COURSE SEQUENCE

	Woodworking and Cabinetry 20-4 ⟶	**Woodworking and Cabinetry 30-4**
Construction: Building 10-4 and/or	**Wood Frame Construction 20-4** ⟶	**Wood Frame Construction 30-4**
Workplace Readiness 10-4	**Workplace Practicum 20-4** ⟶	**Workplace Practicum 30-4**

Knowledge and Employability 10-level courses provide opportunities for *exploration* of, and *orientation* toward, an occupational grouping in a single career field. In 20-level courses, students progress from *orientation* toward *preparation*; and in 30-level courses, students are involved in *preparation* for direct job entry.

Construction courses are designed to teach occupational knowledge and skills for entry-level positions in metal fabrication, construction systems, woodworking and cabinetry, and wood frame construction by developing employability competencies that relate to all career paths.

- All courses focus on developing career awareness, safety standards and knowledge of tools, equipment and materials related to the industry.

- Construction: Building 10-4 provides a basis for, and an introduction to, Woodworking and Cabinetry 20-4 and Wood Frame Construction 20-4. Students who successfully complete Construction: Building 10-4 may also take Construction Systems 20-4.[1]

- Woodworking and Cabinetry 20-4 and 30-4 focus on the manufacture of wood products.

- Wood Frame Construction 20-4 and 30-4 focus on the manufacture of support frames and walls for buildings.

- Construction Systems 20-4 and 30-4 consist of specific knowledge related to the heating, ventilation and air conditioning (HVAC), electrical, masonry and plumbing trades. These courses can either be taught as a whole or one or a combination of trades may be elaborated upon to complete a course, based on facilities, interest and the expertise of the instructor.

- Students interested in construction should be encouraged to take a combination of courses at the 20 and 30 levels.

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1. Construction Systems 20-4 and 30-4 are part of the Construction: Metal Fabrication strand.

- A related Workplace Practicum or Work Experience course is recommended to further enhance employability and occupational skills and to adequately prepare students for entry into the work force. In senior high school, a 30-level Workplace Practicum course, 30-level Work Experience course or 30-level Green Certificate course is required to fulfill the requirements of a Certificate of High School Achievement. Workplace practicums are supportive work placements in a related field that will allow students to validate their learning in the workplace.

- experience career development to assist them in exploring careers, assessing their career skills and developing a career-focused portfolio
- develop interpersonal skills to ensure respect, support and cooperation with others
- develop safety awareness and habits to ensure a safe working environment.

COURSE DELIVERY

This Knowledge and Employability occupational strand includes two sequences of 5-credit courses. Students progress through the courses in a sequence and may combine courses across sequences to increase the depth of their knowledge.

The 10-level course is a prerequisite for all of the 20-level courses within the strand. The 20-level course in each sequence is a prerequisite for the 30-level course in that sequence.

The occupational courses may be offered in a variety of learning environments that range from a classroom in a school to a business/industry work site. The courses offer a balance between school-based and work-based learning that provides options for students to enter the workplace or to pursue post-secondary education or training.

GOALS

Students in Knowledge and Employability occupational courses will:

- identify standards determined by the workplace for the academic and occupational competencies considered necessary for success
- demonstrate practical applications through on- and off-campus experiences/community partnerships
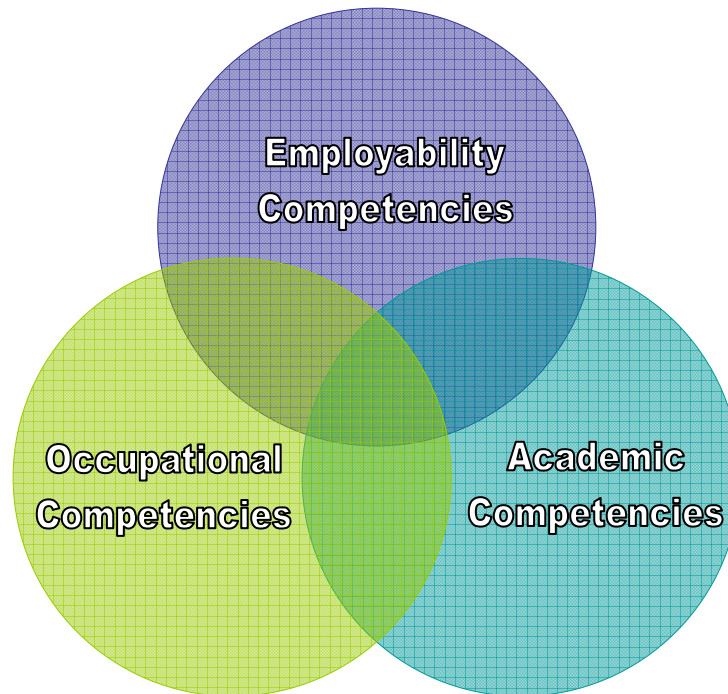
COMPETENCIES FRAMEWORK

Each Knowledge and Employability occupational course is made up of three elements: employability, occupational and academic competencies. The combination of these three elements is essential to the delivery of the occupational courses.

- Employability competencies are transferable to all occupations and are consistent throughout all courses.

- Occupational competencies are specific to an occupational area and provide the context through which students will develop their employability competencies.

- Academic competencies are to be reinforced and further developed through the occupational context that provides relevance to the academic courses.

The integration of the three elements is essential to equip students to make the transition from school to the workplace.

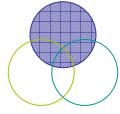### KNOWLEDGE AND EMPLOYABILITY OCCUPATIONAL COURSES COMPETENCIES FRAMEWORK

Knowledge and Employability (Occupational Component)

CONSTRUCTION: BUILDING 10-4
GENERAL OUTCOMES

Employability Competencies	Students will develop these competencies throughout the learning process and demonstrate them in daily life and the workplace.
Managing Transitions	• Students will develop an awareness of how learning contributes to personal success. • Students will develop an ability to manage change effectively. • Students will explore and discover personal aptitudes and interests related to occupational opportunities.
Personal Management	• Students will develop self-esteem, confidence and the ability to set personal goals and priorities. • Students will identify and understand the risks associated with occupational activities.
Working with Others	• Students will develop communication skills and strategies in an occupational context. • Students will demonstrate respect for the thoughts and opinions of others in the group. • Students will demonstrate positive effort and behaviour toward achieving a group's goals.
Occupational Competencies	**Students will develop and demonstrate the following competencies to succeed in a specific occupation or career.**
Achieving Results	• Students will explore a variety of occupations within a building construction career environment. • Students will develop safe workplace practices and procedures. • Students will be introduced to technology to develop a high-quality product or service. • Students will develop basic knowledge of, and the skills required to properly use, the tools, equipment and materials used in woodworking. • Students will apply appropriate finishing procedures to products.
Ensuring Quality	• Students will develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.
Academic Competencies	**Students will continue to develop these minimum academic competencies that provide a foundation for further learning.**
Communication	• Students will enhance their ability to listen, speak, read and write effectively.
Thinking	• Students will develop problem-solving strategies.
Numeracy	• Students will understand the value of numeracy skills in the workplace.
Information Technology	• Students will familiarize themselves with the information technology used in daily workplace operation.

CONSTRUCTION: BUILDING 10-4

EMPLOYABILITY COMPETENCIES: These competencies are developed throughout the learning process and are demonstrated in daily life and the workplace. Students will develop and demonstrate these competencies through individual effort and interpersonal interaction while completing a variety of projects/activities.

MANAGING TRANSITIONS

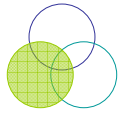| General Outcomes	Specific Outcomes
Students will develop an awareness of how learning contributes to personal success.	**Lifelong Learning** *Students will:* • identify learning preferences and strengths and apply learning styles and strategies appropriate to the situation • set learning goals and identify how formal/informal learning can help them achieve goals • develop an awareness of senior high school courses and work experience and identify educational possibilities; e.g., Registered Apprenticeship Program (RAP), Green Certificate, Career and Technology Studies (CTS) and Career Internship.
Students will develop an ability to manage change effectively.	**Adapting to Change** *Students will:* • identify available support resources and assess potential barriers • prepare an action plan to proactively respond to a particular change or challenge.
Students will explore and discover personal aptitudes and interests related to occupational opportunities.	**Career Development** *Students will:* • create an inventory of personal competencies, interests, goals and work preferences and link this inventory to career options • identify sources of support for investigating and finding work; e.g., Alberta Learning Information Service (ALIS) Web site • describe how work contributes to individual goals • explore the workplace through community partnerships and identify employer and employee expectations, rights and responsibilities.

PERSONAL MANAGEMENT

General Outcomes	Specific Outcomes
Students will develop self-esteem, confidence and the ability to set personal goals and priorities.	**Self-development** *Students will:* • identify personal characteristics, strengths and talents and establish an action plan to build on them • recognize the use of strengths and talents to achieve goals • identify acceptable and appropriate behaviours and present themselves to suit an activity or role; e.g., body language, grooming, clothing, manners • describe personal beliefs about what is right and wrong and assess the consequences of ethical/unethical behaviours.
Students will identify and understand the risks associated with occupational activities.	**Risk Management** *Students will:* • identify current health and safety procedures; e.g., at home, at school, in the community and in the workplace • identify risks that could impact themselves and others and identify hazards in the work environment; e.g., chemical, physical, biological and ergonomic • identify a potential emergency situation and develop strategies for personal emergency responses • identify sources of support when taking risks in their personal lives and in the workplace; e.g., entrepreneurship.

WORKING WITH OTHERS

General Outcomes	Specific Outcomes

Students will develop communication skills and strategies in an occupational context.	**Interpersonal Communication**
	
	Students will:
	• demonstrate appropriate communication strategies for communicating thoughts and feelings; e.g.,
	  – listen without interrupting
	  – contribute to be heard
	  – disagree courteously
	  – accept conflicting opinions
	  – use appropriate language and body language
	• develop awareness of verbal and nonverbal communication strategies
	• improve their ability to communicate by working with others
	• communicate common goals and expectations to improve their team's ability to achieve goals
	• identify causes of conflict.

General Outcomes	Specific Outcomes
Students will demonstrate respect for the thoughts and opinions of others in the group.	**Building Community** *Students will:* • identify commonly accepted courteous behaviour • assess and respect how their personal values and beliefs differ from those of others and how those beliefs impact personal behaviour • identify the value of volunteering in community activities; e.g., charity work, community car wash.

Students will demonstrate positive effort and behaviour toward achieving a group's goals.	**Teamwork**
	
	Students will:
	• identify team goals
	• work independently and with others to support team goals; e.g.,
	  – generate ideas
	  – assess resources
	  – contribute abilities and interests
	  – monitor progress
	  – share responsibility for completion of a task
	• establish short- and long-term team goals.

OCCUPATIONAL COMPETENCIES: Students will develop and demonstrate the following competencies to succeed in a specific occupation or career. They will achieve results through a variety of projects/activities as appropriate to enhance their knowledge and skills. Students will ensure the quality of their work through effective task management and will highlight their achievements in a career-based portfolio.

ACHIEVING RESULTS

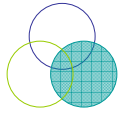| General Outcomes	Specific Outcomes

Students will explore a variety of occupations within a building construction career environment.	**Career Awareness**
	
	Exploration
	
	Students will:
	• identify local opportunities within a career field
	• define and recognize entrepreneurship as a potential career path
	• investigate local opportunities within a career field
	• research employment information; e.g., duties, working conditions, personal characteristics, education, salary.
	
