

VOLUNTEER INSTRUCTIONS

Manufacturing Activity

- **Setup:** The students' desks should be arranged into four groups. As students enter the classroom, help arrange equal numbers of students in each group. In addition to your bin, you should also have 4 game boards in a black bag.
- **Goal:** Students will learn about the many products made in northeastern PA and the varied jobs available in manufacturing.

***When text is in red, please read it to the students exactly as written.**

Introduce yourself and briefly share your career/education background.

Opening Remarks: (5 minutes)

Pennsylvania is home to some of the coolest products made in America. From Hershey Bars to Harley Davidson Motorcycles, and Crayola Crayons to Martin Guitars, the Keystone State is king in manufacturing! Pennsylvania is a hub for snack food, too. How many of you enjoy Middleswarth Potato Chips, UTZ Pretzels, Turkey Hill Ice Cream or Reese's Peanut Butter Cups. These tasty snack foods are all made in PA! What does the word 'manufacturing' mean to you? **(The making of items or the process of turning raw materials into finished products)** Does anyone have a family member or friend that works in manufacturing? Today's activities involve learning about manufacturing and highlight some of the neat products our community uses and relies upon daily.

Why are we focusing on manufacturing? In Pennsylvania, there are over **13,000** manufacturing companies employing nearly **695,000** workers in a variety of roles and positions. In Northeastern Pennsylvania alone, there are over **3,800** manufacturing and distribution establishments employing over **50,000** workers! Combined, there are more jobs in manufacturing and distribution (with distribution technically known as transportation and warehousing) than in any other single sector, including retail, health care, and education.

Activity 1: Manufacturing Video (5 minutes)

In our first activity, students will watch a video featuring some products made in our region and will learn about a few essential careers necessary to make these products, including a process engineer, computer numerical control (CNC) operator, machine maintenance technician, and a welder. Let the students know they are going to watch a brief video. They should pay close attention because they will be having a friendly team competition playing a manufacturing trivia game afterward.

- The teacher should have a link to the video already downloaded onto a computer. If not, insert the flash drive in your bin into the computer.

Comments (Key Learning): While many manufacturing companies utilize robotics and other types of automated processes, people are still needed to design, operate, and maintain these processes. Even in a highly automated environment, manufacturing and distribution could not operate without people. Which of the products in the video are you most familiar with? Which product were you most surprised to see is manufactured right here in Northeastern Pennsylvania?

Activity 2: Manufacturing Trivia Game (approx. 15 minutes)

Let the students know they are going to compete against each other and play a fun manufacturing trivia board game featuring the following topics: Manufacturing Careers (blue square), Salaries & Benefits (green square), Training & Education (pink square), Fun Facts (purple square), Products Made in NEPA (yellow square) and, Manufacturing & Me (orange square). The goal of the game is simple: correctly answer trivia questions and try to be the first team to earn the six PA-themed pie pieces for each category.

- Hand out a game board and baggie containing trivia cards, PA-shaped game piece with 6 keystone blocks, and die to each group. The trivia game board is shaped like a 6-spoke wheel. Players begin at the center; then move out to earn a pie piece from each of the color coordinated categories on the outer wheel for the win.
- Explain that each group they will work together as a team. Try to keep teams as close to the same number of students as possible.
- The game begins with one student in each group rolling the die and moving the game piece that number of spaces. The game piece can move in any direction, including up and down the spokes of the wheel.
- The student picks a card from the same category as indicated by the color of the space and reads the question to the rest of the team. For multiple choice questions, the student should read all the options listed on the card. (The correct answer appears in **bold** on the card.)
- If the answer is incorrect, the student places that card on the bottom of the pile and chooses another trivia card from the same category and asks another question.
- When the team gets the correct answer, another student in the group rolls the die, moves the game piece, and takes a card of that color and reads the question to the group. Continue in this manner with a new student rolling the die and asking the question after a correct answer is given.
- To earn a Keystone block the game piece **must** land on one of the solid color spaces at the end of each spoke and students must correctly answer the question for that color. Teams can **only** earn a pie piece this way.
- The first team to get all six pie pieces wins the game. Or should time run out, the team with the most pie pieces wins. (Stop the game about 5 minutes before the end of the session.)
- Have students put trivia cards, game piece with 6 pie pieces, and die back in the baggie.

Closing/Talking Points (remaining time):

What did you learn about manufacturing today? As you watched the video, did you see any jobs/careers that might interest you? What skills do you think are necessary for working in manufacturing?