

Cabinetmaking 20L/30L

Locally Developed Course

Developed by – Greater Saskatoon Catholic Schools

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Introduction

Purpose and Areas of Focus for Cabinetmaking

The purpose of the Cabinetmaking 20L, 30L curriculum is to have students construct knowledge and acquire skills used in the cabinetmaking industry and to become familiar with careers in cabinetmaking.

Areas of focus identify the key components of what students are expected to know, understand, and be able to do upon completion of the learning in the Practical and Applied Arts (PAA) curriculum. Because the PAA curricula generally contain more learning than one course (1 credit), the Areas of Focus are not meant to be fully attainable after 100 hours of learning. The Areas of Focus for cabinetmaking 20L 30L are:

- Develop understandings and skills using tools and equipment necessary to cut and shape wood to manufacture woodworking projects.
- Provide experiences and information regarding possible career pathways including postsecondary education and training in the cabinetmaking industries.
- Develop safe work habits and culture of working safely with tools around others to prevent unintentional injuries.
- Develop communication skills and apply mathematical understanding used in the cabinetmaking industry.

Course Description

Cabinetmaking is both an art and a craft. The cabinetmaker must have an eye for beauty and good design as well as wood working skill. From the chairs you sit on, to the cabinets in your kitchen, cabinet makers' work is all around you in your daily life. From fine works of art to cupboards in a hospital, there are wide ranging applications of the products created by cabinetmakers.

Look at the description of what cabinetmakers must be able to do: they perform hand and machine operations necessary to lay out, cut, shape, and assemble prepared parts of high-quality products for furniture, cabinets, store fixtures, office equipment, and home furniture. They study drawings of products to be made and lay out an outline or dimension of the parts on the stock to certain specifications. They also operate woodworking machines such as a panel saw, table saw, band saw, jointer, mortise, planer and others to cut and shape, as well as use a variety of joinery and fasteners such as biscuits, dowels, nails, screws and glue.

Cleanliness in the shop will help to increase the longevity of equipment and tools. Regular maintenance of machines and tools also contributes to their longevity. This is also a costly part of running a quality program and needs budget consideration. The investment pays off, however, in creating a safe and healthy environment. Good housekeeping can also reduce the number of unintentional injuries to students and teachers.

Skills develop over time with quality instruction and practice. Students in postsecondary programs, such as the pre-employment program at SIAT, and apprentices learn and refine skills over time with practice.

Skill development in construction also includes activities such as measurement and document use. Document use refers to being able to read symbols and diagrams in the carpentry industry.

Measurement involves calculations and computations, which reinforce the relevance of skills learned in math classes.

Safety is of the utmost concern in the cabinetmaking shop. Developing a safe environment includes the establishment of an inquiring and safe culture. "If you don't know, ask!" should be the motto of everyone in the shop. Responsibility for safety in the shop rests with each individual working there, but teachers shoulder the ultimate responsibility of instituting safe work practices. Protecting sight and hearing should be a known skill before anyone enters the shop. High quantities of dust are created in a cabinetmaking shop, affecting air quality and needs to be addressed with regard to the health of everyone in the shop.

Safe Saskatchewan exists to create an injury-free province wherever citizens live, work, or play. As the province currently has one of the highest injury rates in Canada, Safe Saskatchewan works to inform all people of their core beliefs. One of those beliefs is that all injuries are predictable and preventable. That is why users of this curriculum will not see the word accident; rather, the term "unintentional injuries" is used to describe situations where individuals are harmed both in and away from the workplace.

This course has been developed within the scope of the Practical and Applied Arts courses of study and following the Locally Developed Course of Study guidelines.

The development team reviewed the key structures of core curriculum. The application and integration of the structures (Outcome based, First Nations and Metis Perspectives, Gender Equity and Multicultural Education, Resource Based Learning) is an integral component of the cabinetmaking 20L/30L course.

As always, students enrolling in this course will do so only after consultation with staff (teachers, counselors, administration) and parents and only after students become fully aware of the course implications and requirements.

Please note: Before diving into the art of cabinetmaking, it's essential to lay a solid foundation. As such, we have integrated specific modules from the Ministry's *Construction & Carpentry 10* curriculum as prerequisites for this course. These modules serve as the building blocks upon which we will construct our understanding and skills in cabinetmaking, ensuring a comprehensive and enriching learning experience for all students e.g., Module 2A: Project Estimating requires *Construction and Carpentry* Module 4.

Broad Areas of Learning

There are three Broad Areas of Learning that reflect Saskatchewan's Goals of Education. All areas of study contribute to student achievement of the Goals of Education through helping students achieve knowledge, skills and attitudes related to these Broad Areas of Learning. The Kindergarten to Grade 12 goals and grade level outcomes for each area of study are designed for students to reach their full potential in each of the following Broad Areas of Learning.

Sense of Self, Community and Place*

Students possess a positive sense of identity and understand how it is shaped through interactions within natural and constructed environments. They are able to nurture meaningful relationships and appreciate diverse beliefs, languages and practices from the diversity of cultures in our province, including First Nations and Métis. Through these relationships, students demonstrate empathy and a deep understanding of self, others and the influence of place on identity. In striving to balance their intellectual, emotional, physical and spiritual dimensions, students' sense of self, community and place is strengthened.

