

Wisconsin's Model Academic Standards for Technology Education (Middle School Level)

A. Nature of Technology - Students in Wisconsin will understand that technology is an extension of human capability.

A.8.1 - Show that technology has allowed us to further the efforts of science and, in turn, science has enabled us to develop better technology

- ST220/10 Extracts science and technology facts from an encyclopedia CD-ROM.
- ST100/10 Analyzes data to select the most appropriate technology for a given problem.
- ST110/10 Outlines how satellite technology is used to gather weather data.
- ST120/10 Defines the term 'technology'.
- ST120/10 Interprets the term Construction Technology.
- ST130/10 Recognizes how technology has changed drafting.
- ST150/10 Defines the meaning of the term technology.
- ST160/10 Investigates the impact of technology on medical treatments.
- ST160/10 Recognizes the impact of technology on health.

A.8.2 - Explain the need for and application of knowledge and skills from other disciplines when engaging in technological activities

- ST100/10 Uses an IT package to research the application and operation of a hydroelectric power plant.
- ST100/10 Demonstrates a knowledge of computers.
- ST100/10 Identifies an application of wind energy.
- ST100/10 Identifies a modern application of an alternative energy source.
- ST100/10 Calculates the power output of a 20% efficient system and identifies an application for the energy produced.
- ST100/10 States an application of electrical energy.
- ST130/10 Investigates the wide range of CAD applications.
- ST180/10 Identifies the application of aerodynamics in aircraft design.
- ST190/10 Practices application of formula for calculating height.
- ST190/10 Practices application of formula for calculating velocity.
- ST200/10 States applications that use radar principles.
- ST200/10 States the principles and application of radar.
- ST220/10 Indicates knowledge of the operation of computer screens.
- ST220/10 Identifies applications in the home where computers are used.
- ST220/10 Solves math problems in computer applications.
- ST220/10 Recognizes multimedia applications.
- ST230/10 Demonstrates a knowledge of page anatomy.
- ST230/10 States an application of computer aided publishing.
- ST230/10 Indicates a knowledge of typography.
- ST230/10 Indicates a knowledge of the uses of computer aided publishing.
- ST240/10 Identifies suitable applications for robots.
- ST240/10 Demonstrates a basic knowledge of Robotics and Automation.
- ST260/10 Investigates applications of cams and followers.
- ST260/10 Recognizes an application of mechanical technology.
- ST260/10 States an application of an inclined plane.
- ST270/10 Evaluates the suitability of pneumatics for particular applications.
- ST290/10 Identifies the technological advances in industrial control.

- ST320/10 Identifies the users of the multimedia design applications.
- ST330/10 States an application of, and operating parameters for, a temperature controlled system.
- ST330/10 States an application of, and the physical properties of an electric motor driven fan.
- ST350/10 Identifies the need for protection when using potentially harmful processes.
- ST380/10 Identifies careers and applications involving digital photography.

A.8.3 - Identify and contrast the connections and differences between technology and other disciplines

- ST100/10 Analyzes data to select the most appropriate technology for a given problem.
- ST110/10 Outlines how satellite technology is used to gather weather data.
- ST120/10 Defines the term 'technology'.
- ST130/10 Recognizes how technology has changed drafting.
- ST130/10 Recognizes the impact of technology upon drafting.
- ST150/10 Defines the meaning of the term technology.
- ST160/10 Investigates the impact of technology on medical treatments.
- ST160/10 Recognizes the impact of technology on health.
- ST160/10 States the impact of technology on health.
- ST170/10 Describes different careers in biomedical technology.
- ST190/10 Examines propulsion systems used with space technology.
- ST190/10 Draws similarities and differences between model rocketry and space technology.
- ST190/10 States scientific principles of importance to space technology.
- ST190/10 Describes propulsion systems of importance to space technology.
- ST190/10 Identifies the forces that are important in space technology.
- ST190/10 Describes support processes related to space technology.
- ST190/10 Evaluates the impact of space technology on society.
- ST200/10 Extracts information about communications technology using a Web Browser.
- ST200/10 Investigates radar technology.
- ST200/10 Explores the benefits that new technology has brought to communication systems.
- ST220/10 Extracts science and technology facts from an encyclopedia CD-ROM.
- ST260/10 Recognizes an application of mechanical technology.
- ST320/10 Identifies how technology is used to produce multimedia presentations.
- ST330/10 Recognizes the contribution that electronics technology has made to society.
- ST390/10 Explores car suspension system technology.

