

BIG IDEAS

Social, ethical, and sustainability considerations impact design.

Complex tasks require the sequencing of skills.

Complex tasks require different technologies and tools at different stages.

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"> Engage in a period of research and empathetic observation in order to understand design opportunities <p>Defining</p> <ul style="list-style-type: none"> Choose a design opportunity Identify potential users and relevant contextual factors Identify criteria for success, intended impact, and any constraints <p>Ideating</p> <ul style="list-style-type: none"> 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, including social, ethical, and sustainability considerations, to meet community needs for preferred futures Choose an idea to pursue, keeping other potentially viable ideas open <p>Prototyping</p> <ul style="list-style-type: none"> Identify and use sources of inspiration and information Choose a form for prototyping 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 	<p><i>Students are expected to know the following:</i></p> <ul style="list-style-type: none"> media technologies or image development and design techniques for organizing ideas to structure stories or information and to create points of view in images media production skills standards compliant technology ethical, moral, and legal considerations associated with media arts technology use technical and symbolic elements that can be used to create representations influenced by points of view, story, genre, and values specific features and purposes of media artworks, from the present and past, to explore viewpoints, including those of First Peoples influences of digital and non-digital media in documentation, communication, reporting, and self-expression

Learning Standards (continued)

Curricular Competencies	Content
<p><i>Testing</i></p> <ul style="list-style-type: none"> • Identify sources of feedback • Develop an appropriate test of the prototype • Conduct the test, collect and compile data, evaluate data, and decide on changes • Iterate the prototype or abandon the design idea <p><i>Making</i></p> <ul style="list-style-type: none"> • Identify and use appropriate tools, technologies, materials, and processes for production • Make a step-by-step plan for production and carry it out, making changes as needed • Use materials in ways that minimize waste <p><i>Sharing</i></p> <ul style="list-style-type: none"> • Decide on how and with whom to share their product and processes • Demonstrate their product to potential users, providing a rationale for the selected solution, modifications, and procedures, using appropriate terminology • Critically evaluate the success of their product, and explain how their design ideas contribute to the individual, family, community, and/or environment • Critically reflect on their design thinking and processes, and evaluate their ability to work effectively both as individuals and collaboratively in a group, including their ability to share and maintain an efficient co-operative work space • Identify new design issues <p>Applied Skills</p> <ul style="list-style-type: none"> • Demonstrate an awareness of precautionary and emergency safety procedures in both physical and digital environments • Identify the skills and skill levels needed, individually or as a group, in relation to specific projects, and develop and refine them as needed <p>Applied Technologies</p> <ul style="list-style-type: none"> • Choose, adapt, and if necessary learn about appropriate tools and technologies to use for tasks • Evaluate the personal, social, and environmental impacts, including unintended negative consequences, of the choices they make about technology use • Evaluate how the land, natural resources, and culture influence the development and use of tools and technologies 	

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Curricular Competencies – Elaborations

- **research:** seeking knowledge from other people as experts (e.g., First Peoples Elders), secondary sources, and collective pools of knowledge in communities and collaborative atmospheres
- **empathetic observation:** aimed at understanding the values and beliefs of other cultures and the diverse motivations and needs of different people
- **Defining:** setting parameters
- **constraints:** limiting factors such as task or user requirements, materials, expense, environmental impact, issues of appropriation, and knowledge that is considered sacred
- **Ideating:** forming ideas or concepts
- **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
- **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 peers; users; keepers of traditional cultural knowledge and approaches, including those of First Peoples; and other experts
- **appropriate test:** consider conditions, number of trials
- **technologies:** things that extend human capabilities
- **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

Content – Elaborations

- **media technologies:** for example, video production, layout and design, graphics and images, photography (digital and traditional), emerging media processes (performance art, collaborative work, sound art, network art, kinetic art, biotechnical art, robotic art, space art)
- **media production skills:** Pre-production involves the planning you do before beginning a production (e.g., treatments, scripts, storyboards, and costume designs). Production is the stage in which you create and actively develop your product (e.g., shooting video or film, developing negatives and making enlargements, setting up lights, and programming a website). Post-production occurs once the bulk of the production process is complete and involves fine-tuning and manipulating your production, resulting in a complete and coherent product (e.g., editing video footage, touching up and mounting photos, and conducting multimedia tests).
- **standards compliant:** for example, layout conventions, mark-up language, current web standards, or other digital media compliance requirements
- **ethical, moral, and legal considerations:** for example, regarding duplication, copyright, and appropriation of imagery, sound, and video

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"> • media technologies for image development and design and for manipulating selected visual elements of design • principles of design • ethical, moral, and legal considerations associated with using media arts technology for image, video, and sound development • image-development strategies • personal interpretation of and preferences for selected media artworks • values, traditions, and the characteristics of various artists, movements, and periods • balance of aesthetic design with logical reasoning and practical application • technical, stylistic, symbolic, and cultural influences • media production through various stages of project development to enhance or change the project • standards-compliant technology • viewpoints, key characteristics, and artistic styling in media artworks, including those of First Peoples

Learning Standards (continued)

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<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 	

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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

- **media technologies:** for example, video production, layout and design, graphics and images, photography (digital and traditional), new emerging media processes (e.g., performance art, collaborative work, sound art, network art, kinetic art, biotechnical art, robotic art, space art)
- **elements of design:** colour, form, line, shape, space, texture, tone, value
- **principles of design:** balance, contrast, emphasis, harmony, movement, pattern, repetition, rhythm, unity
- **ethical, moral, and legal considerations:** regulatory issues relating to responsibility for duplication, copyright, appropriation of imagery, sound, and video
- **image-development strategies:** for example, abstraction, compression, distortion, elaboration, exaggeration, gesture, figuration, fragmentation, free association, juxtaposition, magnification, metamorphosis, minification, multiplication, point of view, reversal, rotation, simplification, stylization, thumbnail sketch
- **personal interpretation:** the ability to respond to works with awareness of personal viewpoints; understanding how our personal views affect how we perceive and respond to the media arts
- **technical, stylistic, symbolic, and cultural influences:** visual elements and principles of art and design that recognize the cultural precepts influencing an audience's understanding of them
- **media production:** pre-production, production, and post-production
- **standards-compliant technology:** layout conventions, mark-up language, current web standards, or other digital media compliance requirements

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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

- **media technologies:** for example, video production, layout and design, graphics and images, photography (digital and traditional), new emerging media processes (e.g., performance art, collaborative work, sound art, network art, kinetic art, biotechnical art, robotic art, space art)
- **media production:** pre-production, production, and post-production
- **evolution of voice:** recognizing how their personal style evolves as they explore, understanding their personal media art-making process, and interacting with works made by others
- **ethical, moral, and legal considerations:** regulatory issues relating to duplication, copyright, appropriation of imagery, sound, and video
- **image-development strategies:** for example, abstraction, compression, distortion, elaboration, exaggeration, gesture, figuration, fragmentation, free association, juxtaposition, magnification, metamorphosis, minification, multiplication, point of view, reversal, rotation, simplification, stylization, thumbnail sketch
- **image manipulation:** the transformation or alteration of original images using a variety of methods and techniques
- **developments in media arts:** for example, viral video, virtual gallery, interactive arts, performance art, or any practice that is shared online through social media as part of the design process
- **elements of design:** colour, form, line, shape, space, texture, tone, value
- **principles of design:** balance, contrast, emphasis, harmony, movement, pattern, repetition, rhythm, unity
- **technical, stylistic, symbolic, and cultural influences:** visual elements and principles of art and design that recognize the cultural precepts influencing an audience's understanding

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