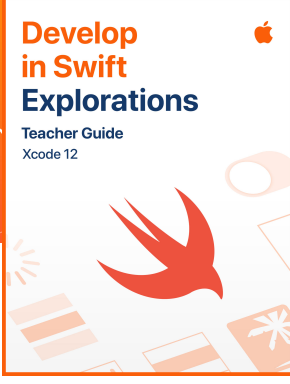
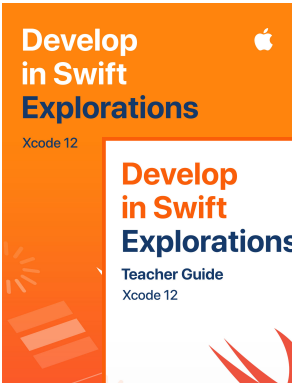
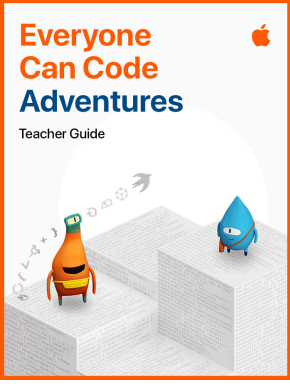
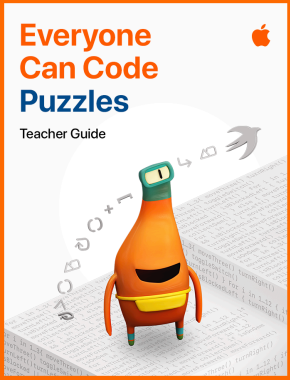
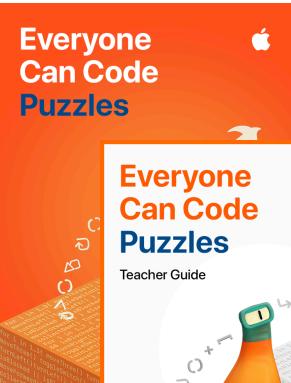
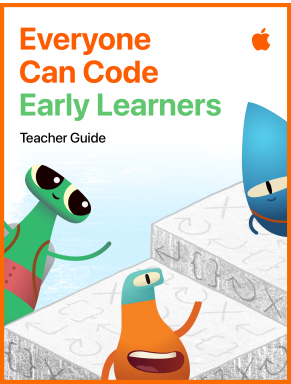




Everyone Can Code and Develop in Swift

British Columbia K-12 Correlations

Applied Design, Skills, and Technologies



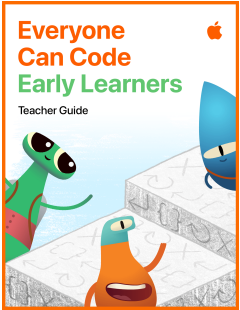
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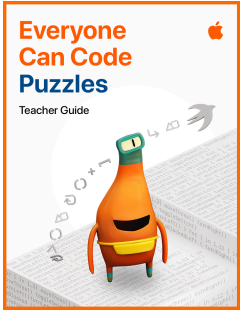
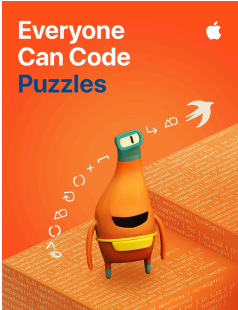
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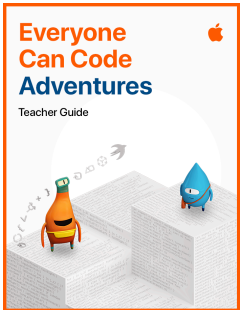
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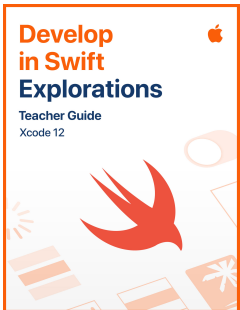
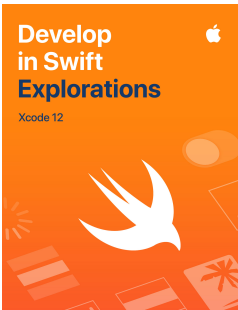
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Grade K–3

Applied Design, Skills, and Technologies

Students are expected to use the learning standards for Curricular Competencies from Applied Design, Skills, and Technologies K–3 in combination with grade-level content from other areas of learning in cross-curricular activities to develop foundational mindsets and skills in design thinking and making.

