



UNIT TWO: PROCESSING

The Exploding Cheeseburger

Grade level: Primary

**NATIONAL
STANDARDS**
NL-ENG.K-12.4
NSS-EC.K-4.1

Student Learning Objectives

After completing this lesson, students will be able to:

1. Explain the steps products that make up a cheeseburger go through as they move from farm to consumer.
2. Define processing.
3. Identify the difference between a raw agricultural material and a finished product.

Time: 50 minutes

Tools, Equipment, and Supplies: Writing surface, copies of Activity Sheet 6:1

Key Term(s): Processing

Background Information

Most agricultural products are processed in some way before they are consumed. Milk is homogenized and pasteurized before it is made into cheese, yogurt and ice cream; pork is ground and spiced for sausage; soybeans are crushed for cooking oil; rice is puffed into cereal.

The pioneers either did these types of processing themselves or did without the product. They ground their own wheat into flour and made bread. They salted and smoked their own pork for bacon. They skimmed the cream off the top of the milk to churn into butter. Today, agribusinesses process our food for us. Most of the work is already done when we purchase it at the supermarket.

Interest Approach

Use a Marceau e-Moment® to introduce the Exploding Cheeseburger lesson.

Has anyone ever heard of Marcel Marceau? Marceau was a famous mime. Has anyone ever seen a mime? Right, sometimes they have the white face and the white gloves. If you have not seen a mime, maybe you have played charades? Mimes and charades have something in common—they act things out without saying a word!



NOTES

Place students in groups of three.

Let's use the art of mime to depict a cow's life. Each group has two minutes to discuss how it will depict a cow's life. If all groups are ready, let's begin.

Call on each group to use mime to depict a cow's life. Comment positively on each performance. Ask questions at the end of each performance for clarity.

Great job! That was fun! Many of us had a good idea of what a cow goes through in its life. Let's think about the cows we did our mimes about, but let's think about other products from the farm too as we try to determine how they get on our plate.

OBJECTIVE 1: Explain the steps the products that make up a cheeseburger go through as they move from farm to consumer.

What are the different parts of a cheeseburger?

Answers will vary.

Where does a cheeseburger come from?

Answers may include: the kitchen, a fast food restaurant, the supermarket, a farm.

Great answers! Before the various parts of the cheeseburger can get to your kitchen or a restaurant or the supermarket, they all have their start on the farm, but each of the parts of the cheeseburger follows a different path to your table. Let's play a guessing game and see if we can identify each of the parts of the cheeseburger I'm describing.

Read the following descriptions to students. See if they can guess what you are describing.

I begin as kernels of wheat. Then I'm milled into flour. The flour is mixed with yeast, water and other ingredients and made into a thick dough. When the dough is baked, it becomes a part of the cheeseburger. Which part?

Answer: the bun

I start out as a ripe, red tomato. I'm cooked into a sauce, and flavorings and spices are added. I'm poured into a bottle with a long, thin neck. What am I?

Answer: ketchup



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I start out as milk, fresh from the cow. At a dairy, someone adds a culture to me. That makes me separate into curds and whey. The whey is poured off and the curds are pressed together. Sometimes flavorings and spices are added. I'm left to age so my flavor will develop. What am I?

Answer: cheese

I start out as soybeans. Crushing removes the oil, which is mixed with eggs, spices and other ingredients. I'm packed in jars and sent to the supermarket. Remember—once you've opened my jar, you should store me in the refrigerator. What am I?

Answer: mayonnaise

OBJECTIVE 2: Define processing.

All of the steps that mayonnaise, cheese, ketchup, and a bun go through are referred to as **processing**. Other parts of a cheeseburger also have to go through **processing**.

Most agricultural products must be processed in some way before they can be used.

Processing changes a raw agricultural commodity into something we can eat, wear or build with.

*Use a Choral Response e-Moment® to memorize the definition of **processing**.*

OBJECTIVE 3: Identify the difference between a raw agricultural material and a finished product.

Now that we know what **processing** is and what some of the **processing** steps are for some products, let's join the official "spokes-product" for agriculture, Cob, and blow up a cheeseburger!

Give each student a copy of Activity Sheet 6:1, "The Exploding Cheeseburger."

Here's a picture of a cheeseburger with all the parts labeled. In the box at the bottom of the page are all the raw agricultural products that go into making the parts of the cheeseburger. Let's choose from the word bank the name of the agricultural product that is the source of each part of the cheeseburger. Write your answers in the left column. Please begin.

Great job! We are becoming cheeseburger experts! Here's a question: which parts of the cheeseburger don't have anything written beside them?



