

CTE CONTENT AREA: Trade and Technical

CONTENT MODULE TITLE: Safety in the Trade and Technical Fields

MODULE DESCRIPTION

This module introduces students to the importance of safety in trade and technical careers. Students will examine the safety risks and hazards inherent in specific trade areas and learn about the ways workers can minimize risks and prevent hazards. Students will have the opportunity to weigh their interest in specific trade and technical careers against their willingness to accept the typical risks of working in those careers. Students will explore the wide variety of trade and technical career options and identify the knowledge, skills, education, and training necessary for working safely in these fields.

GUIDING QUESTION

What knowledge and skills are necessary to demonstrate appropriate and consistent use of policies, equipment, and techniques that foster workplace safety in trade and technical careers?

MODULE CONTENT

Safety in the Trade and Technical Fields

1. Safety in the Workplace

Students will

- a) Tell how safety procedures protect workers in trade careers
- b) Identify common safety hazards in specific trade areas
- c) Understand and utilize trade-specific safety vocabulary
- d) Investigate school, community, state, and federal guidelines for workplace safety
- e) Gain knowledge of the purpose and application of items in a first aid kit
- f) Apply Universal Precautions for every exposure incident
- g) Communicate safety concerns to appropriate leaders in classroom and workplace situations

2. Personal Protective Equipment (PPE) and Safety Apparel

Students will

- a) Know the types of PPE required for specific trade areas
- b) Demonstrate appropriate use and care of PPE and workplace apparel
- c) List the benefits of, and hazards avoided, by appropriate and consistent use of trade-specific PPE and apparel
- d) Describe ways PPE and apparel can be combined for maximum protection of workers in specific trade areas

3. Fire and Chemical Safety

Students will

- a) Identify common flammability and chemical hazards in specific trade areas
- b) Identify appropriate type and placement of fire and chemical emergency response stations in the classroom and workplace

- c) Participate in an exposure incident drill
- d) Understand the application of Safety Data Sheets to fire and chemical safety in specific trade areas
- e) Demonstrate appropriate use, care, and storage of flammables and chemicals in the classroom

4. Lifting Safety and Fall Prevention

Students will

- a) Identify common lifting safety and fall hazards in specific trade areas
- b) Define "ergonomics" and describe the positive effects of ergonomic design for worker safety
- c) Describe tools and equipment designed to insure safe lifting and to prevent falls
- d) Apply safe lifting and fall prevention techniques in classroom and workplace environments

5. Trade-Related Equipment Safety

Students will

- a) List and describe common equipment used by workers in specific trade areas
- b) Explain safe equipment handling practices for work in specific trade areas
- c) Identify common equipment safety hazards in specific trade areas
- d) Investigate the role and importance of regularly scheduled inspection and maintenance of machines and equipment in specific trade areas
- e) Demonstrate appropriate and consistent use of common trade-specific equipment safety features

6. Safety Issues in Trade Career Pathways

Students will

- a) Understand typical safety issues found in specific trade career areas
- b) Assess personal comfort in facing safety risks inherent in specific trade areas
- c) Evaluate personal suitability for work in specific trade careers

ILLUSTRATIVE ACTIVITIES by Theme Module

Career and Community Connections

Workplace Safety Timelines

Students will explore the evolution of workplace safety by creating and hanging a timeline, "From the Industrial Revolution to the Digital Revolution." Timelines show the major changes in laws, labor activity, industry standards, and worker protections in trade and technical careers. Students predict changes that might occur in their lifetimes.

Communication and Interpersonal Relationships

Video Job Advertisements

Student teams research the most dangerous trade or technical occupations. Teams produce short video job advertisements, starting each with "Do you like danger? Then you might like a job in ____." Each video should include risks, hazards, and safety precautions for the dangerous trade or technical occupation. Students evaluate their personal interest in each of

the occupations presented.

Financial and Consumer Literacy

Costs of Insurance Coverage

Invite a 2-person panel, made up of a local insurance expert and a local trade business owner, to class. Ask the insurance expert to discuss the types and costs of insurance coverage needed by small business owners to protect them should an employee sustain an injury at work. Ask the small business owner to discuss safety policies in place to prevent injury and to mitigate insurance costs. Following the panel, students write a "Did You Know?" question summarizing a new idea they learned from the class guests.