A.8.4 - Determine that technological knowledge is valuable but not always available to everyone on an equal basis

- ST100/10 Demonstrates a knowledge of computers.
- ST220/10 Indicates knowledge of the operation of computer screens.
- ST230/10 Demonstrates a knowledge of page anatomy.
- ST230/10 Indicates a knowledge of typography.
- ST230/10 Indicates a knowledge of the uses of computer aided publishing.
- ST240/10 Demonstrates a basic knowledge of Robotics and Automation.
- ST290/10 Identifies the technological advances in industrial control.
- ST255/10 Use technological literacy to design a component to be produced using CAM and CNC.
- ST255/10 Use technological literacy to manufacture a component on a CNC milling machine.

A.8.5 - Analyze how cultures and groups value technology differently and how these values influence the development and acceptance of technology

- ST100/10 Analyzes data to select the most appropriate technology for a given problem.

- ST120/10 Defines the term 'technology'.
- ST130/10 Recognizes how technology has changed drafting.
- ST130/10 Recognizes the impact of technology upon drafting.
- ST160/10 Investigates the impact of technology on medical treatments.
- ST160/10 Recognizes the impact of technology on health.
- ST160/10 States the impact of technology on health.
- ST170/10 Describes different careers in biomedical technology.
- ST190/10 Evaluates the impact of space technology on society.
- ST200/10 Explores the benefits that new technology has brought to communication systems.
- ST330/10 Recognizes the contribution that electronics technology has made to society.
- ST330/10 States the changes Electronics Technology has made to society.

A.8.6 - Analyze the distribution and access of various technologies and explain how inequities occur because of social and political systems

- ST130/10 Identifies the function of CAD within society.
- ST130/10 Recognizes the impact of technology upon drafting.
- ST150/10 States the general uses of energy in society.
- ST150/10 States the possible impact of transportation systems of the future.
- ST160/10 Investigates the impact of technology on medical treatments.
- ST160/10 Recognizes the impact of technology on health.
- ST160/10 States the impact of technology on health.
- ST160/10 Explores the impact of advertising on smoking.
- ST160/10 Explores the impact of advertising on drinking.
- ST170/10 Investigates the impact of orthotics and prosthetics on society.
- ST190/10 Evaluates the impact of space technology on society.
- ST330/10 Recognizes the contribution that electronics technology has made to society.
- ST330/10 States the changes Electronics Technology has made to society.

A.8.7 - Discover that human will or desire can lead to the design of new technology in order to seize an opportunity or solve a problem

- ST100/10 Analyzes data to select the most appropriate technology for a given problem.
- ST100/10 Identifies the problems associated with non-renewable energy resources.
- ST120/10 Speaking - presents a solution to a bridge construction problem.
- ST140/10 Explains weaknesses in a problem solution.
- ST140/10 Solves problems involving an electronic alarm circuit.
- ST150/10 States the differences between problems solved by invention and by innovation.
- ST150/10 Recognizes the stages in the Design and Problem Solving Loop.
- ST180/10 Solves a car design problem using computer software.
- ST180/10 Solves problems in aerodynamics to test a glider.
- ST190/10 Identifies the problems with placing people in space.
- ST190/10 Identifies the problems with protecting people in space.
- ST200/10 Explores the benefits that new technology has brought to communication systems.
- ST200/10 Presents a solution to a communication problem.
- ST230/10 States some career opportunities in the computer aided publishing industry.
- ST255/10 Identify various job opportunities in CNC.
- ST270/10 Evaluates proposed solutions to a pneumatic problem.
- ST300/10 Investigates the design problem and solution for a simulated TV animation.
- ST300/10 Solves problems in designing and producing an animation.
- ST300/10 Explains other potential solutions to the TV animation.

