

All About Potatoes by Stephen Currie, New York: Newbridge Educational Publishing, 2004. (ISBN 1-4007-3789-3)

Literature Annotation: This book traces the history of potatoes. It also discusses how potatoes grow as well as products made from potatoes such as potato chips, french fries and potato pancakes.

Grade Level: Grade 2 or 3

Duration: 1-2 class sessions

Economic Concepts: Productive Resources, Production

Maryland State Curriculum

Economics Standard: Students will identify the economic principles and processes that are helpful to producers and consumers when making good decisions.

4.A.2.a Identify the natural, capital and human resources used in the production of a good or service (Grade 2)

4.A.2.c Describe steps in the production process to produce a product (Grade 3)

Reading Standard: Students will use a variety of strategies to understand what they read (construct meaning).

1.E.4 Use strategies to demonstrate understanding of the text (after reading)

2.2.b Use graphic aids such as illustrations and pictures, photographs, drawings...and diagrams

2.2.d Use organizational aids such as titles, chapter titles...table of contents, glossaries, indices...

Objectives: Students will be able to...

- identify the natural, capital, and human resources used to grow potatoes.
- identify the natural, capital, and human resources used to produce potato chips.
- sequence the steps in the production of potato chips.

Vocabulary

natural resources: the renewable, and non-renewable gifts of nature that can be used to produce goods and services, including but not limited to land, water, animals, minerals, tress, climate, soil, fire, seeds, grain and fruits.

human resources: the health, strength, talents, education and skills that humans can use to produce goods and services.

capital resources: the goods that are manufactured and constructed by people and used to produce other goods and services, including but not limited to factories, warehouses, roads, bridges, machinery, ports, dams, and tools. (money is not a capital resource)

production: the act of creating goods and services by combining economic resources.

Teacher Materials

Teacher Resource 1: *What Am I?*

Student Materials

Six 4" X 11" sheets of construction paper (per student)

Rubber band (1 per student)

Scissors (1 per student)

Glue (1 per student)

Student Resource 1: *Productive Resources Needed to Grow Potatoes* (1 per student)

Student Resource 2: *Potato Chip Production Pictures* (1 per student)

Student Resource 3: *Potato Chip Production Text Boxes* (1 per student)

Student Resource 4: *Assessment: Potato to Potato Chip* (1 per student)

Additional Resources

<http://www.utzsnacks.com/chiptrip/UtzChipTrip.htm>

The Utz Chip Trip: Pictures and audio tour of Utz Factory Tour

<http://www.herrs.com/SnackFactoryTours/VirtualTours.html>

The Herr's Snack Factory Tour: Virtual tours of the production of chips, pretzels, and tortilla chips

Motivation

Distribute Teacher Resource 1 (*What am I?*) to selected students. Ask the students to read the facts aloud, saving the separate fact for last. After all of the facts except for the last one have been read, ask students to identify the object. If they cannot identify the object, read the last fact. By the last fact, students should be able to identify the object as a potato.

Development

1. Tell students that they are going to learn about an important natural resource, the potato. Read *All About Potatoes* by Stephen Currie.
2. Distribute Student Resource 1, *Productive Resources Needed to Grow Potatoes*. Explain that many human, natural, and capital resources are involved in the cultivation of potatoes. If necessary, display the definitions of the three types of resources and discuss. Have students use the Table of Contents to find the "Potatoes Today" section of the book. Instruct them to use that section to complete the graphic organizer on Student Resource 1. Display a copy of Student Resource 1 and discuss student answers. (**Natural**: seed potatoes, soil; **Human**: farmer, workers; **Capital**: potato planters, harvesters, washing machines, trucks)
3. Ask students to brainstorm a list of products that are made from potatoes. Refer them to page 12 of *All About Potatoes*. Display the definition of production. Tell them that they are going to investigate the production of potato chips.
4. Distribute the following materials to each student:

- a. Student Resource 2, *Potato Chip Production Pictures*
 - b. Student Resource 3, *Potato Chip Production Text Boxes*
 - c. Six 4”X 11” sheets of construction paper (3 pieces of paper cut in half lengthwise)
 - d. Scissors
 - e. Glue
 - f. A rubber band
5. Have students cut out the pictures and text boxes. (To save time, you may wish to have this done prior to class.) Tell students that the text boxes are in the correct order (A,B,C...). Have them match the production picture with the appropriate text box.
 6. Review the steps of potato chip production. Ask students to identify the human, natural, and capital resources used in the process. Check student work for accuracy.
(Answers:A-1, B-3, C-7, D-5, E-4, F-9, G-8, H-6, I-2, J-10)
 7. Have students combine their construction paper and fold it in half. They should place a rubber band under the fold to keep the book together. Starting with the inside first page of their book they should glue the pictures and corresponding text boxes in sequential order, a picture on the left hand side and a textbox on the right hand side. When students have finished, they can title their book and decorate the front cover.

