

BIG IDEAS

Products can be
designed for life cycle.

Personal design interests require
the evaluation and refinement of skills.

Tools and technologies can be adapted
for specific purposes.

Learning Standards

Curricular Competencies	Content
<p><i>Students are expected to be able to do the following:</i></p> <p>Applied Design</p> <p><i>Understanding context</i></p> <ul style="list-style-type: none"> Conduct user-centred research to understand design opportunities and barriers <p>Defining</p> <ul style="list-style-type: none"> Choose a design opportunity and point of view Identify potential users, intended impact, and possible unintended negative consequences Make inferences about premises and boundaries that define the design space <p>Ideating</p> <ul style="list-style-type: none"> Take creative risks to identify gaps to explore as design space Generate ideas to create a range of possibilities and add to others' ideas in ways that create additional possibilities Critically analyze how competing social, ethical, and sustainability considerations impact designed solutions to meet global needs for preferred futures Prioritize ideas for prototyping and designing with users <p>Prototyping</p> <ul style="list-style-type: none"> Identify and use a variety of sources of inspiration and information Choose an appropriate form, scale, and level of detail for prototyping, and plan procedures for prototyping multiple ideas Analyze the design for life cycle Construct prototypes, making changes to tools, materials, and procedures as needed Record iterations of prototyping 	<p><i>Students are expected to know the following:</i></p> <ul style="list-style-type: none"> digital tools to communicate and solicit information impacts of social media in global communications impacts on language use of online of technology issues in digital communication digital communication risks ethics and legalities in digital communication influences of digital marketing in online content creation and curation changes in journalism and reporting persuasive writing for the web critical evaluation of online resources technology and wellness in relation to digital communication tools technology to support collaboration and interaction with others strategies for developing a digital dossier career opportunities in digital communications

Learning Standards (continued)

Curricular Competencies	Content
<p><i>Testing</i></p> <ul style="list-style-type: none"> • Identify feedback most needed and possible sources of that feedback • Develop an appropriate test of the prototype • Gather feedback from users over time to critically evaluate their design and make changes to product design or processes • Iterate the prototype or abandon the design idea <p><i>Making</i></p> <ul style="list-style-type: none"> • Identify appropriate tools, technologies, materials, processes, potential funding sources, and time needed for production, and where/how these could be available • Use project management processes when working individually or collaboratively to coordinate production <p><i>Sharing</i></p> <ul style="list-style-type: none"> • Share their progress while making to increase feedback, collaboration, and, if applicable, marketing • Decide on how and with whom to share or promote their product, creativity, and, if applicable, intellectual property • Critically evaluate their design thinking and processes, and their ability to work effectively both as individuals and collaboratively in a group, including the ability to implement project management processes • Identify new design issues, including how they or others might build on their concept <p>Applied Skills</p> <ul style="list-style-type: none"> • Demonstrate an awareness of safety issues for themselves, co-workers, and users in both physical and digital environments • Identify and evaluate their skills and skill levels, in relation to their project or design interests, and develop specific plans to learn or refine their skills over time <p>Applied Technologies</p> <ul style="list-style-type: none"> • Explore existing, new, and emerging tools, technologies, and systems and evaluate their suitability for their design interests • Analyze the role and impact of technologies in societal change, and the personal, social, and environmental impacts, including unintended negative consequences, of their choices of technology use • Analyze how cultural beliefs, values, and ethical positions affect the development and use of technologies 	

Big Ideas – Elaborations

- **designed for life cycle:** taking into account in the design process, economic costs, and social and environmental impacts of the product, from the extraction of raw materials to eventual reuse or recycling of component materials

Curricular Competencies – Elaborations

- **user-centred research:** research done directly with potential users to understand how they do things and why, their physical and emotional needs, how they think about the world, and what is meaningful to them
- **Defining:** setting parameters
- **boundaries:** limiting factors, such as available technology, expense, environmental impact, issues of appropriation, and knowledge that is considered sacred
- **Ideating:** forming ideas or concepts
- **designing with users:** working with users at all stages of the design process
- **sources of inspiration:** may include experiences; traditional cultural knowledge and approaches, including those of First Peoples; places, including the land and its natural resources and analogous settings; and people, including users, experts, and thought leaders
- **information:** for example, other people as experts (e.g., First Peoples Elders), secondary sources, collective pools of knowledge in communities, collaborative atmospheres
- **design for life cycle:** including the social and environmental impacts of extraction and transportation of raw materials, manufacturing, packaging, transportation to markets, servicing or providing replacement parts, expected usable lifetime, and reuse or recycling of component materials
- **iterations:** repetitions of a process with the aim of approaching a desired result
- **sources of that feedback:** may include peers; users; keepers of traditional cultural knowledge and approaches, including those of First Peoples; and other experts
- **appropriate test:** includes evaluating the degree of authenticity required for the setting of the test, deciding on an appropriate type and number of trials, and collecting and compiling data
- **potential funding sources:** It is not the intent, and not appropriate, for students to have to raise funds in order to complete their school project. Students may, however, wish to investigate sources of funding for the commercial development of their products.
- **share:** may include showing to others, use by others, giving away, or marketing and selling
- **product:** for example, a physical product, a process, a system, a service, or a designed environment
- **technologies:** things that extend human capabilities

Content – Elaborations

- **digital tools:** for example, spreadsheet, databases, word processors, social media, blogs (e.g., Wordpress, SquareSpace), infographics, polls and surveys, reliance on text and graphics to communicate visually
- **solicit:** for example, polls, surveys, crowdsourcing ideas (e.g., Quirky.com)
- **impacts of social media:** creation, sharing, or exchange of information; sharing, co-creating, discussing, and modifying user-generated content; quality of information, content reach, frequency of access, usability, immediacy, and permanence; virality of content
- **impacts on language use:** for example, text based and instant messaging, emojis, short-form communication, memes, gifs, evolution of grammar, spelling
- **issues:** for example, netiquette, online courtesies, moderation, free speech, differences between digital, analog, and face to face communication; impacts of technology on interpersonal communication, relationships, and organizations
- **risks:** for example, over-sharing, impulsive reactions, copy (Cc) versus blind copy (Bcc), personal and private information, immediacy of the message
- **ethics and legalities:** for example, fair use rights, image use, copyrights, trademarks, creative commons licensing, anonymous authorship
- **digital marketing:** for example, email, newsletters, mobile media marketing, social media marketing, videos, graphics, digital ad campaign strategies, measurement in clicks, analytics and metrics, audience reach, virality, generational targeting
- **changes:** changing dynamic of journalism, reporting, and content curation
- **persuasive writing:** for example, writing for scanners, using the inverted pyramid method, avoiding jargon and repetition, using bold text, hyperlinking, underlining, contrast, clarity and direction, writing with a digital audience in mind, summarizing, writing with search engine optimization in mind
- **critical evaluation:** relevance, accuracy, bias/perspective, reliability, safety
- **wellness:** for example, self-image, social connections (real versus imagined), mental health, cyber addictions, and other risks and potential side-effects of overuse of digital tools, including games, social media
- **technology to support collaboration:** for example, Google Docs, Prezi, One Note, Wikispaces, Slack, Padlet, Trello
- **digital dossier:** maintaining a positive public profile that highlights career objectives and showcases work and experience
- **career opportunities:** for example, copywriting, Internet marketing, UX, SEO