**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 |  |