Lifelong Learners

Students are curious, observant and reflective as they imagine, explore and construct knowledge. They demonstrate the understandings, abilities and dispositions necessary to learn from subject discipline studies, cultural experiences and other ways of knowing the world. Such ways of knowing support students' appreciation of Indigenous worldviews and learning about, with and from others. Students are able to engage in inquiry and collaborate in learning experiences that address the needs and interests of self and others. Through this engagement, students demonstrate a passion for lifelong learning.

Engaged Citizens

Students demonstrate confidence, courage and commitment in shaping positive change for the benefit of all. They contribute to the environmental, social and economic sustainability of local and global communities. Their informed life, career and consumer decisions support positive actions that recognize a broader relationship with, and responsibility for, natural and constructed environments. Along with this responsibility, students recognize and respect the mutual benefits of Charter, Treaty and other constitutional rights and relationships. Through this recognition, students advocate for self and others, and act for the common good as engaged citizens.

*A sense of place is a geographical concept that attempts to define our human relationships with the environment and knowledge derived from this relationship.

Cross-curricular Competencies

The Cross-curricular Competencies are four interrelated areas containing understanding, values, skills and processes which are considered important for learning in all areas of study. These competencies reflect the Common Essential Learnings and are intended to be addressed in each area of study at each grade.

Developing Thinking

Constructing knowledge (i.e., factual, conceptual, procedural and metacognitive) is how people come to know and understand the world around them. Deep understanding develops through thinking and learning contextually, creatively and critically in a variety of situations, both independently and with others.

Think and learn contextually

- Apply prior knowledge, experiences and the ideas of self and others in new contexts.
- Analyze connections or relationships within and/or among ideas, experiences or natural and constructed objects.
- Recognize that a context is a complex whole made of parts.
- Analyze a particular context for ways that parts influence each other and create the whole.
- Explore norms*, concepts, situations and experiences from several perspectives, theoretical frameworks and worldviews.

Think and learn creatively

- Show curiosity and interest in the world, new experiences, materials and puzzling or surprising events.
- Experiment with ideas, hypotheses, educated guesses and intuitive thoughts.
- Explore complex systems and issues using a variety of approaches such as models, simulations, movement, self-reflection and inquiry.
- Create or re-design objects, designs, models, patterns, relationships or ideas by adding, changing, removing, combining and separating elements.
- Imagine and create central images or metaphors for subject area content or cross-disciplinary ideas.

Think and learn critically

- Analyze and critique objects, events, experiences, ideas, theories, expressions, situations and other phenomena.
- Distinguish among facts, opinions, beliefs and preferences.
- Apply various criteria to assess ideas, evidence, arguments, motives and actions.
- Apply, evaluate and respond to differing strategies for solving problems and making decisions.
- Analyze factors that influence self and others' assumptions and abilities to think deeply, clearly and fairly.

*Norms can include unexamined privilege (i.e., unearned rights/entitlements/immunity/exemptions associated with being "normal") which creates a power imbalance gained by birth, social position or concession and provides a particular context.

Developing Identity and Interdependence

Identity develops as an individual interacts with others and the environment and learns from various life experiences. The development of a positive self-concept, the ability to live in harmony with others and the capacity and aptitude to make responsible decisions about the natural and constructed world supports the concept of interdependence. The focus within this competency is to foster personal reflection and growth, care for others and the ability to contribute to a sustainable future.

Understand, value and care for oneself (intellectually, emotionally, physically, spiritually)

- Recognize that cultural and linguistic backgrounds, norms and experiences influence identity, beliefs, values and behaviours.
- Develop skills, understandings and confidence to make conscious choices that contribute to the development of a healthy, positive self-identity.
- Analyze family, community and societal influences (such as recognized and unrecognized privileges) on the development of identity.
- Demonstrate self-reliance, self-regulation and the ability to act with integrity.
- Develop personal commitment and the capacity to advocate for self.

Understand, value and care for others

- Demonstrate open mindedness* toward, and respect for, all.
- Learn about various peoples and cultures.
- Recognize and respect that people have values and worldviews that may or may not align with one's own values and beliefs.
- Value the varied abilities and interests of individuals to make positive contributions to society.
- Advocate for the well-being of others.

Understand and value social, economic and environmental interdependence and sustainability**

- Examine the influence of worldviews on one's understanding of interdependence in the natural and constructed world.
- Evaluate how sustainable development depends on the effective and complex interaction of social, environmental and economic factors.
- Analyze how one's thinking, choices and behaviours affect living and non-living things, now and in the future.
- Investigate the potential of individual and group actions and contributions to sustainable development.
- Demonstrate a commitment to behaviours that contribute to the well-being of the society, environment and economy – locally, nationally and globally.

*Open Mindedness refers to a mind that is open to new ideas and free from prejudice or bias in order to develop an "ethical space" between an existing idea and a new idea (Ermine).

**Sustainability refers to making informed decisions for the benefit of ourselves and others, now and for the future, and to act upon those decisions for social, economic and environmental well-being.

Developing Literacies

Literacies provide many ways to interpret the world and express understanding of it. Being literate involves applying interrelated knowledge, skills and strategies to learn and communicate with others. Communication in a globalized world is increasingly multimodal. Communication and meaning making, therefore, require the use and understanding of multiple modes of representation. Each area of study develops disciplinary literacies (e.g., scientific, economic, physical, health, linguistic, numeric, aesthetic, technological, cultural) and requires the understanding and application of multiple literacies (i.e., the ability to understand, critically evaluate and communicate in multiple meaning making systems) in order for students to participate fully in a constantly changing world.