ST300/10 Presents a solution to the TV animation problem.

B. Systems - Students in Wisconsin will recognize that systems are made up of individual components and that each component affects the operation of the system and its relationship to other systems.

B.8.1 - Compare and contrast the function of each of the following common elements of technological systems: inputs, processes, and feedback

- ST100/10 Calculates the power output of a 20% efficient system and identifies an application for the energy produced.
- ST100/10 Calculates the power output of a single generator.
- ST140/10 Calculates output/input as a percentage.
- ST150/10 Describes the action of a computer program when using the computer screen as the output.
- ST210/10 Recognizes the way computers regard input information.
- ST220/10 Uses input devices to alter information in a graphics file.
- ST220/10 Identifies the output capabilities of a personal computer.
- ST220/10 Identifies input procedures.
- ST230/10 Identifies the difference between a computer input device and a computer output device.
- ST240/10 Calculates output of a robot using basic multiplication.
- ST290/10 Determines which element of the work cell is linked to PLC output.
- ST290/10 Identifies an application for sensors used to provide feedback in a control system.
- ST290/10 Identifies which computer output is linked to the conveyor.
- ST290/10 Links inputs to a boiler system output.
- ST330/10 Classifies electronic devices as input devices, process devices or output devices and states an appropriate use for them.
- ST330/10 Constructs an electronic circuit with feedback to monitor and react to temperature levels.
- ST330/10 Identifies the components providing feedback to a system.
- ST330/10 Identifies Input, Process, Output and Feedback devices from a diagram.
- ST330/10 Uses an oscilloscope to monitor the output of an LDR.
- ST330/10 Constructs a fully operational electronic circuit with feedback to monitor and react to temperature
- ST330/10 Identifies electronic systems in terms of Input, Process and Output.
- ST350/10 Locates input parts and accessories of a thermoplastic molder.
- ST350/10 Uses a diagram to locate input parts on a thermoplastic molder.
- ST350/10 Locates output parts and accessories of a thermoplastic molder.

B.8.2 - Analyze various systems and identify the ways in which they are controlled to produce a desired outcome

- ST100/10 State the purpose of the sub-systems within a hydroelectric power plant.
- ST100/10 Calculates the power output of a 20% efficient system and identifies an application for the energy produced.
- ST100/10 Examines how energy is produced by a nuclear power plant.
- ST150/10 Defines the basic components of a transportation system.
- ST150/10 Uses digital sensors to monitor conditions and provide data to control systems.
- ST150/10 States the main sources of energy used in transportation systems.
- ST150/10 States the difference between acceleration and deceleration and how these affect vehicular systems.
- ST150/10 Translates information from a graph into a computer program which is then used to control a
- ST150/10 States the features and operating parameters of a vehicular system which has been tested by the student.