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Grade K–3

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British Columbia Curriculum Outcomes	Commands pp. 8–14	Functions pp. 15–21	Loops pp. 22–28	Variables pp. 29–35	App Design pp. 36–38
Computer Programming					
Ideating					
Identify needs and opportunities for designing, through exploration.	•	•	•	•	•
Generate ideas from their experiences and interests.	•	•	•	•	•
Add to others’ ideas.	•	•	•	•	•
Choose an idea to pursue.	•	•	•	•	•
Making					
Choose tools and materials.	•	•	•	•	•
Make a product using known procedures or through modelling of others.	•	•	•	•	•
Use trial and error to make changes, solve problems, or incorporate new ideas from self or others.	•	•	•	•	•
Sharing					
Decide on how and with whom to share their product.	•	•	•	•	•
Demonstrate their product, tell the story of designing and making their product, and explain how their product contributes to the individual, family, community, and/or environment.	•	•	•	•	•
Use personal preferences to evaluate the success of their design solutions.	•	•	•	•	•
Reflect on their ability to work effectively both as individuals and collaboratively in a group.	•	•	•	•	•

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British Columbia Curriculum Outcomes	Commands pp. 8–14	Functions pp. 15–21	Loops pp. 22–28	Variables pp. 29–35	App Design pp. 36–38
Applied Skills					
Use materials, tools, and technologies in a safe manner in both physical and digital environments.	●	●	●	●	●
Develop their skills and add new ones through play and collaborative work.	●	●	●	●	●
Applied Technologies					
Explore the use of simple, available tools and technologies to extend their capabilities.	●	●	●	●	●

Grade 4–5

Applied Design, Skills, and Technologies

Students are expected to use the learning standards for Curricular Competencies from Applied Design, Skills, and Technologies 4–5 in combination with grade-level content from other areas of learning in cross-curricular activities to develop foundational mindsets and skills in design thinking and making.

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Grade 4–5

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Applied Design										
Understanding Context										
Gather information about or from potential users.	•			•		•	•	•	•	
Defining										
Choose a design opportunity.	•			•			•			
Identify key features or user requirements.	•		•	•	•	•	•		•	
Identify the main objective for the design and any constraints.	•	•		•	•	•	•	•	•	•
Ideating										
Generate potential ideas and add to others’ ideas.		•	•	•	•	•	•	•		
Screen ideas against the objective and constraints.					•		•	•	•	•
Choose an idea to pursue.	•	•	•	•		•	•			
Prototyping										
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.		•	•						•	•

British Columbia Curriculum Outcomes	Commands pp. 1–24	Functions pp. 25–50	For Loops pp. 51–69	Variables pp. 70–92	Conditional Code pp. 93–115	Types and Initialization pp. 116–134	Functions with Parameters pp. 134–154	Logical Operators pp. 155–173	While Loops pp. 174–192	Arrays and Refactoring pp. 193–214
Applied Design										
Testing										
Test the product.	●	●	●	●	●	●	●	●	●	●
Gather peer feedback and inspiration.	●	●	●	●	●	●	●	●	●	●
Make changes and test again, repeating until satisfied with the product.	●	●	●	●	●	●	●	●	●	●
Making										
Construct the final product, incorporating planned changes.	●	●	●	●	●	●	●	●	●	●
Sharing										
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.	●	●	●	●	●	●	●	●	●	●
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.	●				●	●	●		●	

[illegible]

Grade 6–7

Applied Design, Skills,
and Technologies

Students will experience a minimum of three modules of Applied Design, Skills, and Technologies 6-7 in each of Grades 6 and 7. ...