Construct knowledge related to various literacies

- Acknowledge the importance of multiple literacies in everyday life.
- Understand that literacies can involve words, images, numbers, sounds, movements and other representations and that these can have different interpretations and meanings.
- Examine the interrelationships between literacies and knowledge, culture and values.
- Evaluate the ideas and information found in a variety of sources (e.g., people, databases, natural and constructed environments).
- Access and use appropriate technologies to investigate ideas and deepen understanding in all areas of study.

Explore and interpret the world using various literacies

- Inquire and make sense of ideas and experiences using a variety of strategies, perspectives, resources and technologies.
- Select and critically evaluate information sources and tools (including digital) based on the appropriateness to specific tasks.
- Use various literacies to challenge and question understandings and interpretations.
- Interpret qualitative and quantitative data (including personally collected data) found in textual, aural and visual information gathered from various media sources.
- Use ideas and technologies in ways that contribute to creating new insight.

Express understanding and communicate meaning using various literacies

- Create, compute and communicate using a variety of materials, strategies and technologies to express understanding of ideas and experiences.
- Respond responsibly and ethically to others using various literacies.
- Determine and use the languages, concepts and processes that are particular to a discipline when developing ideas and presentations.
- Communicate ideas, experiences and information in ways that are inclusive, understandable and useful to others.
- Select and use appropriate technologies in order to communicate effectively and ethically.

Developing Social Responsibility

Social responsibility is the ability of people to contribute positively to their physical, social and cultural environments. It requires an awareness of unique gifts and challenges among individuals and communities and the resulting opportunities that can arise. It also requires participation with others in creating an ethical space* to engage in dialogue, address mutual concerns and accomplish shared goals.

Use moral reasoning processes

- Evaluate the possible consequences of a course of action on self, others and the environment in a particular situation.
- Consider the implications of a course of action when applied to other situations.
- Consistently apply fundamental moral values** such as “respect for all”.
- Demonstrate a principle-based approach to moral reasoning.
- Examine how values and principles have been and continue to be used by persons and cultures to guide conduct and behaviour.

Engage in communitarian thinking and dialogue

- Model a balance in speaking, listening and reflecting.
- Ensure that each person has an opportunity to contribute.
- Demonstrate courage to express differing perspectives in a constructive manner.
- Use consensus-building strategies to work towards shared understanding.
- Be sensitive to, and respectful of, diversity and different ways of participating.

Take social action

- Demonstrate respect for and commitment to human rights, treaty rights and environmental sustainability.
- Contribute to harmony and conflict resolution in own classroom, school, family and community.
- Provide support in a manner that is respectful of the needs, identity, culture, dignity and capabilities of all persons.
- Support individuals in making contributions toward achieving a goal.
- Take responsible action to change perceived inequities or injustice for self and others.

*An ethical space exists between separate worldviews. In this space, “we can understand one another’s knowledge systems” (Ermine, 2006). For further information, see Willie Ermine’s work related to ethical space.

**The most basic moral value underlying development of the CEL of Personal and Social Development is that of respect for persons. For further discussion related to fundamental moral values, refer to *Understanding the Common Essential Learnings: A Handbook for Teachers* (1988, pages 42-49). See also the *Renewed Objectives for the CELs of Critical and Creative Thinking and Personal and Social Development* (2008).

Aim and Goals

The writers recognize the diversity of student needs, strengths, and interests. In seeking to accommodate these diversities, students are presented with the opportunity to participate in a program that recognizes the art, craft, and science of cabinetmaking while meeting credit requirements for graduation. These students can be included in two groups:

- Students, whose primary interests include the development of employability skills, abilities, and attitudes within the school setting, will have the option of exploring career opportunities in the area of cabinetmaking.
- Students, who while in their secondary program, wish to explore and develop skills that will enhance their personal lives, will have an opportunity to learn basic cabinetmaking skills.

Inquiry

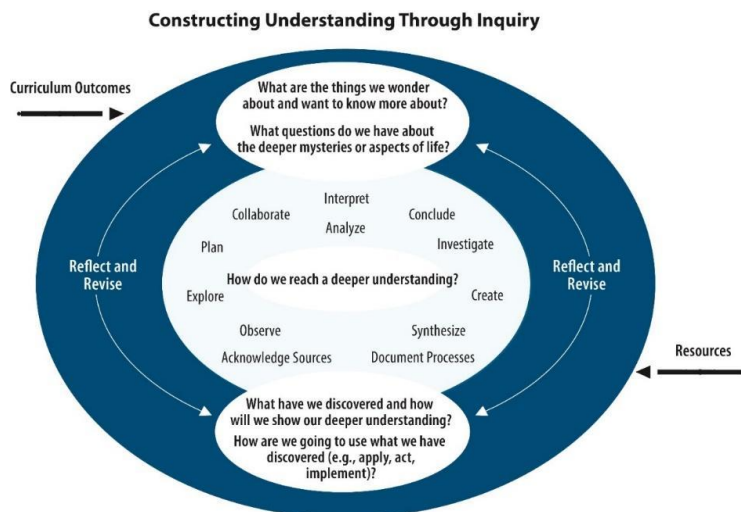
Inquiry learning provides students with opportunities to build knowledge, abilities and inquiring habits of mind that lead to deeper understanding of their world and human experience. Inquiry builds on students’ inherent sense of curiosity and wonder, drawing on their diverse backgrounds, interests and experiences. The process provides opportunities for students to become active participants in a collaborative search for meaning and understanding.

