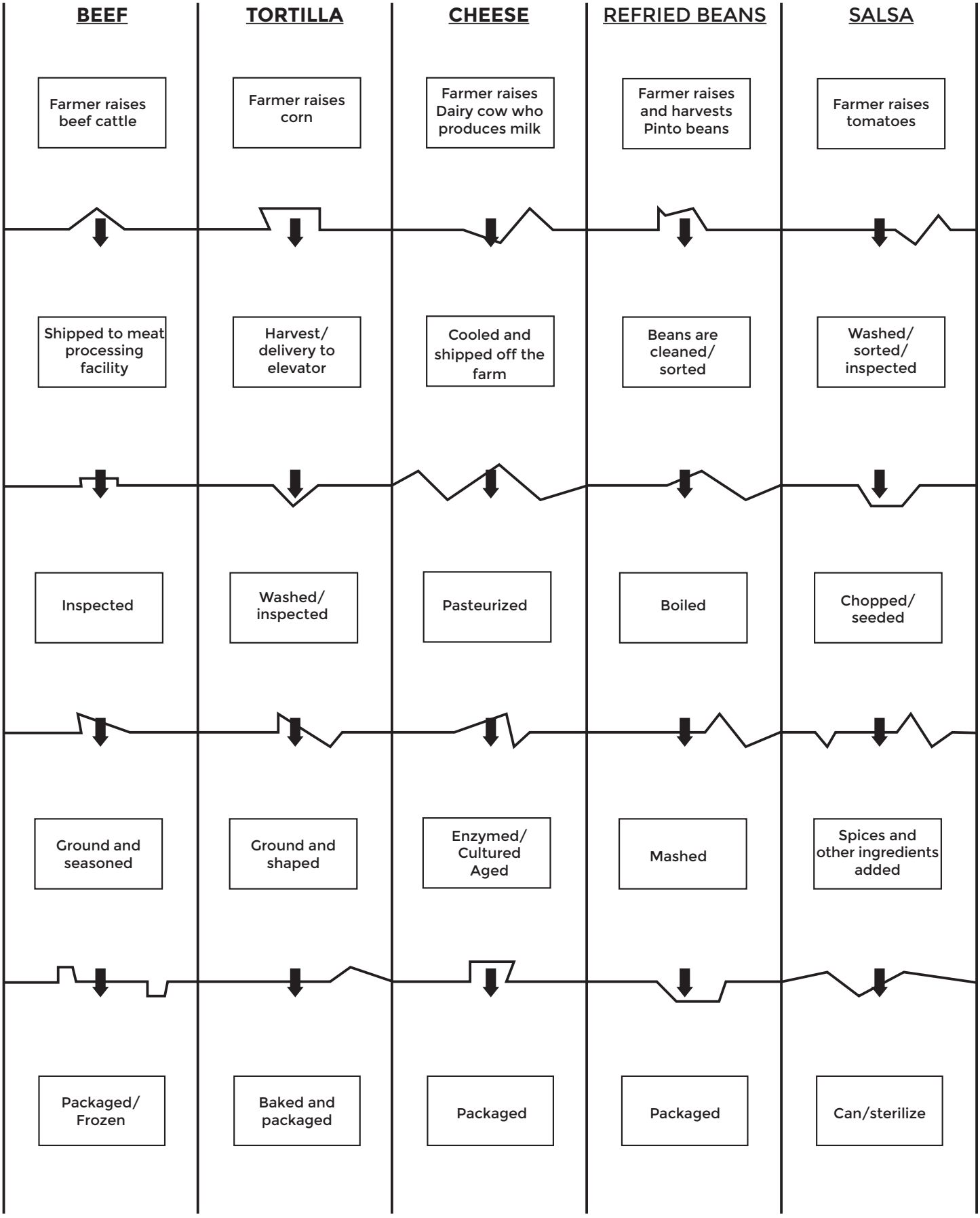
BEEF
TORTILLA
CHEESE
REFRIED BEANS
SALSA
Farmer raises beef cattle
Farmer raises corn
Farmer raises Dairy cow who produces milk
Farmer raises and harvests Pinto beans
Farmer raises tomatoes
Shipped to meat processing facility
Harvest/ delivery to elevator
Cooled and shipped off the farm
Beans are cleaned/ sorted
Washed/ sorted/ inspected
Inspected
Washed/ inspected
Pasteurized
Boiled
Chopped/ seeded
Ground and seasoned
Ground and shaped
Enzymed/ Cultured Aged
Mashed
Spices and other ingredients added
Packaged/ Frozen
Baked and packaged
Packaged
Packaged
Can/sterilize