	Standards
	
	Students will:
	• identify workplace protocols, procedures and standards of conduct; e.g.,
	  – clean the entire work area, return tools to designated areas, minimize the waste of materials
	  – identify related health and sanitation standards
	  – display punctuality and come prepared for classroom and shop activities
	  – treat the shop area with care and pay attention to potential workplace health and safety risks
	  – treat other members of the team with respect
	  – use appropriate language and terminology
	  – wear appropriate dress.

Students will develop safe workplace practices and procedures.	**Workplace Health and Safety**
	
	Students will:
	• identify and demonstrate preventive measures to avoid accidents and injury to themselves and others during construction procedures; e.g.,
	  – identify safety device locations in the shop or classroom; e.g., eyewash station, emergency shut-off, fire extinguisher, emergency exits, telephone
	  – demonstrate the correct procedures for addressing injuries
	  – identify the proper use of tools with regard to other classmates and shop conditions

General Outcomes	Specific Outcomes
	– identify personal protective equipment (PPE); e.g., coveralls, proper eyewear, proper footwear – demonstrate proper body position while at a work station – maintain a safe and clean work area – identify and practise the safe use of electrical equipment – identify the consequences of alcohol and drug use on the worker and the workplace - demonstrate an understanding of the Workplace Hazardous Materials Information System (WHMIS) as it relates to the field of study and identify WHMIS symbols, classes and labelling requirements - recognize the health and safety hazards associated with construction procedures; e.g., – identify the common types of ladders and scaffolds used in building construction and discuss their safe use – identify safe procedures for rigging and hoisting – identify common knots and hitches used in rope work and discuss their safe application – identify an ability to complete assignments, using an interactive program; e.g., Construction Safety Training System (CSTS) - identify important standards (codes) and governing bodies in the construction industry.
Students will be introduced to technology to develop a high-quality product or service.	**Products and Service** **Technology Integration** *Students will:* - explore new and emerging products and technological advances used in building construction. **Providing Service** *Students will:* - identify client relationships or interactions within the field of building construction - identify services required or provided - collect necessary information to complete a purchase or to fill out a work order - identify the importance of customer or client service to all businesses/industries - identify professional practices and work habits - strive to meet and exceed the client's expectations.

General Outcomes	Specific Outcomes

Students will develop basic knowledge of, and the skills required to properly use, the tools, equipment and materials used in woodworking.	**Tools, Equipment and Materials**
	
	Tools and Equipment
	
	Students will:
	• identify common woodworking tools and equipment and describe their functions and safety and handling precautions; e.g., layout, fastening, shaping, cutting and boring tools, such as measuring devices, hammers, wood saws, wood chisels, screwdrivers, planes, rasps, sanding blocks
	• develop and demonstrate the correct use of measuring, layout, fastening, cutting and smoothing hand tools
	• demonstrate the correct handling of common hand and power tools; e.g.,
	  – jigsaw
	  – router
	  – drill
	  – circular saw
	  – sanders
	  – band saws
	  – table saws
	  – drill press
	  – lathe
	  – compound mitre saw
	  – planer
	• identify and demonstrate the proper use of clamps and vices
	• identify correct storage practices and locations for tools and equipment
	• demonstrate proper care of tools and equipment; e.g., the proper technique for sharpening a wood chisel.
	
	Materials
	
	Students will:
	• identify and describe common woods and composites and how they are processed to make building materials; e.g.,
	  – identify common hardwoods and softwoods used in carpentry-related occupations
	  – identify wood by sizes commonly used in the industry
	• identify and demonstrate the proper use of the glues/adhesives used in woodworking and list the advantages and disadvantages of each
	• identify and describe fastening devices used in woodworking
	• identify commonly used nails and screws by type, size and properties
	• identify and use proper surface preparation equipment; e.g., identify, describe and select appropriate abrasives.

General Outcomes	Specific Outcomes

Students will apply appropriate finishing procedures to products.	**Finishing Procedures**
	
	Students will:
	• demonstrate proper selection and application techniques for common fastening devices
	• demonstrate the ability to countersink fastening devices
	• demonstrate proper assembly and finishing techniques for basic woodworking projects; e.g.,
	  – identify the major features, from Material Safety Data Sheets (MSDS), on the labels of finishing products
	  – exhibit skill in making accurate and tight fits
	• demonstrate the ability to prepare surfaces for applying finishes
	• identify, describe and demonstrate the proper application of wood finishing products; e.g.,
	  – fillers
	  – water-based paint
	  – oil-based paint
	  – stains
	  – clear coats.

ENSURING QUALITY

General Outcomes	Specific Outcomes
Students will develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.	**Task Management** **Outcomes** *Students will:* • read and/or listen to instructions • ask questions to clarify expected outcomes, procedures and timelines. **Decision Making** *Students will:* • identify the parameters of the task • generate and review alternative ideas and their consequences • make a decision or select an idea. **Planning** *Students will:* • identify the steps involved in managing a project and identify the need for planning in woodworking • prepare a project management plan, including budget, timeline and sample drawings • identify the purpose of sketches, drawings and blueprints • identify procedures and conventions for drawing; e.g., – sketches – orthographic and isometric drawings – scale drawings • plan and sketch basic shop drawings and create an accurate representation of a simple project • transfer/lay out a cutting list, from drawings to project material • identify available tools, equipment and materials. **Performance Standards** *Students will:* • identify expected standards for a product or service • work to agreed quality standards and specifications • select and use appropriate tools and technology for a task or project • demonstrate safe processes and skills to plan, fabricate, assemble and finish a useful product. **Evaluation** *Students will:* • identify opportunities for improving quality • establish expectations and measures for improvements • create evidence to support an understanding of task management and skill development for inclusion in a personal portfolio.

COMMUNICATION

General Outcomes	Specific Outcomes
Students will enhance their ability to listen, speak, read and write effectively.	**Listening, Speaking, Reading and Writing** *Students will:* • read, view and interpret information presented in a variety of forms, including text, videos, graphs, charts, diagrams, manuals • identify a purpose for writing • print or write legibly, spell accurately and apply rules of grammar to construct text • listen and ask questions to expand information and to appreciate the points of view of others.

THINKING

General Outcomes	Specific Outcomes
Students will develop problem-solving strategies.	**Problem Solving** *Students will:* • identify and define, and ask relevant questions to clarify, the problem • evaluate the results in terms of expected outcomes.

NUMERACY

General Outcomes	Specific Outcomes
Students will understand the value of numeracy skills in the workplace.	**Basic Operations, Patterns and Relationships, Shape and Space, and Statistics and Probability** *Students will:* • apply arithmetic operations, e.g., addition, subtraction, multiplication or division, to whole numbers and decimals and use number operations when creating and solving money problems • use calculators or computers, to perform calculations involving large and small numbers, when solving problems • apply concepts of rate, ratio, percentage and proportion to solve problems in a meaningful context

General Outcomes	Specific Outcomes
	• demonstrate a number sense for whole numbers 0 to 100 000 and explore proper fractions and decimals • estimate, measure and compare, using decimal numbers and standard units of measure, to solve problems in everyday contexts; e.g., mass, length, volume, time, perimeter, surface area • use metric and imperial units of measure.

INFORMATION TECHNOLOGY

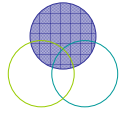|	

Students will familiarize themselves with the information technology used in daily workplace operation.	**Computer Operations**
	
	Students will:
	• identify the most appropriate technology tool for the task; e.g., fax, e-mail, networks, telephone
	• identify appropriate telephone operations, answer telephone calls appropriately, locate numbers and make telephone calls
	• identify basic computer operations; e.g.,
	  – use basic keyboarding skills
	  – store, organize and retrieve information correctly
	  – locate and select information and ideas using appropriate technology and information systems; e.g., Internet
	  – access, send and retrieve e-mail and attachments
	• identify procedures for connecting and using audio, video and digital equipment
	• identify procedures for sending and receiving faxes and setting up a fax machine
	• identify procedures for copying and printing documents.

Knowledge and Employability (Occupational Component)

WOODWORKING AND CABINETRY 20-4
GENERAL OUTCOMES

Employability Competencies	Students will develop these competencies throughout the learning process and demonstrate them in daily life and the workplace.
Managing Transitions	• Students will apply their abilities and interests toward achieving learning goals. • Students will practise the skills and abilities needed to manage change. • Students will orient themselves toward an occupation that reflects their personal aptitudes and interests.
Personal Management	• Students will increase their self-esteem and confidence and enhance their ability to set personal goals and priorities. • Students will understand risks and be accountable for their actions.
Working with Others	• Students will practise effective communication skills and strategies in an occupational context. • Students will demonstrate the ability to understand and work within the culture of a group. • Students will plan and make decisions with others.
Occupational Competencies	**Students will develop and demonstrate the following competencies to succeed in a specific occupation or career.**
Achieving Results	• Students will orient themselves toward an occupation within a woodworking and cabinetry career environment. • Students will demonstrate safe workplace practices and procedures. • Students will develop an increased awareness of technology to develop a high-quality product or service. • Students will develop basic knowledge and the proper use of the tools, equipment and materials used in cabinetmaking and millworking operations. • Students will demonstrate proper assembly and finishing techniques.
Ensuring Quality	• Students will continue to develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.
Academic Competencies	**Students will continue to develop these minimum academic competencies that provide a foundation for further learning.**
Communication	• Students will demonstrate effective listening, speaking, reading and writing skills.
Thinking	• Students will apply creative thinking skills to solve problems.
Numeracy	• Students will apply mathematical concepts to solve occupational problems.
Information Technology	• Students will enhance their performance by using information technology to help complete tasks.

WOODWORKING AND CABINETRY 20-4

EMPLOYABILITY COMPETENCIES: These competencies are developed throughout the learning process and are demonstrated in daily life and the workplace. Students will develop and demonstrate these competencies through individual effort and interpersonal interaction while completing a variety of projects/activities.

MANAGING TRANSITIONS

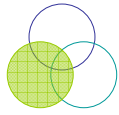| General Outcomes	Specific Outcomes
Students will apply their abilities and interests toward achieving learning goals.	**Lifelong Learning** *Students will:* • relate learning preferences and strengths to formal and informal learning opportunities and identify post-secondary opportunities within the related field • assess learning goals and current competencies, identify competencies needing development and identify and prioritize learning goals • create a pathway of senior high school courses to reflect learning goals • identify educational possibilities; e.g., Registered Apprenticeship Program (RAP), Green Certificate, Career and Technology Studies (CTS) and Career Internship.

Students will practise the skills and abilities needed to manage change.	**Adapting to Change**
	
	Students will:
	• identify goals, responsibilities and commitments
	• assess and reflect on the success of an action plan; e.g.,
	  – create alternative choices to deal with unexpected change
	  – identify stressors in personal environments that they can and cannot change
	• identify the need for personal support and create an inventory of available personal and community sources of support.

Students will orient themselves toward an occupation that reflects their personal aptitudes and interests.	**Career Development** *Students will:* • assess work preferences and nonpreferences (e.g., indoor, outdoor, shift work), assess life/work options and outline career goals and paths • work in and seek out a variety of roles and responsibilities • measure and celebrate personal contributions to workplace goals; e.g., paid, unpaid or volunteer work • orient themselves to the workplace through community partnerships and assess personal performance in terms of workplace expectations.