"My teacher (Elder) liked it when I asked questions, this way it reassured him that I understood his teachings. He explained every detail, the meaning and purpose. Not only talked about it, but, showed me! Communication, critical and creative thinking were important." (Elder Albert Scott)

Students who are engaged in inquiry:

- construct deep knowledge and deep understanding, rather than passively receiving information;
- are directly involved and engaged in the discovery of new knowledge;
- encounter alternative perspectives and differing ideas that transform knowledge and experience into deep understandings;
- transfer new knowledge and skills to new circumstances; and,
- take ownership and responsibility for their ongoing learning and mastery of curriculum content and skills.

(Adapted from Kuhlthau, Maniotes, & Caspari, 2007)



Inquiry learning is not a step-by-step process, but rather a cyclical process, with various phases of the process being revisited and rethought as a result of students' discoveries, insights and construction of new knowledge. Experienced inquirers will move back and forth among various phases as new questions arise and as students become more comfortable with the process. The following graphic shows various phases of the cyclical inquiry process.

An important part of any inquiry process is student reflection on their learning and the documentation needed to assess the learning and make it visible. Student documentation of the inquiry process may take the form of works-in-progress, reflective writing, journals, reports, notes, models, arts expressions, photographs, video footage, action plans and many more.

Creating Questions for Inquiry

It is important that teachers and students learn within meaningful contexts that relate to their lives, communities and world. Teachers and students need to identify big ideas and questions for deeper understanding central to the area of study.

Big ideas invoke inquiry questions. These questions are important in developing a deep understanding of the discipline or an area of study within the discipline. They do not have obvious answers and they foster high-order thinking. They invite genuine inquiry.

It is important to develop questions that are evoked by student interests and sense of wonder and have potential for rich and deep learning. These questions are used to initiate and guide inquiries that lead to

deep understandings about topics, problems, ideas, challenges, issues, concepts and areas of study related to curriculum content and outcomes.

Well-formulated inquiry questions are broad in scope and rich in possibilities. Such questions encourage students to explore, observe, gather information, plan, analyze, interpret, synthesize, problem solve, take risks, create, conclude, document, reflect on learning and develop new questions for further inquiry.

The process of constructing questions for deep understanding can help students grasp the important disciplinary or interdisciplinary ideas that are situated at the core of a particular curricular focus or context. These broad questions lead to more specific questions that can provide a framework, purpose and direction for the learning activities in a lesson, or series of lessons, and help students connect what they are learning to their experiences and life beyond school.

Effective questions are the key to initiating and guiding students' investigations, critical thinking, problem solving and reflection on their own learning.

Throughout the cabinetmaking 20/30L course, a variety of instructional approaches are utilized. Accommodating student goals and learning styles while delivering information is key to fulfilling course objectives. The essence of this course is to accommodate diversity in student needs and interests. To do so, focusing on individualized learning is key.

Using this LDC Curriculum

Outcomes define what students are expected to know, understand and be able to do by the end of a grade or secondary level course in a particular area of study. Therefore, all outcomes are required. The outcomes provide direction for assessment and evaluation, and for program, unit and lesson planning.

Outcomes:

- focus on what students will learn rather than what teachers will teach;
- specify the skills, abilities, knowledge and/or attitudes students are expected to demonstrate;
- are observable, assessable and attainable; and,
- are supported by indicators which provide the breadth and depth of expectations.

Indicators are representative of what students need to know and/or be able to do in order to achieve an outcome. When planning for instruction, teachers must comprehend the set of indicators to understand fully the breadth and the depth of learning related to a particular outcome. Based on this understanding of the outcome, teachers may develop indicators that are responsive to students' needs, interests and prior learning. Teacher-developed indicators must maintain the intent of the outcome.

The set of indicators for an outcome:

- provides the intent (breadth and depth) of the outcome;
- tells the story, or creates a picture, of the outcome;
- defines the level and types of knowledge required; and,
- is not a checklist or prioritized list of instructional activities or assessment items.

Other Terms

Within curricula, the terms "including", "such as" and "e.g.," serve specific purposes:

- **Including** prescribes content, contexts or strategies that students must experience in their learning, without excluding other possibilities.
- **Such as** provides examples of possible broad categories of content, contexts or strategies that teachers or students may choose, without excluding other possibilities.
- **E.g.** offers specific examples of what a term, concept or strategy might look like.

Outcomes and Indicators

Module 1: Personal Safety (Core)

Suggested Time: 4-8 hours

Level: Introductory

Prerequisite: None

Outcome

Apply safety standards to prevent injuries in the cabinetmaking workspace.

Indicators

- a. Discuss worker and employee rights and responsibilities as they relate to workplace safety and how they can prevent injuries.
- b. Identify common safety hazard categories and hierarchy of control common to the cabinetmaking industry.
- c. Assess and mitigate the risks (e.g., slips, trips, falls) and potential safety hazards in the cabinetmaking workspace.
- d. Research the benefits of completing the different certifications and programs offered by Work Safe Sask, Sask Safety Council, Sask Prevention and the Ministry of Labour Relations and Workplace Safety.
- e. Identify and explore basic safety procedures (e.g., storage and maintenance of tools, clean workspace and caution when working at high heights and power tools) as they apply to cabinetmaking.
- f. Develop a list of rules for workplace safety including proper personal protective equipment (PPE), sanitation, neat and tidy work area and reporting workplace accidents and safety incidents.
- g. Act consistently to focus on personal tasks while maintaining consciousness of others working in proximity.
- h. Demonstrate the utilization and maintenance of protective devices on equipment.
- i. Perform proper lockout and de-energizing of equipment before beginning inspections or repairs.
- j. Identify the advantages and disadvantages of using each category of industry standard personal protective equipment (PPE) for respiratory, hearing, sight and body protection such as masks, ear plugs or earmuff, safety goggles and shields, gloves, footwear and aprons.
- k. Demonstrate PPE cleaning procedures.
- l. Analyze shop and workplace situations to identify hazards and seek solutions.
- m. Locate and demonstrate the correct use of safety equipment (e.g., eye wash station, shower, first aid station, shop ventilation, fire extinguishers and caging devices) in the workplace.
- n. Post and maintain emergency phone numbers in a visible location.
- o. Discuss appropriate actions in the event of an injury in the workplace, including whom to contact, how to report and first-aid procedures.