NAME _____

FOOD PRODUCTS PROCESSING PUZZLE

LAB SHEET #3

BEEF	TORTILLA	CHEESE	REFRIED BEANS	SALSA
Farmer raises beef cattle	Farmer raises corn	Farmer raises Dairy cow who produces milk	Farmer raises and harvests Pinto beans	Farmer raises tomatoes
⬇	⬇	⬇	⬇	⬇
Shipped to meat processing facility	Harvest/ delivery to elevator	Cooled and shipped off the farm	Beans are cleaned/ sorted	Washed/ sorted/ inspected
⬇	⬇	⬇	⬇	⬇
Inspected	Washed/ inspected	Pasteurized	Boiled	Chopped/ seeded
⬇	⬇	⬇	⬇	⬇
Ground and seasoned	Ground and shaped	Enzymed/ Cultured Aged	Mashed	Spices and other ingredients added
⬇	⬇	⬇	⬇	⬇
Packaged/ Frozen	Baked and packaged	Packaged	Packaged	Can/sterilize
POSSIBLE CAREERS	POSSIBLE CAREERS	POSSIBLE CAREERS	POSSIBLE CAREERS	POSSIBLE CAREERS

Careers in Agriculture

Objective:

Students will:

1. Understand the role of agriculture in Michigan's economy.
2. Explore agriculture careers and relate them to different food products.

Time: 10 minutes

Grade Level: 3

Link to Posters
MFB website link

Curriculum Standards:

Social Studies:

3-G4.0.1, 3-E1.0.5

Career and Employability:

CES1.1, CES2.1, CES2.2

Other Resources

- My Little Ag Me game - http://myamericanfarm.org/classroom/games
- Career Exploration video and web pages - https://www.michfb.com/MI/CareerExploration/

Materials Needed

- ☐ Career cards (p. 13-14)
- ☐ Food Products Processing Puzzle worksheet (p. 11)

Background

Processing all the ingredients of a taco is not the end of the product line, the ingredients need to be packaged, advertised, transported to the school, etc. It often takes a lot of different steps to get a product from the farm to the school, grocery store, or restaurant. It also takes a lot of people with different careers to do each of these jobs. There are over 250 careers related to agriculture, food, and natural resources. Michigan agriculture and related jobs employ 923,000 Michiganders - 22% of the state's workforce (MDARD, 2016).

Directions/Discussion Guide

1. **Q:** Can you guess how many different types of careers are related to agriculture? **A:** Over 250.
2. Pass around the career cards.
3. We are going to look at some of the careers involved in each of the products we put in our tacos and write those careers at the bottom of the Food Products Processing Puzzle worksheet.
4. Beef: A farmer is involved in all of our products but we'll put a farmer with the beef product.
   - Farmers who raise beef cattle care for them until they are big enough to be processed for meat.
5. Tomatoes: We used tomatoes to make salsa. What careers are involved in processing tomatoes? **A:** One career is a Food Processing Engineer.
   - A Food Processing Engineer has the job of ensuring food quality and safety. They also research new food products.
6. Milk: We used milk to make cheese for our tacos. Do you know any careers that would help process milk into cheese? **A:** A Food Scientist.
   - A Food Scientist makes sure our food products taste good and help to make new varieties/flavors of food such as cheese.
7. Corn: Corn made our tortillas. What's a job that would be involved in making corn for our tortillas? **A:** An Agronomist.
   - Agronomists work with plants, soil, and the environment to research how to grow crops best with the best tools and techniques. They also help develop new varieties of crops.
8. Beans: Our taco also had beans in it. Who would be involved in the beans product line? **A:** A Nutritionist.
   - A nutritionist helps people eat right by determining the health benefits in food. They help make the nutrition labels that go on food.
9. Maybe one of these careers sounds intersting, or there are 245 others!

Food Scientist

Food Processing Engineer

Nutritionist

Agronomist

Food Processing Engineer

Food processing engineers research and develop new and existing food products. They design (or supervise design) of processing, handling, and packaging equipment. Some work in technical sales and service, act as specialized consultants, and market products. Food processing engineers can work in food, chemical, biocehemical, and pharmaceutical industries.

If you want to be a Food Processing Engineer:

- Engineers tend to enjoy solving problems and are curious about how things work
- You should enjoy math and science
- Four-year college program
- College studies can include chemisty, biology, calculus, and engineering

Food Scientist

Food scientists assure the flavor, color, texture, nutritional quality, and safety of our food supply. They work to convert grain, meat, fruit, and vegetables into new food products. Food Scientists can work as production supervisors, quality assurance specialists, product developers, and managers of processing plants. They can also hold government jobs as food inspectors, researchers, and laboratory workers. They conduct food research and act as troubleshooters in solving problems.

