**Area of Learning: Applied Design, Skills, and Technologies — Drafting Grade 10**

**BIG IDEAS**

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| User needs and interests drive the design process. |  | Social, ethical,  and sustainability considerations  impact design. |  | Complex tasks  require different technologies and tools at different stages. |

**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 researchand **empathetic observation**   Defining   * Identify potential users and relevant contextual factors for a chosen design opportunity * Identify criteria for success, intended impact, and any **constraints** * Determine whether activity is collaborative or self-directed   Ideating   * Take creative risks in generating ideas and add to others’ ideas in ways that enhance them * Screen ideas against criteria and constraints * Critically analyze and prioritize competing **factors** to meet community needs  for preferred futures * Maintain an open mind about potentially viable ideas   Prototyping   * Visualize possibilities and develop a **plan** that includes key stages and resources * Evaluate a variety of materials for effective use and potential for reuse, recycling,  and biodegradability * Prototype, making changes to tools, materials, and procedures as needed * Record **iterations** of prototyping | *Students are expected to know the following:*   * design opportunities * drafting **terminology** * drawing **standards** and **conventions** * scales for different **types** of drawings * drafting styles, including perspective,  mechanical drafting, and architectural drawing * modelling using computer-aided design (CAD) and computer-aided manufacturing  (CAM) software * coding for creating 3D representations  of design solutions * equipment and tools for manual and  computer-aided drafting |

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**Learning Standards (continued)**

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| **Curricular Competencies** | **Content** |
| Testing   * Identify **sources of feedback** * Develop an appropriate test * Conduct the test, collect and compile data, evaluate data, and decide on changes   Making   * Identify and use appropriate tools, **technologies**, materials, and processes * Make a step-by-step plan and carry it out, making changes as needed * Use materials in ways that minimize waste   Sharing   * Decide on how and with whom to **share** product and processes * Demonstrate product to users and critically evaluate its success * Identify new design goals   Applied Skills   * Demonstrate and document an awareness of precautionary and emergency safety procedures * Develop competency and proficiency in skills at various levels involving manual dexterity and drafting techniques * Identify the skills needed, individually or collaboratively, in relation to specific projects,  and develop and refine them   Applied Technologies   * Choose, adapt, and if necessary learn more about appropriate tools and technologies  to use for tasks * Evaluate **impacts**, including unintended negative consequences, of choices made  about technology use * Evaluate the influences of land, natural resources, and culture on the development  and use of tools and technologies |  |