Unit 2: Manufacturing Technology Laboratory and Personal Safety

Content Area: **Industrial Technology**
Course(s): **Manufacturing Tech III/ IV**
Time Period: **1 marking period**
Length: **1 Weeks**
Status: **Published**

Unit Overview

Students will be able to identify possible safety hazards and proper safety attire when working in the Manufacturing Lab. This is a review to make sure students remember previously taught material.

Transfer

Apply these skills to work related activities when they leave High School and join the work force when they graduate or become of work age to avoid injury.

For more information, read the following article by Grant Wiggins.

http://www.authenticeducation.org/ae_bigideas/article.lasso?artid=60

Meaning

Students will be able to explain the importance of practicing safe work habits.

Students will be able to summarize the general safety practices observed in manufacturing.

Students will be able to list common safety equipment and protective clothing used in the manufacturing lab.

Students will be able to apply safe work habits when operating machinery.

Students will be able to recognize and avoid unsafe work practices.

Understandings

There actions and knowledge will affect the possiblity of injury they may sustain if they don't follow the safety rules for the Manufacturing Lab.

Essential Questions

Students will keep considering...

What would happen if there was no state and school safety requirements?

Why must the students assume responsibility for their safety?

Why must the students wear safety eye protection at all times in the shop, what could happen?

How could the way you dress possible cause an accident or injury?

Why is it important to receive training on tools and machinery before operating them?

Application of Knowledge and Skill

Students will know that safety rules must be followed when beginning work on their projects in the Manufacturing Lab.

Students will wear Safety Glasses or Safety Goggles at all times when working on their projects in the shop.

Students will be able to operate safety apparatus like the eyewash, chemical shower, fire blanket, fire extinguisher and first aid kit location in the event of an emergency in the shop.

Students will be able to locate and operate lab power safety shutoff buttons in the Man. tech Lab in the event of an emergency while they're working on projects.

Students will dress appropriately when working in the lab when working on projects or using machinery or

equipment.

Students will know...

Students will know...

Students will know that safety rules must be followed when beginning work in the Manufacturing Lab.

Students will wear Safety Glasses or Safety Goggles at all times when working in the shop.

Students will be able to operate safety apparatus like the eyewash, chemical shower, fire blanket, fire extinguisher and first aid kit location.

Students will be able to locate and operate lab power safety shutoff buttons in the Man. tech Lab.

Students will dress appropriately when working in the lab.

Students will be skilled at...

Students will be skilled at...

Recognizing the potential for an accident to occur if they do not follow safety rules and any hazards that exist

Academic Vocabulary

Adequate Ventilation

approved eye protection

chips

compressed air

electrocution

hand tools

machine guards

metal safety container

metal lab safety equipment

Learning Goal 1

Explain the importance of practicing safe work habits and summarize the general safety practices.

CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
CAEP.9.2.12.C.7	Examine the professional, legal, and ethical responsibilities for both employers and employees in the global workplace.
CAEP.9.2.12.C.8	Assess the impact of litigation and court decisions on employment laws and practices.
MANU.9-12.9.4.12.M.(6).1	Evaluate procedures used to plan for safety in a new production process in order to ensure health, safety, and environmental well-being.
MANU.9-12.9.4.12.M.(6).2	Analyze investigations of health, safety, and/or environmental incidents and hazards in order to maintain healthy and safe manufacturing work environments.
MANU.9-12.9.4.12.M.(6).3	Evaluate preventive inspections of health, safety, and/or environmental hazards in order to ensure healthy and safe manufacturing work environments.
MANU.9-12.9.4.12.M.(6).4	Evaluate a job safety and health analysis of manufacturing jobs, equipment, and processes in order to identify priorities for health, safety, and environmental assurance programs.
MANU.9-12.9.4.12.M.(6).5	Analyze safety inspections findings and implement appropriate safety practices in order to improve the health and safety of manufacturing workplaces.
MANU.9-12.9.4.12.M.(6).6	Evaluate and summarize training in health, safety, and/or environmental issues needed to provide safe, healthy, and productive manufacturing work environments.
MANU.9-12.9.4.12.M.(6).7	Demonstrate the safe use of manufacturing equipment in order to assure heath and safety in work environments.
MANU.9-12.9.4.12.M.(6).8	Examine and summarize health, safety, and/or environmental programs, projects, policies, or procedures in order to ensure healthy and safe manufacturing work environments.
MANU.9-12.9.4.12.M.(6).9	Examine and summarize continuous improvement protocols, techniques, and practices in order to enhance the health and safety of manufacturing work environments.
MANU.9-12.9.4.12.M.(6).10	Examine and summarize health, safety, and/or environmental quality assurance programs in order to ensure healthy and safe manufacturing work environments.

