BIG IDEAS

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

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 develop criteria for success • Determine whether activity is collaborative or self-directed ***Ideating*** • Identify, critique, and use a variety of **sources of inspiration** • Critically analyze how competing social, ethical, and sustainability considerations impact creation and development of solutions • Generate ideas and enhance others' ideas to create a range of possibilities, and prioritize the possibilities for prototyping • Evaluate suitability of possibilities according to success criteria and constraints • Work with users throughout the design process	*Students are expected to know the following:* • traditional and modern techniques in jewellery design and creation • use of **artistic elements** and image design to create emotional response and convey ideas • concepts related to the creation of art with the primary medium of metal and alloys • incorporation of **other materials** to enhance the final product • use, purpose, and traditions of **high-value materials** • various forms of **casting** • detail-oriented **welding** • material selection for specific applications • application and purpose of **finishes and polishes** • **carving media** for transfer to metal • layout and use of materials to minimize waste and conserve material • uses of **power** and **non-power** tools • design for the life cycle

Learning Standards (continued)

Curricular Competencies	Content
Prototyping • Choose an appropriate form, scale, and level of detail for prototyping, and develop a **plan** that includes key stages and resources • Analyze the design for the life cycle and evaluate its **impacts** • Visualize and construct prototypes, making changes to tools, materials, and procedures as needed • Record **iterations** of prototyping ***Testing*** • Identify and communicate with **sources of feedback** • Develop an **appropriate test** of the prototype, conduct the test, and collect and compile data • Evaluate design according to critiques, testing results, and success criteria to make changes ***Making*** • Identify appropriate tools, technologies, materials, processes, cost implications, and time needed • Create design, incorporating feedback from self, others, and results from testing of the prototypes • Use materials in ways that minimize waste ***Sharing*** • Decide how and with whom to **share** creativity, or share and promote design and processes • Share the product with users and critically evaluate its success • Critically reflect on plans, products and processes, and identify new design goals • Evaluate new possibilities for plans, products and processes, including how they or others might build on them	• ethics of **cultural appropriation** in design process • future career options and opportunities in metalworking and jewellery creation • **interpersonal and consultation skills** to interact with clients

Learning Standards (continued)

Curricular Competencies	Content
Applied Skills • Apply safety procedures for themselves, co-workers, and users in both physical and digital environments • Individually or collaboratively identify and assess skills needed for design interests • Demonstrate competency and proficiency in skills at various levels involving manual dexterity and metalworking and jewellery making techniques • Develop specific plans to learn or refine identified skills over time **Applied Technologies** • Explore existing, new, and emerging tools, technologies, and systems to evaluate suitability for their design interests • Evaluate impacts, including unintended negative consequences, of choices made about technology use • Examine and analyze the role that changing technologies play in metalworking and jewellery design contexts	