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Grade 6–7

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Applied Design										
Understanding Context										
Empathize with potential users to find issues and uncover needs and potential design opportunities.	•		•		•	•		•	•	
Defining										
Choose a design opportunity.	•			•			•			
Identify key features or potential users and their requirements.	•				•	•	•		•	
Identify criteria for success and any constraints.	•	•	•	•	•	•	•	•	•	•
Ideating										
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.	•			•		•	•			

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British Columbia Curriculum Outcomes	Commands pp. 1–24	Functions pp. 25–50	For Loops pp. 51–69	Variables pp. 70–92	Conditional Code pp. 93–115	Types and Initialization pp. 116–134	Functions with Parameters pp. 134–154	Logical Operators pp. 155–173	While Loops pp. 174–192	Arrays and Refactoring pp. 193–214
Applied Design										
Sharing										
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 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 6–7

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Applied Design							
Understanding Context							
Empathize with potential users to find issues and uncover needs and potential design opportunities.	•	•	•	•		•	
Defining							
Choose a design opportunity.	•		•				•
Identify key features or potential users and their requirements.		•	•		•		
Identify criteria for success and any constraints.	•	•	•	•	•	•	•
Ideating							
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.	•	•	•	•	•	•	•
Prototyping							
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.	•	•	•	•	•	•	•

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Applied Design							
Testing							
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.	•	•	•	•	•	•	•
Making							
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.							
Sharing							
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 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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Applied Skills							
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.	●						
Applied Technologies							
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.							

Grade 8

Applied Design, Skills, and Technologies

The curriculum is designed to be offered in modules or courses of various lengths. Schools are required to provide students with the equivalent of a full-year “course” in Applied Design, Skills, and Technologies. This “course” can be made up of one or more modules. ...

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Grade 8

Everyone Can Code

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Applied Design										
Understanding Context										
Empathize with potential users to find issues and uncover needs and potential design opportunities.	•				•	•		•	•	
Defining										
Choose a design opportunity.	•			•			•			
Identify key features or potential users and their requirements.	•					•	•		•	
Identify criteria for success and any constraints.	•	•		•	•	•	•	•	•	•
Ideating										
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.	•			•		•	•			

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Applied Design										
Sharing										
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 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 8

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Applied Design							
Understanding Context							
Empathize with potential users to find issues and uncover needs and potential design opportunities.	•	•	•	•		•	
Defining							
Choose a design opportunity.	•		•				•
Identify key features or potential users and their requirements.		•	•		•		
Identify criteria for success and any constraints.	•	•	•	•	•	•	•
Ideating							
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.	•	•	•	•	•	•	•
Prototyping							
Identify and use sources of inspiration and 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.	•	•	•	•	•	•	•

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Applied Design							
Testing							
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.	•	•	•	•	•	•	•
Making							
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.							
Sharing							
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 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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Applied Skills							
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.	●						
Applied Technologies							
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.							

Grade 9

Applied Design, Skills, and Technologies

The curriculum is designed to be offered in modules or courses of various lengths. There are more Content learning standards for Grade 9, as schools often offer these as full courses. Schools are required to provide students with the equivalent of a full-year “course” in Applied Design, Skills, and Technologies. ...

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Grade 9

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Applied Design										
Understanding Context										
Engage in a period of research and empathetic observation in order to understand design opportunities	•				•	•		•	•	
Defining										
Choose a design opportunity.	•			•			•			
Identify potential users and relevant contextual factors	•				•	•	•		•	
Identify criteria for success, intended impact, and any constraints	•	•	•	•	•	•	•	•	•	•
Ideating										
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	•			•		•	•			

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Applied Design										
Sharing										
Decide on how and with whom to share their product			•	•	•		•			•
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 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 9

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Applied Design								
Understanding Context								
Engage in a period of research and empathetic observation in order to understand design opportunities.	•	•	•	•	•		•	
Defining								
Choose a design opportunity.	•	•		•				•
Identify potential users and relevant contextual factors.			•	•		•		
Identify criteria for success, intended impact, and any constraints.	•	•	•	•	•	•	•	•
Ideating								
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.		•						
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, materials, and procedures as needed.	•	•	•	•	•	•	•	•
Record iterations of prototyping.		•	•	•	•	•	•	•

