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| **Course:** | BF10: Principles of Business and Finance |
| **Objective:** | NC CTE 5.05: Analyze cost/profit relationships to guide business decision making. (EC:013, EC LAP 18) |

**Unpacked Content**

1. Explain the concept of productivity (EC:013, EC LAP 18) (CS)
   1. Productivity: Amount and value of goods and services produced (outputs) from set amounts of resources (inputs).
   2. How productivity is measured
      1. Number of products produced/Number of steps involved in producing them
      2. Dollar value of total sales/ Number of salespeople who make the sales
      3. Dollar value of total sales/costs of making those sales
   3. Describe factors that enhance productivity
      1. Specialization/Division of labor
      2. Increased capital investment
      3. Mass production
      4. Research and development
      5. Working within government regulations
      6. Training and education
      7. Communication
      8. Participative decision making
      9. Motivation
      10. Quality of work life
   4. Describe factors that hinder productivity
      1. Lack of standardization
      2. Lack of tools/equipment
      3. Too many different products
      4. Poor product/service design
      5. Lack of communication
      6. Poor planning
      7. Lack of worker knowledge and education
      8. Personality conflicts
      9. Poor or unsafe working conditions
      10. Unclear goals

**5.05 - Production at the Bead Factory**

This scenario takes place in your not too distant future. With your high school education behind you, you find yourself employed in your less than ideal career position – making bracelets in a factory. The factory has two divisions – the craft division and the assembly line division.

* Class will be divided into two work teams. One team will work in the craft division and the other will be assigned to the assembly line division.
* A production supervisor/time keeper will be assigned to each division.
* Each division will get raw materials of string, scissors and a container of beads along with specific manufacturing instructions. Each work team will have five minutes to design and arrange their work area.

Craft Division Standard Operating Procedures (SOP)

1. Each worker will make one bracelet.
2. For their raw materials each worker will need 1 string 1 foot in length, a pair of scissors and 53 beads – 6 of each color.
3. Place the beads on the string in the following order.
   1. 3 red
   2. 2 black
   3. 3 orange
   4. 3 green
   5. 3 yellow
   6. 3 purple
   7. 3 white
   8. 3 blue
   9. 3 pink
   10. 1 letter (your choice)
   11. 3 pink
   12. 3 blue
   13. 3 white
   14. 3 purple
   15. 3 yellow
   16. 3 green
   17. 3 orange
   18. 2 black
   19. 3 red
4. Tie the two ends of the string together to form the bracelet and cut off any excess string.

The production supervisor needs to keep a log of how long it takes each worker to make their bracelet.

Assembly Line Division Standard Operating Procedures (SOP)

1. You will manufacture 7 bracelets.
2. For your raw materials your team will need 7 strings each 1 foot in length, 1 pair of scissors and 53 of each color.
3. The work should be assigned in the following manner.
   * Worker 1 will take the string and place 3 red, 2 black and 3 orange beads   
     then pass to Worker 2
   * Worker 2 will place 3 green, 3 yellow and 3 purple beads,   
     then pass to Worker 3
   * Worker 3 will place 3 white, 3 blue and 3 pink beads, then pass to Worker 4
   * Worker 4 will place 1 letter bead (your choice), 3 pink and 3 blue beads,   
     then pass to Worker 5
   * Worker 5 will place 3 white, 3 purple and 3 yellow beads, then pass to Worker 6
   * Worker 6 will place 3 green, 3 orange and 2 black beads,   
     then pass to Worker 7
   * Worker 7 will place 3 red, then tie the string and cut off the excess.
4. Tie the two ends of the string together to form the bracelet and cut off any excess string.

The production supervisor needs to keep a log of how long it took the team to make the first bracelet and then how long it took to make the last bracelet. In addition, they must keep track of the total time from start to finish of all 7 bracelets.

**5.05 - Production at the Bead Factory Worksheet**

Using the results from both groups, complete the following:

1. Record the timing results of each group.
2. How is productivity being measured?
3. Based on the results, was productivity increased with the use of an assembly line or by working independently)? Explain your answer.
4. What were some of the hindrances that occurred during the production process for either group?
5. What could be done to increase production for this product?