If you want to be a food scientist:

- You should enjoy math and science
- Four-year college program
- College studies can include biology, business, chemistry, management and math

Agronomist

Agronomists deal with interactions among plants, soils, and the environment. They use research tools and techniques to develop new crop hybrids and varieties that grow more efficiently and are more beneficial to society. They conduct research in applied issues of soil and water management and land use and research the best ways to produce crops and turf and ways to manage soils in the most environmentally friendly way. Agronomists can also can be employed as weather forecasters, evironmentalists, researchers, and teachers.

If you want to be an agronomist:

- Have an interest in science and environmental issues
- Four-year college program
- College studies can include agriculture, biology, chemistry, and math

Nutritionist

Nutritionists help people look and feel well by making the connection between food, nutrition, and health. They are responsible for nutrition therapy for disease conditions such as diabetes and preventative healthcare issues such as cholesterol. Nutrtionists can work in medical centers, hospitals, nursing homes, health departments, schools, restaurants, daycare centers, health and recreation clubs, as well as food and pharmaceutical companies

If you want to be a nutritionist:

- You should enjoy working with people and have a strong interest in food and nutrition
- Should be able to work independently to identify and solve problems
- College studies can include classes such as biology, anatomy, chemistry, sociology, and psychology

Michigan Agriculture in the Classroom

Conclusion

Background
Review what was learned in each of the activities: Cardinal directions, the Great Lakes, regions of Michigan, what a commodity is, what processing is, and agricultural careers.

Directions/Discussion Guide

1. Project the region map of Michigan, make sure all the labels are erased from the whiteboard.
2. Review the Cardinal Directions.
   - Use the map to check students' knowledge of directions.
3. Review the Great Lakes.
   - **Q:** Who remembers what HOMES stands for? **A:** Huron, Ontario, Michigan, Erie, and Superior.
   - **Q:** What bridge connects the Upper and Lower Peninsulas? **A:** The Mackinac Bridge.
4. Review the regions of Michigan.
   - Point to the different regions on the map and ask if they remember what region it is.
5. Review what a commodity is.
   - **Q:** Does anyone remember the definition of a commodity? **A:** A raw agricultural product that can be bought or sold.
   - **Q:** How many different commodities are grown in Michigan? **A:** 300.
6. Review what processing means.
   - **Q:** Does anyone remember what processing means? **A:** It's changing or modifying a product.
7. Review agricultural careers.
   - **Q:** How many careers are related to agriculture? **A:** Over 250.
   - Agriculture provides 923,000 jobs in Michigan and over $100 billion to the state's economy annually.

Michigan Food Script

Good morning! My name is _____ and I am a farmer from _____. How many of you know a farmer? I'm here today to talk to you about Michigan food and how it gets from the farm to you.

(Display the map of Michigan with the different regions)

Michigan is located in the Midwest region of the United States and is the only state to be surrounded by four of the five Great Lakes - can you name them? (Michigan, Superior, Ontario, Huron, and Erie). Ontario is the only one that doesn't touch our state. One easy way to remember the Great Lakes is to remember the word HOMES: Huron, Ontario, Michigan, Erie, and Superior! Michigan is also unique from other states because it has two peninsulas, an upper and a lower. Can you tell me what connects the two of them? (The Mackinac Bridge). Does anyone know what country is just north of Michigan? (Canada).

(Label the 5 lakes and Canada on the map)

Because Michigan is surrounded by the lakes, special climates are created that allow the state to produce many different commodities. What is climate? (The weather conditions typical to our area). Does anyone know what a commodity is? (A raw agricultural product that can be bought or sold.) Can you guess how many different commodities Michigan produces? (Over 300 different commodities). The food and agriculture industry contributes more than $100 billion to the Michigan ecnomy. That's a lot of money!

Today we're going to talk about some of these different commodities and where they're grown
Right now we are here on the map - if we go this direction, which way are we traveling? (North). If we go towards Ohio or Indiana, which way are we traveling? (South). If we go towards Lake Michigan, which way are we going? (West). And if we go towards Lake Huron, which way are we going? (East).