- ST150/10 Recognizes the concepts of Systems and control.
- ST150/10 Recognizes the sources of energy used in transportation systems.
- ST150/10 Applies tests and improvement procedures to check the quality of systems.
- ST170/10 States the purpose of the renal system.
- ST190/10 Examines propulsion systems used with space technology.
- ST190/10 Describes propulsion systems of importance to space technology.
- ST200/10 Describes the communication process of a string based communication system.
- ST200/10 Identifies the function of each part in a microwave communication system.
- ST200/10 Examines wire communication systems.
- ST200/10 Explores the benefits that new technology has brought to communication systems.
- ST200/10 Performs calculations to evaluate communication systems.
- ST210/10 Trains a voice recognition system.
- ST210/10 States considerations when training a voice recognition system.
- ST210/10 Uses a voice recognition system to crack a virtual bank vault.
- ST220/10 Identifies individual elements of a computer system.
- ST220/10 Identifies types of personal computer systems.
- ST260/10 Assembles and uses a stepped pulley and belt system.
- ST260/10 Investigates the problem of slippage in pulley belt systems.
- ST260/10 Uses the mechanical trainer to investigate pulley systems.
- ST260/10 Describes methods of transferring energy using mechanical systems.
- ST260/10 Identifies lever systems.
- ST270/10 Explains the workings of a pneumatic system.
- ST280/10 States the components of a hydraulic system.
- ST280/10 Uses valves to control a fluid in a hydraulic system.
- ST280/10 Recognizes how components are used in a hydraulic system.
- ST280/10 States the advantages of hydraulic systems.
- ST290/10 Identifies types of manufacturing systems.
- ST290/10 Identifies an application for sensors used to provide feedback in a control system.
- ST290/10 Evaluates the use of control systems.
- ST330/10 States an application of, and operating parameters for, a temperature controlled system.
- ST330/10 Interprets diagrams in software programs relating to electronic components and systems.
- ST330/10 Describes the action of an electronic system to monitor temperature and provide feedback from a motor controlled fan.
- ST330/10 Identifies electronic systems in terms of Input, Process and Output.
- ST350/10 Locates output parts and accessories of a thermoplastic extrusion system.
- ST350/10 Identifies the use and parts of thermoplastic injection system.

B.8.4 - Discover that resources are essential; they must be used effectively to produce a desired outcome, and outputs from one system may be inputs to another system

- ST100/10 Identifies the need to preserve existing energy resources and to find new methods of providing energy.
- ST100/10 Identifies a non-renewable energy resource.
- ST100/10 Calculates the power output of a 20% efficient system and identifies an application for the energy produced.
- ST100/10 Calculates the power output of a single generator.
- ST100/10 Identifies the problems associated with non-renewable energy resources.
- ST150/10 Describes the action of a computer program when using the computer screen as the output.
- ST220/10 Researches computer networks using software and book resources.
- ST220/10 Identifies the output capabilities of a personal computer.

- ST290/10 Determines which element of the work cell is linked to PLC output.
- ST290/10 Identifies which computer output is linked to the conveyor.
- ST290/10 Links inputs to a boiler system output.
- ST330/10 Classifies electronic devices as input devices, process devices or output devices and states an appropriate use for them.
- ST330/10 Identifies Input, Process, Output and Feedback devices from a diagram.
- ST330/10 Uses an oscilloscope to monitor the output of an LDR.
- ST330/10 Identifies electronic systems in terms of Input, Process and Output.
- ST350/10 Locates input parts and accessories of a thermoplastic molder.
- ST350/10 Locates output parts and accessories of a thermoplastic molder.

B.8.6 - Identify all the resources necessary for a given system; analyze how the use of the resources will be affected by consideration for cost, availability, appropriate application, and regard for the environment

- ST100/10 Indicates that the use of fossil fuels harms the environment.
- ST100/10 Uses an IT package to research the application and operation of a hydroelectric power plant.
- ST100/10 Identifies the need to preserve existing energy resources and to find new methods of providing energy.
- ST100/10 Builds a motor support structure and uses an appropriate alternative energy source to drive it.
- ST100/10 Identifies an application of wind energy.
- ST270/10 Evaluates compressed air as a medium for transferring energy in fluid power systems.
- ST100/10 States an application of electrical energy.
- ST100/10 Analyzes data to select the most appropriate technology for a given problem.
- ST100/10 Uses multiplication to work out electricity cost.
- ST170/10 Calculates the cost of different forms of treatment for kidney failure.
- ST200/10 Recognizes how environmental obstructions can block microwave signals.
- ST200/10 Calculates the cost of a communication link.
- ST220/10 Recognizes appropriate software use.
- ST240/10 Calculates cost of robot elements using basic addition and subtraction.
- ST300/10 Calculates the cost of making an animation, using basic multiplication.
- ST310/10 Chooses appropriate Video technology Hardware.
- ST330/10 Classifies electronic devices as input devices, process devices or output devices and states an appropriate use for them.
- ST350/10 Compares the hardness of materials to find appropriate solutions for product designs.
- ST350/10 Evaluates the heat properties of materials to find appropriate solutions for product designs.
- ST350/10 Evaluates the densities of materials to find appropriate solutions for product designs.
- ST350/10 Compares fixed and variable costs for manufacturing.
- ST380/10 Locates an appropriate background graphic.