PERSONAL MANAGEMENT

General Outcomes	Specific Outcomes
Students will increase their self-esteem and confidence and enhance their ability to set personal goals and priorities.	**Self-development** *Students will:* • re-evaluate an action plan to develop strengths and talents • use strengths and talents to achieve personal goals • clarify acceptable and appropriate behaviours for specific activities and roles • act ethically in personal, community and workplace contexts and accept the consequences of their actions.
Students will understand risks and be accountable for their actions.	**Risk Management** *Students will:* • follow health and safety procedures; e.g., at home, at school, in the community and in the workplace • identify potential hazards, take corrective action and develop and practise action plans to ensure safety • practise personal emergency responses • assess their comfort level with, and the consequences of, taking risks.

WORKING WITH OTHERS

General Outcomes	Specific Outcomes

Students will practise effective communication skills and strategies in an occupational context.	**Interpersonal Communication**
	
	Students will:
	• assess the effectiveness of communication strategies used to communicate thoughts and feelings; e.g.,
	  – listen without interrupting
	  – contribute to be heard
	  – disagree courteously
	  – accept conflicting opinions
	  – use appropriate body language
	• assess verbal and nonverbal communication strategies
	• apply social norms to build specific relationships
	• demonstrate the ability to accept praise and/or criticism.

Students will demonstrate the ability to understand and work within the culture of a group.	**Building Community** *Students will:* • interact with others in a courteous manner • accommodate the beliefs of others in work and personal environments and show respect for differences in beliefs, abilities, etiquette and styles of interaction • identify opportunities for participation in community growth.

General Outcomes	Specific Outcomes
Students will plan and make decisions with others.	**Teamwork** *Students will:* • participate effectively as group members; e.g., – generate ideas – assess resources – contribute abilities and interests – monitor progress – share responsibility for completion of a task • assume various roles within a group; e.g., leadership • clarify the expected outcomes of teamwork.

Knowledge and Employability (Occupational Component)
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OCCUPATIONAL COMPETENCIES: Students will develop and demonstrate the following competencies to succeed in a specific occupation or career. They will achieve results through a variety of projects/activities as appropriate to enhance their knowledge and skills. Students will ensure the quality of their work through effective task management and will highlight their achievements in a career-based portfolio.

ACHIEVING RESULTS

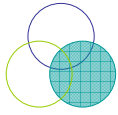| General Outcomes	Specific Outcomes

Students will orient themselves toward an occupation within a woodworking and cabinetry career environment.	**Career Awareness**
	
	Orientation
	
	Students will:
	• identify entry-level competencies
	• identify post-secondary opportunities
	• recognize entrepreneurial opportunities within the industry
	• introduce themselves to local business/industry operations
	• match their personal interests to their job search; e.g.,
	   – identify sources of support for investigating and finding work
	   – describe entry-level requirements
	   – recognize potential career ladders.
	
	Standards
	
	Students will:
	• develop workplace protocols, procedures and standards of conduct; e.g.,
	   – demonstrate appropriate work habits
	   – use safe and sanitary practices
	   – demonstrate pride in themselves
	   – demonstrate pride in their work performance
	   – show respect for others
	   – respect the property of others.

Students will demonstrate safe workplace practices and procedures.	**Workplace Health and Safety** *Students will:* • identify safety device locations and procedures within the workplace environment • demonstrate knowledge of, and the ability to access information about, Occupational Health and Safety (OHS) and the Workers' Compensation Board (WCB) • demonstrate knowledge of, and adherence to, safety rules that are specific to available tools, equipment and materials

General Outcomes	Specific Outcomes
	• demonstrate knowledge of health hazards associated with the use of chemicals and materials and retrieve information on Material Safety Data Sheets (MSDS) using appropriate print and Internet resources • select and wear personal protective equipment (PPE) appropriate to the specific task • demonstrate knowledge of environmental issues relating to the procedures for handling hazardous waste • demonstrate an understanding of the Workplace Hazardous Materials Information System (WHMIS) as it relates to the field of study and identify WHMIS symbols, classes and labelling requirements • identify important standards (codes) and governing bodies in the construction industry • recognize health and safety hazards associated with construction procedures; e.g., demonstrate preventive measures to avoid accidents and injury to themselves and others during construction procedures.
Students will develop an increased awareness of technology to develop a high-quality product or service.	**Products and Service** **Technology Integration** *Students will:* • identify new and emerging products and technological advances in woodworking and cabinetry. **Providing Service** *Students will:* • identify client relationships or interactions within the field of woodworking and cabinetry • identify services required or provided • collect necessary information to complete a purchase or to fill out a work order • recognize the importance of customer or client service to all businesses/ industries • demonstrate professional practices and work habits • strive to meet and exceed the client's expectations.
Students will develop basic knowledge and the proper use of the tools, equipment and materials used in cabinetmaking and millworking operations.	**Tools, Equipment and Materials** **Tools and Equipment** *Students will:* • identify, describe and demonstrate the proper use of layout tools and measuring devices; e.g., rules, squares, dividers, gauges • identify, describe and demonstrate the safe use of hand tools; e.g., sawing, edge cutting, striking, drilling and boring, fastening, and metalworking tools

General Outcomes	Specific Outcomes

	• identify, describe and demonstrate the safe use of portable power tools; e.g., saws, drills, drivers, routers, sanders and pneumatic tools
	• identify, describe and demonstrate the safe use of stationary power tools and equipment; e.g.,
	  – cutting machines; e.g., table, mitre, band and radial saws
	  – edging and surfacing machines; e.g., jointer, thicknesser
	  – shaping and drilling machines; e.g., shapers, routers, lathes, sanders, drill presses, mortisers
	• develop and practise terminology specific to cabinetmaking and millworking occupations and use proper tool names.
	
	Materials
	
	Students will:
	• identify and describe common woods and manufactured materials used in cabinetry; e.g.,
	  – distinguish between hardwoods and softwoods
	  – identify and describe common lumber defects; e.g., cup, twist, crown, bow
	  – identify and describe common manufactured materials used in cabinet production; e.g., medium-density fibreboard (MDF), particle board, plywood, hardboard, plastic laminates
	• identify, describe and demonstrate the proper use of fasteners, adhesives and clamping tools; e.g.,
	  – nails, screws, staples, anchors, dowels, biscuits
	  – polyvinyl glue (carpenter's glue), contact cement, hot glue, epoxies
	  – bar clamp, C-clamp, band clamp, corner clamps, vices
	• identify, describe and properly use abrasive products, including the selection of appropriate types and grit sequence; e.g., sheeting products, belts, discs, spindle sleeves
	• identify and demonstrate the correct storage practices for tools, equipment and materials.

Students will demonstrate proper assembly and finishing techniques.	**Assembly and Finishing**
	
	Students will:
	• identify, describe and produce basic wood joints; e.g., butt, rabbet, mitre, dado
	• identify, describe and apply finishes by brushing, spraying, rolling, dipping and wiping; e.g., identify tools and equipment used to apply finishes and follow safety procedures as outlined
	• identify and describe the components of a basic cabinet and incorporate this knowledge into a project; e.g.,
	  – gables, partitions, back panels, stiles and rails, shelves, doors and drawers
	  – hinges, latches, pulls, locks, connectors and brackets.

ENSURING QUALITY

General Outcomes	Specific Outcomes
Students will continue to develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.	**Task Management** **Outcomes** *Students will:* • read and/or listen to instructions • ask questions to clarify expected outcomes, procedures and timelines. **Decision Making** *Students will:* • identify the parameters of the task • generate and review alternative ideas and their consequences • make a decision or select an idea. **Planning** *Students will:* • identify the steps involved in managing a project • prepare a sample project plan, including budget and timeline • identify available tools, equipment and materials • identify the steps taken in managing a building project • prepare a sample building project management timeline • develop a building project checklist • discuss the need for a building project budget • identify the purpose of sketches, drawings and blueprints • identify the procedures and conventions for drawing sketches and orthographic, isometric and scale drawings • plan and sketch basic shop drawings and create an accurate representation of a woodworking and cabinetry project • transfer/lay out a cutting list, from drawings to project material. **Performance Standards** *Students will:* • identify expected standards for a product or service • work to agreed quality standards and specifications • select and use appropriate tools and technology for a task or project. **Evaluation** *Students will:* • identify opportunities for improving quality • establish expectations and measures for improvements • create evidence to support an understanding of task management and skill development for inclusion in a personal portfolio.

Knowledge and Employability (Occupational Component)

COMMUNICATION

General Outcomes	Specific Outcomes

Students will demonstrate effective listening, speaking, reading and writing skills.	**Listening, Speaking, Reading and Writing**
	
	Students will:
	• read, view and interpret occupation-related materials; e.g.,
	  – use related occupational terms
	  – identify occupation-related literature
	  – interpret and follow written instructions
	• select and create a text format to suit a purpose and audience, e.g., forms, letters, reports, memos, résumé, and:
	  – describe uses of writing skills in related occupations
	  – write a letter of inquiry
	  – write a letter of thanks
	  – complete job applications
	• listen and present information in a clear, concise manner; e.g.,
	  – listen attentively to organize and classify information and ideas
	  – organize main ideas and key messages with clarity.

THINKING

Students will apply creative thinking skills to solve problems.	**Problem Solving, Decision Making and Creative Thinking** *Students will:* • apply a problem-solving model to identify the problem/issue • identify appropriate actions and develop several alternatives for each promising idea • evaluate the results, in terms of expected outcomes related to the initial problem, and evaluate personal satisfaction with the outcome of the idea; e.g., product/process.

NUMERACY

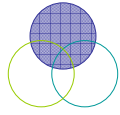| General Outcomes	Specific Outcomes
Students will apply mathematical concepts to solve occupational problems.	**Basic Operations, Patterns and Relationships, Shape and Space, and Statistics and Probability** *Students will:* • apply arithmetic operations, e.g., addition, subtraction, multiplication or division, to whole numbers and decimals and use number operations when creating and solving money problems • use calculators or computers, to perform calculations involving large and small numbers, when solving problems • apply concepts of rate, ratio, percentage and proportion to solve problems in a meaningful context • demonstrate a number sense for whole numbers 0 to 100 000 and explore proper fractions and decimals • estimate, measure and compare, using decimal numbers and standard units of measure, to solve problems in everyday contexts; e.g., mass, length, volume, time, perimeter, surface area • use metric and imperial units of measure.

INFORMATION TECHNOLOGY

General Outcomes	Specific Outcomes

Students will enhance their performance by using information technology to help complete tasks.	**Computer Operations and Computer Applications**
	
	Students will:
	• demonstrate appropriate language and etiquette when using information technology
	• demonstrate appropriate telephone operations; e.g., answer telephone calls appropriately, locate numbers and make telephone calls
	• demonstrate basic computer operations to complete a task; e.g.,
	  – use basic keyboarding skills
	  – store, organize and retrieve information correctly
	  – locate and select information and ideas using appropriate technology and information systems; e.g., Internet
	  – access, send and retrieve e-mail and attachments
	• demonstrate procedures for connecting and using audio, video and digital equipment
	• demonstrate procedures for sending and receiving faxes and setting up a fax machine
	• demonstrate procedures for copying and printing documents.

