Lesson 8
Specialization and Division of Labor
Making Production More Efficient

Teaching Objectives:

1. To teach that specialization and division of labor increase productivity, resulting in higher incomes

2. To teach some of the disadvantages of specialization and division of labor

Economic Concepts: Specialization, Productivity, Division of Labor, Efficiency, Productive Resources, Output, Input

Time Allowed: 45 minutes

Materials:

- Enough green, yellow, red, white, and brown modeling clay to make about 40 small "hamburgers" (Larger quantities of white and brown especially will be needed. You may want to use the recipe at the end of this book.)
- 6 Rulers
- 2 Pencils

Discussion of Economic Concepts:

Probably the most important way to alleviate the problem of **scarcity** is to increase **productivity**. Productivity measures the amount of **goods** and **services** produced from a given amount of **productive resources**. Economists refer to the goods and services as **output**. The productive resources used in production are **inputs**. Productivity can be defined as the ratio of output per unit of input.

To increase productivity, a business must produce more output per unit of input, or must produce the same amount of output using less inputs. By increasing productivity, businesses are using their productive resources more **efficiently**. More efficient production results in higher wages and salaries. One of the most fundamental ways to increase productivity is through **specialization**. One way to specialize is to **divide the labor** in specific production processes. An excellent example of this is an assembly line. Assembly line production is typically more efficient than having individual workers making complete products.

Specialization and division of labor have some disadvantages, however. In highly specialized production situations, a worker who is absent or inefficient can slow the whole production process. Also, for many people, producing one type of good or service, or doing only one specific task in the production process, can be monotonous. Creativity can be stifled. Workers and businesses must decide if increases in productivity through specialization and division of labor (and the probable increases in profits, wages, and salaries) are worth the monotony and reduced creativity.

It is important to emphasize that in modern manufacturing plants, individual workers often do a variety of production tasks in a team setting, instead of doing only one highly specialized task on a long assembly line. Also, quality control is ongoing and doesn't just take place at the end of a production line. Despite these current trends, the basic principle taught in this lesson remains true - modern production still entails a high degree of specialization/division of labor, which increases productivity and results in a high degree of **interdependence**.

Teaching Tips:

1. Don't assign a large percentage of the students who are more skilled and faster in making hamburgers to the non-assembly line group. Otherwise, more output may be produced by that group and less by the assembly line group - just the opposite result that you want!

2. It is very important to plan carefully how you want the assembly line group to be organized. The attached Assembly Line Pattern works very well.

3. Important! Play down the competitive nature of this activity. In the instructions, don't make the activity a big "contest." In the debriefing, emphasize that each group worked equally hard; it was the division of labor that caused the increased productivity of the assembly line group.

4. The first time you do this activity, it is helpful having another adult in the room to help with organization.

Teaching Procedure:

1. Ask the students if they have ever been to a McDonald's, Burger King, Wendy's, or Hardee's hamburger restaurant. Discuss how the food is prepared and why it is necessary to produce the food quickly. Ask them if they would like to make hamburgers with their modeling clay!

2. Form two groups of workers. Give each group three rulers, one pencil, plus all five colors of modeling clay. Students in the non-assembly line group may *not* divide the modeling clay by passing some of each color to each student.

3. Show exactly how you want the hamburgers made. There must be two buns, each 2" in diameter, and one piece of meat 1 1/2" in diameter made from white and brown modeling clay, respectively. (Most of the modeling clay will be used for meat and buns.) On each hamburger must be three dabs of ketchup (red), three dabs of mustard (yellow), and two pickles (green). There must also be 16 sesame seeds on the top of each bun. (Use pencils to make tiny "sesame seed" holes.)

4. Tell one group that each worker must make complete hamburgers. While this group gets organized (you can let them soften the modeling clay), quickly explain the assembly line procedure to the other group. The specific tasks for 14 students might be:

    - 2 students - modeling clay into balls for buns
    - 2 students - flatten balls into buns
    - 1 student - modeling clay into ball for meat
    - 1 student - flatten balls into meat
    - 3 students - use rulers to make sure meat patties are correct size
    - 1 student - assemble bottom bun and meat
    - 1 student - put on three dabs of ketchup
    - 1 student - put on three dabs of mustard
    - 1 student - put on two green pickles
    - 1 student - put 16 sesame seed holes in bun and assemble burgers

    <u>Important:</u> Use the attached Assembly Line Pattern to get students stationed in the proper production sequence. The pattern offers suggestions for groups of less than 14 students.

5. Tell both groups that they will have about seven minutes to produce hamburgers. When you stop the production, only completed hamburgers will count. Hamburgers that are not made properly will be rejected.