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Wait for responses.

Exactly! Lettuce and onions is the answer—because they are not processed.

Now, let's pick another favorite food that comes from the same raw product in the right hand column; for example, wheat - bun - pasta.

Let students talk about some of their favorite foods and the agricultural products they come from.

SUMMARY/REVIEW

REFLECTIVE REVIEW QUESTIONS:

- What are processed foods you ate this morning for breakfast? Did you eat any non-processed foods?
- Think about what you ate for supper last night. What were the raw food products that went into making your entire meal?

Use the Cartographer e-Moment® to draw the beginning step and the end of the process of a hamburger bun. Be sure to remind students that a cartographer draws several stops along the way.

Wow, investigating an exploding cheeseburger is tons of fun with our friend Cob. As we have dinner tonight, let's think about the processing that our food has gone through to make it to our plates as we give it a final resting place in our belly.

APPLICATION

APPLICATION 1: Research

Ask students to research how other agricultural products become finished products. Ask them to write their own riddles about the products they have researched.

APPLICATION 2: Make Butter

Divide your class into groups of four or five students. Each group will need:

- half-pint carton of whipping cream (warmed to room temperature)
- 1-quart jar with tight-fitting lid
- a large spoon
- a bowl.



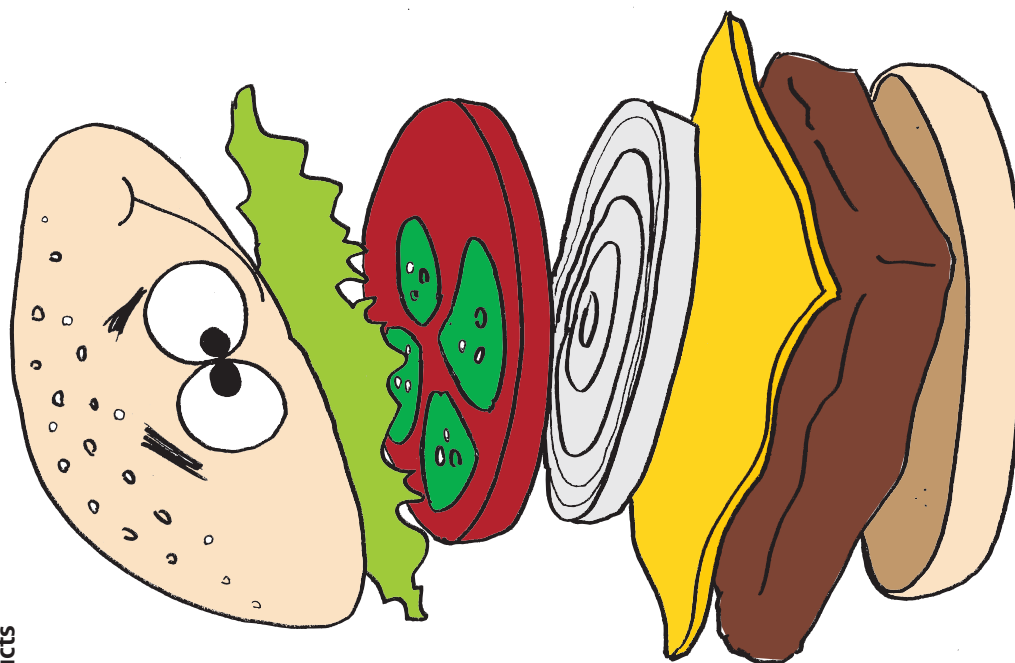
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You will also need salt, a knife and crackers or bread. Pour the whipping cream into the jar. Ask each team member to take turns shaking the jar—about 20 shakes each. After about 10 to 15 minutes, the cream should turn to a soft butter. Open the jar, pour off the buttermilk, and scoop out the butter. Add salt, if desired, and spread on bread or crackers.

APPLICATION 3: Teach students to look for the “Real” seal on dairy products. The “Real” seal shows that the product was made with milk instead of a milk substitute. Ask students to list all the dairy products they know.



A Favorite Food of Mine

[illegible]

Raw Agricultural Products

Bun

Mayonnaise

Lettuce

Pickle

Onion

Cheese

Bacon

Hamburger

Ketchup

Bun

Word Bank

Milk
Wheat

Pork
Cucumber

Soybean and egg

The parts of a cheeseburger come from many different raw agricultural products. From the words in the words bank, choose the name of the agricultural product that is the source of each part of the cheeseburger. Write it in the left-hand column. Then in the right-hand column, write another favorite food that comes from that same raw product.