Target 1

Explain the importance of practicing safe work habits and summarize the general safety practices.

Target 2

Tour and safety lesson on all safety apparatus and its function in the Manufacturing Laboratory.

Learning Goal 2

List common safety work habits when operating machinery and common safety equipment and protective clothing used in the Lab. Recognize and avoid unsafe work practices.

CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
CAEP.9.2.12.C.7	Examine the professional, legal, and ethical responsibilities for both employers and employees in the global workplace.
CAEP.9.2.12.C.8	Assess the impact of litigation and court decisions on employment laws and practices.
MANU.9-12.9.4.12.M.(6).1	Evaluate procedures used to plan for safety in a new production process in order to ensure health, safety, and environmental well-being.
MANU.9-12.9.4.12.M.(6).2	Analyze investigations of health, safety, and/or environmental incidents and hazards in order to maintain healthy and safe manufacturing work environments.
MANU.9-12.9.4.12.M.(6).3	Evaluate preventive inspections of health, safety, and/or environmental hazards in order to ensure healthy and safe manufacturing work environments.
MANU.9-12.9.4.12.M.(6).4	Evaluate a job safety and health analysis of manufacturing jobs, equipment, and processes in order to identify priorities for health, safety, and environmental assurance programs.
MANU.9-12.9.4.12.M.(6).5	Analyze safety inspections findings and implement appropriate safety practices in order to improve the health and safety of manufacturing workplaces.
MANU.9-12.9.4.12.M.(6).6	Evaluate and summarize training in health, safety, and/or environmental issues needed to provide safe, healthy, and productive manufacturing work environments.
MANU.9-12.9.4.12.M.(6).7	Demonstrate the safe use of manufacturing equipment in order to assure heath and safety in work environments.
MANU.9-12.9.4.12.M.(6).8	Examine and summarize health, safety, and/or environmental programs, projects, policies, or procedures in order to ensure healthy and safe manufacturing work environments.
MANU.9-12.9.4.12.M.(6).9	Examine and summarize continuous improvement protocols, techniques, and practices in order to enhance the health and safety of manufacturing work environments.
MANU.9-12.9.4.12.M.(6).10	Examine and summarize health, safety, and/or environmental quality assurance programs in order to ensure healthy and safe manufacturing work environments.

Target 1

Students will be able to apply safe work habits when operating machines.

Target 2

Students will be able to recognize and avoid unsafe work practices.

Proficiency Scale

Summative Assessment

Students will be able to pass a safety test on shop safety rules. Students must pass the test to work in the Manufacturing Lab

21st Century Life and Careers

CAEP.9.2.12.C.1	Review career goals and determine steps necessary for attainment.
CAEP.9.2.12.C.2	Modify Personalized Student Learning Plans to support declared career goals.
CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
CAEP.9.2.12.C.4	Analyze how economic conditions and societal changes influence employment trends and future education.
CAEP.9.2.12.C.5	Research career opportunities in the United States and abroad that require knowledge of world languages and diverse cultures.
CAEP.9.2.12.C.7	Examine the professional, legal, and ethical responsibilities for both employers and employees in the global workplace.
CAEP.9.2.12.C.8	Assess the impact of litigation and court decisions on employment laws and practices.

Formative Assessment and Performance Opportunities

Students will be observed to make sure they are following safety rules and wearing proper safety equipment by the instructor and other students.

Accommodations/Modifications

Students will help to remind other students about safety rules.

Unit Resources

Modern Metalworking Instructor's Manual by John R. Walker

Modern Metalworking Textbook by John R. Walker

Modern Metalworking Workbook by John R. Walker