

## EFFICIENCY

### Performance Standard 15D.I

Observe a group of working people and make recommendations for improving productivity accordingly:

- *Knowledge*: recommending ways that productivity can be increased in a school setting;
- *Reasoning*: analyzing the recommendations to show a rationale based on the concept of productivity; and
- *Communication*: make written recommendations that are well-organized, well-focused and well-detailed; express all ideas in a way that provides evidence of knowledge and reasoning processes.

### Procedures

- 1 ***In order to understand trade as an exchange of goods or services (15D)***, students should experience sufficient learning opportunities to develop the following:
  - Identify ways in which the productivity of labor can be increased.
- 2 Have students review and discuss the assessment task and how the rubric will be used to evaluate their work.
- 3 Students are taught methods businesses use to improve productivity. Students are offered options of situations to observe and make suggestions for improving productivity:
  - a. Students could observe over a period of time a part of the school operation that requires significant physical labor. Among the possibilities are food preparations in the cafeteria, maintenance of the building and/or grounds, office operations, bus operations and/or maintenance, or physical education instruction. Video taping of one of the operations, if appropriate, could be used also.
  - b. Students could observe student activities, such as newspaper staff, yearbook staff, or other groups that produce a product.
  - c. Students could observe their place of employment.
- 4 Have students discuss raising productivity at school or on the job by recommending ways the school staff, employees or students work could be used more efficiently. Students may be grouped together for discussion, if reasonable methods for individual accountability are used.
- 5 Based on previous observations, students make recommendations with the following guidelines:
  - a. No recommendation may suggest adding employees.
  - b. No recommendation may cut out any particular work activity though changes in methodology and/or equipment may be suggested.
  - c. If a recommendation calls for more money is to be spent at first, the recommendation must suggest how that spending will save money in the long run.
  - d. Recommendations may not include names of individuals or make reference to work habits of particular individuals.
  - e. Recommendations may not rely on motivating employees to work harder or beyond the regular workday though additional training or a change in the time of day people work may be suggested.
- 6 Have students individually make a written recommendation (Optional - video tape), which should include a rationale for each suggestion and be presented in a way as to encourage its acceptance.
- 7 Evaluate each student's work using the Social Science Rubric as follows and add the scores to determine the performance level:
  - *Knowledge*: the identification of items in the recommendations has a reasonable change of improving productivity and is accurate and complete.
  - *Reasoning*: the analysis in the recommendations should show a rationale and an understanding of the concept of productivity.
  - *Communication*: the recommendations are well-organized, well-focused and well-detailed; the knowledge and reasoning were completely and effectively communicated.

### Examples of Student Work follow

### Resources

### Time Requirements

- One period to make recommendations
- Other class or research time will be needed.

- Textbook or other sources of information on improving productivity
- Guidelines for appropriate observations
- Social Science Rubric
- Student directions

### ASSESSMENT 15D.I

## Increasing Productivity

Assume that you have been producing and marketing cookies for the student body. Let's also assume that you will engage in future production and marketing of your cookie products.

The big question? How can you increase productivity?

Identify and demonstrate at least three ways that productivity of labor can be increased. Utilize examples to clarify your recommendations.

You must adhere to the following guidelines as you develop your response:

1. No recommendations may cut out any particular work activity through changes in methodology and/or equipment may be suggested.
2. If a recommendation calls for more money to be spent at first, the recommendation must suggest how that spending will save money in the long run.
3. Recommendations may not include names of individuals or make references to work habits of particular individuals.
4. Recommendations may not rely on motivating workers to work harder or beyond the regular workday.

If I had to produce and sell cookies for the school again, I would do some things different to increase productivity. The first thing I would do is have people specialize in what they do. I would have one person make one type of cookie and the other people each make a different type. This would help by having people be able to make more cookies in a quicker amount of time. If that person could make fifty cookies in an hour, a team of three people could make seventy in an hour, but each person individually could make 50 in an hour or 150 overall. Each person specializing would be twice as productive. Another thing I would do is make sure someone is always doing something. If cookies were in the oven, I would make sure people were preparing the dough for the next batch. This would be productive because time would not be wasted. This works for a production line because right when someone finishes one thing he starts the next. Multiple things are going on at the same time too. A car assembly line would have doors being put on in one spot and wheels in another. The last thing

I would do is make sure no materials are wasted. If materials are wasted, you are wasting money. Also, when you're wasting materials you run out faster + will have to take the time to go and buy more. Making sure materials are not wasted saves time and money. If a real business wasted materials, all of the expenses would add up and really cost them.

## Productivity

If the cookie project were to continue throughout the school year, there are several things that could be done to increase profits. One way to increase profits is to increase productivity. Productivity is the amount produced in a certain period of time. In order to increase this, you must either decrease the time and keep the amount produced the same, or increase the amount produced and keep the time period the same. There are different ways to increase productivity. Increasing either the quality or quantity of input both result in higher productivity.

The best way to increase productivity is to increase the quality of input. This would have helped our company immensely. Before we started cooking, we should have taken time to teach our bakers how to bake cookies. Half of the people baking had never made cookies before. If they had known what they were doing, they would have made each batch of cookies faster. While this would have taken time in the beginning, the benefits would outweigh the time lost. Because of the unskilled labor, time was needed to train them anyway. If we had spent more time training them better, they would have been more confident in their own abilities and would not have asked so many questions as they baked, which took up baking time.

Another way to increase productivity is to divide the labor into an assembly line type of operation. Boeing recently began doing this with their large airplanes, and it has helped them save costs and time. While the cookies would not be put on a moving belt as the airplanes are, the bowl could be passed down a line of workers who each added different things. For example, one person could measure the liquid ingredients, one could

measure the dry ingredients, and one could mix it up. Then it would be passed along wear one person would put the dough on pans and another would be responsible for taking sheets of cookies in and out of the oven. Finally, a person would take the cookies off the sheets. This is what Boeing does with the planes. Each person has his or her own job, which ensures that every job gets done. When we were baking before, we occasionally forgot to take cookies off sheets, which ruined them. This would not happen in an assembly line operation. Each worker would also become better at his or her job. By doing the same thing over and over again, they would improve. Eventually, the cookies would be made very quickly. Also, time would be saved if another person's job was to make sure all ingredients were ready. Boeing had the same problem we did; time was taken up trying to find ingredients. It was a big problem for them, taking up to two hours of an employee's time. By solving this problem through an assembly line, we would save a lot of time.

The last way to increase productivity is to increase the quantity of input. We could do this by having more bakers at each time. While this would cost more in wages, less time would be used. We only had four bakers the first day, and baked for a long time. We could experiment to find the most profitable amount of workers and use that. Because we have the whole year to sell cookies, these initial experiments would be worth any loss they caused after we found the best number of people. We would have to record the number of hours worked by all people and divide the amount of cookies produced by this. Whatever number of people resulted in the highest number would be the best amount of workers to use at each time.