6. After the activity, compute each group's productivity (output per worker). Discuss the following questions:

    a. What productive resources were used in your production? (human resources - our work effort; capital - pencil and ruler; natural resources – our workspace (i.e. land), the modeling clay)

    b. Which group made the most hamburgers, i.e. had the best productivity? (Assembly line group)

    c. Why did the assembly line group make more hamburgers? Was it because they worked harder? (No, they specialized by dividing the labor. The non-assembly line group wasted time waiting to use the capital and modeling clay. The assembly line students only had to learn one task, etc.)

    d. What are some other examples of people specializing in their work? (People learning one job: teaching, carpentry, plumbing, etc.)

    e. What are some examples of division of labor in your house? (Parents and children doing specific jobs around the house). Why do families divide the labor? (More work gets done that way since people don't have to learn as many different tasks and can concentrate on the tasks they do well. This makes families more productive.)

    f. What are some <u>disadvantages</u> of specializing and dividing the labor? (Jobs can become more boring and less creative. If one member of the team does poorly or is absent, it slows down the whole production process.)

    g. How does specializing and dividing the labor help workers? (As workers become more productive, they become more valuable to employers and usually earn higher wages and salaries.)

Follow-up and Extension Activities:

1. To extend the activity, create two identical "Special Order Cards," one for each group. On each card have specialized orders that the groups must fill (e.g., four hamburgers with ketchup and pickle only, six with mustard only, etc.)

2. Arrange a field trip to a local factory where an assembly line is used or visit a local restaurant. Inform the manager beforehand that your class is interested in how the factory or restaurant increases productivity.

3. Ask students to identify other products made on an assembly line (car, computer, television, etc.) then draw what they think the production process looks like. Require them to identify and label the various productive resources, including the types of jobs on the assembly line. Have students write a short paragraph describing a day's work on this assembly line.

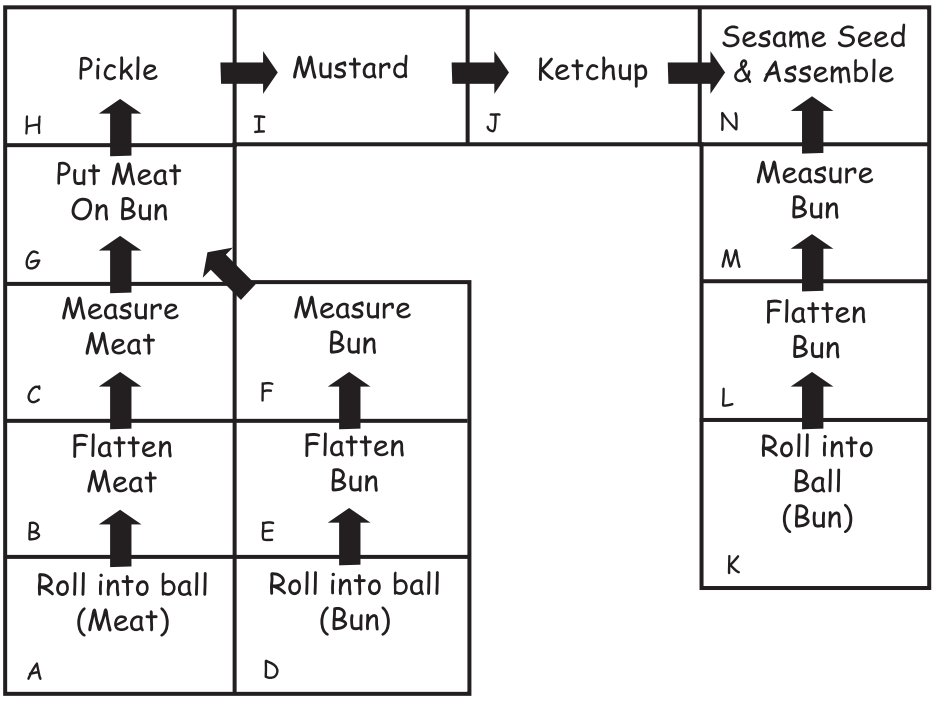
4. Pose this question for discussion: "You have the chance to make $15 an hour working on an assembly line in a factory that makes chairs. You can work in a small carpentry shop and custom design and make complete chairs, but will earn only $13 an hour. Which would you choose? Why?"

Literature Connection: Use the following books to reinforce the economic concept. Lessons with questions to ask students can be found at the KidsEcon Posters© website (www.kidseconposters.com). Click on Literature Connection.

- *How a House Is Built* by Gail Gibbons
- *Worm Gets a Job* by Kathy Caple

SPECIALIZATION

Basic Assembly Line Pattern
(10-14 People)



Suggestions:

- Jobs A and B, D and E, and K and L can be combined if necessary.
- Job G can also be eliminated.
- Suggestions for additional jobs: Help Where Needed Person
  Quality Control Person