**Area of Learning: Applied Design, Skills, and Technologies — Woodwork Grade 11**

**BIG IDEAS**

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| Design for the life cycle includes consideration of social and **environmental** **impacts**. |  | Personal design interests require the evaluation and refinement of skills. |  | Tools and technologies can be adapted for specific purposes. |

**Learning Standards**

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| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*  Applied Design  Understanding context   * Engage in a period of **user-centred research** and **empathetic observation** to understand  design opportunities   Defining   * Establish a point of view for a chosen design opportunity * Identify potential users, intended impact, and possible unintended negative consequences * Make decisions about premises and **constraints** that define the design space, and identify criteria for success * Determine whether activity is collaborative or self-directed   Ideating   * Generate ideas and add to others’ ideas to create possibilities, and prioritize them for prototyping * Critically analyze how competing social, ethical, and sustainability considerations impact design * Choose an idea to pursue based on success criteria and maintain an open mind about potentially viable ideas   Prototyping   * Identify and apply **sources of inspiration** * Choose a form for prototyping and develop a **plan** that includes key stages and resources * Analyze the design for life cycle and evaluate its **impacts** * Visualize and construct prototypes, making changes to tools, materials, and procedures as needed * Record **iterations** of prototyping | *Students are expected to know the following:*   * simple woodworking and design * orthographic and pictorial drawings * preparation of a bill of materials and a cutting list * **measuring instruments** * problem-solving techniques using ratio, proportion, and geometry * selection and identification of wood species appropriate for a given purpose * material conservation and sustainability * operation of **stationary** **power equipment** in the processing of material * hand-tool processes in the creation  of a product * machine and equipment set up, change, and adjustment * project **finishing methods** * **design for the life cycle** * ethics of **cultural appropriation** in design process |

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**Learning Standards (continued)**

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| **Curricular Competencies** | **Content** |
| Testing   * Identify and communicate with **sources of feedback** * Develop an appropriate test of the prototype, conduct the test, and collect and compile data * Apply information from critiques, testing results, and success criteria to make changes   Making   * Identify appropriate tools, **technologies**, materials, processes, cost implications, and time needed for production * Create design, incorporating feedback from self, others, and testing prototypes * Use materials in ways that minimize waste   Sharing   * Determine how and with whom to **share** product and processes for feedback * Share the product to evaluate its success * Critically reflect on their design thinking and processes, and identify new design goals * Identify and analyze new design possibilities, including how they or others might build on their concept   Applied Skills   * Apply safety procedures for themselves, co-workers, and users in both physical and digital environments * Identify and assess the skills needed for design interests, individually or collaboratively,  and develop specific plans to learn or refine them over time * Develop competency and proficiency in skills at various levels involving manual dexterity  and woodworking techniques   Applied Technologies   * Explore existing, new, and emerging tools, technologies, and systems to evaluate suitability  for design interests * Evaluate impacts, including unintended negative consequences, of choices made  about technology use * Examine the role that advancing technologies play in woodworking contexts |  |