NEW YORK STATE EDUCATION DEPARTMENT
MIDDLE LEVEL CAREER AND TECHNICAL EDUCATION

TECHNOLOGY EDUCATION

THE DESIGNED WORLD

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2. AGRICULTURAL AND RELATED BIOTECHNOLOGIES

STUDENTS WILL:

a) Describe how technologies impact resource needs for food production for large populations

b)

b) Analyze transportation systems and subsystems that need to function together for control, propulsion, and guidance
c) Describe how government and safety regulations impact transportation system development and operation
d) Describe the multiple processes and how they connect to make a transportation system operate efficiently

6. MANUFACTURING TECHNOLOGIES

STUDENTS WILL:

a) Describe or demonstrate how manufacturing processes convert natural or raw materials into products
b) Demonstrate manufacturing processes to design products, gather resources, use tools to separate, form or combine materials for a finished product
c) Classify manufactured goods as either durable or nondurable
d) Demonstrate manufacturing processes for product designing, development, production (making), and servicing of products
e) Describe how materials are located then harvested, extracted, or mined for manufacturing purposes
f) Describe how products are marketed, distributed, and sold to consumers

7. CONSTRUCTION TECHNOLOGIES

STUDENTS WILL:

a) Examine the impact of building laws, codes, convenience, cost, and function contribute to the design of a structure
b) Demonstrate how foundations anchor and support structures
c) Demonstrate how elements of tension and compression work together in a structure

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HEALTH, SAFETY, AND WELLNESS

FOOD PRESERVATION

Students investigate ways that food, such as fruit and vegetables, can be preserved through drying. Students design and test a food dehydrator that is either solar powered or uses a safe heat source such as a light bulb. Students test and evaluate drying times, product quality, food thickness, and water mass loss.

PROBLEM SOLVING AND INNOVATION

DESIGN A SMALL HOUSE

Students develop plans for a small house to scale that has a kitchen, eating area, sleeping area, and bathroom. Students design for space efficiency and comfort and develop a scale model of the home to better visualize and communicate the form and function for the house. Design considerations include low cost, efficiency, and ability to be transported to different locations.

SUSTAINABILITY

MANUFACTURING FOR SUSTAINABILITY

Students develop a product for production that can be produced from recycled or sustainable materials. Students develop working drawings, a production plan, materials lists, and a list of required tools. The class forms a production line based on the production plan, focusing on how productionwaste can be reduced or eliminated. Students plan the lifecycle of the new product through manufacture, sale, use, and disposal. Consider products such as bird feeders, plant starting containers, puzzles, home aides, or organizational products.

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

CAREER READY PRACTICES

1. Act as a responsible and contributing citizen and employee
2. Apply appropriate academic and technical skills
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
6. Demonstrate creativity and innovation
7. Employ valid and reliable research strategies
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
12. Work productively in teams while using cultural global competence

INTERNATIONAL TECHNOLOGY AND ENGINEERING EDUCATION ASSOCIATION

Standard 14: Students will develop an understanding of and be able to select and use medical technologies.

Standard 15: Students will develop an understanding of and be able to select and use agricultural and related biotechnologies.

Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies

Standard 17: Students will develop an understanding of and be able to select and use information and communication technologies.

Standard 18: Students will develop an understanding of and be able to select and use transportation technologies.

Standard 19: Students will develop an understanding of and be able to select and use manufacturing technologies.

Standard 20: Students will develop an understanding of and be able to select and use construction technologies.

RESOURCES

Disclaimer: Posting of resources on this form does not constitute an endorsement from the New York State Education Department nor does it imply that the following resources are mandatory or the only ones that can be used. Teachers and administrators ensure that resources align with

ENERGY KIDS – US ENERGY INFORMATION ADMINISTRATION

https://www.eia.gov/kids/index.php

Energy Kids has energy activities for kids and classroom resources for teachers. Information is available on energy sources, conservation, and history. Student activities and games are available in addition to energy calculators.

UNITED STATES DEPARTMENT OF ENERGY

www.energy.gov

The website has statistics and information on energy sources, consumption, and conservation. There is a section for educators with lesson plans, videos, and student activities.

UNITED STATES DEPARTMENT OF TRANSPORTATION

www.transportation.gov

This website contains information on all forms of transportation, including air, sea, and ground transportation. There is a wealth of information and data available along with some videos that would be usable in a classroom.

INTERNATIONAL TECHNOLOGY AND ENGINEERING EDUCATORS' ASSOCIATION

www.iteea.org

ITEEA is the international organization that represents technology and engineering educators. The organization supports an annual conference and publishes two journals, Technology and Engineering Educator and Journal of Technology Education. Many resources are available for classroom teachers including Engineering by Design. ITEEA developed and maintains the Standards for Technological Literacy.

NEW YORK STATE TECHNOLOGY AND ENGINEERING EDUCATORS' ASSOCIATION

www.nysteea.org

NYSTEEA represents Technology and Engineering Educators across New York State. The website includes information on technology content, current developments in Technology and Engineering Education, professional development opportunities, and other resources for technology educators.

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,