

Technology Education in BC: Prescribed Learning Outcomes (TE 8-10)

Curriculum Organizer: Self and Society

Students need to understand how humans shape technology and the impact that current and future technological advances have on our society, culture, and environment.

- demonstrate a willingness to find unique solutions to problems that arise during the design process
- demonstrate confidence and positive attitudes when solving problems that occur during the design process
- demonstrate the ability to use community resources to help solve problems that come up during the design process
- describe how societal pressures influence technological advancements and, conversely, how technological changes influence society
- describe new careers and occupations in technological fields and determine their educational prerequisites
- identify gender and ethnic bias in technological fields
- identify methods to improve their abilities to work with others during problem-solving activities

Curriculum Organizer: Communications

At home and in the workplace, students will need to use technology in the processing and sharing of information, and communicate ideas using language, graphics, and technology.

- apply knowledge and concepts from other disciplines in solving problems that arise during the design process
- demonstrate skill in managing time and resources
- develop a plan to clearly communicate ideas for creating products and systems
- evaluate information-gathering tools and processes used to access, store, organize, and present data
- revise presentations based on personally set objectives
- use a variety of drawing projection methods
- use information-gathering and communication methods to solve problems involving technology and to create effective presentations

Curriculum Organizer: Production

Students build skills in designing and developing products and systems that improve the human condition.

- classify and describe the characteristics of industrial materials
- demonstrate safe work habits when using tools, equipment, and technical processes, and encourage the same in others
- describe ways to reuse and recycle materials and products to reduce waste
- devise a production process
- examine new trends in manufacturing processes
- explain and use WHMIS information
- match materials to specific product requirements
- use a design process in production activities
- use hand and power tool techniques to process materials in order to improve the appearance, usefulness, and function of products
- use orderly assembly and disassembly techniques

Curriculum Organizer: Control

Control addresses the application of devices and processes used to manage, sort, control, and organize systems.

- demonstrate an understanding of the principles involved with interconnected control devices in product manufacturing
- design and construct a system that uses a control device, and assess its environmental and social implications
- devise troubleshooting strategies for correcting malfunctions in a system

- devise ways to monitor, modify, and improve systems by incorporating control devices

Curriculum Organizer: Energy and Power

Energy and power addresses the application of devices and processes that convert, transmit, and conserve forms of energy.

- analyse the function of systems used in machines and equipment
- construct devices to convert, store, and distribute energy in usable forms
- design systems that multiply, reduce, and transmit power, and assess their social and environmental implications
- explain the transfer and conversion of energy within a mechanical system

Curriculum Organizer: Self and Society

Students need to understand how humans shape technology and the impact that current and future technological advances have on our society, culture, and environment.

- demonstrate a willingness to express thoughts and feelings about the effects of technology on their personal lives, society, and the environment
- demonstrate confidence and positive attitudes when solving problems that arise during the design process
- identify practical problems involving technology in a variety of contexts
- list career paths in technological fields, and examine potential career opportunities
- work with others to solve problems that come up during the design process

Curriculum Organizer: Communications

At home and in the workplace, students will need to use technology in the processing and sharing of information, and communicate ideas using language, graphics, and technology.

- develop two- and three-dimensional graphics using manual and computer-assisted processes
- identify how information and concepts from other fields of knowledge are used in the design process
- produce initial concept sketches and final drawing using a design process
- revise presentations based on suggestions and comments from others
- solve problems that come up during the design process by using various information sources

Curriculum Organizer: Production

Students build skills in designing and developing products and systems that improve the human condition.

- apply finishes and details to manufactured products to enhance their appearance and durability
- demonstrate safe work habits when using tools, equipment, and technical processes
- describe and use the process of product design
- describe combining, forming, separating, and finishing processes as they relate to materials used in product manufacturing
- evaluate the efficiency of a production process
- identify and classify the properties of materials used to manufacture products
- identify ways to minimize waste and reuse products
- select materials based on a set of design specifications

Curriculum Organizer: Control

Control addresses the application of devices and processes used to manage, sort, control, and organize systems.

- compare ways that various control devices work, and explain their applications
- demonstrate understanding of the concept of control by dismantling devices
- design and construct a control device that senses, switches, or regulates

Learning Outcomes

- integrate electric, electronic, pneumatic, and mechanical control devices within a system

Curriculum Organizer: Energy and Power

Energy and power addresses the application of devices and processes that convert, transmit, and conserve forms of energy.

- construct devices that are powered in various ways
- explain how systems transmit and convert energy
- identify how simple machines are combined into energy and power systems
- incorporate selected devices in the design of energy transmission and conversion system

Curriculum Organizer: Self and Society

Students need to understand how humans shape technology and the impact that current and future technological advances have on our society, culture, and environment.

- contribute to group success by encouraging others to fulfill their responsibilities
- demonstrate a willingness to look for and develop improved solutions to problems that arise during the design process
- demonstrate confidence and positive attitudes when solving problems that arise during the design process
- evaluate design ideas based on assessments by others
- explain relationships between technological advancements and changes in the workplace, including the changing roles of workers
- express personal thoughts and feelings about how societal pressures may influence technological advancements and, conversely, how technological changes influence society and the environment
- identify role models in technological occupations, including those that are sensitive to culture, gender, and physical ability

Curriculum Organizer: Communications

At home and in the workplace, students will need to use technology in the processing and sharing of information, and communicate ideas using language, graphics, and technology.

- communicate ideas for designing products and systems using various drawing projection methods, spreadsheets, graphics, or other media
- describe the advantages and disadvantages of various information-gathering and communication processes
- develop two- and three-dimensional graphics using manual and computer-assisted processes
- identify how information and concepts from other fields of knowledge are used in the design process
- revise presentations based on personal review and feedback from others
- use information-gathering and communication methods to solve problems during the design process and to create effective presentations

Curriculum Organizer: Production

Students build skills in designing and developing products and systems that improve the human condition.

- classify and describe the characteristics of industrial materials
- demonstrate safe work habits when using tools, equipment, and technical processes, and encourage the same in others
- describe ways to reduce waste
- devise a manufacturing process
- devise and use assembly-sequence diagrams and flow charts to explain a process or system
- identify new trends in manufacturing processes
- investigate and select materials to meet design specifications
- select and safely use hand and power tools in the manufacture of products

Learning Outcomes

- select and use a variety of finishes on products to improve their appearance and durability
- use a design process to modify products to improve their appearance, usefulness, and function

Curriculum Organizer: Control

Control addresses the application of devices and processes used to manage, sort, control, and organize systems.

- demonstrate an understanding of the operating principles used in various control devices
- design and construct a system that uses a control device
- modify electric, electronic, pneumatic, and mechanical control devices for particular applications
- use troubleshooting strategies to locate the source of malfunctions in a system

Curriculum Organizer: Energy and Power

Energy and power addresses the application of devices and processes that convert, transmit, and conserve forms of energy.

- construct devices that convert and transmit various forms of energy
- describe alternative sources of energy
- disassemble devices and explain the transfer and conversion of energy within mechanical systems
- explain how systems convert potential energy to kinetic energy, and assess their environmental and social implications
- incorporate selected devices in the design of energy transmission and conversion systems