

Productivity Among the Native Americans

by

Jeanine Moore, Indian River School District

Revisions and Edits: Judy Austin, Center for Economic Education and Entrepreneurship**Lesson Description:** Students will participate in three rounds of a production activity in which they will take on the role of Native Americans and investigate ways to increase productivity. This lesson focuses on division of labor (specialist vs. craftsman) and technology as methods of increasing productivity.**Grade Level:** 4**Standard:** Economics Standard 3: Students will understand different types of economic systems and how they change.**End of Cluster Expectations (Benchmarks):** Students will identify different means of production used within an economic system in different times and places.**Essential Question:** How can the productivity of labor be increased?**Assessment:** *Constructed Response***Benchmark Statement:** This assessment gives evidence of the student's ability to identify different means of production within an economic system in different times and places.

Yield Per Acre (in bushels)	1800	2000
Wheat	15	40
Corn	25	138

Source: *Historical Statistics of the United States*, U.S. Census Bureau, and U.S. Department of Agriculture.

Based on the above data, how might you explain the increased output between 1800 and 2000? Give an example to support your answer.

Sample Response: The farmers harvested everything by hand in 1800, but by 2000 they purchased machines and equipment to help make their jobs easier. For instance, a farmer might have a new combine to help make harvesting corn or wheat easier.

Rubric:

- 2 – This response gives a valid explanation with an accurate and relevant example.
 1 – This response gives a valid explanation with an inaccurate, irrelevant, or no example.
 0 – Inaccurate response.

Assessment: Multiple Choice

U.S. Textile Mills	
Output per Worker per Year (yards of cotton cloth)	
1820	2,000
1859	9,410

Source: "The New England Textile Industry, 1825-60: Trends and Fluctuations," Lance E. Davis and H. Louis Stettler III.

Which of the following might explain the increase in output in the textile mills between 1820 and 1859?

- Item:**
- The mill hired more workers.
 - The mill purchased new machines.
 - The workers worked shorter hours.
 - The workers worked at home.

The answer is **b**.

Objective(s): Students will be able to:

- Define inputs as human and capital resources used to produce outputs (goods and services).
- Define productivity as the amount of output produced per unit of input.
- Explain ways to increase productivity,
- Explain the difference between craftsperson and specialist methods of production.
- State advantages and disadvantages of craftsperson vs. specialist methods of production.
- Compare/contrast the costs and benefits of new technology on labor productivity.

Prior Knowledge and Skills: Students should be familiar with the concepts of **goods** (*tangible objects that satisfy economic wants*) and **production** (*the manufacture of goods*).

Time to Complete: 90 minutes

Materials/resources needed:

- Visual 1: Comparing Productivity (1 transparency)
- Visual 2: Discussing Productivity (1 transparency)
- Handout 1: Production Method #1 (1 copy per group of 4)
- Handout 2: Discussing Productivity (1 copy per student)
- Handout 3: Production Method #2 (1 copy per group of 4)
- (Back to back)Handout 4: Production Method #3 –Nanticoke (1 copy per group of 4)
Production Method #3 – Lenni Lenape (1 copy per group of 4)
- Handout 5 – Assessment (1 copy per student)
- timer (optional for teacher)

Rounds 1 and 2:

Lunch bag (1 per group of 4 students) containing:

- 1 ruler
- 2 pencils
- 20 sheets of 9"x12" brown construction paper cut into quarters (80 quarters)*
- 20 pieces of yarn pre-cut to 12" lengths*
- 1 yellow crayon

calculators (optional - 1 per group of 4)

*Have on hand extra construction paper and yarn if groups should require more

Round 3:

In addition to the previous materials you will need:

- 1 more yellow crayon
- staplers (1 for each group of 4 in the Nanticoke tribe)
- single hole punches (1 for each group of 4 in the Lenni Lenape tribe)

Procedure:

