**Productivity - Guided Practice**

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| Goal | Experience productivity and specialization of labor through a kinesthetic activity. |
| Activity | Assemble and package peanut butter and jelly sandwiches. Teacher may use other sandwich choices as deemed appropriate. |
| Method | Distribute resources to students in groups of varying sizes (2 students, 4 students, and 6 students) |
| Resources | Each group receives all of the items below:  Loaf of bread Disposable gloves  Jar of peanut butter Small, disposable bowls  Jar of jelly Sandwich bags  Plastic spoons and knives |
| Process | 1. Record the cost of all resources as a class. Obtain a measurement conversion chart and scale to estimate the amount of peanut butter and jelly used per sandwich. Use a calculator to determine cost.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Input | Cost | Qty. used per sandwich | Est. cost per sandwich | Notes | | Bread | Loaf: $ |  |  |  | | Peanut Butter | Jar: $ |  |  | Establish a consistent amount of peanut butter to use per sandwich (TSP or TBSP) and estimate cost per sandwich. | | Jelly | Jar: $ |  |  | Establish a consistent amount of jelly to use per sandwich (TSP or TBSP) and estimate cost. | | Plastic spoons and knives | Box: $ |  |  |  | | Disposable gloves | Box: $ |  |  |  | | Disposable bowls | Set: $ |  |  |  | | Sandwich bags or baggies | Box: $ |  |  |  |   2. Determine cost per sandwich (include the cost of one baggie per sandwich).  3. Give each group three minutes to create strategy and assign roles for specialized labor.  4. Begin five-minute timer.  5. Stop groups immediately at ringing of timer.  6. Track results.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Team | No. of students on team | Qty. of packaged sandwiches | Avg. packaged sandwiches/ minute per student | Projected packaged sandwiches/ hour per student | Projected packaged sandwiches/  workday per student | | 1. |  |  |  |  |  | | 2. |  |  |  |  |  | | 3. |  |  |  |  |  | | 4. |  |  |  |  |  |   7. Imagine that each student (employee) worked for $10 per hour. Calculate the labor cost per 8-hour workday per student: $\_\_\_\_\_\_\_\_\_\_\_   |  |  |  | | --- | --- | --- | | Team | Labor costs for all students/ workday | Combined projected labor costs and projected sandwich cost for workday | | 1. |  |  | | 2. |  |  | | 3. |  |  | | 4. |  |  |   8. Imagine that each sandwich sells for $3 each. Calculate revenue for each team.   |  |  |  | | --- | --- | --- | | Team | Sandwiches per workday | Revenue for workday | | 1. |  |  | | 2. |  |  | | 3. |  |  | | 4. |  |  |   9. Revenue less cost of sales equals gross margin. Cost of sales equals all expenditures required to get the product or service to the customer. Examples of product costs include all items in #1. Costs of labor are included, as well. Finally, it includes indirect costs associated with producing the items to be sold, i.e. rental of the production facilities and payment of utilities where the product is being created and/or packaged (indirect cost has not been included in this activity).  Calculate Gross Margin for each team.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Team | Sandwiches per workday | Qty. of packaged sandwiches | Avg. packaged sandwiches/ minute per student | Projected packaged sandwiches/ hour per student | Projected packaged sandwiches/workday per student | | 1. |  |  |  |  |  | | 2. |  |  |  |  |  | | 3. |  |  |  |  |  | | 4. |  |  |  |  |  |   10. Create charts/graphs reflecting the results (examples below)   * Productivity: Quantity of sandwiches per student or team per hour * Productivity: Quantity of sandwiches per student or team per workday * Finance: Gross Margin per student * Finance: Gross Margin per team |
| Questions | 1. Describe how you employed the use of specialization of labor and division of  labor within your team.  2. How did the number of students in your team positively or negatively affect  productivity?  3. What other methods can be used to improve productivity? |