Health, Safety, and Wellness

Venn Diagrams

Students work in small groups to develop a list of the Personal Protective Equipment (PPE) and safety apparel needed for one trade or technical career area. Small groups post their lists around the classroom. Student groups create Venn diagrams using information from all of the posted lists to show that some PPE and safety apparel is common to trade and technical areas and that some PPE and safety apparel is specific to particular trade and technical areas. Post the diagrams and have a class discussion on the importance of PPE and safety apparel across trade and technical careers.

Problem Solving and Innovation

Personal First Aid Kits

Students work in pairs to identify the most common injuries for a specific trade area; pairs share their lists. As a class, students will brainstorm a set of items that could be kept in a first aid kit that would help workers respond immediately to common trade-specific injuries. Students collect needed items and create personal first aid kits to keep at their workstation, desk, or locker.

Sustainability

Days Without an Accident

Hang a "Days without an Accident" poster in the classroom and keep a running tally of the accident-free days. As a class, discuss how safety practices help to sustain the classroom "workforce." Extend the discussion by examining ways that the longevity of a trade or technical business is dependent upon sustaining a safe and healthy environment for employees.

STANDARDS ADDRESSED

New York State Career Development and Occupational Studies (CDOS) Standards
Intermediate Level

<http://www.p12.nysed.gov/cte/>

Standard 1: Career Development

Students will be knowledgeable about the world of work, explore career options, and relate personal skills, aptitudes, and abilities to future career decisions.

Standard 2: Integrated Learning

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Students will demonstrate how academic knowledge and skills are applied in the workplace and other settings.

Standard 3a: Universal Foundation Skills

Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.

Common Career Technical Core Standards

<https://www.careertech.org/career-ready-practices>

Career Ready Practices

1. Act as a responsible and contributing citizen and employee
3. Attend to personal health and financial well-being
4. Communicate clearly and effectively and with reason
5. Consider environmental, social, and economic impacts of decisions
8. Utilize critical thinking to make sense of problems and persevere in solving them
9. Model integrity, ethical leadership, and effective management
10. Plan education and career paths aligned to personal goals
11. Use technology to enhance productivity

USDOE Employability Skills

<http://cte.ed.gov/employability-skills/>

Applied Knowledge: Applied Academic Skills, Critical Thinking Skills

The thoughtful integration of academic knowledge and technical skills put to practical use

Effective Relationships: Interpersonal Skills, Personal Qualities

The skills that enable individuals to interact effectively with clients, coworkers, and supervisors

Workplace Skills: Resource Management, Information Use, Communication Skills, Systems Thinking, Technology Use

The skills employees need to successfully perform work tasks

RESOURCES

New York State Department of Labor

New York State Career Zone

<https://www.careerzone.ny.gov>

Career Zone is a no-cost online career exploration and planning tool developed by the New York State Department of Labor. It offers career and education information on thousands of careers, as well as, self-assessment and career planning tools. Career Zone is appropriate for users from middle school through adult.

United States Department of Labor

CareerOneStop

<https://www.careeronestop.org>

CareerOneStop is the career, training, and job search website for the U.S. Department

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of Labor. The website serves job seekers, businesses, students, and career advisors with a variety of free online tools, information and resources.

Association of Career and Technical Education
Career Planning Guide

https://www.acteonline.org/wp-content/uploads/2018/02/ACTE_CC_Paper_FINAL.pdf

Research has identified middle school as a time when students can benefit the most from career exploration, a process of building self-awareness, learning about potential careers, and developing a plan for reaching future goals.

AdvanceCTE
Middle Level Career Interest Inventory

<https://cte.careertech.org/sites/default/files/StudentInterestSurvey-English.pdf>

AdvanceCTE provides a Career Interest Inventory worksheet to use with students in helping them identify the potential matches to the 16 career clusters available to them.

Association of Career and Technical Education Administrators (ACTEA)
CTE Strong Videos

<http://www.ctestrong.com>

Edge Factor has created a series of inspirational videos related to career and education that provide students with a very contemporary perspective on CTE options. Career Cluster videos provide a new look at the many career options that students have in high school and beyond.

New York State Trade and Technical Teachers' Association (NYSTTTA)

<https://www.nysttta.org/>

NYSTTTA provides statewide opportunities for collaboration and focused professional development on curriculum, project ideas, assessment strategies, technical assessments, and student management.

Career and Technical Education Technical Assistance Center of New York (CTE TAC)

<http://nyctecenter.org/>

The Career and Technical Education Technical Assistance Center (CTE TAC) operates under a state contract to assist the New York State Education Department (NYSED) in carrying out its mission of improving the quality, access, and delivery of career and technical education through research-based methods and strategies resulting in broader CTE opportunities for all students.