Applied Design, Skills, and Technologies K-9 – Curricular Competencies

Grade	Applied Design							Applied Skills	Applied Technologies
	Understanding Context	*Defining*	*Ideating*	*Prototyping*	*Testing*	*Making*	*Sharing*		
4-5	□Gather information about or from potential users	□Choose a design opportunity □Identify key features or user requirements □Identify the main objective for the design and any constraints	□Generate potential ideas and add to others' ideas □Screen ideas against the objective and constraints □Choose an idea to pursue	□Outline a general plan, identifying tools and materials □Construct a first version of the product, making changes to tools, materials, and procedures as needed □Record iterations of prototyping	□Test the product □Gather peer feedback and inspiration □Make changes and test again, repeating until satisfied with the product	□Construct the final product, incorporating planned changes	□Decide on how and with whom to share their product □Demonstrate their product and describe their process □Determine whether their product meets the objective and contributes to the individual, family, community, and/or environment	□Use materials, tools, and technologies in a safe manner, and with an awareness of the safety of others, in both physical and digital environments □Identify the skills required for a task and develop those skills as needed	□Use familiar tools and technologies to extend their capabilities when completing a task □Choose appropriate technologies to use for specific tasks □Demonstrate a willingness to learn new technologies as needed
4-5							□Reflect on their design thinking and processes, and their ability to work effectively both as individuals and collaboratively in a group, including their ability to share and maintain a co-operative work space □Identify new design issues		

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Grade	Applied Design							Applied Skills	Applied Technologies
	Understanding Context	*Defining*	*Ideating*	*Prototyping*	*Testing*	*Making*	*Sharing*		
6-7	□Empathize with potential users to find issues and uncover needs and potential design opportunities	□Choose a design opportunity □Identify key features or potential users and their requirements □Identify criteria for success and any constraints	□Generate potential ideas and add to others' ideas □Screen ideas against criteria and constraints □Evaluate personal, social, and environmental impacts and ethical considerations □Choose an idea to pursue	□Identify and use sources of information □Develop a plan that identifies key stages and resources □Explore and test a variety of materials for effective use □Construct a first version of the product or a prototype, as appropriate, making changes to tools, materials, and procedures as needed □Record iterations of prototyping	□Test the first version of the product or the prototype □Gather peer and/or user and/or expert feedback and inspiration □Make changes, troubleshoot, and test again	□Identify and use appropriate tools, technologies, and materials for production □Make a plan for production that includes key stages, and carry it out, making changes as needed □Use materials in ways that minimize waste	□Decide on how and with whom to share their product □Demonstrate their product and describe their process, using appropriate terminology and providing reasons for their selected solution and modifications □Evaluate their product against their criteria and explain how it contributes to the individual, family, community, and/or environment □Reflect on their design thinking and processes, and	□Demonstrate an awareness of precautionary and emergency safety procedures in both physical and digital environments □Identify and evaluate the skills and skill levels needed, individually or as a group, in relation to a specific task, and develop them as needed	□Select, and as needed learn about, appropriate tools and technologies to extend their capability to complete a task □Identify the personal, social, and environmental impacts, including unintended negative consequences, of the choices they make about technology use □Identify how the land, natural resources, and culture influence the development and use of tools and technologies
6-7							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		

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Grade	Applied Design							Applied Skills	Applied Technologies
	Understanding Context	*Defining*	*Ideating*	*Prototyping*	*Testing*	*Making*	*Sharing*		
8	□Empathize with potential users to find issues and uncover needs and potential design opportunities	□Choose a design opportunity □Identify key features or potential users and their requirements □Identify criteria for success and any constraints	□Generate potential ideas and add to others' ideas □Screen ideas against criteria and constraints □Evaluate personal, social, and environmental impacts and ethical considerations □Choose an idea to pursue	□Identify and use sources of information □Develop a plan that identifies key stages and resources □Explore and test a variety of materials for effective use □Construct a first version of the product or a prototype, as appropriate, making changes to tools, materials, and procedures as needed □Record iterations of prototyping	□Test the first version of the product or the prototype □Gather peer and/or user and/or expert feedback and inspiration □Make changes, troubleshoot, and test again	□Identify and use appropriate tools, technologies, and materials for production □Make a plan for production that includes key stages, and carry it out, making changes as needed □Use materials in ways that minimize waste	□Decide on how and with whom to share their product □Demonstrate their product and describe their process, using appropriate terminology and providing reasons for their selected solution and modifications □Evaluate their product against their criteria and explain how it contributes to the individual, family, community, and/or environment □Reflect on their design thinking and processes, and evaluate their ability to work effectively both	□Demonstrate an awareness of precautionary and emergency safety procedures in both physical and digital environments □Identify and evaluate the skills and skill levels needed, individually or as a group, in relation to a specific task, and develop them as needed	□Select, and as needed learn about, appropriate tools and technologies to extend their capability to complete a task □Identify the personal, social, and environmental impacts, including unintended negative consequences, of the choices they make about technology use □Identify how the land, natural resources, and culture influence the development and use of tools and technologies
8							as individuals and collaboratively in a group, including their ability to share and maintain an efficient co-operative work space □Identify new design issues		