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Applied Design								
Testing								
Identify sources of feedback.		•	•	•	•	•	•	•
Develop an appropriate test of the prototype.		•	•	•	•	•	•	•
Conduct the test, collect and compile data, evaluate date, and decide on changes.	•	•	•	•	•	•	•	•
Iterate the prototype or abandon the design idea.	•	•	•	•	•	•	•	•
Making								
Identify and use appropriate tools, technologies, and materials 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								
Sharing								
Decide on how and with whom to share their product.	•		•			•		•
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 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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Applied Skills								
Demonstrate a 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.		●						
Applied Technologies								
Choose, adapt, and if necessary learn about appropriate tools and technologies to use for tasks.			●	●	●			●
Evaluate the personal, social, and the environmental impacts, including unintended negative consequences, of the choices they made about technology use.							●	
Evaluate how the land, natural resources, and culture influence the development and use of tools and technologies								

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Applied Design								
Understanding Context								
Engage in a period of research and empathetic observation in order to understand design opportunities.	•	•		•		•	•	•
Defining								
Choose a design opportunity.				•				
Identify potential users and relevant contextual factors.				•				
Identify criteria for success, intended impact, and any constraints.	•	•						
Ideating								
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.		•						
Prototyping								
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.						•		

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Applied Design								
Testing								
Identify sources of feedback.	●	●		●				●
Develop an appropriate test of the prototype.	●	●		●	●	●	●	●
Conduct the test, collect and compile data, evaluate date, and decide on changes.		●		●		●		
Iterate the prototype or abandon the design idea.		●		●		●		
Making								
Identify and use appropriate tools, technologies, and materials 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								
Sharing								
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 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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Applied Skills								
Demonstrate a 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.				●				
Applied Technologies								
Choose, adapt, and if necessary learn about appropriate tools and technologies to use for tasks.	●	●				●		●
Evaluate the personal, social, and the environmental impacts, including unintended negative consequences, of the choices they made about technology use.	●	●		●		●	●	●
Evaluate how the land, natural resources, and culture influence the development and use of tools and technologies								

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Applied Design											
Understanding Context											
Engage in a period of research and empathetic observation.		•				•	•		•	•	
Defining											
Identify potential users and relevant contextual factors for a chosen design opportunity.	•	•				•	•	•		•	
Identify criteria for success, intended impact, and any constraints or possible unintended impacts.	•	•	•	•	•	•	•	•	•	•	•
Ideating											
Screen ideas against criteria and constraints.						•	•	•	•	•	
Critically analyze and prioritize competing factors to meet community needs for preferred futures.	•					•	•		•		
Maintain an open mind about potentially viable ideas.		•			•		•	•			

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Applied Design											
Sharing											
Decide on how and with whom to share product and processes.	●		●				●	●			●
Demonstrate their product to potential users, providing a rationale for the selected solution, modifications, and procedures.	●	●	●	●	●	●	●	●	●	●	●
Use appropriate terminology.											
Critically reflect on their design thinking and processes, and identify new design goals.	●	●	●	●	●	●	●	●	●	●	●
Assess their ability to work effectively both as individuals and collaboratively in a group, including the ability to share and maintain an efficient collaborative workspace.			●	●						●	●

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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								
Screen ideas against criteria and constraints.		•		•				
Critically analyze and prioritize competing factors to meet community needs for preferred futures.				•		•	•	
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, materials, and procedures as needed.	•	•	•	•	•	•	•	•
Record iterations of prototyping.		•	•	•	•	•	•	•

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Applied Design								
Testing								
Identify sources of feedback.		•	•	•	•	•	•	•
Develop an appropriate test of the prototype.		•	•	•	•	•	•	•
Conduct the test, collect and compile data, evaluate date, and decide on changes.	•	•	•	•	•	•	•	•
Iterate the prototype or abandon the design idea.	•	•	•	•	•	•	•	•
Making								
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.	•	•	•	•	•	•	•	•
Sharing								
Decide on how and with whom to share product and processes.	•		•			•		•
Demonstrate their product to potential users, providing a rationale for the selected solution, modifications, and procedures.	•	•	•	•	•	•	•	•
Critically reflect on their design thinking and processes, and identify new design goals.	•	•	•	•	•			
Assess their ability to work effectively both as individuals and collaboratively in a group, including the ability to share and maintain an efficient collaborative workspace.		•	•	•	•	•	•	•

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Applied Skills								
Demonstrate a 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 about appropriate tools and technologies to use for tasks.			•	•	•			•
Evaluate impacts, including unintended negative consequences, of choices made about technology use							•	
Evaluate the influences of land, natural resources, and culture on the development and use of tools and technologies.								

