**Area of Learning: Applied Design, Skills, and Technologies —   
Art Metal and Jewellery Grade 12**

**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 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 |

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**Learning Standards (continued)**

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| **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 |

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**Learning Standards (continued)**

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| **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 |  |