Assessment

Distribute Student Resource 4, *Assessment: Potato to Potato Chip*. Have students complete individually.

What Am I?

I am a cousin of the tomato and the chili pepper.
Peru's Inca Indians first cultivated me in 200 B.C.E.
In 1985 I became the first vegetable grown in space.
During the 1897-8 Alaskan Klondike Gold Rush, I was traded for gold.
The average American eats over 135 pounds of me a year- that is almost 1 a day.
I was the introduced to Europe by the Spanish Conquistadors in 1537.
The French call me 'pomme de terre' which literally translates as 'apple of the earth'.
I produce more food per acre than any other crop.
One serving of me provides 45% of the recommended Daily Value of vitamin C.
I am the second most consumed food in the United States, only passed by milk.
I arrived in the American Colonies in 1621 when the Governor of Bermuda sent two large chests to the Governor of Jamestown.
I became the major source of food for the Irish people in the 18th Century.

My nickname is "spud", a term that comes from the Irish name for a type of spade used for digging me.
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Student Resource 1



Productive Resources Needed to Grow Potatoes

Natural	Capital	Human

Potato Chip Production Pictures



1



2



3



4



5



6



7



8



9



10

Potato Chip Production Text Boxes

<p>Utz selects only the finest potato varieties; those that produce the right size, shape, and light golden potato chips. Either freshly dug potatoes or those from the autumn harvest that are stored in Utz's own temperature and humidity controlled storage cellars are selected at peak condition for processing</p> <p style="text-align: right;">A</p>	<p>Properly conditioned potatoes are first separated by size, thoroughly washed and peeled.</p> <p style="text-align: right;">B</p>
<p>The peeled potatoes are inspected and trimmed to remove defects.</p> <p style="text-align: right;">C</p>	<p>A precision slicing machine cuts the potatoes to a uniform .055 inch thick. The slices are tumbled in fresh water and rinsed to remove starch thereby improving color and giving the chip a lighter texture.</p> <p style="text-align: right;">D</p>
<p>The rinsed slices are immersed in a bath of 340° cottonseed oil for about two minutes. As the moisture is removed from the slices, the potato's nutrients are sealed in. Skilled operators continuously monitor the process to assure that the golden chips emerge at the peak of flavor.</p> <p style="text-align: right;">E</p>	<p>The hot chips are lightly salted and inspected for dark chips on cooling conveyors.</p> <p style="text-align: right;">F</p>
<p>Flavored chips such as Bar-b-que and Sour Cream and Onion are seasoned at controlled levels just prior to packing.</p> <p style="text-align: right;">G</p>	<p>Chips are gently conveyed to packaging equipment where they are sealed into a variety of package sizes. Sophisticated machinery automatically weighs, fills, and seals packages. Inspectors check each package for proper weight, appearance and seal integrity.</p> <p style="text-align: right;">H</p>
<p>Packaged chips are stored in the air conditioned finished goods warehouse. This warehouse is short-term storage for over 200 products and package styles. Electric motored trucks are used instead of fuel powered to prevent the possibility of gas fumes contaminating the potato chips.</p> <p style="text-align: right;">I</p>	<p>Fresh chips are loaded daily on the familiar maroon, red, and white Utz trucks for direct delivery to retail outlets.</p> <p style="text-align: right;">J</p>

Assessment: Potato to Potato Chip

1. Identify 3 economic resources that are used to grow potatoes. Next to the resource circle "N" if it is a Natural Resource, "C" if it is a Capital Resource, and "H" if it is a Human Resource.

_____	N	C	H
_____	N	C	H
_____	N	C	H

2. Using information from this lesson, describe the production of potato chips. Be sure to include how natural, capital, and human resources are used in the process.