Note: While a single safety module has been included, safety must be the primary focus for students each day. Throughout the safety module, hands-on demonstrations, interactive activities, and video resources could be utilized to reinforce safety concepts and ensure that students understand and internalize safe woodworking practices. Regular safety checks and assessments could also be conducted to monitor students' adherence to safety protocols and identify areas for improvement.

Module 2A: Project Estimating (Core)

Suggested Time: 1-2 hours

Level: 20L

Prerequisite: Construction and Carpentry 10 Module 4

Outcome

Demonstrate ability to accurately estimate materials, labor, and time required for advanced cabinet-making projects.

Indicators

- a. Utilize the appropriate formula to calculate the number of board feet in a given project.
- b. Calculate material quantities and cost required for advanced cabinet-making projects based on project specifications and design plans.
- c. Estimate labor hours for various tasks involved in advanced cabinet-making projects, considering factors such as complexity, skill level, and efficiency.
- d. Identify and factor in additional costs such as hardware, finishes, and miscellaneous expenses into project estimates.
- e. Utilize relevant software tools or traditional methods to generate comprehensive project estimates.
- f. Identify and mitigate potential risks and uncertainties that may affect project estimates.

Module 2B: Project Estimating (Core)

Suggested Time: 2-3 hours

Level: 30L

Prerequisite: Module 2

Outcome

Demonstrate increasing ability to accurately estimate materials, labor, and time required for advanced cabinet-making projects.

Indicators

- a. Analyze and interpret project blueprints and designs to extract essential information for estimating purposes, demonstrating the ability to translate conceptual ideas into actualized building costs.
- b. Critically assess and revise project estimates based on feedback, changing project requirements, and unforeseen challenges, showcasing adaptability and problem-solving skills in the estimation process.
- c. Assess personal ability to select projects by considering factors such as skill level, available resources, demonstrating strategic decision-making in aligning project choices with individual capabilities and goals.

Module 3A: Alternate Building Materials (Core)

Suggested Time: 1-2 hours

Level: 20L

Prerequisite: Construction and Carpentry 10 Module 3

Outcome

Investigate various building materials and their relative advantages or disadvantages over wood and wood products.

Indicators

- a. Demonstrate a comprehensive understanding of a diverse range of alternate building materials suitable for cabinetmaking, including but not limited to engineered wood products, recycled materials, and sustainable options.
- b. Assess the suitability of alternative materials for specific cabinetmaking projects, taking into consideration factors such as durability, cost-effectiveness, and aesthetic appeal.
- c. Develop practical skills in working with alternate building materials through hands-on experiences, including cutting, shaping, joining, and finishing processes, ensuring proficiency in the use of these materials in real-world applications.
- d. Implement rigorous quality control measures to ensure the longevity and durability of cabinetmaking projects constructed with alternate materials.

Module 3B: Alternate Building Materials (Core)

Suggested Time: 2-3 hours

Level: 30L

Prerequisite: Module 3

Outcome

Utilize various building materials and understand their relative advantages or disadvantages over wood and wood products.

Indicators

- a. Understand material limitations, addressing compatibility issues, and developing effective solutions to ensure the successful completion of cabinetmaking projects.
- b. Utilize alternate materials in cabinetmaking, demonstrating the ability to educate and make informed recommendations based on project requirements.
- c. Integrate alternate building materials creatively into project designs, showcasing innovation and an ability to push the boundaries of traditional cabinetmaking, while ensuring structural integrity and functionality.

Module 4: Measuring and Layout (Core)

Suggested Time: 2-3 hours

Level: 20L

Prerequisite: Construction and Carpentry 10 Module 6

Outcome

Accurately measure and layout materials while considering characteristics of different wood species

Indicators

- a. Apply mathematical principles to calculate and adjust measurements for joinery, allowances, and other factors critical to the precision and functionality of cabinetmaking projects.
- b. Understand grain direction, moisture content, and potential movement, and apply this knowledge to make informed decisions during the measuring and layout processes.
- c. Incorporate measurement tools and technology, such as laser measuring devices, angle finders, and calipers, to enhance accuracy and efficiency in the measuring and layout phases of cabinetmaking.
- d. Integrate efficient measuring and layout practices into the broader workflow of cabinetmaking, ensuring a seamless transition from design and planning stages to the actual construction of projects.
- e. Implement quality assurance measures to inspect and verify measurements at key stages of cabinet construction, ensuring adherence to project specifications.

Module 5: Hand Tools (Core)

Suggested Time: 4-8 hours

Level: 20L

Prerequisite: Construction and Carpentry 10 Module 7

Outcome

Identify and utilize appropriate hand tools for specific cabinetmaking tasks to accomplish cutting, shaping, and smoothing of wood to a high degree of precision.