1. Ask students: "What always have been the three basic necessities for humans?" (*food, shelter, clothing*)
2. Pose the following situation to the students: When your toes poke through holes in your socks are you more likely to **a)** reach for a sewing kit, or **b)** grab your wallet and head to a clothing store? Poll the students for answers. (*Most students will probably choose b.*) Explain to students that, in the past, money was scarce and store-bought clothes were expensive (or, in the case with Native Americans, non-existent). Ask students how those people solved their need for clothing. (*Students will probably say they made their own clothes or possibly that they traded for them.*)
3. Explain to students that the early Native Americans also had a need for clothing. Ask students: "Where did the Native Americans get their clothing?" Explain that before the Europeans came, Native Americans lived off the land. They made their clothing from the skins of animals and the feathers of birds, being careful never to kill more than were absolutely needed. Some wore colorful jewelry made from sea shells and stones. Each

tribe had its own distinctive style of dress. Tribal identities were apparent simply by observing clothing, headdresses and ornamentation.

4. Further explain that within Native American tribes men and women had different responsibilities. Have students generate lists of jobs typically performed by men and by women, recording responses on the board. (*men – cleared land, built homes, protected family from danger, hunted animals for food and clothing, fished; women – took care of children, made clothing, cooked food, grew and harvested crops*)
5. Explain to students that they will participate in an activity in which they need to provide clothing for their families and tribe members. The activity will have three rounds, each slightly different. Divide the class into two tribes: **Lenni Lenape** and **Nanticokes**. Have each tribe choose a tribal leader who will be responsible for gathering supplies. Divide each tribe into working groups of 4.

Round 1:

6. Distribute **Handout 1: Production Method #1**, one to each group. Students should read the instructions silently while the teacher (or a student) reads them aloud. As each step is being read, the teacher will model how to produce a completed animal-skin garment. **Demonstrate: to begin the lacing fold the yarn in half, then lace each end through the holes as you would with a shoelace.**
7. Have each tribal leader collect the appropriate amount of bags of supplies needed for his tribe (one for each group of 4) and distribute one to each group.
8. Tell the students that they will have **5 minutes** to piece together as many “animal skin” garments as possible while maintaining high standards of quality. Clothing production was a very time-consuming process, so you want to produce high quality clothing that will last.
9. Stop the students at the end of **5 minutes**. Tell the students to discard any partially completed garments. The teacher will inspect each completed garment and discard any that are not constructed properly. Have each tribe count all acceptable garments.
10. Display transparency **Visual 1: Comparing Productivity**. Together, complete **Round 1** columns 1 through 5 for each tribe. Calculators may be used.
 - Column 1: Output – total number of garments produced by the tribe
 - Column 2: Input -- total number of workers in each tribe
 - Column 3: Productivity – Output (col.1) ÷ Input (col. 2)
 - Column 4: Estimate of Output per hour – Output x 12 (5 minutes x 12 = 1 hour)
 - Column 5: Estimate of Productivity per hour – Productivity x 12
11. Distribute **Handout 2: Discussing Productivity** to each student. Ask students to define *productivity (the amount of output produced per unit of input, in this case the number of garments per person)*. Display **Visual 2: Discussing Productivity**. Read and discuss questions 1 and 2; allow students time to record answers.

- a. Question 1 (*Not enough time to complete animal skin, had to do all the work on our own, had a hard time weaving the yarn and/or punching the holes;*)
- b. Question 2 (*share the work, form an assembly line*)

12. Ask students if they know the name given to the method of production used in Round 1. Introduce the term **craftsperson** (or **artisan**) and explain that each person worked independently to produce each piece of clothing.

Round 2:

