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

**BIG IDEAS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*Applied DesignUnderstanding 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
 |

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

**Learning Standards (continued)**

|  |  |
| --- | --- |
| **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
 |  |

|  **APPLIED DESIGN, SKILLS, AND TECHNOLOGIES – DraftingCurricular Competencies – Elaborations Grade 10** |
| --- |
| * **empathetic observation:** may include experiences; traditional cultural knowledge and approaches of First Peoples and those of other cultures; places, including the land and its natural resources and analogous settings; people, including users, experts, and thought leaders
* **constraints:** limiting factors such as task or user requirements, materials, expense, environmental impact
* **factors:** including social, ethical, and sustainability
* **plan:** for example, pictorial drawings, sketches, flow charts
* **iterations:** repetitions of a process with the aim of approaching a desired result
* **sources of feedback:** may include First Nations, Métis, or Inuit community experts; keepers of other traditional cultural knowledge and approaches; peers, users, and other experts
* **technologies:** tools that extend human capabilities
* **share:** may include showing to others or use by others, giving away, or marketing and selling
* **impacts:** personal, social, and environmental
 |

|  **APPLIED DESIGN, SKILLS, AND TECHNOLOGIES – DraftingContent – Elaborations Grade 10** |
| --- |
| * **terminology:** for example, scale, weight, plan, elevation, section
* **standards:** for example, line types, line weights
* **conventions:** for example, layout, drawing setup
* **types:** for example, plans, section, detail
 |