Indicators

- a. Identify and select appropriate hand tools for specific cabinet making tasks.
- b. Achieve finished surfaces utilizing the correct hand tool for the specific objective.
- d. Implement safe practices when operating hand tools, including the use of personal protective equipment.

Module 6: Portable Power Tools (Core)

Suggested Time: 4-8 hours

Level: 20L

Prerequisite: Construction and Carpentry 10 Module 8 A

Outcome

Identify and utilize appropriate portable power tools for specific cabinetmaking tasks to accomplish cutting, shaping, and smoothing of wood to a high degree of precision.

Indicators

- a. Demonstrate a comprehensive understanding of safety procedures and protocols related to the use of portable power tools.
- b. Operate with a high degree of control and precision, various portable power tools such as jigsaws, routers, power drills, and biscuit joiners.
- c. Select the appropriate tool for specific tasks based on material, design, and project requirements.
- e. Execute precise and accurate cuts, contours, and edges using portable power tools.

Module 7: Stationary Power Tools (Core)

Suggested Time: 4-8 hours

Level: 20L

Prerequisite: Construction and Carpentry 10 Module 9A

Outcome

Identify and utilize appropriate stationary power tools for specific cabinetmaking tasks to accomplish cutting, shaping, and smoothing of wood to a high degree of precision.

Indicators

- a. Demonstrate a comprehensive understanding of safety procedures and protocols related to the use of stationary power tools.
- b. Effectively operate and control various stationary power tools such as table saw, miter saw, jointer, thickness planer, router table, drill press, bandsaw, belt sander, shaper, mortiser.
- c. Install and set up proper tooling for stationary power tools.
- d. Select the appropriate tool for specific tasks based on material, design, and project requirements.
- f. Demonstrate how to mill a board to dimension from rough stock.
- g. Execute precise and accurate cuts, contours, and edges using portable power tools.

Module 8: Wood Joinery (Core)

Suggested Time: 4-8 hours

Level: 20L

Outcome

Utilize equipment to create suitable and effective joinery for the assembly of a project.

Indicators

- a. Evaluate project requirements to choose suitable joinery techniques based on factors such as strength, aesthetics, and functionality.
- b. Demonstrate an understanding of the advantages and limitations of various joinery methods.
- c. Execute fundamental joinery techniques, including butt joints, miter joints, lap joints, and mortise-and-tenon joints with precision.
- d. Execute advanced joinery techniques including dovetail, biscuit, dowel, finger, and spline joinery.
- e. Demonstrate the ability to align and assemble multiple components with precision, ensuring tight and flush joints.
- f. Understand strategies for correcting misalignments during the assembly process.
- g. Analyze project specifications and adapt joinery techniques to meet specific design and functional requirements.
- h. Develop problem-solving skills to troubleshoot and correct issues during the joinery process.

Module 9: Fasteners and Adhesives (Core)

Suggested Time: 1-2 hours

Level: 20L

Prerequisite: Construction and Carpentry 10 Module 10

Outcome

Investigate and utilize various types of fasteners and adhesives for a given task.

Indicators

- a. Recognize and differentiate between various types of fasteners, including screws, nails, and dowels, as well as different adhesives such as wood glue and epoxy.
- b. Select the most suitable fasteners and adhesives based on material, joint type, and project requirements.
- c. Employ proper techniques for fastening wood components using screws, nails, and other mechanical fasteners.
- d. Demonstrate proper application and spreading techniques when using wood glue, epoxy, and other adhesives.
- e. Achieve strong and visually appealing bonds between wood components through adhesive application.

Module 10A: Wood Project (Core)

Suggested Time: 60-80 hours

Level: 20L

Outcome

Demonstrate proficiency of woodworking skills to select, build and assess a cabinetmaking project.

Indicators

- a. Analyze and interpret design drawings and specifications for a given cabinetmaking project considering factors such as durability, appearance, and sustainability.
- b. Utilize precision measuring tools to accurately mark and measure wood components for the project.
- a. Demonstrate proficiency in various joinery techniques, including but not limited to: mortise-and-tenon joints, dovetails, and rabbets.
- f. Apply appropriate hand tools and portable power tools for shaping, cutting, and joining wood components.
- g. Utilize stationary power tools such as table saws, jointers, and planers for precision cutting, jointing, and dimensioning of wood components.
- h. Employ finishing techniques, including sanding, staining, and applying topcoats, to achieve a professional and polished appearance.
- i. Identify and address challenges that may arise during the construction process.
- j. Manage time effectively to meet project deadlines, considering each phase of construction.
- k. Evaluate the finished woodworking project in terms of design, craftsmanship, and functionality.

Module 10B: Wood Project (Core)

Suggested Time: 80-90 hours

Level: 30L

Prerequisite: module 10

Outcome

Demonstrate increasing proficiency of woodworking skills to select, build and assess a woodworking project of one's own choosing.

Indicators

- a. Apply design concepts to the construction process while considering functionality and aesthetic principles.
- b. Apply layout and marking techniques to ensure precision in joinery and assembly.
- c. Achieve tight-fitting joints that contribute to the structural integrity of the woodworking project.
- d. Demonstrate efficiency in the use of tools to achieve desired results while maintaining safety standards.
- e. Understand how to integrate stationary power tools into the construction process effectively.
- f. Apply finishing materials and methods in line with the desired aesthetic and functional outcomes.
- g. Implement effective problem-solving strategies to ensure project completion and quality.
- h. Prioritize tasks and allocate time appropriately to achieve a well-executed project.
- i. Communicate progress, challenges, and solutions effectively with instructors
- j. Reflect and evaluate personal growth in skills, problem-solving, and decision-making throughout the project.