13. Have each group of 4 choose a leader. Distribute **Handout 3: Production Method #2** to each leader, who will read the directions to his/her group. The teacher will distribute extra brown paper and yarn as needed.
14. Tell the students that they will have **5 minutes** to piece together as many “animal skin” garments as possible, maintaining high standards of quality. Begin another **5 minute** round.
15. Stop the students at the end of 5 minutes. Tell the students to discard any partially completed garments. The teacher will inspect each completed garment and discard any that are not constructed properly. Have each tribe count all acceptable garments.
16. Display **Visual 1: Comparing Productivity** and complete Round 2 columns 1 through 5 for each tribe.
17. Ask students if they know the name given to the method of production used in Round 2. Introduce the term **specialist** and explain that each person worked independently to complete only one of the four tasks. Ask students to name the specialists in the activity (*marker, puncher, weaver, decorator*). Further clarify that the specialists organized their labor in a particular way. This method is called **division of labor**.
18. Display **Visual 2: Discussing Productivity** and discuss Round 2 questions #3-5.
 - a. Question 3 (*productivity should have increased*)
 - b. Question 4 (*being able to divide the work*)
 - c. Question 5 (*students argued over jobs, students weren't good at their jobs*)
 - d. Question 6 -- Have students discuss within their groups the advantages and disadvantages of each method of production and record answers on the chart. Have group leaders share the groups' findings with the class. (*craftsperson advantages – satisfaction of completing product from beginning to end, variety of work, work at own pace; disadvantages – learning all the skills necessary for production, slower production, sharing of tools, tiring doing all the jobs*) (*specialist advantages – speed, expertise in a single skill, no waiting for tools, quicker production; disadvantages – boredom from doing same job all day, problems when one person is absent or is not completing his job fast enough, arguing over who gets what job*)

Round 3:

19. Explain to students that with the arrival of European settlers, trading became an important part of the Native American economy. Most native clothing was replaced with clothing

made from European trade goods. In addition, as early as 1800, the hand-operated sewing machine made its appearance in Seminole camps, and its use later spread to other tribes. The introduction of this capital resource transformed Seminole clothing. Women were now able to sew a pattern of horizontal strips of colored fabric into their garments. Soon these strips evolved into more elaborate patterns. Women were not only able to make clothing for their families but also enough extra for trading. Ask students: What made productivity increase for these Native Americans? (*technology, use of capital resources*)

20. Ask students: How might you increase productivity even more in Round 3 of the activity? (*students might suggest hole punches, reorganize labor*) Distribute **Handout 4: Production Method #3** to each group. Instruct group leaders to read the appropriate instructions to their groups (different instructions for Lenni Lenape and Nanticoke). Give each Lenni Lenape group 1 hole punch and each Nanticoke group 1 stapler and another yellow crayon. Distribute additional supplies of brown paper and yarn as needed. Begin the final 5-minute round.
21. Stop the students at the end of 5 minutes. Tell the students to discard any partially completed clothing. Inspect each piece of clothing and discard any that are not constructed properly. Have each tribe count up their acceptable pieces.
22. Display **Visual 1: Comparing Productivity** and complete Round 3 columns 1 through 5 for each tribe.
23. Display **Visual 2: Discussing Productivity** and discuss questions 7-10.
 - a. Question 7 (*productivity should have increased*)
 - b. Question 8 (*some workers had to change their jobs, workers were able to produce more goods*)
 - c. Question 9 (*workers kept their jobs, workers produced more but not as many as the groups with staplers*)
 - d. Question 10 (*costs would include the training of workers, the cost of the equipment, the risk involved in borrowing money to pay for the equipment, loss of jobs; benefits would include increased productivity, make more goods to trade*)

Closure:

1. Divide students into pairs. Tell students they are going to create a “Fortunately, Unfortunately” story.
2. Explain that the first line of the story will begin with Fortunately and the second with Unfortunately. The story will continue this way alternating lines between Fortunately and Unfortunately. One member of the pair will write the Fortunately lines and one will write the Unfortunately lines.
3. Tell the pairs to begin the story with “We did a production activity in social studies class today.” Write the questions below on the board. Inform students that their stories must include answers to the following questions:
 - What is productivity?
 - What methods might be used to increase productivity?

- Why would specialist/division of labor be a better method of production than a craftsperson?
 - What are some advantages and disadvantages of using technology in production?
4. Share the example below of the first four lines of a story if students have problems writing the stories.

We did a production activity in social studies class today.

Fortunately each group got a bag of materials.

Unfortunately there weren't enough materials for everyone in the group to have all they wanted.

Fortunately my teacher showed us how to make the animal skins.

Unfortunately I couldn't complete one in the time allowed.

