| Standard ID | Standard Description |
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| **Unit 1: What is a Robot?** | |
| **Intro to Robotics** | |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| 3A-AP-22 | Design and develop computational artifacts working in team roles using collaborative tools. |
| **What is a Robot?** | |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| 3A-AP-22 | Design and develop computational artifacts working in team roles using collaborative tools. |
| **Sound and Light** | |
| 3A-CS-01 | Explain how abstractions hide the underlying implementation details of computing systems embedded in everyday objects. |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-18 | Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs. |
| **Motors and Sensors** | |
| 3A-CS-01 | Explain how abstractions hide the underlying implementation details of computing systems embedded in everyday objects. |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-18 | Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs. |

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| **Make it Move** | |
| 3A-CS-01 | Explain how abstractions hide the underlying implementation details of computing systems embedded in everyday objects. |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-18 | Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs. |
| **Connecting to Careers - Human Services and Education & Training** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |
| **Unit 2: Improving a Design** | |
| **Iteration and Perseverance** | |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-21 | Evaluate and refine computational artifacts to make them more usable and accessible. |
| **Pseudocode** | |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| 3A-AP-23 | Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs |
| **Create a New Product** | |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-19 | Systematically design and develop programs for broad audiences by incorporating feedback from users. |

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| **Share Your Ideas** | |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| **Mini-Challenge: Creativity in Business** | |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-19 | Systematically design and develop programs for broad audiences by incorporating feedback from users. |
| 3A-AP-22 | Design and develop computational artifacts working in team roles using collaborative tools. |
| **Connections to Careers: Marketing and Arts, A/V Technology & Communications** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |
| **Unit 3: Troubleshooting and Debugging** | |
| **Model Debugging** | |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| **Software Debugging** | |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |

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| **Dancer Break Down** | |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| 3A-AP-23 | Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs. |
| **Dance to the Color** | |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| 3A-AP-23 | Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs. |
| **Mini-Challenge: Design a Route** | |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| **Connections to Careers: Information Technology and Law, Public Safety, Corrections & Security** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |
| **Unit 4: Testing and Evaluating Solutions** | |
| **Testing Prototypes** | |
| 3A-AP-21 | Evaluate and refine computational artifacts to make them more usable and accessible. |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |
| 3A-AP-14 | Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables. |

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| **Human vs. Robot** | |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-19 | Systematically design and develop programs for broad audiences by incorporating feedback from users. |
| 3A-AP-21 | Evaluate and refine computational artifacts to make them more usable and accessible. |
| 3A-AP-25 | Test and refine computational artifacts to reduce bias and equity deficits. |
| **Comparing Robotic Grabbers** | |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-19 | Systematically design and develop programs for broad audiences by incorporating feedback from users. |
| 3A-AP-21 | Evaluate and refine computational artifacts to make them more usable and accessible. |
| 3A-AP-25 | Test and refine computational artifacts to reduce bias and equity deficits. |
| **Repetitive Tasks** | |
| 3A-AP-18 | Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs. |
| 3A-AP-21 | Evaluate and refine computational artifacts to make them more usable and accessible. |
| 3A-AP-14 | Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables. |
| **Turns, Speed, and Accuracy** | |
| 3A-AP-18 | Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs. |
| 3A-AP-21 | Evaluate and refine computational artifacts to make them more usable and accessible. |
| 3A-AP-14 | Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables. |

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| **Uphill Climb** | |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |
| 3A-DA-11 | Create interactive data visualizations using software tools to help others better understand real world phenomena. |
| 3A-DA-12 | Create computational models that represent the relationships among different elements of data collected from a phenomenon or process. |
| **Mini-Challenge: Design for Someone** | |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-19 | Systematically design and develop programs for broad audiences by incorporating feedback from users. |
| 3A-AP-21 | Evaluate and refine computational artifacts to make them more usable and accessible. |
| 3A-AP-25 | Test and refine computational artifacts to reduce bias and equity deficits. |
| **Connecting to Careers: Health Science and Agriculture, Food, & Natural Resources** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |
| **Unit 5: Sensors** | |
| **Sensors Trigger Reactions** | |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |
| 3A-AP-18 | Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs. |
| 3A-DA-11 | Create interactive data visualizations using software tools to help others better understand real world phenomena. |
| **Sensors and Data** | |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |

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| **Dance to Debug** | |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| **Maze** | |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |
| 3A-DA-12 | Create computational models that represent the relationships among different elements of data collected from a phenomenon or process. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| **Factory Robot** | |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |
| 3A-DA-12 | Create computational models that represent the relationships among different elements of data collected from a phenomenon or process. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| **Parking Lot** | |
| 3A-CS-01 | Explain how abstractions hide the underlying implementation details of computing systems embedded in everyday objects. |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| 3A-AP-21 | Evaluate and refine computational artifacts to make them more usable and accessible. |
| **Mini-Challenge: Parking Lot** | |
| 3A-CS-01 | Explain how abstractions hide the underlying implementation details of computing systems embedded in everyday objects. |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |

