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

**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 DesignUnderstanding 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* 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 drafting design projects
* geometric construction to create **drawings and images**
* **drawing management** and problem solving using computer-assisted design (CAD) software
* use of scale and proportion when outputting to 3D models
* geometric dimensioning and tolerancing in both imperial and SI units.
* types, sizes, and applications of drawing media
* applicable visual formats and media for presenting design solutions
* technical problem solving using geometry, trigonometry, and algebra
* **design for the life cycle**
* ethics of **cultural appropriation** and plagiarism
 |

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

**Learning Standards (continued)**

|  |  |
| --- | --- |
| **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
* Create design, incorporating feedback from self, others, and testing prototypes
* Use materials in ways that minimize waste

Sharing* Decide on how and with whom to **share** design and processes for feedback
* Share the product with users and critically 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 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 drafting techniques

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 the role that advancing technologies play in drafting contexts
 |  |