Module 11: Project Finishing (Core)

Suggested Time: 5-10 hours

Level: 20L

Prerequisite: Construction and Carpentry 10 Module 12

Outcome

Evaluate and choose appropriate finishing materials such as stains, sealers, paints, and varnishes based on project requirements.

Indicators

- a. Implement safety precautions during the finishing process, including the use of personal protective equipment.
- b. Understand the properties and applications of different finishing materials.
- c. Execute proper wood preparation techniques, including sanding, filling, and grain filling, to ensure a smooth and even surface.
- d. Identify and address imperfections in the wood that may affect the finish.
- e. Implement staining techniques to enhance the natural beauty of wood or achieve specific color tones.
- f. Understand and apply sealers and primers effectively to prepare the wood surface for subsequent finishing layers.
- g. Demonstrate proficiency in various application methods, including spraying, brushing, and wipe-on techniques.
- h. Execute techniques for achieving various finishes, such as matte, satin, and glossy surfaces.
- i. Understand the artistic and creative aspects of specialty finishing, such as glazing, antiquing, and distressing.
- j. Identify and correct common finish defects such as runs, sags, and bubbles.

Module 42A, B: Career Opportunities in Cabinetmaking (Core)

Suggested Time: 2-5 hours

Level: Introductory

Prerequisite: None

Outcome

Explore occupations related to cabinetmaking.

Indicators

- a. Create a list of personal interests, skills and traits that could lead to a career in cabinetmaking.
- b. Investigate occupations related to cabinetmaking.
- c. Research which cabinetmaking-related occupations are facing shortages, and which are oversubscribed locally, regionally, or provincially.
- d. Examine the roles, responsibilities, educational qualifications, and personal and professional qualities common to people involved in cabinetmaking-related jobs.
- e. Reflect upon personal suitability for a specific cabinetmaking-related occupation considering criteria such as:
 - initial and continuing education requirements;
 - duties and skills required for this occupation;
 - the work environment, including typical hours, shifts worked and locations;
 - current wages received in Saskatchewan and how these compare to the rest of Canada;
 - physical, mental and emotional stresses related to this occupation;
 - workplace hazards and safety considerations;
 - other occupations with which they interact;
 - apprenticeship and/or certification requirements in Canada and Saskatchewan; and,
 - future trends impacting the construction.
- f. Explore opportunities for underrepresented populations in the cabinetmaking industry.
- g. Research experience and qualifications for newcomers to enter the cabinetmaking industry.
- h. Communicate research findings related to cabinetmaking-related occupations through a display, brochure, video, presentation software, website, or an oral presentation.

Module 80A, B: Work Study Preparation (Optional)

Suggested Time: 3-5 hours

Level: Intermediate, Advanced

Prerequisite: None

Note: Work Study is used to prepare students for employment through specific skill development within a workplace. The number of work study opportunities is equal to the number of courses available in the curriculum area at the 20 and 30 level.

Outcome

Prepare for the work placement.

Indicators

- a. Describe and reflect on the three basic rights that all workers have under Part III - Occupational Health and Safety in n The Saskatchewan Employment Act, 2019.
 - the right to know - the hazards at work and how to control them;
 - the right to participate - in finding and controlling workplace hazards; and,
 - the right to refuse - work that you believe is unusually dangerous
- b. Explain the roles and responsibilities of each partner (e.g., student, parent, teacher or other school staff, employer) involved in the work placement.
- c. Research the business/organization to become familiar with its operations.
- d. In collaboration with all partners, develop personal and learning goals for the work placement.
- e. Develop a procedural guide for the work placement that includes items such as:
 - transportation to and from the work placement;
 - hours of work;
 - guidelines for absence and tardiness;
 - dress code;
 - job description; and
 - conflict resolution.
- f. Compile an employer information package that includes documents needed for the work placement (e.g., personal career documentation such as a resume or portfolio, permission forms, logs, self- and employer evaluation forms).
- g. Brainstorm a list of questions to ask the employer before beginning the work placement; these may include:
 - What is my schedule of work hours?
 - Who is my supervisor?
 - What should I wear?
 - When will I be provided with safety training?
 - What potential hazards might I encounter in the work placement?
 - Where do I find fire extinguishers, first aid kits and emergency assistance?
 - What type of safety gear am I expected to wear? Is it provided?

- What should I do if I get injured or have an accident in the workplace?
 - How can I contact my health and safety committee or representative?
 - Are there any health and safety procedures I should follow?
 - Who is the first aid person?
 - Where are safety notices posted?
 - What should I do in case of a fire or emergency?
- h. Develop a list of questions that could potentially be asked by the employer/work placement in an interview situation as well as answers to the questions.
- i. Participate in an interview with the employer prior to beginning the work placement.
- j. Reflect upon one's performance during the interview.

Note: For more information about implementing work study in schools, see the Work Study Guidelines for the Practical and Applied Arts included in the *Practical and Applied Arts Handbook*.

Module 81A, B: Work Study Placement (Optional)**Suggested Time:** 25-50 hours**Level:** Intermediate, Advanced**Prerequisite:** Module 80A**Outcome**

Participate in a work placement experience.