WOODWORKING AND CABINETRY 30-4
GENERAL OUTCOMES

Employability Competencies	Students will develop these competencies throughout the learning process and demonstrate them in daily life and the workplace.
Managing Transitions	• Students will consistently demonstrate personal discovery and continuous learning. • Students will manage change effectively to support their goals. • Students will prepare themselves for entry-level employment in an occupation that reflects their personal aptitudes and interests.
Personal Management	• Students will exhibit self-esteem and confidence through the achievement of personal goals. • Students will manage risks to achieve both personal and workplace goals.
Working with Others	• Students will model effective communication skills and strategies in the home, school, community and workplace. • Students will promote equity in work and community endeavours. • Students will demonstrate the ability to complete tasks in a team environment.
Occupational Competencies	**Students will develop and demonstrate the following competencies to succeed in a specific occupation or career.**
Achieving Results	• Students will prepare for entry-level employment within a woodworking and cabinetry career environment. • Students will demonstrate entry-level standards of safe workplace practices and procedures. • Students will use technology to develop a high-quality product or service. • Students will demonstrate entry-level knowledge and the proper use of the tools, equipment and materials used in cabinetmaking and millworking operations. • Students will demonstrate entry-level assembly and finishing techniques.
Ensuring Quality	• Students will demonstrate an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.
Academic Competencies	**Students will continue to develop these minimum academic competencies that provide a foundation for further learning.**
Communication	• Students will demonstrate effective listening, speaking, reading and writing skills to prepare for employment.
Thinking	• Students will research information, use creative thinking skills and use effective problem-solving strategies to solve problems.
Numeracy	• Students will demonstrate mathematical operations to effectively solve problems in a meaningful context.
Information Technology	• Students will demonstrate the effective use of information technology to perform daily workplace operations.

WOODWORKING AND CABINETRY 30-4

> **EMPLOYABILITY COMPETENCIES:** These competencies are developed throughout the learning process and are demonstrated in daily life and the workplace. Students will develop and demonstrate these competencies through individual effort and interpersonal interaction while completing a variety of projects/activities.

MANAGING TRANSITIONS

General Outcomes	Specific Outcomes

Students will consistently demonstrate personal discovery and continuous learning.	**Lifelong Learning**
	
	Students will:
	• identify learning opportunities related to learning goals, commitments and resources; e.g.,
	  – identify opportunities for further education/training
	  – locate needed financial support systems
	  – locate needed personal support systems
	• practise what has been learned to build competence and confidence and evaluate the application of competencies to learning goals
	• create a plan that demonstrates continuous learning; e.g.,
	  – analyze requirements for graduation and for further education/training
	  – modify a learning plan to reflect requirements and opportunities.

Students will manage change effectively to support their goals.	**Adapting to Change**
	
	Students will:
	• prioritize and assign resources to meet commitments and goals
	• prioritize commitments and goals to achieve a balanced lifestyle
	• redefine an action plan as situations change; e.g.,
	  – use adaptive strategies
	  – redefine personal goals
	  – select personal coping mechanisms
	• access available and appropriate sources of support
	• identify opportunities for improvement and innovation; e.g., entrepreneurship.

Knowledge and Employability (Occupational Component)

General Outcomes	Specific Outcomes
Students will prepare themselves for entry-level employment in an occupation that reflects their personal aptitudes and interests.	**Career Development** *Students will:* • analyze elements of job satisfaction; e.g., recognition, environment, pay, benefits, prestige • build personal career paths and networks • analyze how work contributes to societal and economic needs and a sense of responsibility • prepare for employment through community partnership activities and organize and complete specific job tasks effectively and efficiently.

PERSONAL MANAGEMENT

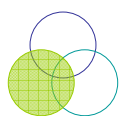| General Outcomes	Specific Outcomes
Students will exhibit self-esteem and confidence through the achievement of personal goals.	**Self-development** *Students will:* • continue to create a long-term self-development plan in which they consider accomplishments and redefine self-development goals • demonstrate entry-level self-presentation appropriate to the activity and role • maintain a high standard of personal ethics when interacting with others.
Students will manage risks to achieve both personal and workplace goals.	**Risk Management** *Students will:* • maintain health and safety procedures; e.g., at home, at school, in the community and in the workplace • monitor success in reducing the impact of hazards on themselves and others • demonstrate concern for the safety of others by exhibiting appropriate behaviour in the workplace • work with others to respond to emergencies • take planned risks to contribute to personal growth.

WORKING WITH OTHERS

General Outcomes	Specific Outcomes

Students will model effective communication skills and strategies in the home, school, community and workplace.	**Interpersonal Communication**
	
	Students will:
	• communicate thoughts and feelings appropriately; e.g.,
	  – listen without interrupting
	  – contribute to be heard
	  – disagree courteously
	  – accept conflicting opinions
	  – use appropriate body language
	• maintain a balance between speaking, listening and responding
	• work together to achieve goals
	• demonstrate the ability to deal constructively with conflict.

Students will promote equity in work and community endeavours.	**Building Community** *Students will:* • demonstrate and model courteous behaviour in daily interactions • demonstrate respect for others and a shared understanding of diverse beliefs, etiquette and styles of interaction • assess their personal contribution to community growth.

Students will demonstrate the ability to complete tasks in a team environment.	**Teamwork**
	
	Students will:
	• assess the effectiveness of group and personal contributions; e.g.,
	  – generate ideas
	  – assess resources
	  – contribute abilities and interests
	  – monitor progress
	  – share responsibility for completion of a task
	• expand their abilities to contribute to team goals.

Knowledge and Employability (Occupational Component)

> **OCCUPATIONAL COMPETENCIES:** Students will develop and demonstrate the following competencies to succeed in a specific occupation or career. They will achieve results through a variety of projects/activities as appropriate to enhance their knowledge and skills. Students will ensure the quality of their work through effective task management and will highlight their achievements in a career-based portfolio.

ACHIEVING RESULTS

General Outcomes	Specific Outcomes

Students will prepare for entry-level employment within a woodworking and cabinetry career environment.	**Career Awareness**
	
	Preparation
	
	Students will:
	• assess entry-level competencies
	• recognize opportunities for further education/training
	• select post-secondary opportunities
	• identify local entrepreneurs
	• establish contacts with local businesses/industries
	• present marketable skills and strengths; e.g.,
	  – write a letter of application
	  – prepare a résumé
	  – complete application forms
	  – identify contacts and references
	  – collect evidence of competencies in a portfolio
	• demonstrate an informed decision-making process; e.g.,
	  – collect evidence supporting their career choice
	  – integrate evidence and present a collection of artifacts and reflections to support an informed career pathway selection.
	
	Standards
	
	Students will:
	• demonstrate workplace protocols, procedures and standards of conduct; e.g.,
	  – demonstrate appropriate work habits
	  – demonstrate effective human-relations techniques in the workplace
	  – practise safety in the workplace
	  – demonstrate acceptable verbal and nonverbal communication skills
	  – practise personal and public hygiene procedures
	  – demonstrate entry-level competency in tools and equipment usage
	  – use supplies correctly
	  – follow good storage practices
	  – demonstrate pride in their work performance
	  – demonstrate a willingness to work
	  – demonstrate respect for others
	  – follow accepted principles and procedures
	  – recognize opportunities for further education/training.

General Outcomes	Specific Outcomes
Students will demonstrate entry-level standards of safe workplace practices and procedures.	**Workplace Health and Safety** *Students will:* • identify and explain the use of safety devices within the workplace • demonstrate knowledge of, and the ability to access information about, Occupational Health and Safety (OHS) and the Workers' Compensation Board (WCB) • demonstrate a prework and postwork hazard assessment • demonstrate knowledge of, and adherence to, safety rules that are specific to available tools, equipment and materials • demonstrate knowledge of health hazards associated with the use of chemicals and materials and retrieve information on Material Safety Data Sheets (MSDS) using appropriate print and Internet resources • model safety consciousness by selecting and wearing personal protective equipment (PPE) appropriate to the specific task • demonstrate knowledge of environmental issues relating to the procedures for handling hazardous waste • demonstrate an understanding of the Workplace Hazardous Materials Information System (WHMIS) as it relates to the field of study and identify WHMIS symbols, classes and labelling requirements.
Students will use technology to develop a high-quality product or service.	**Products and Service** **Technology Integration** *Students will:* • use new and emerging products and technological advances in woodworking and cabinetry; e.g., examine the effects of current technological advances in the woodworking and cabinetry industry and explain the impact of current technology on the job descriptions of future woodworking and cabinetry trade workers. **Providing Service** *Students will:* • identify client relationships or interactions within the field of woodworking and cabinetry • identify services required or provided • collect necessary information to complete a purchase or to fill out a work order • recognize the importance of customer or client service to all businesses/ industries • demonstrate professional practices and work habits • strive to meet and exceed the client's expectations.

44/ Woodworking and Cabinetry 30-4 (2006)   Knowledge and Employability (Occupational Component)
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General Outcomes	Specific Outcomes
Students will demonstrate entry-level knowledge and the proper use of the tools, equipment and materials used in cabinetmaking and millworking operations.	**Tools, Equipment and Materials** **Tools and Equipment** *Students will:* • select and demonstrate the proper use of common hand tools; e.g., – measuring and layout – sawing – striking – edge cutting – metalworking • select and demonstrate the safe use of portable power tools used in cabinetmaking and woodworking shops; e.g., – portable power saws – routers – power drills and drivers – sanders – pneumatic tools • select and demonstrate the proper use of stationary power tools used in cabinetmaking and millworking shops • demonstrate the proper use of cutting tools; e.g., – table saws; e.g., change blades, set up for rip, cross cut, bevel, mitre, dado – band saws; e.g., change blades, cut arcs and circles – radial saws; e.g., change blades, set up for cross cuts and multiple cuts, rip, bevel, dado – jointers; e.g., edges, face – thickness planers; e.g., dimension stock to size – boring machines (drill press and mortisers); e.g., set up, adjust, bore/mortise – sanding machines (spindle, disc, belt); e.g., set up, adjust and change abrasives • perform basic hand and power tool maintenance; e.g., sharpen hand tools and remove and replace saw blades, router bits, sanding belts, drill bits. **Materials** *Students will:* • review and demonstrate correct storage practices and locations for materials and review MSDS • identify and describe wood components and characteristics; e.g., – identify common species based on samples; e.g., spruce-pine-fir (SPF), cedar, oak, maple, walnut, cherry – distinguish between solid woods and man-made materials – identify different cuts of lumber; e.g., quartered, rotary, flat

General Outcomes	Specific Outcomes

	– identify common lumber defects and imperfections; e.g., cup, twist, bow, crown
	– select wood products most suited to specific construction applications, based on such factors as appearance, strength, workability, cost and availability
	• identify fasteners, adhesives and abrasives used in cabinetmaking; e.g.,
	– identify various fasteners and their application
	– identify adhesives and estimate drying times
	– identify abrasive types and select and correctly use each specified grit type
	– identify different clamping tools used in cabinetmaking
	• identify finishing materials and applicators; e.g.,
	– distinguish between oil- and water-based products
	– identify tools and equipment to apply finishes; e.g., brushes, rollers, sprayers, cloth applications
	– understand and follow safety procedures as outlined by the manufacturer's instructions.
Students will demonstrate entry-level assembly and finishing techniques.	**Assembly and Finishing**
	Students will:
	• demonstrate the use of joinery; e.g.,
	– construct projects, using a variety of wood joints with increasing complexity
	– demonstrate the use of hardware, fasteners and adhesives
	– assemble a project, using the proper fasteners, adhesives and clamping tools
	– install common hardware on a project properly; e.g., overlay and butt hinges, latches, pulls, locks
	• demonstrate finishing techniques; e.g.,
	– prepare a surface to receive a finish
	– apply stains and clear coats
	– review safety procedures.

Knowledge and Employability (Occupational Component)

ENSURING QUALITY

General Outcomes	Specific Outcomes

Students will demonstrate an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.	**Task Management**
	
	Outcomes
	
	Students will:
	• read and/or listen to instructions
	• ask questions to clarify expected outcomes, procedures and timelines.
	
