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

**BIG IDEAS**

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| User needs and interests drive the design process. |  | Social, ethical, and sustainability considerations influence design. |  | Complex tasks require different technologies and tools at different stages. |  | Multi-stage design projects benefit from collaborative work environments. |

**Learning Standards**

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| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*Applied Design*Understanding context** Engage in a period of **research** and **empathetic observation**

*Defining** Identify potential users, societal impacts, and other relevant contextual factors for a chosen design opportunity
* Identify criteria for success, intended impact, and any **constraints** or possible unintended impacts

*Ideating** Take creative risks in generating ideas and add to others’ ideas in ways that enhance them
* Screen ideas against criteria and constraints
* Collaborate on idea generation and maintain an open mind about potentially viable ideas

*Prototyping** Identify and use **sources of inspiration** and information
* Choose a form for prototyping and develop a **plan** that includes key stages and resources
* Prototype, making changes to tools, designs, and procedures as needed
* Record **iterations** of prototyping
 | *Students are expected to know the following:** design opportunities
* relationship between web structure and content, HTML, style and design, cascading style sheets (CSS), and website **functionality and interactivity**
* advantages/disadvantages of websites and **content management systems** (CMS)
* website design **planning tools**
* HTML text editing software, WYSIWYG HTML editors user interface (**UI**) and user experience (**UX**)
* World Wide Web Consortium (**W3C**) standardsand **responsive** and **optimized** web design
* **domain and hosting options**
* copyright, Creative Commons, fair use protocols for media and content, and ethics of **cultural appropriation**
* **accessibility** and **functionality** in web design
* **writing** for the web
* principles of creative web design
* **security and privacy** implications
* principles of **database** creation and management
* **career options** in web development and the **interpersonal skills** necessary for success in this field
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**Learning Standards (continued)**

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| **Curricular Competencies** | **Content** |
| *Testing** 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

*Making** Identify and use appropriate tools, **technologies**, and processes for production
* Make a step-by-step plan for production and carry it out, making changes as needed

*Sharing** Decide on how and with whom to **share** **product** and processes
* Demonstrate the product to potential users, providing a rationale for selected solution, modifications, and procedures, using appropriate terminology
* Critically reflect on design thinking and processes, and identify new design goals
* Assess ability to work effectively both as individuals and collaboratively in a group, including ability to share and maintain an efficient cooperative work space

Applied Skills* Demonstrate an awareness of precautionary and emergency safety procedures in both physical and digital environments
* Identify the skills needed 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
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