B.8.7 - Compare and contrast the use of tools, processes, and materials in diverse applications; such as, auto production, health care, food processing, laboratory research, and space exploration

- ST100/10 Identifies the processes involved when using nuclear energy to generate electricity.
- ST100/10 Identifies an application of wind energy.
- ST100/10 Identifies a modern application of an alternative energy source.
- ST100/10 States an application of electrical energy.
- ST130/10 Investigates the wide range of CAD applications.
- ST180/10 Identifies the application of aerodynamics in aircraft design.
- ST190/10 Describes support processes related to space technology.

ST200/10	States the principles and application of radar.
ST210/10	Identifies the tools used to perform specified operations using audio software.
ST210/10	Recognizes the processes required for speech processing.
ST210/10	Identifies tools involved in digital speech synthesis.
ST220/10	Identifies applications in the home where computers are used.
ST220/10	Recognizes multimedia applications.
ST230/10	Identifies some applications which require a grid layout.
ST230/10	Uses resizing tools and design tools to alter a graphic.
ST230/10	Identifies lithographic print processes.
ST230/10	Explains the processes involved in creating a presentation.
ST230/10	Recognizes the computer as a design tool.
ST230/10	States an application of computer aided publishing.
ST230/10	States applications of color for DTP.
ST260/10	Investigates applications of cams and followers.
ST260/10	Recognizes an application of mechanical technology.
ST260/10	States an application of an inclined plane.
ST270/10	Researches text to find a commercial application of pneumatic systems.
ST270/10	Evaluates the suitability of pneumatics for particular applications.
ST280/10	Designs a hydraulic circuit to simulate a sequencing application.
ST290/10	Identifies an application for sensors used to provide feedback in a control system.
ST320/10	Identifies the users of the multimedia design applications.
ST320/10	States how templates are used in a multimedia design application.
ST320/10	Explains the processes involved in creating a multimedia presentation.
ST330/10	States an application of, and operating parameters for, a temperature controlled system.
ST330/10	States an application of, and the physical properties of an electric motor driven fan.
ST350/10	Identifies the wasting and separating processes used to manufacture a wooden spoon.
ST350/10	Identifies the shaping and forming processes used to manufacture a metal spoon.
ST350/10	Identifies the molding processes used to manufacture a plastic spoon.
ST350/10	Identifies the need for protection when using potentially harmful processes.
ST350/10	Identifies that wood, metal and plastic are shaped using a variety of manufacturing processes.
ST370/10	Identifies from text an application and the meaning of GPS.
ST370/10	States suitable applications for maps with various scales.
ST380/10	Identifies objects in an image manipulation application.
ST380/10	Identifies careers and applications involving digital photography.

C. Human Ingenuity - Students in Wisconsin will be able to define problems, gather information, explore options, devise a solution, evaluate the outcome, and communicate the results.

C.8.1 - Research and develop a set of solutions to solve a problem not knowing all constraints

ST100/10	Analyzes data to select the most appropriate technology for a given problem.
ST120/10	Speaking - presents a solution to a bridge construction problem.
ST140/10	Explains weaknesses in a problem solution.
ST150/10	States the differences between problems solved by invention and by innovation.
ST170/10	Identifies the medical solutions to kidney failure.
ST200/10	Presents a solution to a communication problem.
ST270/10	Evaluates proposed solutions to a pneumatic problem.

- ST300/10 Investigates the design problem and solution for a simulated TV animation.
- ST300/10 Identifies problems and solutions in animating a human walk.
- ST300/10 Explains other potential solutions to the TV animation.
- ST300/10 Presents a solution to the TV animation problem.
- ST350/10 Compares the hardness of materials to find appropriate solutions for product designs.
- ST350/10 Evaluates the heat properties of materials to find appropriate solutions for product designs.
- ST350/10 Evaluates the densities of materials to find appropriate solutions for product designs.

