Manufacturing Sector Profile

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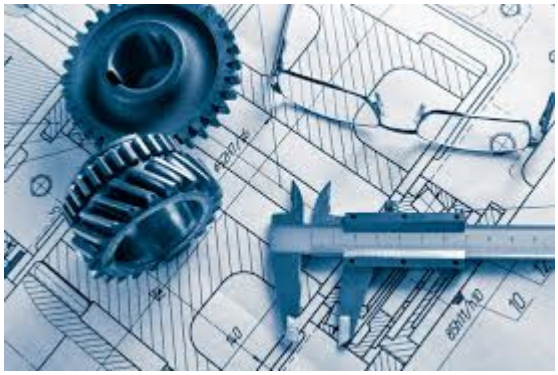
Note to teacher or student: Vocabulary words are capitalized in the following paragraphs. Under each paragraph, a definition of the vocabulary words is given. At the end of all six sections, there are questions which the teacher may use to test a student, or a student may use to review his/her knowledge.

1. What is Manufacturing?



Places that work in Manufacturing change RAW MATERIALS* into something finished that a person can use. RAW MATERIALS are things in their natural state, things from Nature, before they are changed. For example, a tree. A tree is RAW MATERIAL. A factory takes the wood from a tree and changes it to paper, something a person can use. A clothing factory takes cloth and changes it into clothes a person can buy in the store. Sometimes a factory makes parts of a machine that another factory might need. There are different ways to make things, for example, by hand, by assembly line, or by technology. Some examples of things that are made in manufacturing are clothes, computers, glass things such as windows or kitchen items, vehicles like cars or trucks, aluminum things such as pots and pans and aluminum foil, TVs, etc.

***VOCABULARY**

1. **Raw materials**: Things in their natural state before they are changed into something people can use.

2. The History of Manufacturing in New York State

For much of its history, New York State was one of the most important states for manufacturing. New York City was New York State's largest manufacturing location. New York City had what is called "the garment district." This was a place in the city where there were many small factories where clothes were made. The garment district is still a center of fashion. Outside of New York City, manufacturing led to economic PROSPERITY*. This means that many people had very good jobs and the economy was strong. For example, Rochester had Kodak and Xerox. Buffalo had the automobile industry. Many smaller cities produced everything from shoes to parts for cars and airplanes.

Since the mid-60s, manufacturing in New York State has DECLINED*, or gone down. Between 2000 and 2010, jobs in manufacturing fell from 752,300 to 457,800. In one year, from December 2015 to December 2016, 9,900 jobs in manufacturing were lost. But manufacturing still brings 5% of the jobs in New York State. Some areas of New York State, especially near our capital, Albany, got 3,000 new manufacturing jobs between 2009 and 2014. These jobs were in using chemicals, metal and machines, and computers. Now people in government and business are trying to make manufacturing strong again. Between now and 2024, manufacturing is expected to grow.

***VOCABULARY**

1. **Prosperity**: Having good jobs that lead to economic success.
2. **Decline**: To go down; to decrease.

3. Who Works in Manufacturing?

The AVERAGE* age, or the more or less middle or center age, of workers in manufacturing in New York State is 47. This is a little bit older than the average worker in other industries, which is 42. What happens when workers retire and leave their jobs? Those jobs open up to new workers. Many of the jobs that open are SKILLED*, or jobs for which you need training. Some examples are welders or electricians. These jobs usually pay more than the average pay. Many of these jobs require only a high school diploma or High School Equivalency (HSE) and some training. Some of this training is on-the-job.

***VOCABULARY**

1. **Average**: a middle point, often used to measure something with numbers, such as ages or number of people.
2. **Skilled jobs**: jobs a person needs to be trained to do.

4. Technology and Manufacturing

Companies in manufacturing use HIGH-TECH* processes to make their work faster and more PRECISE* or accurate. Because computers can sometimes work in place of people, these manufacturers need fewer workers. The workers they need have to have computer and technology skills. Technology, or computers, can: collect, organize and analyze DATA*; make things; manage the steps taken to make things; keep track of the hours that people work; communicate with workers; schedule appointments. For most jobs in manufacturing, at least basic computer skills are needed.

***VOCABULARY**

1. **High-tech**: short for high-technology; the most advanced technology, which usually means the most advanced computerized machines.
2. **Precise**: accurate or correct.
3. **Data**: information about a company, school or community.

5. Outsourcing

OUTSOURCING* is when a company moves its factories or offices to another country, or when it signs a CONTRACT* with a company in another country to make something. A company does this to save money. Usually workers in these other countries don't make as much as American workers, and the raw materials may be cheaper. Even though it may save the company money, outsourcing REDUCES*, or decreases, the number of jobs in the United States.