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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								
Screen ideas against criteria and constraints.		•		•		•		•
Critically analyze and prioritize competing factors to meet community needs for preferred futures.		•	•	•	•		•	•
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, materials, and procedures as needed.		•		•				•
Record iterations of prototyping.						•		

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Applied Design								
Testing								
Identify sources of feedback.	●	●		●				●
Develop an appropriate test of the prototype.	●	●		●		●	●	●
Conduct the test, collect and compile data, evaluate date, and decide on changes.		●		●		●		
Iterate the prototype or abandon the design idea.		●		●		●		
Making								
Identify and use appropriate tools, technologies, and materials 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 their product to potential users, providing a rationale for the selected solution, modifications, and procedures.	●	●				●		●
Use appropriate terminology.								
Critically reflect on their design thinking and processes, and identify new design goals.	●	●	●	●	●	●	●	●
Assess their ability to work effectively both as individuals and collaboratively in a group, including the ability to share and maintain an efficient collaborative workspace.	●	●		●		●		●

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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.	●	●		●		●	●	●
Evaluate the influences of land, natural resources, and culture on the development and use of tools and technologies.								

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Applied Design											
Understanding Context											
Conduct user-centered research to understand design opportunities and barriers.		•				•	•		•	•	
Defining											
Establish a point of view for a chosen design opportunity											
Identify potential users, intended impact, and possible unintended negative consequences.	•	•				•	•	•		•	
Make inferences about premises and constraints that define the design space.	•	•	•	•	•	•	•	•	•	•	•
Ideating											
Identify gaps to explore a design space.						•	•	•	•	•	
Generate ideas and add to others' ideas to create possibilities, and prioritize them for prototyping.	•	•	•	•		•	•	•		•	•
Critically analyze how competing social, ethical, and sustainability consideration impact designed solutions to meet global needs for preferred futures.	•					•	•		•		
Work with users throughout the design process.								•			

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Applied Design								
Understanding Context								
Conduct user-centered research to understand design opportunities and barriers.	•	•	•	•	•		•	
Defining								
Establish a point of view for a chosen design opportunity.								
Identify potential users, intended impact, and possible unintended negative consequences.			•	•		•		
Make inferences about premises and constraints that define the design space.	•	•	•	•	•	•	•	•
Ideating								
Identify gaps to explore a design space.		•	•					
Generate ideas and add to others' ideas to create possibilities, and prioritize them for prototyping.		•	•	•		•	•	
Critically analyze how competing social, ethical, and sustainability consideration impact designed solutions to meet global needs for preferred futures.				•		•	•	
Work with users throughout the design process								
Prototyping								
Identify and use 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 the life cycle and evaluate its impacts.		•						
Construct prototypes, making changes to tools, materials, and procedures as needed.	•	•	•	•	•	•	•	•
Record iterations of prototyping.		•	•	•	•	•	•	•

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Applied Design								
Testing								
Identify feedback most needed and possible sources of feedback.		•	•	•	•	•	•	•
Develop an appropriate test of the prototype.		•	•	•	•	•	•	•
Collect feedback to critically evaluate design and make changes to product design or processes.		•	•	•	•	•	•	•
Iterate the prototype or abandon the design idea.	•	•	•	•	•	•	•	•
Making								
Identify appropriate tools, technologies, materials, processes, and time needed for production.			•	•	•			•
Use project management processes when working individually or collaboratively to coordinate production.	•	•	•	•	•	•	•	•
Sharing								
Share progress while creating to increase opportunities for feedback,	•		•			•		•
Decide on how and with whom to share or promote their product, creativity, and, if applicable, intellectual property.	•		•			•		•
Consider how others might build upon the design concept.	•		•		•	•	•	•
Critically reflect on their design thinking and processes, and identify new design goals.		•	•	•	•			
Assess ability to work effectively both as individuals and collaboratively while implementing project management processes.		•	•	•	•	•	•	•