5. Have groups share their stories. Ask the class to determine if the story answers the questions listed in 3 above.

Assessment:

Distribute Handout 5 (one per student). Encourage students to answer the constructed response question with complete sentences and a detailed explanation.

Tip for the teacher:

Have extra staplers on hand in case of jamming or running out of staples.

Visual 1: Comparing Productivity

Lenni Lenape Tribe:

Round	1. Output (in 5 min.) <small>(total production for tribe)</small>	2. Input <small>(number of workers)</small>	3. Productivity (in 5 min.) <small>(Output ÷ Input)</small>	4. Estimate of Output in 1 hr. <small>(Output x 12)</small>	5. Estimate of Productivity in 1 hr. <small>(Productivity x 12)</small>
1					
2					
3					

Nanticoke Tribe:

Round	1. Output (in 5 min.) <small>(total production for tribe)</small>	2. Input <small>(number of workers)</small>	3. Productivity (in 5 min.) <small>(Output ÷ Input)</small>	4. Estimate of Output in 1 hr. <small>(Output x 12)</small>	5. Estimate of Productivity in 1 hr. <small>(Productivity x 12)</small>
1					
2					
3					

Visual 2: Discussing Productivity

Questions to consider after Round 1:

1. Why were so few pieces of clothing produced in Round 1?
2. How might you increase the output?

Questions to consider after Round 2:

3. Did each worker’s productivity *increase* or *decrease* from Round 1 to Round 2?
4. If productivity increased, what might have caused this?
5. If productivity decreased, what might have caused this?
6. List some advantages and disadvantages of each method of production.

Craftsperson Advantages	Craftsperson Disadvantages	Specialist Advantages	Specialist Disadvantages

Questions to consider after Round 3:

- 7. What happened to worker's productivity from Round 2 to Round 3?**
 - 8. What effect(s) did the introduction of the stapler have on workers and their productivity?**
 - 9. What effect(s) did the introduction of the hole punch have on workers and their productivity?**
 - 10. What are some costs and benefits of using new technology?**
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Handout 1: Production Method #1

General Instructions:

1. Each of you will produce clothing for members of your *own family*.
2. You *will not* share the work.
3. You must produce by yourself each piece of clothing from the first step through the last.
4. Materials **may** be shared, but labor **may not** be shared.
5. You must produce as many quality pieces of clothing as possible in 5 minutes.

Steps in Producing Clothing:

1. Neatly stack 2 sheets of brown construction paper. This paper represents the animal skins that the Native Americans used to make their clothing.
2. Using the ruler and a pencil, mark a dot every inch down the long side of the top sheet of paper, each dot being ” in from the edge. You should have 5 dots.
3. Using your pencil, punch a hole at each dot through both sheets of paper.
4. Lay the two sheets of paper next to each other so that the sides with the holes are facing each other.
5. Take a piece of yarn and weave it through the two sets of holes as if threading a shoelace through the holes in a shoe. Tie the two ends in a knot after the last hole.
6. Using the yellow crayon, decorate your clothing by drawing and coloring 3 feathers on each “skin”.

Name _____

Handout 2: Discussing Productivity

Questions to consider after Round 1:

1. Why were so few pieces of clothing produced in Round 1?

2. How might you increase the output?

Questions to consider after Round 2:

3. Did the worker’s productivity *increase* or *decrease* from Round 1 to Round 2?

4. If productivity increased, what might have caused this? _____

5. If productivity decreased, what might have caused this? _____

6. List some advantages and disadvantages of each method of production.

Craftsperson Advantages	Craftsperson Disadvantages	Specialist Advantages	Specialist Disadvantages

Questions to consider after Round 3:

7. What happened to worker's productivity from Round 2 to Round 3?

8. What effect(s) did the introduction of the stapler have on workers and their productivity? _____

9. What effect(s) did the introduction of the hole punch have on workers and their productivity?

10. What are some costs and benefits of using new technology? _____

Handout 3: Production Method #2

General Instructions:

1. You will be producing clothing for *all members of your tribe*.
2. The team will share the work in the following manner: 1 person will be the **marker**, 1 person will be the **puncher**, 1 person will be the **weaver**, and 1 person will be the **decorator**. **See the explanations below.**
3. All steps of the process must be completed in order to have finished pieces of clothing.
4. Materials and labor will be shared among all the workers in your group.
5. You must produce as many quality pieces of clothing as possible in 5 minutes.