***VOCABULARY**

1. **Outsource**: move a company or factory to another country to save money.
2. **Contract**: a formal, written, signed agreement.
3. **Reduce**: to decrease; to bring down.

6. Jobs in Manufacturing

Five common manufacturing jobs in New York State are:

1. **Team Assemblers**: Work as part of a team putting parts or products together. They might have to: check for QUALITY*; get ready to ship their products; clean their work areas; REVIEW* work orders to make sure everything is okay. They need a high school diploma or High School Equivalency (HSE) diploma. In 2016, there were 38,400 team assemblers in New York State earning an average ANNUAL* salary of $31,080.
2. **First-Line Supervisors of Production and Operating Workers:** SUPERVISE* and COORDINATE* the activities of production and operating workers, such as team assemblers. They might have to: make sure that safety and SANITATION* rules are being followed; coordinate work schedules and TASKS*; plan with other supervisors; make sure production GOALS* are met; and INSPECT* materials, products, and equipment to find problems. They need a high school diploma or HSE diploma. In 2016, there were 25,650 first-line supervisors in New York State earning an average annual salary of $65,860.

3. **Inspectors, Testers, Sorters, Samplers and Weighers**: Inspect, test, SORT*, SAMPLE* or WEIGH* raw materials, parts or products to see if they are DAMAGED* or okay. They might have to: measure something to be sure it's correct; read MANUALS*; write down data; figure out which products are okay and which are not. They usually have a high school or HSE diploma. In 2016, there were 20,681 of these workers in New York State earning an average annual salary of $41,650.
4. **Machinists:** Set up and operate many different machines to make metal parts, instruments and tools. They might have to: CALCULATE DIMENSIONS*; fasten tools and parts onto machines; measure and test finished products to see if they are okay or not. Machinists need a high school or HSE diploma. In 2016, there were 13,480 machinists in New York State earning an average annual salary of $44,460.
5. **Sales Representatives:** Sell products to businesses and groups. They might have to: talk to existing and POTENTIAL* customers to tell them about the products they are selling; suggest products to people based on people's needs and interests; ESTIMATE* prices and delivery dates; solve problems and give support to customers who have their products. Sales representatives usually have a high school or HSE diploma. In 2016, there were 89,800 sales reps in New York State earning an average annual salary of $72,640.

The above jobs and responsibilities may change from employer to employer. All five of these jobs are expected to grow between now and 2024.

VOCABULARY

1. **Quality**: how good or bad something is. **High quality** means it's good; **low quality** means it's bad

2. **Review**: Look something over to be sure it's okay

3. **Annual**: every year

4. **Supervise**: to be in charge of; to watch

5. **Coordinate**: to be sure everything or everyone works together

6. **Sanitation**: Cleanliness

7. **Task**: job

8. **Goal**: a plan to finish something by a certain date

9. **Inspect**: to check to see if something is okay

10. **Sort**: to put into similar groups

11. **Sample**: to try something

12. **Weigh**: to see how heavy something is
13. **Damaged**: broken
14. **Manual**: book that tells exactly how to do something
15. **Calculate**: measure.
16. **Dimensions**: how high, how wide, how thick, and/or how far around something is
17. **Potential**: possible
18. **Estimate**: guess

For teacher or student:

Use the following questions connected to each section to review or test.

What is Manufacturing? (Review or test)

1. What is manufacturing?
2. What are raw materials?
3. What are two examples of a raw material?
4. What are two examples of something made from a raw material?

The History of Manufacturing in New York State (Review or test)

1. What is "the garment district?" Where is it?
2. What does economic prosperity mean?
3. How did manufacturing bring economic prosperity?
4. What are some examples of manufacturing outside of New York City?
5. What, in general, has happened in New York State since 1965?
6. Is this true of every New York region?

Who Works in Manufacturing? (Review or test)

1. What is the average age of workers in manufacturing in New York State?
2. What is the average age of workers outside of manufacturing in New York State?
3. What happens when workers leave their jobs?
4. What is a skilled job?
5. What is one advantage of a skilled job?
6. Do these jobs always require university education?

Technology and Manufacturing (Review or test)

1. What two reasons do companies like high-tech processes?
2. What skills do workers who work with technology need?
3. Name three things in manufacturing that computers can do.

Outsourcing (Review or test)

1. What is outsourcing?
2. Why does a company outsource?
3. What is a negative result of outsourcing for American workers?

Jobs in Manufacturing (Review or test)

1. Out of the five common jobs in New York State, name three.
2. Of those three jobs you named, name two job responsibilities a worker might have.
3. Do we expect more of these jobs or less of these jobs between now and 2024?