



Mechanics & Safety Sciences

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Emergency Preparedness

Personal Safety

- Provide at least three behaviors that someone who is safety conscious would exhibit
- Identify potential hazards to personal safety at home, at school, and in the workplace

Public Safety

- Research who and what a Public Safety Officer is
- Create a poster with basic rules for being safe in public

Workplace Safety

Workplace Safety Basics

- Research OSHA and what their role is
- Identify opportunities for safety awareness in a workplace

Engineering Fundamentals

Engineering Design

- Identify the steps in the engineering design process
- Explain the value of following processes, such as the engineering design process

Measurements

- Define the following terms: significant figures, precision, accuracy
- Perform basic unit conversions between metric and U.S. Customary System measurements
- Research the standard tools used to perform measurements (ruler, tape measure, caliper) and decide when each one is used
- Demonstrate the ability to successfully measure millimeter, centimeter, inch, and fractions of an inch (1/8 of an inch and larger)
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Mechanical Systems

Structures

- Research the uses of materials for building structures (wood, metal, etc.)
- Identify basic parts of electrical systems in structures (lights, switches, electrical outlets)
- Identify basic parts of plumbing systems in structures (faucets, drains, etc.)

Engines and Machinery

- Classify different types of engines including diesel and gasoline and electric motors
- Identify simple machines (inclined plane, wedge, lever, wheel and axle, screw and pulley)
- Give examples of the simple machine uses

Careers and Skills

- Identify careers related to construction, engines and mechanics
- Create a “plan of work” (a written plan needed to build, maintain, or repair something)
- Communicate a plan of work to someone else, explain what needs to be done, and what processes need to be followed to complete the job

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