The Manufacturing Industry

Media Type: Microsoft® PowerPoint® Presentation
Duration: 60 slides

Goal: To introduce students to the manufacturing industry.

Description: Students will learn about the manufacturing industry and the career opportunities within the industry. Students will also learn about the technological evolution of the industry and what impacts technology has made. This presentation also provides an overview of safety within the industry.

Objectives:
1. To provide an overview of the manufacturing industry.
2. To evaluate how the development of technology has affected the manufacturing industry.

Horizontal Alignment

Core-Subject Area	Foundation Concept	Basic Understanding
Language Arts	***Application of Writing Skills***	• Composition mechanics • Descriptive, informative, creative and persuasive writing • Organizing logical arguments • Brainstorming • Utilizing reference materials • Enhancing grammatical mechanics • Vocabulary enhancement
	Analysis of Text & Information	• Critical thinking • Creative thinking • Expression of thoughts and ideas • Communication skills • Developing listening and comprehension skills • Literary interpretation • Creating visual representations
	Technology Applications in Literature	• Utilizing document processing software • Utilizing presentation processing software • Internet-based research

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Lesson Plan

Student and Teacher Notes are available to print in outline format. You can access these documents under the "Printable Resources" section. If student licenses have been purchased, an interactive version of the Student Notes is available in the "Interactive Activities" section. If printing the full PowerPoint® is desired, you may download the file and print the handouts as needed.

Class 1: Begin class by distributing *The Manufacturing Industry Vocabulary Handout* for students to reference during the presentation. Show *The Manufacturing Industry - Introduction* segment. Follow the segment with its *Assessment*. Distribute the *Industry Interview Project* and allow students to begin researching questions.

Slides 1-19

Class 2: Remind students to continue using the *Vocabulary Handout* as reference materials. Show *The Manufacturing Industry - Technology* segment of the presentation. Follow the segment with the corresponding *Assessment*. Distribute the *Rise of Technology Project*. Allow students to begin their research.

Slides 20-35

Class 3: Remind students to continue using the *Vocabulary Handout*. Show *The Manufacturing Industry - Safety* segment of the presentation. Follow the segment with its *Assessment*. Assign the *Safety First Activity*. Students should begin the *Activity* which will be completed the following day. For more information see the *Teacher Instruction Sheet*.

Slides 36-60

Class 4: Distribute *The Manufacturing Industry Final Assessment* and allow time for students to complete it. Students should use the remainder of the class to complete the *Safety First Activity*.

Class 5: *Have* students present their *Rise of Technology Project* presentations.

Class 6: Have students present their *Industry Interview Project* presentations.

Lesson Links

Bureau of Labor Statistics: Manufacturing

- http://www.bls.gov/iag/tgs/iag31-33.htm

Occupational Safety & Health Administration

- www.osha.gov

Career & Technical Student Organizations

Skills USA

- Automated Manufacturing Technology
- Engineering Technology/Design
- Occupational Health & Safety
- Principles of Engineering/Technology

Technology Student Associations

- Manufacturing Prototype

Career Connections

Using the *Career Connections Activity*, allow students to explore the various careers associated with this lesson. See the *Activity* for more details. *If student licenses have been purchased:* Students will select the interviews to watch based on your directions. *If only a teacher license is purchased:* Show students all the career interviews and instruct them to only complete the interview form for the required number of interviews.

- iCEV50827, Lesley Chambers, Product Designer, Brown & Jordan International
- iCEV50799, Jeffrey Thompson, President, Etched Metal Company
- iCEV51100, Derek Logan, Project Engineer, Nissan Technical Center North America

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Lab Activities

Safety First

Directions:

Using the Internet, library or any other available resources, students will research and select a hazardous substance used in the manufacturing industry. Students should notify you before beginning any additional research in order make sure no two students select the same substance. Using the Internet, students will locate a Material Safety Data Sheet detailing the substance they chose and gather at least 10 facts about the substance. Students will develop a short (one to three minute) presentation detailing their findings as well as a 10 question quiz on the safety aspects of the substance selected. Students should share their findings with the class. Divide the class into groups of two or three. In groups, students should exchange their quizzes and complete the one they received. Once all quizzes are complete, students should check their quiz and discuss any wrong answers.

Projects

Industry Interview

Directions:

For this *Project,* students will interview a professional in the manufacturing industry. They may choose any of the careers outlined in the presentation. The interview should be based on purpose, duties and qualifications for the career. Using the presentation, Internet or other available resources, students will research and develop at least 10 questions to ask during the interview. Their questions should be open-ended to allow for expansion of each question. Once the interview is completed, students should write a one to two page essay detailing the information obtained from the interview and turn in their interview notes with the essay. After all interviews have been completed, lead a class discussion so students can share their findings with the class.

Rise of Technology

Directions:

For this *Project*, students will trace the progress of industry growth by investigating a chosen piece of technology used in manufacturing. Students will start by using any available resources to research and better understand a technology used within the manufacturing industry. Students should then trace the evolution of the technology and analyze events which influenced the development and research how the technology altered the means of engineering, production, consumption and distribution of goods once it was adopted as well as locating the international effects of the technology. Students will then analyze the positive and negative aspects of the chosen technology and develop a visual presentation on the technology and discuss factors which affected the implementation of this technology. Remind students to attach a citation sheet listing all sources used. Students should share their findings with the class and be prepared to answer questions.