	Decision Making
	
	Students will:
	• identify the parameters of the task
	• generate and review alternative ideas and their consequences
	• make a decision or select an idea.
	
	Planning
	
	Students will:
	• identify the steps involved in managing a project
	• prepare a sample project plan, including budget and timeline
	• identify available tools, equipment and materials
	• review the fundamentals of project planning and design as they relate to cabinetmaking
	• develop a project plan; e.g.,
	  – produce sketches and isometric and orthographic representations
	  – produce a scale drawing
	  – interpret basic shop drawings
	  – identify the components of a blueprint; e.g., plan view, elevations, sections
	  – complete a material list
	  – create a procedure list
	• transfer/lay out a cutting list, from drawings to project material.
	
	Performance Standards
	
	Students will:
	• identify expected standards for a product or service
	• work to agreed quality standards and specifications
	• select and use appropriate tools and technology for a task or project.
	
	Evaluation
	
	Students will:
	• identify opportunities for improving quality
	• establish expectations and measures for improvements
	• create evidence to support an understanding of task management and skill development for inclusion in a personal portfolio.

COMMUNICATION

General Outcomes	Specific Outcomes

Students will demonstrate effective listening, speaking, reading and writing skills to prepare for employment.	**Listening, Speaking, Reading and Writing**
	
	Students will:
	• read, view and interpret occupation-related materials for a specific purpose; e.g.,
	  – read related health and safety documents
	  – read terms of employment documents
	  – follow written instructions specific to an occupational area
	• create text for a specific purpose that clearly communicates information; e.g.,
	  – write a résumé
	  – write a job description
	  – submit job application forms
	• communicate thoughts and ideas and listen to the thoughts and ideas of others to effectively complete a task; e.g.,
	  – follow oral instructions
	  – give effective oral instructions when necessary.

THINKING

General Outcomes	Specific Outcomes

Students will research information, use creative thinking skills and use effective problem-solving strategies to solve problems.	**Problem Solving, Decision Making, Finding Information and Creative Thinking**
	
	Students will:
	• demonstrate an effective problem-solving model; e.g.,
	  – identify the need for a solution to a problem/issue
	  – identify why information is needed; e.g., make decisions, inform, persuade
	• identify appropriate actions and select and apply information that meets their purposes and needs
	• evaluate the results in terms of expected outcomes and assess the impact of information on their purpose and audience.

NUMERACY

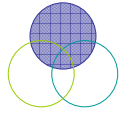| General Outcomes	Specific Outcomes
Students will demonstrate mathematical operations to effectively solve problems in a meaningful context.	**Basic Operations, Patterns and Relationships, Shape and Space, and Statistics and Probability** *Students will:* • apply arithmetic operations, e.g., addition, subtraction, multiplication or division, to whole numbers and decimals and use number operations when creating and solving money problems • use calculators or computers, to perform calculations involving large and small numbers, when solving problems • apply concepts of rate, ratio, percentage and proportion • demonstrate a number sense for whole numbers 0 to 100 000 and explore proper fractions and decimals • estimate, measure and compare, using decimal numbers and standard units of measure, to solve problems in everyday contexts; e.g., mass, length, volume, time, perimeter, surface area • use metric and imperial units of measure.

INFORMATION TECHNOLOGY

Students will demonstrate the effective use of information technology to perform daily workplace operations.	**Computer Operations and Computer Applications**
	
	Students will:
	• model and assume personal responsibility for the ethical use of information technologies
	• demonstrate appropriate telephone operations within the workplace; e.g., answer telephone calls appropriately, locate numbers and make telephone calls
	• use computer operations to assist in the completion of daily workplace operations; e.g.,
	  – use basic keyboarding skills
	  – store, organize and retrieve information correctly
	  – locate and select information and ideas using appropriate technology and information systems; e.g., Internet
	  – access, send and retrieve e-mail and attachments
	• demonstrate procedures for connecting and using audio, video and digital equipment
	• demonstrate procedures for sending and receiving faxes and setting up a fax machine
	• demonstrate procedures for copying and printing documents.

Knowledge and Employability (Occupational Component)

WOOD FRAME CONSTRUCTION 20-4
GENERAL OUTCOMES

Employability Competencies	Students will develop these competencies throughout the learning process and demonstrate them in daily life and the workplace.
Managing Transitions	• Students will apply their abilities and interests toward achieving learning goals. • Students will practise the skills and abilities needed to manage change. • Students will orient themselves toward an occupation that reflects their personal aptitudes and interests.
Personal Management	• Students will increase their self-esteem and confidence and enhance their ability to set personal goals and priorities. • Students will understand risks and be accountable for their actions.
Working with Others	• Students will practise effective communication skills and strategies in an occupational context. • Students will demonstrate the ability to understand and work within the culture of a group. • Students will plan and make decisions with others.
Occupational Competencies	**Students will develop and demonstrate the following competencies to succeed in a specific occupation or career.**
Achieving Results	• Students will orient themselves toward an occupation within a wood frame construction career environment. • Students will demonstrate safe workplace practices and procedures. • Students will develop an increased awareness of technology to develop a high-quality product or service. • Students will develop and review tool knowledge for use in wood frame construction. • Students will develop the skills needed to read blueprints and apply these skills to various construction tasks. • Students will develop the skills needed to construct footings and foundations. • Students will develop competencies in framing floor, wall and roof trusses. • Students will develop competencies in the installation of prefabricated stairs. • Students will develop competencies in the installation of exterior doors and windows. • Students will develop competencies in the exterior finishing of residential buildings.
Ensuring Quality	• Students will continue to develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.
Academic Competencies	**Students will continue to develop these minimum academic competencies that provide a foundation for further learning.**
Communication	• Students will demonstrate effective listening, speaking, reading and writing skills.
Thinking	• Students will apply creative thinking skills to solve problems.
Numeracy	• Students will apply mathematical concepts to solve occupational problems.
Information Technology	• Students will enhance their performance by using information technology to help complete tasks.

WOOD FRAME CONSTRUCTION 20-4

> **EMPLOYABILITY COMPETENCIES:** These competencies are developed throughout the learning process and are demonstrated in daily life and the workplace. Students will develop and demonstrate these competencies through individual effort and interpersonal interaction while completing a variety of projects/activities.

MANAGING TRANSITIONS

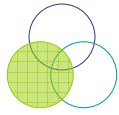| General Outcomes	Specific Outcomes
Students will apply their abilities and interests toward achieving learning goals.	**Lifelong Learning** *Students will:* • relate learning preferences and strengths to formal and informal learning opportunities and identify post-secondary opportunities within the related field • assess learning goals and current competencies, identify competencies needing development and identify and prioritize learning goals • create a pathway of senior high school courses to reflect learning goals • identify educational possibilities; e.g., Registered Apprenticeship Program (RAP), Green Certificate, Career and Technology Studies (CTS) and Career Internship.

Students will practise the skills and abilities needed to manage change.	**Adapting to Change**
	
	Students will:
	• identify goals, responsibilities and commitments
	• assess and reflect on the success of an action plan; e.g.,
	  – create alternative choices to deal with unexpected change
	  – identify stressors in personal environments that they can and cannot change
	• identify the need for personal support and create an inventory of available personal and community sources of support.

Students will orient themselves toward an occupation that reflects their personal aptitudes and interests.	**Career Development** *Students will:* • assess work preferences and nonpreferences (e.g., indoor, outdoor, shift work), assess life/work options and outline career goals and paths • work in and seek out a variety of roles and responsibilities • measure and celebrate personal contributions to workplace goals; e.g., paid, unpaid or volunteer work • orient themselves to the workplace through community partnerships and assess personal performance in terms of workplace expectations.

PERSONAL MANAGEMENT

General Outcomes	Specific Outcomes
Students will increase their self-esteem and confidence and enhance their ability to set personal goals and priorities.	**Self-development** *Students will:* • re-evaluate an action plan to develop strengths and talents • use strengths and talents to achieve personal goals • clarify acceptable and appropriate behaviours for specific activities and roles • act ethically in personal, community and workplace contexts and accept the consequences of their actions.
Students will understand risks and be accountable for their actions.	**Risk Management** *Students will:* • follow health and safety procedures; e.g., at home, at school, in the community and in the workplace • identify potential hazards, take corrective action and develop and practise action plans to ensure safety • practise personal emergency responses • assess their comfort level with, and the consequences of, taking risks.

WORKING WITH OTHERS

General Outcomes	Specific Outcomes

Students will practise effective communication skills and strategies in an occupational context.	**Interpersonal Communication**
	
	Students will:
	• assess the effectiveness of communication strategies used to communicate thoughts and feelings; e.g.,
	  – listen without interrupting
	  – contribute to be heard
	  – disagree courteously
	  – accept conflicting opinions
	  – use appropriate body language
	• assess verbal and nonverbal communication strategies
	• apply social norms to build specific relationships
	• demonstrate the ability to accept praise and/or criticism.

Students will demonstrate the ability to understand and work within the culture of a group.	**Building Community** *Students will:* • interact with others in a courteous manner • accommodate the beliefs of others in work and personal environments and show respect for differences in beliefs, abilities, etiquette and styles of interaction • identify opportunities for participation in community growth.

General Outcomes	Specific Outcomes
Students will plan and make decisions with others.	**Teamwork** *Students will:* • participate effectively as group members; e.g., – generate ideas – assess resources – contribute abilities and interests – monitor progress – share responsibility for completion of a task • assume various roles within a group; e.g., leadership • clarify the expected outcomes of teamwork.

OCCUPATIONAL COMPETENCIES: Students will develop and demonstrate the following competencies to succeed in a specific occupation or career. They will achieve results through a variety of projects/activities as appropriate to enhance their knowledge and skills. Students will ensure the quality of their work through effective task management and will highlight their achievements in a career-based portfolio.

ACHIEVING RESULTS

General Outcomes	Specific Outcomes

Students will orient themselves toward an occupation within a wood frame construction career environment.	**Career Awareness**
	
	Orientation
	
	Students will:
	• identify entry-level competencies
	• identify post-secondary opportunities
	• recognize entrepreneurial opportunities within the industry
	• introduce themselves to local business/industry operations
	• list individual skills and interests that relate to building construction trades and occupations
	• match their personal interests to their job search; e.g.,
	  – identify sources of support for investigating and finding work
	  – describe entry-level requirements
	  – recognize potential career ladders
	• identify career opportunities in building construction occupations
	• match trade-specific terminology with the associated trade; e.g.,
	  – draftsperson; e.g., elevation, floor plan, plot plan
	  – excavation/heavy equipment operator; e.g., building pocket, setback, surveyor's pin
	  – footings/forms/cement finisher; e.g., pilings, forms, auger
	  – framing carpenter; e.g., stud, plumb, cripple
	  – stair installer/carpenter; e.g., tread, riser, stringer
	  – siding installer; e.g., soffit, fascia, weep hole
	  – roofing installer; e.g., tar paper, starter row, cap
	• prepare marketable skills and strengths; e.g., résumé, portfolio, interview.
	
	Standards
	
	Students will:
	• develop workplace protocols, procedures and standards of conduct; e.g.,
	  – demonstrate appropriate work habits
	  – use safe and sanitary practices
	  – demonstrate pride in themselves
	  – demonstrate pride in their work performance
	  – show respect for others
	  – respect the property of others.