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Applied Skills								
Apply safety procedures for themselves, co-workers, and users in both physical and digital environments.			•	•	•			•
Identify and assess skills needed for design interests, and develop specific plans to learn or refine them over time.		•						
Applied Technologies								
Explore existing, new, and emerging tools, technologies, and systems to evaluate their suitability for their design interests.			•	•	•			•
Evaluate impacts, including unintended negative consequences, of choices made about technology use.							•	
Analyze the role technologies play in societal change.							•	
Examine how cultural beliefs, values, and ethical positions affect the development and use of technologies.								

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Applied Design								
Understanding Context								
Conduct user-centered research to understand design opportunities and barriers.	•	•		•		•	•	•
Defining								
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.	•	•						
Ideating								
Identify gaps to explore a design space.		•		•		•		•
Generate ideas and add to others' ideas to create possibilities, and prioritize them for prototyping.				•	•			
Critically analyze how competing social, ethical, and sustainability consideration impact designed solutions to meet global needs for preferred futures.		•	•	•	•	•	•	•
Work with users throughout the design process.		•	•					
Prototyping								
Identify and use 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 the life cycle and evaluate its impacts.	•							
Construct prototypes, making changes to tools, materials, and procedures as needed.		•		•				•
Record iterations of prototyping.						•		

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Applied Design								
Testing								
Identify feedback most needed and possible sources of feedback.	●	●		●				●
Develop an appropriate test of the prototype.	●	●		●		●	●	●
Collect feedback to critically evaluate design and make changes to product design or processes.	●	●		●				●
Iterate the prototype or abandon the design idea.		●		●		●		
Making								
Identify appropriate tools, technologies, materials, processes, and time needed for production.	●	●		●		●		●
Use project management processes when working individually or collaboratively to coordinate production.		●		●				●
Sharing								
Share progress while creating to increase opportunities for feedback	●	●				●		●
Decide on how and with whom to share or promote their product, creativity, and, if applicable, intellectual property.	●	●				●		●
Consider how others might build upon the design concept.	●	●				●		●
Critically reflect on their design thinking and processes, and identify new design goals.	●	●	●	●	●	●	●	●
Assess ability to work effectively both as individuals and collaboratively while implementing project management processes.	●	●		●		●		●

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Applied Skills								
Apply safety procedures for themselves, co-workers, and users in both physical and digital environments.		●						●
Identify and assess skills needed for design interests, and develop specific plans to learn or refine them over time.				●				
Applied Technologies								
Explore existing, new, and emerging tools, technologies, and systems to evaluate their suitability for their design interests	●	●		●		●		●
Evaluate impacts, including unintended negative consequences, of choices made about technology use.	●	●		●		●	●	●
Analyze the role technologies play in societal change.	●	●		●		●		●
Examine how cultural beliefs, values, and ethical positions affect the development and use of technologies.								

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Applied Design											
Understanding Context											
Conduct user-centered research to understand design opportunities and barriers.		•				•	•		•	•	
Defining											
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.	•	•	•	•	•	•	•	•	•	•	•
Ideating											
Identify gaps to explore a design space.						•	•	•	•	•	
Identify potential users, intended impact, and possible unintended negative consequences.	•	•	•	•		•	•	•		•	•
Critically analyze how competing social, ethical, and sustainability consideration impact designed solutions to meet global needs for preferred futures.	•					•	•		•		•
Work with users throughout the design process.								•			