C.8.2 - Explain and demonstrate several solutions to a problem or opportunity using technological design, tools, careful planning, experimentation, and testing

- ST100/10 Builds and tests a model car powered by solar energy.
- ST100/10 Analyzes data to select the most appropriate technology for a given problem.
- ST100/10 Investigates the greenhouse effect using experimental models.
- ST100/10 Identifies the problems associated with non-renewable energy resources.
- ST120/10 Uses test equipment to analyze deflection.
- ST120/10 Speaking - presents a solution to a bridge construction problem.
- ST140/10 Solves problems in a circuit during testing.
- ST140/10 Explains weaknesses in a problem solution.
- ST140/10 Solves problems involving an electronic alarm circuit.
- ST150/10 States the differences between problems solved by invention and by innovation.
- ST150/10 States the features and operating parameters of a vehicular system which has been tested by the student.
- ST150/10 Recognizes the stages in the Design and Problem Solving Loop.
- ST150/10 Applies tests and improvement procedures to check the quality of systems.
- ST170/10 Identifies the medical solutions to kidney failure.
- ST180/10 Demonstrates aerodynamic principles using simple experiments.
- ST180/10 Designs and tests car on computer.
- ST180/10 Solves a car design problem using computer software.
- ST180/10 Solves problems in aerodynamics to test a glider.
- ST180/10 Identifies problems created by turbulence.
- ST180/10 Recognizes the problems of stalling.
- ST190/10 Performs experiments to demonstrate the effects of gravity.
- ST190/10 Solves the problems with placing people in space.
- ST200/10 Presents a solution to a communication problem.
- ST210/10 Identifies the tools used to perform specified operations using audio software.
- ST210/10 Identifies tools involved in digital speech synthesis.
- ST230/10 Recognizes the computer as a design tool.
- ST260/10 Builds and tests a moveable pulley system.
- ST260/10 Solves problems involving mechanical advantage.
- ST260/10 Makes inferences based on experiments using first order levers.
- ST260/10 Interprets experimental observations.
- ST260/10 Solves problems involving gear ratios.
- ST270/10 Evaluates proposed solutions to a pneumatic problem.
- ST300/10 Investigates the design problem and solution for a simulated TV animation.
- ST300/10 Changes using edit tools an existing animation of a cockatoo into a bald eagle.
- ST300/10 Solves problems in designing and producing an animation.
- ST300/10 Explains other potential solutions to the TV animation.
- ST300/10 Presents a solution to the TV animation problem.

- ST300/10 Investigates the design problem and solution for a simulated TV animation.
- ST310/10 States elements of video pre-production planning.
- ST320/10 Identifies tools used to produce graphics.
- ST320/10 Identifies tools used in constructing a multimedia presentation.
- ST320/10 States the purpose of planning a multimedia presentation.
- ST340/5 Identifies and uses software function tools to edit and format a document.
- ST350/10 Compares the hardness of materials to find appropriate solutions for product designs.
- ST350/10 Follows instructions to run a simulated hardness test on a computer.
- ST350/10 Evaluates the heat properties of materials to find appropriate solutions for product designs.
- ST350/10 Follows written instructions to run a simulated melting point test on a computer.
- ST380/10 Recognizes basic technical problems with photographic images.
- ST380/10 Identifies problems with shot composition.
- ST390/10 Analyzes the performance of a road vehicle from test data.
- ST255/10 Identifies safety practices when using machine tools.

C.8.3 - Brainstorm and illustrate ways to integrate efficiency into design through the reuse of materials, resources, and waste in technological systems

- ST100/10 Calculates the power output of a 20% efficient system and identifies an application for the energy produced.
- ST100/10 Identifies criteria which will reduce the efficiency of a solar panel.
- ST120/10 Calculates insulation efficiency.
- ST180/10 Relates vehicle design to efficiency.
- ST100/10 Identifies the need to preserve existing energy resources and to find new methods of providing energy.
- ST100/10 Identifies a non-renewable energy resource.
- ST100/10 Identifies the problems associated with non-renewable energy resources.