General Outcomes	Specific Outcomes

Students will demonstrate safe workplace practices and procedures.	**Workplace Health and Safety**
	
	Students will:
	• identify safety device locations and procedures within the workplace environment; e.g., become familiar with work environments within the specific subtrades in wood frame construction
	• demonstrate knowledge of, and the ability to access information about, Occupational Health and Safety (OHS) and the Workers' Compensation Board (WCB)
	• recognize the importance of having policies, procedures and regulatory bodies that support the operation of a safe workplace
	• demonstrate knowledge of, and adherence to, safety rules that are specific to available tools, equipment and materials
	• demonstrate knowledge of health hazards associated with the use of chemicals and materials and retrieve information on Material Safety Data Sheets (MSDS) using appropriate print and Internet resources
	• select and wear personal protective equipment (PPE) appropriate to the specific task
	• demonstrate knowledge of environmental issues relating to the procedures for handling environmentally hazardous materials and waste
	• demonstrate an understanding of the Workplace Hazardous Materials Information System (WHMIS) as it relates to the field of study and identify WHMIS symbols, classes and labelling requirements
	• discuss potential hazards associated with residential building construction; e.g.,
	  – review and practise good electrical safety habits and report and repair potential electrical safety hazards in the shop and at home
	  – select and demonstrate proper set-up procedures for ladders and scaffolding systems
	  – select and use common knots and hitches for hoists and rigging
	  – select and use appropriate hoisting and rigging equipment for common construction activities
	• recognize the importance of permits and working to code and identify where to get information on building codes and local bylaws.

Students will develop an increased awareness of technology to develop a high-quality product or service.	**Products and Service** **Technology Integration** *Students will:* • identify new and emerging products and technological advances in wood frame construction • understand the value of electronic communication and attach documents, such as CAD drawings and contracts, to e-mail messages • be aware of spreadsheet and accounting software that facilitates mathematical calculations and operational budgeting; e.g., calculate the cost of materials for various projects

Knowledge and Employability (Occupational Component)

General Outcomes	Specific Outcomes

- identify the need for accurate measurements; e.g.,
  - identify the use of light-emitting diode (LED) or laser levelling devices
  - discuss the necessity for global positioning system (GPS) devices in site and foundation layouts
  - use elevation and site drawings to recognize excavation points
  - find the centre point of materials and sites, using both metric and imperial dimensions
  - lay out a wall plate with a window, door and multiple studs
  - calculate the size of studs needed to create walls of different heights
  - identify pitch, rise and run for rafter placement.

Providing Service

Students will:
- identify client relationships or interactions within the field of wood frame construction
- identify services required or provided
- collect necessary information to complete a purchase or to fill out a work order
- recognize the importance of customer or client service to all businesses/ industries
- demonstrate professional practices and work habits
- strive to meet and exceed the client's expectations.

Students will develop and review tool knowledge for use in wood frame construction.

Tools, Equipment and Materials

Tools and Equipment

Students will:
- list and identify tools used in various construction trades; e.g.,
  - measuring and layout tools; e.g., transits, tape measures, plumb bobs
  - cutting tools; e.g., chain saws, keyhole saws, routers
  - hand tools; e.g., planers, hammers, screwdrivers
  - power tools; e.g., drills, sanders, nail guns
  - elevator tools; e.g., ladders, scaffolds, sawhorses
- demonstrate the proper techniques for using trade-specific tools.

Materials

Students will:
- identify materials used in building construction; e.g.,
  - foundation/cribber; e.g., forms, rebar, dimensional lumber, concrete, piling tubes
  - carpenter/framer; e.g., dimensional lumber, poly barrier, vinyl and wood doors and windows, teleposts
  - exterior finisher; e.g., vinyl siding, stucco, veneers, aluminum
  - roofing installer; e.g., shingles, tar paper, wood shakes, ceramics.

General Outcomes	Specific Outcomes
Students will develop the skills needed to read blueprints and apply these skills to various construction tasks.	**Reading Blueprints** *Students will:* • read and interpret basic construction blueprints, working drawings and building codes • demonstrate measurement and layout procedures and applications • translate a blueprint measurement from scale.

Students will develop the skills needed to construct footings and foundations.	**Footings and Foundations**
	
	Students will:
	• understand the need for footings and how to make them; e.g.,
	  – set up a builder's level
	  – identify elevation points from a benchmark
	  – install batter boards
	  – identify the basic components of and construct simple footing forms
	  – identify the basic components of and construct simple foundation wall forms
	  – maintain form materials properly
	• choose appropriate footing widths for the size of the building and the type of soil base
	• tie rebar to add to footing strength
	• provide drainage away from footings
	• use correct depth measurements to place footings and foundations below the frost line
	• find centre points.

Students will develop competencies in framing floor, wall and roof trusses.	**Framing**
	
	Floors
	
	Students will:
	• demonstrate floor-framing techniques and procedures; e.g.,
	  – identify and install a sill plate and ladder frame
	  – cut floor joists and truss joists
	  – frame floor openings
	  – identify and install bridging, blocking and hangers
	  – install subfloor sheathing and adhesives
	  – select and use appropriate floor-framing fasteners and adhesives
	  – identify the crown in joists and trusses.

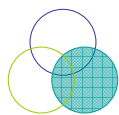| General Outcomes	Specific Outcomes

Walls

Students will:
- demonstrate layout procedures for framing
- use blueprints to determine where doors and windows need to be framed
- mark stud placement clearly, including cripples, backing and openings
- demonstrate framing skills, including using hand and power tools, building standing walls, choosing lumber and recognizing warping and waning; e.g.,
  - identify and select commonly used wood framing stock
  - check stock for defects and squareness
  - measure materials, using a tape measure
  - identify properties, and the proper use, of a framing square
  - identify and select proper fastening devices for framing projects
  - use, safely, circular saws, reciprocating saws, compound mitre saws and table saws
  - use compressed-air tools in a safe manner; e.g., framing nailers, staplers, brad nailers
  - maintain, properly, hand tools, power tools and compressed-air tools
- demonstrate wall-framing techniques and procedures; e.g.,
  - lay out floor deck for walls
  - cut wall plates
  - read/lay out simple wall framing on wall plates
  - identify the basic elements used in wall framing
  - cut studs, headers, jacks, rough sills and cripples
  - assemble corner and T-posts
  - assemble a header
  - frame a rough opening for a door
  - frame a rough opening for a window
  - assemble wall sections
  - install a cap plate
  - install wall blocking
  - install exterior wall sheathing
  - raise and anchor a wall section
  - plumb, align and brace wall sections
- demonstrate the ability to sheath framed floors, walls and rafters, according to specifications
- identify and use factory markings for fastener placement
- demonstrate the proper use of circular saws to trim sheathing
- identify and install tongue and groove materials properly.

General Outcomes	Specific Outcomes
	Roof *Students will:* • create trusses by calculating the rise and run, plumb cuts by using speed squares and choose lumber by recognizing the crown; e.g., – identify and describe common truss assemblies – lay out trusses – cut, assemble and install simple truss patterns – identify the material and procedures required to install roof sheathing – install roof sheathing – identify and describe the safe selection, setting and anchoring of trusses by hand or crane – brace a roof assembly – identify truss systems – identify and demonstrate the proper procedures for standing trusses – identify and install ridge blocks, rough fascia and backing for roof trusses.
Students will develop competencies in the installation of prefabricated stairs.	**Stair Installation** *Students will:* • identify the procedures for squaring and installing stairs safely and accurately; e.g., – use a tape measure to determine square – use spacers to allow for the installation of drywall – use temporary supports to attach multiple components.
Students will develop competencies in the installation of exterior doors and windows.	**Exterior Doors and Windows** *Students will:* • install doors and windows, level and plumb, according to schedule; e.g., – remove all packing materials – use spacers to create equal insulating pockets – use a level to plumb doors and windows.
Students will develop competencies in the exterior finishing of residential buildings.	**Exterior Finishing** *Students will:* • measure starting points and install vinyl siding correctly; e.g., – choose level starting points – install starter strips, drip caps and corner caps – nail to allow for expansion – cut with tin snips and circular saws • lay out starter rows and install shingles accurately; e.g., – use chalk lines and tape measures to create straight starting points – use staplers and tar paper on low-slope roofs – determine proper overhang allowances – trim shingles before and after placement – use factory tabs to place shingles – use roofing hammers and guides to place shingles accurately.

ENSURING QUALITY

General Outcomes	Specific Outcomes
Students will continue to develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.	**Task Management** **Outcomes** *Students will:* • read and/or listen to instructions • ask questions to clarify expected outcomes, procedures and timelines. **Decision Making** *Students will:* • identify the parameters of the task • generate and review alternative ideas and their consequences • make a decision or select an idea. **Planning** *Students will:* • identify the steps involved in managing a project • prepare a sample project plan, including budget and timeline • identify available tools, equipment and materials • identify the steps taken in managing a building project • prepare a sample building project management timeline • develop a building project checklist • discuss the need for a building project budget • identify the purpose of sketches, drawings and blueprints • identify the procedures and conventions for drawing sketches and orthographic, isometric and scale drawings • plan and sketch basic shop drawings and create an accurate representation of a wood frame project; e.g., shed, doghouse • transfer/lay out a cutting list, from drawings to project material. **Performance Standards** *Students will:* • identify expected standards for a product or service • work to agreed quality standards and specifications • select and use the appropriate tools and technology for a task or project. **Evaluation** *Students will:* • identify opportunities for improving quality • establish expectations and measures for improvements • create evidence to support an understanding of task management and skill development for inclusion in a personal portfolio.

COMMUNICATION

General Outcomes	Specific Outcomes

Students will demonstrate effective listening, speaking, reading and writing skills.	**Listening, Speaking, Reading and Writing**
	
	Students will:
	• read, view and interpret occupation-related materials; e.g.,
	  – use related occupational terms
	  – identify occupation-related literature
	  – interpret and follow written instructions
	• select and create a text format to suit a purpose and audience, e.g., forms, letters, reports, memos, résumé, and:
	  – describe uses of writing skills in related occupations
	  – write a letter of inquiry
	  – write a letter of thanks
	  – complete job applications
	• listen and present information in a clear, concise manner; e.g.,
	  – listen attentively to organize and classify information and ideas
	  – organize main ideas and key messages with clarity.

THINKING

General Outcomes	Specific Outcomes
Students will apply creative thinking skills to solve problems.	**Problem Solving, Decision Making and Creative Thinking** *Students will:* • apply a problem-solving model to identify the problem/issue • identify appropriate actions and develop several alternatives for each promising idea • evaluate the results, in terms of expected outcomes related to the initial problem, and evaluate personal satisfaction with the outcome of the idea; e.g., product/process.

Knowledge and Employability (Occupational Component)
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NUMERACY

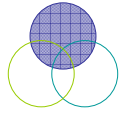| General Outcomes	Specific Outcomes
Students will apply mathematical concepts to solve occupational problems.	**Basic Operations, Patterns and Relationships, Shape and Space, and Statistics and Probability** *Students will:* • apply arithmetic operations, e.g., addition, subtraction, multiplication or division, to whole numbers and decimals and use number operations when creating and solving money problems • use calculators or computers, to perform calculations involving large and small numbers, when solving problems • apply concepts of rate, ratio, percentage and proportion to solve problems in a meaningful context • demonstrate a number sense for whole numbers 0 to 100 000 and explore proper fractions and decimals • estimate, measure and compare, using decimal numbers and standard units of measure, to solve problems in everyday contexts; e.g., mass, length, volume, time, perimeter, surface area • use metric and imperial units of measure.