Indicators

- a. Apply relevant skills and abilities during the work placement experience.
- b. Document one's experience using electronic and other tools (e.g., vlogs, blogs, log sheets, reflective journals) to summarize and reflect upon items such as:
 - hours of work including breaks;
 - responsibilities and tasks performed;
 - interactions with the employer, staff, customers and others;
 - company or organization's 'raison d'être;' and,
 - skills developed and demonstrated during the work placement that enhance one's employability.
- c. Document knowledge and awareness of employment standards, safety, workplace ethics, rights and responsibilities, occupational health and safety, and networking observed during the work placement.

Note: For more information about implementing work study in schools, see the Work Study Guidelines for the Practical and Applied Arts included in the *Practical and Applied Arts Handbook*.

Module 85A, B: Cabinetmaking Business Opportunities (Optional)

Suggested Time: 3-5 hours

Level: Advanced

Prerequisite: None

Outcome

Investigate business opportunities in the cabinetmaking industry.

Indicators

- a. Research the types (e.g., cabinet and millwork shops) of business opportunities available in the cabinetmaking industry.
- b. Explore cabinetmaking-related business opportunities in sectors such as cabinetmaking or millwork shops.
- c. Explore business opportunities in installing custom millwork in specialty operations.
- d. Investigate the advantages and disadvantages of different business ownership models, including sole proprietorship, partnerships and private corporations.
- e. Explore the role of franchises as a business ownership model in the cabinetmaking industry.
- f. Research the requirements (e.g., registering business name, collecting and remitting taxes, registering with WCB, licensing and zoning) for establishing a business in one's community.
- g. Research the importance of sustainable business practices such as providing quality customer service, following environmental guidelines and employing qualified and certified personnel.
- h. Explain the advantages of and requirements for obtaining Blue Seal certification.
- i. Explain the responsibility of a business owner to employ individuals with various levels of training (e.g., apprentice, Red Seal or non-certified) and to provide quality customer service.
- j. Outline an entry level business plan that may include start-up costs, location, customer base, advertising and an exit plan.

Module 88: Apprenticeship (Core)

Suggested Time: 5-7 hours

Level: Introductory

Prerequisite: None

Outcome

Investigate apprenticeship in the trades.

Indicators

- a. Research the history and the role of apprenticeship in the trades.
- b. Explore the advantages and disadvantages of apprenticeship for the individual and the trade.
- c. Describe qualities of a successful apprentice.
- d. Discuss the relationship between the trades and national, provincial and territorial certification bodies including the Saskatchewan Apprenticeship and Trade Certification Commission.
- e. Investigate available programs and opportunities such as the Saskatchewan Youth Apprenticeship program and secondary apprenticeship credits that support transitions from high school.
- f. Investigate the apprenticeship process in a trade of personal interest.
- g. Use appropriate trade-related terminology including:
 - apprentice;
 - journeyperson;
 - indenture;
 - pre-employment training;
 - designated trade and sub-trade; and,
 - advanced standing.
- h. Research the qualifications needed to obtain Red Seal and Blue Seal certifications.
- i. Discuss requirements and opportunities for apprentices and journeymen to train and work in other jurisdictions.
- j. Explore opportunities and programs that address the issue of underrepresented populations in the trades.
- k. Differentiate between compulsory (i.e., construction electrician, plumber, refrigeration and air conditioning mechanic, sheet metal worker and sprinkler fitter) and non-compulsory trades in Saskatchewan.
- l. Investigate the trade qualifier pathway as an alternate pathway to certification in a non-compulsory trade in Saskatchewan.

Assessment and Evaluation of Student Learning

Assessment and evaluation are continuous activities that are planned for and derived from curriculum outcomes and consistent with the instructional learning strategies. The depth and breadth of each outcome, as defined by the indicators, informs teachers of the skills, processes and understandings that should be assessed.

Assessment is the act of gathering information on an ongoing basis in order to understand individual students' learning and needs.

Evaluation is the culminating act of interpreting the information gathered through relevant and appropriate assessments for the purpose of making decisions or judgements, often at reporting times.

Effective and authentic assessment and evaluation involves:

- designing performance tasks that align with curricular outcomes;
- involving students in determining how their learning will be demonstrated; and,
- planning for the three phases of assessment and evaluation indicated below.

Formative Assessment		Summative Assessment and Evaluation
<p>Assessment <i>for</i> Learning involves the use of information about student progress to support and improve student learning, inform instructional practices, and:</p> <ul style="list-style-type: none"> ● is teacher-driven for student, teacher and parent use; ● occurs throughout the teaching and learning process, using a variety of tools; and, ● engages teachers in providing differentiated instruction, feedback to students to enhance their learning and information to parents in support of learning. 	<p>Assessment <i>as</i> Learning involves student reflection on learning, monitoring of own progress, and:</p> <ul style="list-style-type: none"> ● supports students in critically analyzing learning related to curricular outcomes; ● is student-driven with teacher guidance; and, ● occurs throughout the learning process. 	<p>Assessment <i>of</i> Learning involves teachers' use of evidence of student learning to make judgements about student achievement, and:</p> <ul style="list-style-type: none"> ● provides opportunity to report evidence of achievement related to curricular outcomes; ● occurs at the end of a learning cycle, using a variety of tools; and, ● provides the foundation for discussions on placement or promotion.

There is a close relationship among outcomes, instructional approaches, learning activities, assessment and evaluation. Assessments need to be reflective of the cognitive processes and level(s) of knowledge indicated by the outcome. An authentic assessment will only collect data at the level for which it is designed.

Resources

[Magazines available free on Ministry of SK site](#)
(found in Pressreader)

Canadian Woodworking



Woodsmith Magazine



Popular Woodworking



Woodshop News

