

BIG IDEAS

Design for the life cycle includes consideration of social and **environmental impacts**.

Services and products can be designed through consultation and collaboration.

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 opportunities and barriers <p><i>Defining</i></p> <ul style="list-style-type: none"> • 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 <p><i>Ideating</i></p> <ul style="list-style-type: none"> • Identify and analyze gaps to explore possibilities for innovation • Take creative risks • Generate ideas and enhance others' ideas to create a range of possibilities, and prioritize the possibilities for prototyping • Critically analyze how competing social, ethical, and sustainability factors impact designed solutions to meet global needs for preferred futures • Work with users throughout the design process 	<p><i>Students are expected to know the following:</i></p> <ul style="list-style-type: none"> • recognition of entrepreneurial opportunities • types of business ventures and social entrepreneurship • factors that can promote innovation and entrepreneurial success, including networking, product/service knowledge, and market analysis • characteristics of the global market and local economic trends • components of starting a small business, including registration and financial considerations • ways to protect intellectual property • design for the life cycle • interpersonal and presentation skills to promote products and/or services and to interact with clients • emerging career options for young entrepreneurs • ethics of cultural appropriation and plagiarism

Learning Standards (continued)

Curricular Competencies	Content
<p>Prototyping</p> <ul style="list-style-type: none"> • Identify, critique, and use a variety of sources of inspiration and information • Choose an appropriate form and level of detail for prototyping • Plan procedures for prototyping multiple ideas • Analyze the design for the life cycle and evaluate its impacts • Construct prototypes, making changes to tools, materials, and procedures as needed • Record iterations of prototyping <p>Testing</p> <ul style="list-style-type: none"> • Obtain and evaluate critical feedback from multiple sources, both initially and over time • Develop an appropriate test of the prototype • Based on feedback received and evaluated, make changes to product and/or service plan or processes as needed <p>Making</p> <ul style="list-style-type: none"> • Identify tools, technologies, materials, processes, cost implications, and time needed for development and implementation • Use project management processes when working individually or collaboratively to coordinate or create processes or products • Share progress to increase opportunities for feedback, collaboration, and, if applicable, marketing <p>Sharing</p> <ul style="list-style-type: none"> • Decide on how and with whom to share or promote their product or service, their creativity, and, if applicable, their intellectual property • Critically reflect on their design thinking and processes, and identify new design goals, including how they or others might build on their concept • Critically evaluate their ability to work effectively, both individually and collaboratively 	

Learning Standards (continued)

Curricular Competencies	Content
<p>Applied Skills</p> <ul style="list-style-type: none"> • Evaluate safety issues for themselves, co-workers, and users in both physical and digital environments • Identify and critically assess skills needed related to the project(s) or design interests, and develop specific plans to learn or refine skills over time • Evaluate and apply a framework for problem solving <p>Applied Technologies</p> <ul style="list-style-type: none"> • Explore existing, new, and emerging tools, technologies, and systems and evaluate their suitability for design and production interests • Evaluate impacts, including unintended negative consequences, of choices made about technology use • Analyze the role and personal, interpersonal, social, and environmental impacts of technologies in societal change • Examine how cultural beliefs, values, and ethical positions affect the development and use of technologies on a national and global level 	