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Applied Design								
Understanding Context								
Conduct user-centered research to understand design opportunities and barriers.	•	•	•	•	•		•	
Defining								
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.	•	•	•	•	•	•	•	•
Ideating								
Identify gaps to explore a design space.		•	•					
Generate ideas and add to others' ideas to create possibilities, and prioritize them for prototyping.		•	•	•		•	•	
Critically analyze how competing social, ethical, and sustainability consideration impact designed solutions to meet global needs for preferred futures.				•		•	•	
Work with users throughout the design process								
Prototyping								
Identify and apply 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 the life cycle and evaluate its impacts.		•						
Construct prototypes, making changes to tools, materials, and procedures as needed.	•	•	•	•	•	•	•	•
Record iterations of prototyping.		•	•	•	•	•	•	•

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Applied Design								
Testing								
Identify feedback most needed and possible sources of feedback.		•	•	•	•	•	•	•
Develop an appropriate test of the prototype.		•	•	•	•	•	•	•
Collect feedback to critically evaluate design and make changes to product design or processes.		•	•	•	•	•	•	•
Iterate the prototype or abandon the design idea.	•	•	•	•	•	•	•	•
Making								
Identify appropriate tools, technologies, materials, processes, and time needed for production.			•	•	•			•
Use project management processes when working individually or collaboratively to coordinate production.	•	•	•	•	•	•	•	•
Sharing								
Share progress while creating 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.	•		•			•		•
Consider how others might build upon the design concept.	•		•		•	•	•	•
Critically reflect on their design thinking and processes, and identify new design goals.		•	•	•	•			
Assess ability to work effectively both as individuals and collaboratively while implementing project management processes.		•	•	•	•	•	•	•

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Applied Skills								
Apply safety procedures for themselves, co-workers, and users in both physical and digital environments.			•	•	•			•
Identify and assess skills needed for design interests, and develop specific plans to learn or refine them over time.		•						
Applied Technologies								
Explore existing, new, and emerging tools, technologies, and systems to evaluate their suitability for their design interests.			•	•	•			•
Evaluate impacts, including unintended negative consequences, of choices made about technology use.							•	
Analyze the role technologies play in societal change.							•	
Examine how cultural beliefs, values, and ethical positions affect the development and use of technologies.								

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Applied Design								
Understanding Context								
Conduct user-centered research to understand design opportunities and barriers.	•	•		•		•	•	•
Defining								
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.	•	•						
Ideating								
Identify gaps to explore a design space.		•		•		•		•
Generate ideas and add to others' ideas to create possibilities, and prioritize them for prototyping.				•	•			
Critically analyze how competing social, ethical, and sustainability consideration impact designed solutions to meet global needs for preferred futures.		•	•	•	•	•	•	•
Work with users throughout the design process.		•	•					
Prototyping								
Identify and use 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 the life cycle and evaluate its impacts.	•							
Construct prototypes, making changes to tools, materials, and procedures as needed.		•		•				•
Record iterations of prototyping.						•		

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Applied Design								
Testing								
Identify feedback most needed and possible sources of feedback.	●	●		●				●
Develop an appropriate test of the prototype.	●	●		●		●	●	●
Collect feedback to critically evaluate design and make changes to product design or processes.	●	●		●				●
Iterate the prototype or abandon the design idea.		●		●		●		
Making								
Identify appropriate tools, technologies, materials, processes, and time needed for production.	●	●		●	●	●		●
Use project management processes when working individually or collaboratively to coordinate production.		●		●				●
Sharing								
Share progress while creating 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.	●	●				●		●
Consider how others might build upon the design concept.	●	●				●		●
Critically reflect on their design thinking and processes, and identify new design goals.	●	●	●	●	●	●	●	●
Assess ability to work effectively both as individuals and collaboratively while implementing project management processes.	●	●		●		●		●

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Applied Skills								
Apply safety procedures for themselves, co-workers, and users in both physical and digital environments.		•	•					•
Identify and assess skills needed for design interests, and develop specific plans to learn or refine them over time.				•				
Applied Technologies								
Explore existing, new, and emerging tools, technologies, and systems to evaluate their suitability for their design interests	•	•	•			•		•
Evaluate impacts, including unintended negative consequences, of choices made about technology use.	•	•		•		•	•	•
Analyze the role technologies play in societal change.	•	•		•		•	•	•
Examine how cultural beliefs, values, and ethical positions affect the development and use of technologies.								