(Pass out the Product Produced by Region worksheet)

Michigan Food Script

Continued

Sometimes we combine our directions. If you look at your map, you'll see different sections outlined. What do you think the lower left corner would be? (Southwest). Color that area yellow and write southwest on the top line that says region. Now let's move east to southeast Michigan. Color that part of your map purple and write southeast on the top line that says region. Now let's move northwest to central Michigan. Color that portion of the map red and write central on the top line that says region. Now move farther north and west to northwest Michigan. Color that portion of the map green and write northwest on the top line that says region. Let's move east again to the northeast region. Color that region orange and write northeast on the top line that says region. This region includes the "thumb" of Michigan. Now let's move north to the Upper Peninsula. Let's color this region blue and write Upper Peninsula on the top line that says region.

(Pass out the Michigan Commodity Map worksheet)

Now that you have the regions of Michigan identified let's use our maps to identify some commodities and see where they grow in Michigan. We will need five of these commodities to help us with another activity later. Does anyone remember what a commodity is? A raw agricultural product that can be bought or sold.

This first commodity comes from cattle. It's often grilled in the summertime and can be made into hamburgers. What is it? (Beef). A hamburger is a form of beef. We enjoy several cuts of beef which include steaks and roast. Does anyone have a favorite cut of beef? Look at your commodity map of Michigan. Do you see where beef cattle are raised? (All over Michigan). Beef cattle are raised all over Michigan, but a lot of cattle are grown in the Upper Peninsula. Write beef on one of the product lines in the Upper Peninsula (also write it on the large Michigan Map on the board). Now let's find a few other products using our commodity maps and write them on your product lines for the U.P., under beef. A lot of Christmas trees grown in the U.P. as well; in fact, Michigan is 3rd in the whole country for Christmas tree production!

The second product can be red or green. It grows on a vine and can be used for sandwiches or on salads or even made

Michigan Food Script

Continued

into products like these:

(Show samples of tomato products)

What is it? (Tomatoes). Tomatoes don't show up on our map, but they are very important in our state. Michigan ranks 4th in the country for tomatoes produced for processing products like these (motion to product samples). Where do you think most tomatoes are grown in Michigan? (Southeast Michigan). Write tomato in southeast Michigan. A lot of vegetables are grown here due to the sandy soil type.
Did you know a tomato is both a fruit and a vegetable? The actual structure of it makes it a fruit, but legally it is considered a vegetable. Now let's use our maps again to find other products from that area and write them on the product lines for the southeast region.

The next product is important to stay healthy. It's good for your bones, it comes from a cow and lots of people like it chocolate. What is it? (Milk).

(Show samples of dairy products)

Where do you think the most milk is produced in Michigan? (All over Michigan). Milk is produced across the state but two major areas are the thumb, which is in Northeast Michigan, and in central Michigan, so write milk on the product line for both of those regions. What type of products can be made from milk?

Now find a few other products in the central region on your map and write them down on the product line below milk. What products do you see in northwest Michigan? Lots of fruit! Lake Michigan gives the west side a unique climate that is great for raising everything from peaches to blueberries. Michigan is 1st in the United States for blueberry and tart cherry production. Write in a few fruits or other products that come from that area on the product lines.
The fourth product we need is a grain and is used to make products you wouldn't think would go together like pop, gum, cereal, ethanol for fuel, and tortillas.

(Show samples of corn products)

Michigan Agriculture in the Classroom

Michigan Food Script

Continued

Does anyone know what it is? (Corn). Where do you think the most corn is grown in Michigan? Corn is grown all over Michigan, in fact, it's grown all over the United States. A big portion of Michigan's corn is grown in the southwest region. Write corn and a few other poducts on the product lines for southwest Michigan.

The fifth product is a great source of dietary fiber. It is used in a variety of products including many Mexican dishes.

(Show samples of bean products)

Sometimes it is made into soup and sometimes it is refried - what is it? (beans). There are lots of different kinds of beans - can you name a few? (soybeans, green beans, navy, kidney, pinto, and black beans). Michigan is a top producer in some varieties of beans. It may not look like it on your map, but the majority of beans in Michigan are grown in the bay area, which is part of the Northeast. Write beans on the product line under milk and use your map to write down a few other products from that area.

That's a lot of different products. What do you suppose farmers do with all those products after they grow them? (Eat them or sell them). Who might they sell them to? (Restaurants, grocery stores, processors). Some products, especially fruits and vegetables, may be sold fresh directly to the customer, but most Michigan products are shipped to other areas to be processed. What do you think processing might mean? Remember the corn and beans we looked at? You probably wouldn't want to eat them as seeds but you'd enjoy them as gum or nachos, wouldn't you? That's what processing is, it's changing or modifying a product into a form that people want to eat or use.