Steps in Producing Clothing:

Marker:

1. Neatly stack 2 sheets of brown construction paper. This paper represents the animal skins that the Native Americans used to make their clothing.
2. Using the ruler and a pencil, mark a dot every inch down the long side of the top sheet of paper, ” in from the edge of the paper. You should have 5 dots.

Puncher:

3. Using your pencil, punch a hole at each dot through both sheets of paper.

Weaver:

4. Lay the two sheets of paper next to each other so that the sides with the holes are facing each other.
5. Take a piece of yarn and weave it through the two sets of holes as if threading a shoelace through the holes in a shoe. Tie the two ends in a knot after the last hole.

Decorator:

6. Using the yellow crayon, decorate your clothing by drawing and coloring 3 feathers on each “skin”.

Handout 4: Production Method #3 - Nanticokes

General Instructions:

1. Your team will be producing clothing for *all members of your tribe*.
2. The team will share the work in the following manner: 2 people will be the **weavers** and 2 people will be the **decorators**.
3. All steps of the process must be completed in order to have finished pieces of clothing.
4. You must produce as many quality pieces of clothing as possible in 5 minutes.

Steps in Producing Clothing:

Marker:

Your job has been eliminated. You will now be a Folder.

Puncher:

Your job has been eliminated. You will now be a Decorator.

Weaver:

Set two sheets of construction paper on top of one another. Staple the sheets together 1/2" from the edge down one long side, using 4 staples.

Folder:

Open the two "skins" (as if you were opening a book) and with your finger press the seam open. Then fold the "skins" so the stapled seam is on the inside of the clothing.

Decorators:

Using the yellow crayon, decorate your clothing by drawing and coloring 3 feathers on each "skin".

Handout 4: Production Method #3 – Lenni Lenape

General Instructions:

1. Your team will be producing clothing for *all members of your tribe*.
2. The team will share the work in the following manner: 1 person will be the **marker**, 1 person will be the **puncher**, 1 person will be the **weaver**, and 1 person will be the **decorator**.
3. You must produce each piece of clothing from the first step through the last.
4. Materials and labor will be shared among all the workers in your group.
5. You must produce as many quality pieces of clothing as possible in 5 minutes.

Steps in Producing Clothing:

Marker:

1. Neatly stack 2 sheets of brown construction paper.
2. Using the ruler and a pencil, mark a dot every inch down the long side of the top sheet of paper, ” in from the edge of the paper. You should have 5 dots.

Puncher:

1. Using your hole punch, punch a hole at each dot through both sheets of paper.

Weaver:

1. Lay the two sheets of paper next to each other so that the sides with the holes are facing each other.
2. Take a piece of yarn and weave it through the two sets of holes as if threading a shoelace through the holes in a shoe. Tie the two ends in a knot after the last hole.

Decorator:

Using the yellow crayon, decorate your clothing by drawing and coloring 3 feathers on each “skin”.

Name _____

Handout 5
 Assessment – Grade 4
 Economics Standard 3

Yield Per Acre (in bushels)		
	1800	2000
Wheat	15	40
Corn	25	138

Source: *Historical Statistics of the United States*, U.S. Census Bureau, and U.S. Department of Agriculture.

Based on the above data, how might you explain the increased output between 1800 and 2000?

Give an example to support your answer. _____

U.S. Textile Mills	
Output per Worker per Year (yards of cotton cloth)	
1821	2,000
1859	9,410

Source: "The New England Textile Industry, 1825-60: Trends and Fluctuations," Lance E. Davis and H. Louis Stettler III.

Which of the following might explain the increase in output between 1821 and 1860? Circle the letter in front of your choice.

- a. The mill hired more workers.
- b. The mill purchased new machines.
- c. The workers worked shorter hours.
- d. The workers worked at home.