INFORMATION TECHNOLOGY

Students will enhance their performance by using information technology to help complete tasks.	**Computer Operations and Computer Applications**
	
	Students will:
	• demonstrate appropriate language and etiquette when using information technology
	• demonstrate appropriate telephone operations; e.g., answer telephone calls appropriately, locate numbers and make telephone calls
	• demonstrate basic computer operations to complete a task; e.g.,
	  – use basic keyboarding skills
	  – store, organize and retrieve information correctly
	  – locate and select information and ideas using appropriate technology and information systems; e.g., Internet
	  – access, send and retrieve e-mail and attachments
	• demonstrate procedures for connecting and using audio, video and digital equipment
	• demonstrate procedures for sending and receiving faxes and setting up a fax machine
	• demonstrate procedures for copying and printing documents.

Knowledge and Employability (Occupational Component)
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WOOD FRAME CONSTRUCTION 30-4
GENERAL OUTCOMES

Employability Competencies	Students will develop these competencies throughout the learning process and demonstrate them in daily life and the workplace.
Managing Transitions	• Students will consistently demonstrate personal discovery and continuous learning. • Students will manage change effectively to support their goals. • Students will prepare themselves for entry-level employment in an occupation that reflects their personal aptitudes and interests.
Personal Management	• Students will exhibit self-esteem and confidence through the achievement of personal goals. • Students will manage risks to achieve both personal and workplace goals.
Working with Others	• Students will model effective communication skills and strategies in the home, school, community and workplace. • Students will promote equity in work and community endeavours. • Students will demonstrate the ability to complete tasks in a team environment.
Occupational Competencies	**Students will develop and demonstrate the following competencies to succeed in a specific occupation or career.**
Achieving Results	• Students will prepare for entry-level employment within a wood frame construction career environment. • Students will demonstrate entry-level standards of safe workplace practices and procedures. • Students will use technology to develop a high-quality product or service. • Students will display the entry-level skills needed to read blueprints and apply these skills to a number of occupations. • Students will demonstrate an understanding of vapour barriers, caulking and thermal insulation. • Students will demonstrate an understanding of drywall materials, tools and application techniques. • Students will demonstrate an understanding of taping materials and related application techniques. • Students will demonstrate an understanding of the use and application of paints, stains and wall coverings. • Students will demonstrate an understanding of flooring materials and methods. • Students will demonstrate an understanding of interior finishing in a new or an existing home.
Ensuring Quality	• Students will demonstrate an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.
Academic Competencies	**Students will continue to develop these minimum academic competencies that provide a foundation for further learning.**
Communication	• Students will demonstrate effective listening, speaking, reading and writing skills to prepare for employment.
Thinking	• Students will research information, use creative thinking skills and use effective problem-solving strategies to solve problems.
Numeracy	• Students will demonstrate mathematical operations to effectively solve problems in a meaningful context.
Information Technology	• Students will demonstrate the effective use of information technology to perform daily workplace operations.

WOOD FRAME CONSTRUCTION 30-4

EMPLOYABILITY COMPETENCIES: These competencies are developed throughout the learning process and are demonstrated in daily life and the workplace. Students will develop and demonstrate these competencies through individual effort and interpersonal interaction while completing a variety of projects/activities.

MANAGING TRANSITIONS

General Outcomes	Specific Outcomes

Students will consistently demonstrate personal discovery and continuous learning.	**Lifelong Learning**
	
	Students will:
	• identify learning opportunities related to learning goals, commitments and resources; e.g.,
	  – identify opportunities for further education/training
	  – locate needed financial support systems
	  – locate needed personal support systems
	• practise what has been learned to build competence and confidence and evaluate the application of competencies to learning goals
	• create a plan that demonstrates continuous learning; e.g.,
	  – analyze requirements for graduation and for further education/training
	  – modify a learning plan to reflect requirements and opportunities.

Students will manage change effectively to support their goals.	**Adapting to Change**
	
	Students will:
	• prioritize and assign resources to meet commitments and goals
	• prioritize commitments and goals to achieve a balanced lifestyle
	• redefine an action plan as situations change; e.g.,
	  – use adaptive strategies
	  – redefine personal goals
	  – select personal coping mechanisms
	• access available and appropriate sources of support
	• identify opportunities for improvement and innovation; e.g., entrepreneurship.

General Outcomes	Specific Outcomes
Students will prepare themselves for entry-level employment in an occupation that reflects their personal aptitudes and interests.	**Career Development** *Students will:* • analyze elements of job satisfaction; e.g., recognition, environment, pay, benefits, prestige • build personal career paths and networks • analyze how work contributes to societal and economic needs and a sense of responsibility • prepare for employment through community partnership activities and organize and complete specific job tasks effectively and efficiently.

PERSONAL MANAGEMENT

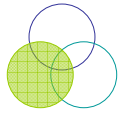| General Outcomes	Specific Outcomes
Students will exhibit self-esteem and confidence through the achievement of personal goals.	**Self-development** *Students will:* • continue to create a long-term self-development plan in which they consider accomplishments and redefine self-development goals • demonstrate entry-level self-presentation appropriate to the activity and role • maintain a high standard of personal ethics when interacting with others.
Students will manage risks to achieve both personal and workplace goals.	**Risk Management** *Students will:* • maintain health and safety procedures; e.g., at home, at school, in the community and in the workplace • monitor success in reducing the impact of hazards on themselves and others • demonstrate concern for the safety of others by exhibiting appropriate behaviour in the workplace • work with others to respond to emergencies • take planned risks to contribute to personal growth.

WORKING WITH OTHERS

General Outcomes	Specific Outcomes

Students will model effective communication skills and strategies in the home, school, community and workplace.	**Interpersonal Communication**
	
	Students will:
	• communicate thoughts and feelings appropriately; e.g.,
	   – listen without interrupting
	   – contribute to be heard
	   – disagree courteously
	   – accept conflicting opinions
	   – use appropriate body language
	• maintain a balance between speaking, listening and responding
	• work together to achieve goals
	• demonstrate the ability to deal constructively with conflict.

Students will promote equity in work and community endeavours.	**Building Community** *Students will:* • demonstrate and model courteous behaviour in daily interactions • demonstrate respect for others and a shared understanding of diverse beliefs, etiquette and styles of interaction • assess their personal contribution to community growth.

Students will demonstrate the ability to complete tasks in a team environment.	**Teamwork**
	
	Students will:
	• assess the effectiveness of group and personal contributions; e.g.,
	   – generate ideas
	   – assess resources
	   – contribute abilities and interests
	   – monitor progress
	   – share responsibility for completion of a task
	• expand their abilities to contribute to team goals.

OCCUPATIONAL COMPETENCIES: Students will develop and demonstrate the following competencies to succeed in a specific occupation or career. They will achieve results through a variety of projects/activities as appropriate to enhance their knowledge and skills. Students will ensure the quality of their work through effective task management and will highlight their achievements in a career-based portfolio.

ACHIEVING RESULTS

General Outcomes	Specific Outcomes

Students will prepare for entry-level employment within a wood frame construction career environment.	**Career Awareness**
	
	Preparation
	
	Students will:
	• assess entry-level competencies
	• recognize opportunities for further education/training
	• select post-secondary opportunities
	• identify local entrepreneurs
	• establish contacts with local businesses/industries
	• present marketable skills and strengths; e.g.,
	  – write a letter of application
	  – prepare a résumé
	  – complete application forms
	  – identify contacts and references
	  – collect evidence of competencies in a portfolio
	• explore career opportunities in wood frame construction and examine and explain specific occupational opportunities within their areas of interest
	• demonstrate an informed decision-making process; e.g.,
	  – collect evidence supporting their career choice
	  – integrate evidence and present a collection of artifacts and reflections to support an informed career pathway selection.
	
	Standards
	
	Students will:
	• demonstrate workplace protocols, procedures and standards of conduct; e.g.,
	  – demonstrate appropriate work habits
	  – demonstrate effective human-relations techniques in the workplace
	  – practise safety in the workplace
	  – demonstrate acceptable verbal and nonverbal communication skills
	  – practise personal and public hygiene procedures
	  – demonstrate entry-level competency in tools and equipment usage
	  – use supplies correctly
	  – follow good storage practices
	  – demonstrate pride in their work performance

General Outcomes	Specific Outcomes
	– demonstrate a willingness to work – demonstrate respect for others – follow accepted principles and procedures – recognize opportunities for further education/training.

Students will demonstrate entry-level standards of safe workplace practices and procedures.	**Workplace Health and Safety**
	
	Students will:
	• identify and explain the use of safety devices within the workplace; e.g., become familiar with work environments within the specific occupations of wood frame construction
	• demonstrate knowledge of, and the ability to access information about, Occupational Health and Safety (OHS) and the Workers' Compensation Board (WCB)
	• recognize the importance of having policies, procedures and regulatory bodies that support the operation of a safe workplace
	• demonstrate a prework and postwork hazard assessment
	• demonstrate knowledge of, and adherence to, safety rules that are specific to available tools, equipment and materials
	• demonstrate knowledge of health hazards associated with the use of chemicals and materials and retrieve information on Material Safety Data Sheets (MSDS) using appropriate print and Internet resources; e.g., review and demonstrate how to handle and store materials according to the MSDS training material
	• model safety consciousness by selecting and wearing personal protective equipment (PPE) appropriate to the specific task
	• demonstrate knowledge of environmental issues relating to the procedures for handling environmentally hazardous materials and waste
	• demonstrate an understanding of the Workplace Hazardous Materials Information System (WHMIS) as it relates to the field of study and identify WHMIS symbols, classes and labelling requirements
	• discuss potential hazards associated with residential building construction; e.g.,
	   – review and practise good electrical safety habits and report and repair potential electrical safety hazards in the shop and at home
	   – demonstrate entry-level competence in the selection and use of ladders and scaffolding systems
	   – demonstrate entry-level competence in the basic rigging and hoisting procedures used in construction
	   – develop a basic understanding of standard hand signals for rigging and hoisting
	• pass, successfully, the industry-standard Construction Safety Training System (CSTS) course as offered through the Alberta Construction Safety Association (ACSA).

General Outcomes	Specific Outcomes

Students will use technology to develop a high-quality product or service.

Products and Service

Technology Integration

Students will:
- use new and emerging products and technological advances in wood frame construction; e.g., examine the effects of current technological advances in the wood frame construction industry and explain the impact of current technology on the job descriptions of future wood frame construction trade workers
- understand the value of electronic communication and attach documents, such as CAD drawings and contracts, to e-mail messages
- use spreadsheet and accounting software that facilitate mathematical calculations and operational budgeting
- identify uses for light-emitting diode (LED) or laser devices.

Providing Service

Students will:
- identify client relationships or interactions within the field of wood frame construction
- identify services required or provided
- collect necessary information to complete a purchase or to fill out a work order
- recognize the importance of customer or client service to all businesses/ industries
- demonstrate professional practices and work habits
- strive to meet and exceed the client's expectations.

Students will display the entry-level skills needed to read blueprints and apply these skills to a number of occupations.

Reading Blueprints

Students will:
- identify the reading of blueprints as a component of construction occupations; e.g.,
  – identify businesses in the community that employ draftspersons, estimators and material purchasers
  – identify the duty and scope of such vocations
- use drawing and planning skills in project work
- use blueprints and specifications for interior walls and carpentry finishes; e.g., sectional views, elevations
- use electrical blueprints to identify electrical placements and components; e.g., electrical circuits
- use mechanical blueprints to identify mechanical placements and components; e.g., mechanical parts and material schedules.

General Outcomes	Specific Outcomes

Students will demonstrate an understanding of vapour barriers, caulking and thermal insulation.