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| 3A-AP-21 | Evaluate and refine computational artifacts to make them more usable and accessible. |
| **Connecting to Careers: Manufacturing and Transportation, Distribution & Logistics** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |
| **Unit 6: Variables** | |
| **Drone Pitch and Roll** | |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-DA-12 | Create computational models that represent the relationships among different elements of data collected from a phenomenon or process. |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| **Drone Movements** | |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-DA-12 | Create computational models that represent the relationships among different elements of data collected from a phenomenon or process. |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| **Variables** | |
| 3A-AP-14 | Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables. |
| 3A-DA-11 | Create interactive data visualizations using software tools to help others better understand real world phenomena. |
| **Graphing, Speed, and Distance** | |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-DA-11 | Create interactive data visualizations using software tools to help others better understand real world phenomena. |

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| **Mini-Challenge: Distance Game** | |
| 3A-AP-14 | Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables. |
| 3A-CS-03 | Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-DA-11 | Create interactive data visualizations using software tools to help others better understand real world phenomena. |
| **Connecting to Careers: Finance and Business Management** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |
| **Unit 7: Arrays, Boolean Expressions, and Conditionals** | |
| **Intro to Arrays (Lists) and Conditionals** | |
| 3A-AP-14 | Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables. |
| 3A-AP-15 | Justify the selection of specific control structures when tradeoffs involve implementation, readability, and program performance, and explain the benefits and drawbacks of choices made. |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |
| **Comparing Arrays** | |
| 3A-AP-14 | Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables. |
| 3A-AP-15 | Justify the selection of specific control structures when tradeoffs involve implementation, readability, and program performance, and explain the benefits and drawbacks of choices made. |
| 3A-CS-02 | Compare levels of abstraction and interactions between application software, system software, and hardware layers. |

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| **Conditionals and Simplifying Code** | |
| 3A-AP-15 | Justify the selection of specific control structures when tradeoffs involve implementation, readability, and program performance, and explain the benefits and drawbacks of choices made. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| **Conditionals and Boolean Expressions** | |
| 3A-AP-15 | Justify the selection of specific control structures when tradeoffs involve implementation, readability, and program performance, and explain the benefits and drawbacks of choices made. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| **Mini-Challenge: Security Alarm Using Operators** | |
| 3A-AP-15 | Justify the selection of specific control structures when tradeoffs involve implementation, readability, and program performance, and explain the benefits and drawbacks of choices made. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| **Connecting to Careers: Hospitality, Tourism & Government** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |
| **Unit 8: Compound Conditionals** | |
| **Game with Variables** | |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-CS-14 | Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables. |

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| **Compound Conditionals** | |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-21 | Evaluate and refine computational artifacts to make them more usable and accessible. |
| 3A-DA-12 | Create computational models that represent the relationships among different elements of data collected from a phenomenon or process. |
| 3A-DA-10 | Evaluate the tradeoffs in how data elements are organized and where data is stored. |
| **Compounding Conditionals** | |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| 3A-AP-21 | Evaluate and refine computational artifacts to make them more usable and accessible. |
| 3A-DA-12 | Create computational models that represent the relationships among different elements of data collected from a phenomenon or process. |
| 3A-DA-10 | Evaluate the tradeoffs in how data elements are organized and where data is stored. |
| **Mini-Challenge: Break Out Room** | |
| 3A-CS-15 | Justify the selection of specific control structures when tradeoffs involve implementation, readability, and program performance, and explain the benefits and drawbacks of choices made. |
| 3A-AP-16 | Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions. |
| 3A-AP-17 | Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. |
| 3A-DA-12 | Create computational models that represent the relationships among different elements of data collected from a phenomenon or process. |
| 3A-DA-10 | Evaluate the tradeoffs in how data elements are organized and where data is stored. |
| 3A-AP-13 | Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. |
| **Connecting to Careers: Architecture & Construction and Science, Technology, Engineering and Mathematics** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |

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| **Unit 9: Careers Culminating Project** | |
| **Culminating Activity: Careers** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |
| **My Career Interests** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |
| **Culminating Activity: My Career Reflection and Plan** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |
| **Unit 10: Physical Computing Culminating Project** | |
| **Culminating Activity in the areas of Natural Resources, Transportation, Health Science and STEM, Manufacturing, Government and Public Administration and Law, Public Safety, Corrections & Security, and Agriculture** | |
| 3A-IC-27 | Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. |