C.8.4 - Predict possible outcomes of a newly designed technological system

- ST110/10 Predicts weather conditions for cities in the path of a hurricane.
- ST150/10 Defines and predicts the performance of a maglev vehicle when magnetic forces are increased.
- ST190/10 Uses IT to make predictions about model rockets.
- ST240/10 Predicts robot movement from a program sequence.
- ST370/10 Predicts four figure grid references from known coordinates.
- ST370/10 Predicts latitude and longitude relative to known locations.
- ST370/10 Compares predicted with actual latitude and longitude GPS readings.

C.8.5 - Explain the value of technical knowledge and teamwork in the development of a device or process

- ST100/10 Demonstrates a knowledge of computers.
- ST130/10 Identifies technical terms used in CAD.
- ST140/10 Interprets technical data.
- ST140/10 Speaking - presents technical details clearly.
- ST150/10 Uses an accurate technical vocabulary.
- ST210/10 Obtains technical information about wave files from various sources.
- ST210/10 Describes how digital storage devices work.
- ST220/10 Indicates knowledge of the operation of computer screens.
- ST220/10 Uses the computer as a device to control external equipment via the parallel port.
- ST230/10 Uses the correct technical terms for letterpress print.

- ST230/10 Extracts technical information from research material.
- ST230/10 Indicates a knowledge of the uses of computer aided publishing.
- ST230/10 Indicates a knowledge of the role of computer aided publishing.
- ST240/10 Demonstrates a basic knowledge of Robotics and Automation.
- ST270/10 Investigates the use of valves as devices that control flow direction.
- ST330/10 Classifies electronic devices as input devices, process devices or output devices and states an appropriate use for them.
- ST330/10 Uses a transistor as a switch to develop the steady hand game.
- ST330/10 Uses a capacitor as a time delay to develop the steady hand game.
- ST330/10 Uses an accurate technical vocabulary to describe electronic devices and circuits.
- ST370/10 Uses an accurate technical vocabulary to identify GPS & Navigation terms.
- ST380/10 Recognizes basic technical problems with photographic images.
- ST390/10 Examines the early history of motor car development.
- ST390/10 Identifies the development of the internal combustion engine.

C.8.6 - Explain how changing the physical characteristics of material or the format of information can increase its usefulness

- ST120/10 Examines material properties.
- ST120/10 Identifies insulation as a property of construction material.
- ST120/10 Demonstrates differences in material strength.
- ST140/10 States factors effecting the resistance of a conducting material.
- ST170/10 Identifies the properties of the materials used for making denture casts.
- ST170/10 Identifies why the property of materials is important for medical use.
- ST220/10 Selects information in text, audio and visual formats.
- ST230/10 Extracts technical information from research material.
- ST290/10 Extracts information on the format of saving industrial control programs.
- ST300/10 Distinguishes between the different signal formats used in computers and videos.
- ST300/10 Distinguishes between the different signal formats used in computers and videos.
- ST340/5 Interprets information from reference material.
- ST350/10 Selects different plastics in a set of sample materials from given descriptions.
- ST350/10 Selects different metals in a set of sample materials from given descriptions.
- ST350/10 Follows instructions to select a sample of material.
- ST350/10 Compares the hardness of materials to find appropriate solutions for product designs.
- ST350/10 Selects different woods in a set of sample materials from given descriptions.
- ST350/10 Selects different composite materials in a set of sample materials from given descriptions.
- ST350/10 Identifies uses of secondary materials for the manufacture of parts.
- ST350/10 Identifies the materials and processes used to make a clip, a door, a door handle and a chess piece.
- ST350/10 Evaluates the heat properties of materials to find appropriate solutions for product designs.
- ST350/10 Investigates the materials used in the manufacture of a floppy disk.
- ST350/10 Identifies the use of compressing and stretching forces to shape materials.
- ST350/10 Evaluates the densities of materials to find appropriate solutions for product designs.
- ST350/10 Extracts material information from a table to make a tabletop game.