Vapour Barriers, Caulking and Thermal Insulation

Students will:
- identify insulation application as a building occupation; e.g.,
  - identify local insulation companies and supply stores
  - identify the scope, duties and work expectations of an insulator
  - identify the safety regulations and clean-up and disposal practices of the insulation trade
- identify and demonstrate healthy and safe work practices in the application of insulation; e.g.,
  - wear proper PPE for insulation application
  - follow proper health and safety precautions when applying insulation
- identify tasks performed by insulators in the construction trade; e.g., basements, walls, ceiling blow-ins, pipes and ducts
- identify and demonstrate the proper use of tools associated with insulation; e.g.,
  - cutting tools, application tools, ladders and sawhorses
  - scaffolding in stairwells and open areas
- identify types of thermal insulation; e.g.,
  - fibreglass
  - rock wool
  - rigid polyurethane
- identify and demonstrate the application and installation of vapour barriers, caulking and thermal tape to stop air movement
- identify a variety of R-values and describe the application and installation of commonly used thermal insulation products; e.g., blanket, batten, loose-fill
- identify the need for proper ventilation; e.g.,
  - attic ventilation
  - main floor air exchange
  - fresh air and combustion air.

Students will demonstrate an understanding of drywall materials, tools and application techniques.

Drywall

Students will:
- identify drywall application as a building occupation; e.g.,
  - identify local drywalling companies and supply stores
  - identify the scope, duties and work expectations of a drywaller
  - identify the safety regulations and clean-up and disposal practices of the drywall trade
- identify typical drywall tools and their uses; e.g.,
  - cutting tools
  - drywall lifts and jacks
  - fastening tools
  - fastening devices, such as screws, nails and glue
- identify the varieties of drywall and their applications

General Outcomes	Specific Outcomes
	• demonstrate knowledge of drywall preparation; e.g., – inspect vapour barrier and caulking work – mark outlets and rafters – check framing and backing – estimate materials, such as type and sizes of drywall • identify and demonstrate drywall handling and cutting techniques; e.g., – deliver drywall – lift and handle drywall – score the front and back – measure and score for length and width – cut for lights, switches and outlets • identify and demonstrate methods of applying drywall to ceilings and walls; e.g., – nails, screws, tacking, fastener patterns – flat ceilings, sloped ceilings – walls, staircases – butt joints and bevel joints.
Students will demonstrate an understanding of taping materials and related application techniques.	**Taping** *Students will:* • identify taping as a building occupation; e.g., – identify local taping companies and taping supply stores – identify the scope, duties and work expectations of a taper – identify the safety regulations and clean-up and disposal practices of the taping trade • identify typical taping tools and their functions; e.g., pans, knives, hawk and trowel, machine taping, mixing paddle and drill, sanders • identify typical accessories and materials used in taping; e.g., corner beads, gauge tape, paper tape, compounds • identify and demonstrate bead and compound application; e.g., – cut and apply bead – round corners – identify and demonstrate practices for special applications • identify and demonstrate different stages of tape and compound application; e.g., – first pass of tape coat – embedding joint tape – inside corners, outside corners – fastener heads – fill coats – butt joints – finish coat – textured ceilings

General Outcomes	Specific Outcomes

- identify and demonstrate proper sanding techniques; e.g.,
  - sanding preparation
  - types of sandpaper
  - sanding techniques
  - finishing touches, light check
- demonstrate knowledge of drywall repair; e.g., patch and repair cracks, patch large holes and use butterfly patching.

Students will demonstrate an understanding of the use and application of paints, stains and wall coverings.

Paints, Stains and Wall Coverings

Paint

Students will:
- identify painting and decorating as a building occupation; e.g.,
  - identify local painting firms and supply stores
  - identify the scope, duties and work expectations of a painter or decorator
  - identify the safety regulations and clean-up and disposal practices of the painting trade
- demonstrate knowledge of, and the ability to prepare, old and new drywall surfaces; e.g.,
  - clean, sand and perforate prepainted surfaces
  - prepare new drywall surfaces
- demonstrate the ability to prepare wood for painting; e.g.,
  - consider the hazards of paint removers
  - consider the proper disposal methods for paint removers
  - use methylene chloride stripper
  - scrape wood
  - repair damaged wood
  - sand wood
- demonstrate knowledge of primers and paints and demonstrate the proper choice of each; e.g.,
  - latex primers
  - alkyd primers
  - stain-covering sealers
  - latex finish paints; e.g., high gloss, semigloss, flat
  - alkyd finish paints; e.g., high gloss, semigloss, flat
  - paint disposal
- identify and demonstrate the proper techniques for applying primer and finishing paints; e.g.,
  - choose latex or alkyd paint
  - mask with tape
  - choose brushes and roller naps
  - cut in before rolling out
  - keep a wet edge
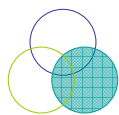 - use rollers
  - paint trim.

General Outcomes	Specific Outcomes

Wood Finishes

Students will:
- identify and demonstrate the proper techniques for applying wood stains and finishes; e.g.,
  – sealing
  – water base, oil base gels, penetrating oils
  – stains
  – polyurethanes
  – clean up and safety.

Wallpaper Finishes

Students will:
- demonstrate knowledge of wallpaper and its applications
- demonstrate knowledge of wallpaper application tools.

Students will demonstrate an understanding of flooring materials and methods.

Flooring

Students will:
- identify the laying of floors as a building occupation; e.g.,
  – identify local floor-laying companies and supply stores
  – identify the scope, duties and work expectations of a floor layer
  – identify the safety regulations and clean-up and disposal practices of the flooring trade
  – identify hazardous materials; e.g., asbestos, lead, mould
- identify common tools used in flooring; e.g., cutting tools, straightedge, carpet roller, glue, applicators, kickers
- identify installation techniques for ceramic tile, vinyl tile, sheet vinyl and laminate flooring; e.g.,
  – prepare the subfloor
  – install the tile
  – fit the last row
  – cut a seam
- identify installation techniques for hardwood floors (prefinished and laminate); e.g.,
  – prepare the subfloor
  – fit and nail hardwood
- identify installation techniques for carpet; e.g.,
  – remove old carpet or linoleum
  – manage carpet outgassing
  – measure and calculate amounts of carpet
  – use different types of carpet and underlay
  – fasten backing strips and glue carpet
  – cut and lay carpet
  – stretch, kick and tuck carpet.

General Outcomes	Specific Outcomes

Students will demonstrate an understanding of interior finishing in a new or an existing home.

Interior Finishing

Students will:
- identify interior finishing as a building occupation; e.g.,
  - identify interior-finishing companies and supply stores
  - identify the scope, duties and work expectations of an interior finisher
  - identify the safety regulations and clean-up and disposal practices of the interior finishing trade
- demonstrate knowledge of the tools used in interior finishing; e.g., mitre box, cut-off saw, air nailer, glues and adhesives
- demonstrate competency in project planning, considering material takeoff and the cost of materials, and create a finished design for a room
- demonstrate knowledge of trim materials; e.g., choose finishing lumber and select millwork
- demonstrate knowledge of trimming windows; e.g.,
  - trim styles
  - jam extension
  - picture-frame a window
  - traditional casing
- demonstrate knowledge of baseboards; e.g., layout, cut and install baseboards
- demonstrate knowledge of interior door installation; e.g.,
  - plumb in and fasten an interior door frame
  - hang an interior door
  - install appropriate hardware.

ENSURING QUALITY

General Outcomes	Specific Outcomes

Students will demonstrate an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.	**Task Management**
	
	Outcomes
	
	Students will:
	• read and/or listen to instructions
	• ask questions to clarify expected outcomes, procedures and timelines.
	
	Decision Making
	
	Students will:
	• identify the parameters of the task
	• generate and review alternative ideas and their consequences
	• make a decision or select an idea.
	
	Planning
	
	Students will:
	• identify the steps involved in managing a project
	• prepare a sample project plan, including budget and timeline
	• identify available tools, equipment and materials
	• review the fundamentals of project planning and design as they relate to interior or exterior finishing projects
	• develop a project plan; e.g.,
	  – produce sketches, isometric and orthographic representations
	  – produce a scale drawing
	  – interpret basic shop drawings
	  – identify the components of a blueprint; e.g., plan view, elevations, sections
	  – complete a material list
	  – create a procedure list
	• transfer/lay out a cutting list, from drawings to project material.
	
	Performance Standards
	
	Students will:
	• identify expected standards for a product or service
	• work to agreed quality standards and specifications
	• select and use appropriate tools and technology for a task or project.
	
	Evaluation
	
	Students will:
	• identify opportunities for improving quality
	• establish expectations and measures for improvements
	• create evidence to support an understanding of task management and skill development for inclusion in a personal portfolio.

COMMUNICATION

General Outcomes	Specific Outcomes
Students will demonstrate effective listening, speaking, reading and writing skills to prepare for employment.	**Listening, Speaking, Reading and Writing** *Students will:* • read, view and interpret occupation-related materials for a specific purpose; e.g., – read related health and safety documents – read terms of employment documents – follow written instructions specific to an occupational area • create text for a specific purpose that clearly communicates information; e.g., – write a résumé – write a job description – submit job application forms • communicate thoughts and ideas and listen to the thoughts and ideas of others to effectively complete a task; e.g., – follow oral instructions – give effective oral instructions when necessary.

THINKING

General Outcomes	Specific Outcomes
Students will research information, use creative thinking skills and use effective problem-solving strategies to solve problems.	**Problem Solving, Decision Making, Finding Information and Creative Thinking** *Students will:* • demonstrate an effective problem-solving model; e.g., – identify the need for a solution to a problem/issue – identify why information is needed; e.g., make decisions, inform, persuade • identify appropriate actions and select and apply information that meets their purposes and needs • evaluate the results in terms of expected outcomes and assess the impact of information on their purpose and audience.

Knowledge and Employability (Occupational Component)

NUMERACY

General Outcomes	Specific Outcomes
Students will demonstrate mathematical operations to effectively solve problems in a meaningful context.	**Basic Operations, Patterns and Relationships, Shape and Space, and Statistics and Probability** *Students will:* • apply arithmetic operations, e.g., addition, subtraction, multiplication or division, to whole numbers and decimals and use number operations when creating and solving money problems • use calculators or computers, to perform calculations involving large and small numbers, when solving problems • apply concepts of rate, ratio, percentage and proportion • demonstrate a number sense for whole numbers 0 to 100 000 and explore proper fractions and decimals • estimate, measure and compare, using decimal numbers and standard units of measure, to solve problems in everyday contexts; e.g., mass, length, volume, time, perimeter, surface area • use metric and imperial units of measure.

INFORMATION TECHNOLOGY

General Outcomes	Specific Outcomes

Students will demonstrate the effective use of information technology to perform daily workplace operations.	**Computer Operations and Computer Applications**
	
	Students will:
	• model and assume personal responsibility for the ethical use of information technologies
	• demonstrate appropriate telephone operations within the workplace; e.g., answer telephone calls appropriately, locate numbers and make telephone calls
	• use computer operations to assist in the completion of daily workplace operations; e.g.,
	  – use basic keyboarding skills
	  – store, organize and retrieve information correctly
	  – locate and select information and ideas using appropriate technology and information systems; e.g., Internet
	  – access, send and retrieve e-mail and attachments
	• demonstrate procedures for connecting and using audio, video and digital equipment
	• demonstrate procedures for sending and receiving faxes and setting up a fax machine
	• demonstrate procedures for copying and printing documents.