

K-12 Technology Education (Industrial Technology) Program Learner Outcomes

Demonstrate the ability to communicate in technical terms using the appropriate language.

- Analyses data to select the most appropriate technology for the given problem.
- Defines the term 'technology'.
- Interprets the term Construction Technology.
- Accounts for the widespread use of CAD in a technological society.
- Defines the term 'electric current'.
- Interprets technical data.
- Speaking - presents technical details clearly.
- Defines the meaning of the term technology.
- Uses an accurate technical vocabulary.
- States scientific principles of importance to space technology.
- Identifies the relationship between model rocketry and space technology.
- States scientific principles of importance to space technology.
- Identifies the forces that are important in space technology.
- Describes propulsion systems of importance to space technology.
- Describes support processes of importance to space technology.
- Extracts science and technology facts from an encyclopedia CD-ROM.
- Describes how technology is used producing multimedia presentations.

Demonstrate an understanding of technology's function in local, national and global interaction.

- Analyses data to select the most appropriate technology for the given problem.
- States the function of a solar panel transducer.
- Identifies the role of Construction Technology.
- Describes the function and use of printers in the field of CAD.
- Accounts for the widespread use of CAD in a technological society.
- Recognizes the impact of technology upon the fields of CAD and drafting.
- Demonstrates an understanding of Ohm's Law.
- Defines the meaning of the term technology.
- States the general uses of energy in society.
- Describes the role of aircraft in the modern world.
- Identifies the function of different parts of an airplane.
- Defines the function of wind tunnels.
- Describes the function of model rocket components.
- Describes the function of launch and flight support equipment.
- Identifies the relationship between model rocketry and space technology.
- States functions of elements in a computer system.
- Identifies pneumatic components and their function from symbols.
- Identifies the function of pneumatic symbols from text.
- Investigates the function of a spring return valve.
- Identifies the function of compressors, filters and lubricators.
- Recognizes the use and function of flow restrictors.
- Investigates the function of simple pneumatic components.
- Identifies icon function through comparison of text and diagrams.
- Describes how technology is used producing multimedia presentations.

Use the appropriate technology for problem solving and decision making.

Analyses data to select the most appropriate technology for the given problem.
Defines the energy problem.
Defines the term 'technology'.
Speaking - presents a solution to a bridge construction problem.
Accounts for the widespread use of CAD in a technological society.
Outlines the process used to solve errors in a CAD drawing.
Recognizes the impact of technology upon the fields of CAD and drafting.
Applies the design process to the solution of CAD problems.
Solves a problem involving ratios.
Solves math problems using substitution into an algebraic expression.
Solves a math problem involving ratios.
Interprets technical data.
Solves math problems involving fractions.
Solves problems in a circuit during testing.
Explains weaknesses in a problem solution.
Speaking - presents technical details clearly.
Solves problems involving an electronic alarm circuit.
Solves math problems in Basic Electricity.
Defines the meaning of the term technology.
States the differences between problems solved by invention and by innovation.
Describes the stages in the Design and problem solving loop.
Uses an accurate technical vocabulary.
Solves a car design problem using computer software.
Solves problems in aerodynamics to test a glider.
Identifies problems created by turbulence.
Recognizes the problems of stalling.
Extracts science and technology facts from an encyclopedia CD-ROM.
Solves math problems in computer applications.
Evaluates the importance of decision making in automation.
Determines the importance of decision making in robot control.
Solves math problems in Robotics and Automation.
Evaluates proposed solutions to a pneumatic problem.
Math: Solves math problems.
Investigates the design problem and solution for a simulated TV animation.
Identifies problems and solutions in animating a human walk.
Solves problems in designing and producing an animation.
Speaking - presents reasoning and solutions to the TV animation problem.
Solves math problems in Graphics and Animation.
Describes how technology is used producing multimedia presentations.

Relate and integrate concepts related to Science, Math, English, Social Studies and other subject areas to the systems of technology.

Uses multiplication to work out electricity cost.
Plots and reads a graph of load against beam deflection.
Reads characteristics from load deflection graphs.
Applies a scaling factor to a CAD line.
Solves math problems involving fractions.

Applies a scaling factor to a CAD architectural drawing.
Determines the scaling factor required to add furniture to a CAD drawing of a hotel room.
Solves math problems using substitution into an algebraic expression.
Solves a math problem involving ratios.
Calculates total by addition of decimal numbers.
Solves math problems in Basic Electricity.
Interprets meter readings using a graph.
Plots graph to convert drag meter readings into grams.
States scientific principles of importance to space technology.
Reads text in software and on paper.
Uses a simple word processor to read and write information to disk.
Applies modulo math to determine remainders for a programming exercise.
Uses software to write a simple program.
Extracts science and technology facts from an encyclopedia CD-ROM.
Solves math problems in computer applications.
Solves math problems in Robotics and Automation.
Calculates output of a robot using basic multiplication.
Calculates cost of robot elements using basic addition and subtraction.
Calculates number of divisions in a sheet of metal using fractions.
Calculates the number of items on a production line using basic multiplication.
Calculates the number of cars coming off a production line using basic addition.
Calculates the production figures of a robot using basic multiplication.
Math: Solves math problems.
Reading: Interprets written words.
Solves math problems in Graphics and Animation.
Identifies letters of the alphabet and reads text.
Calculates the number of times an animation could cycle, using basic division.
Calculates the number of frames in an animation, using basic multiplication.
Calculates the number of cells in an animation, using basic multiplication.
Calculates the cost of making an animation, using basic multiplication.
Calculates the number of frames displayed, in an animation per second, using basic division and multiplication.
Uses math to calculate film length

Safely demonstrate basic skills in the use of tools, machines, materials and processes.

States the safety procedures used when operating the maglev system.
Identifies important safety-related topics in model rocketry.
Describes the procedures for launching a model rocket safely.
Identifies safety-related aspects of model rocketry.
Identifies safety procedures when working with pneumatic systems.

Demonstrate the appropriate technology to obtain, categorize and evaluate information towards a specific goal.

Assembles and demonstrates a model hydro-electric power plant.
Demonstrates a knowledge of computers.
Demonstrates differences in material strength.
Demonstrates aerodynamic principles using simple experiments.
Demonstrates the effect of changing the angle of attack on lift.
Demonstrates properties of air.

- Demonstrates the laws of motion.
- Demonstrates the effect of the cross-sectional area of a rocket on drag resistance.
- Demonstrates the operation of a token ring network.
- Demonstrates a basic knowledge of Robotics and Automation.
- Performs force-pressure-area evaluation on cylinder applications.
- Demonstrates the use of an encoder to convert a movie from computer source to video product.
- Demonstrates a multimedia application.

Apply ethical and legal standards of society regarding the environmental impacts from technology.

- Indicates that the use of fossil fuels harms the environment
- Analyses data to select the most appropriate technology for the given problem.
- Accounts for the widespread use of CAD in a technological society.
- Recognizes the impact of technology upon the fields of CAD and drafting.
- States the general uses of energy in society.
- States the possible impact of transportation systems of the future.
- States the possible impact of a full scale propeller driven maglev system.

Become educated consumers.

- States that energy can be transformed.
- Explains wind energy and its uses.
- Uses wind power to generate electricity.
- States the applications of water for energy.
- States ways of saving conventional fuels.
- Identifies factors affecting the price of electricity.
- Uses multiplication to work out electricity cost.
- Calculates cost of robot elements using basic addition and subtraction.
- Calculates the cost of making an animation, using basic multiplication.