D. Impact of Technology - Students in Wisconsin will understand that technology affects society and the environment in ways that are both planned and unplanned and desirable and undesirable.

D.8.1 - Explain the difficulty in predicting the effects a new technology will have on society and the environment due to a lack of experience with the technology

- ST110/10 Predicts weather conditions for cities in the path of a hurricane.
- ST150/10 Defines and predicts the performance of a maglev vehicle when magnetic forces are increased.
- ST190/10 Uses IT to make predictions about model rockets.
- ST200/10 Explores the benefits that new technology has brought to communication systems.
- ST240/10 Predicts robot movement from a program sequence.
- ST370/10 Compares predicted with actual latitude and longitude GPS readings.
- ST380/10 Identifies experiences required for a digital photography based career.

D.8.2 - Explain the importance of making projections, studying scenarios, and making thoughtful decisions because of the direct and indirect effects technology will have on the future

- ST120/10 States the effect of earthquakes on skyscrapers.
- ST240/10 Evaluates the importance of decision making in automation.
- ST240/10 Determines the importance of decision making in robot control.
- ST390/10 Carries out a fault finding task to determine the cause of a fault in the trip computer system of a vehicle.

D.8.3 - Contrast the advantages and disadvantages of given technology and make adjustments or develop new technologies if disadvantages outweigh the advantages

- ST120/10 Identifies the benefits of bridge construction.
- ST200/10 Explores the benefits that new technology has brought to communication systems.
- ST260/10 Solves problems involving mechanical advantage.
- ST260/10 Calculates mechanical advantage for system of mechanisms.
- ST280/10 States the advantages of hydraulic systems.
- ST300/10 Identifies the main disadvantages of using a 'Flickbook' to animate sequences.
- ST370/10 Uses distance and coordinate data to help plan routes.
- ST370/10 Uses coordinate systems to help plan routes.

D.8.4 - Explain why people must think about how a new technology might affect other people, societies, and the ecosystem in which we live

- ST150/10 States the possible impact of transportation systems of the future.
- ST150/10 States the possible impact of a full scale propeller driven maglev system.
- ST160/10 Investigates the impact of technology on medical treatments.
- ST160/10 Recognizes the impact of technology on health.
- ST160/10 States the impact of technology on health.
- ST160/10 Explores the impact of advertising on smoking.
- ST160/10 Explores the impact of advertising on drinking.
- ST170/10 Investigates the impact of orthotics and prosthetics on society.
- ST180/10 Identifies the ways car design affects performance.
- ST190/10 Describes the position of people involved in a rocket launch.
- ST190/10 Identifies the problems with placing people in space.
- ST190/10 Identifies the problems with protecting people in space.

- ST190/10 Solves the problems with placing people in space.
- ST190/10 Evaluates the impact of space technology on society.
- ST330/10 States the changes Electronics Technology has made to society.

D.8.5 - Explain that people can control the technologies they develop and use and that people are responsible for the effects their technology has on society and the environment

- ST100/10 Indicates that the use of fossil fuels harms the environment.
- ST170/10 States responsibilities of medical technicians.
- ST170/10 States the responsibilities of opticians and associated personnel.
- ST170/10 States responsibilities of nursing personnel.
- ST170/10 States the responsibilities of personnel working in therapeutic services.
- ST170/10 States the responsibilities of dentists and associated personnel.
- ST170/10 Investigates the impact of orthotics and prosthetics on society.
- ST170/10 States the responsibilities of paramedics, physicians and veterinary personnel.
- ST190/10 Evaluates the impact of space technology on society.
- ST200/10 Recognizes how environmental obstructions can block microwave signals.
- ST330/10 Recognizes the contribution that electronics technology has made to society.
- ST330/10 States the changes Electronics Technology has made to society.