(Display processing poster)

REPEAT: it's changing or modifying a product into a form that people want to eat or use. To understand this better, let's look at an example. Let's pretend that a school in Michigan wants to make homemade beef tacos for lunches.

Michigan Food Script

Continued

What will they need to make beef tacos? Look at your map and see what Michigan products we found might be in a taco. Raise your hand if you have an idea. What did you find? (Beef, tortilla, cheese, tomatoes, and beans).

(Have the students get into 5 groups. Pass out an envelope labeled with a region name, containing puzzle pieces, to each group. The puzzle pieces in the envelope should be for a product corresponding to the region. Beef for the U.P., tomatoes for the southeast, milk for the central region, corn for the southwest, and beans for the northeast).

Of course, they won't be very good tacos if they just use the raw products. We can't make a very good taco with just corn or beans. Seeds must be processed into products that can be used in the taco. We are going to need your help in order to get all the final ingredients to the school. In your five groups, you each have an envelope for a region of Michigan. In it you will find processing steps for a specific commodity from that region (remember, commodity is a raw agricultural product). See if you can put your processing steps puzzle pieces in the right order for your product. You will also need to choose someone from your group to share your results with the rest of the class.

(Have groups tape puzzle pieces to a strip of paper)

Now that each group has their puzzle put together, let's talk about what you have.

(Pass out the Food Products Processing Puzzle worksheet for students to follow along while groups are discussing their product, then ask each group to have their representative talk about their product puzzle)

Now we have all our ingredients to make tacos. Of course, that's still not the end of the product journey. Once all the finished products make it to the school, the cooks in the cafeteria can put them together to make beef tacos for the students. But, what has to happen to get the final ingredients to the school? (Advertising, packaging, transportation).

(Show career cards, pass the cards around the room)

Michigan Food Script

Continued

It often takes a lot of different steps to get a product from the farm to the school, grocery store, or restaurant. It also takes a lot of people with different careers to do each of these jobs. Can you guess how many different types of careers are related to agriculture? (More than 250). A lot of people in Michigan work jobs that are related to agriculture and food processing. Does anyone have a guess of how many people? (923,000 Michiganders, 22% of the state's workforce). Let's look at a few careers that are involved in processing each of the products we are using to make beef tacos.

Although many of these careers are involved in all areas, we are going to relate a career to each product. Let's start with a farmer (that's who we are!) A farmer is at the beginning of all of our products, but we are going to list farmer with beef. Write farmer in the box at the bottom of beef on your Lab Sheet #3.

(Write each career on the board so the students are able to spell it)

Let's move on to tomatoes. Can you think of a career involved in processing tomatoes into salsa? All of those are good ideas - have you ever heard of a Food Processing Engineer? Food processing engineers ensure food quality and safety while researching new products. Write food processing engineer in the box at the bottom of tomatoes. Let's move on to the milk. What is a career that would be involved in processing milk into cheese? How about a Food Scientist? Food scientists ensure our products taste good while researching ways to develop new varieties. Write food scientist in the box at the bottom of milk. Next is corn. Can you think of a career involved in producing corn for a tortilla? One job would be an agronomist. An agronomist would help early on in the process; they work with plants, soil, and the environment to research tools and techniques to develop new crop varieties that grow efficiently. Write agronomist in the box at the bottom of corn. Our last product is beans. Do you know of a career involved in processing beans? Have you thought of a nutritionist? Nutritionists help people eat right by determining the health benefits in products. Write nutritionist in the box at the bottom of beans.

Michigan Food Script

Continued

Maybe one of these careers sounds interesting to you but if not, remember that there are 245 other agriculture related careers you could choose from!
Let's review what we learned today. We have explored a variety of commodities across Michigan. Do you remember how many different commodities are produced in Michigan? (Over 300). Michigan's agricultural diversity makes agriculture the second largest industry in Michigan and Michigan is ranked second nationwide for agricultural diversity.
Who remembers what HOMES stands for? (Huron, Ontario, Michigan, Erie, and Superior) Good Job!

How about our cardinal directions? (Show on map) We learned North, South, East, and West. Do you remember combining them to name our regions? What region is this? (point). How about this one? (point). We also learned about processing - what does that mean? (changing or modifying a product). After we did our processing and assesmbled our beef tacos, we talked about all the careers related to agriculture. Do you remeber how many? (More than 250).

I hope the next time you buy a school lunch or go with someone to the grocery store you remember that it takes a lot of people doing lots of different jobs to bring you fresh, healthy, and great tasting food everyday.

Thank you!