

Fiero Code Curriculum

CSTA & ISTE Standards

Fiero Course Unit	CSTA Standards	ISTE Standards
<p>Javascript</p> <p>Skills Mastery: Learn how to create and use event handlers, event listeners, web animations, input fields, sequences, variables, conditionals, loops, and functions</p>	<p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-12 Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p> <p>2-AP-14 Create procedures with parameters to organize code and make it easier to reuse.</p> <p>2-AP-15 Seek and incorporate feedback from team members and users to refine a solution that meets user needs.</p> <p>2-AP-16 Incorporate existing code, media, and libraries into original programs, and give attribution.</p> <p>2-AP-17 Systematically test and refine programs using a range of test cases.</p> <p>2-AP-19 Document programs in order to make them easier to follow, test, and debug.</p> <p>3A-AP-14 Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.</p> <p>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.</p> <p>3A-AP-21 Evaluate and refine computational artifacts to make them more usable and accessible.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.c Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</p> <p>1.2.c Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.5.a Formulate problem definitions suited for technology assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.</p> <p>1.5.c Break problems into component parts, extract key information, and develop descriptive models to understand complex systems to facilitate problem-solving.</p> <p>1.5.d Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.</p> <p>1.6.b Create original works or responsibly repurpose or remix digital resources into new creations..</p> <p>1.6.c Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations models or simulations.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>

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<p>Python</p> <p>Skills Mastery: Learn how to create sequences, variables, loops, conditionals, and functions</p>	<p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-12 Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p> <p>2-AP-14 Create procedures with parameters to organize code and make it easier to reuse.</p> <p>2-AP-15 Seek and incorporate feedback from team members and users to refine a solution that meets user needs.</p> <p>2-AP-16 Incorporate existing code, media, and libraries into original programs, and give attribution.</p> <p>2-AP-17 Systematically test and refine programs using a range of test cases.</p> <p>2-AP-19 Document programs in order to make them easier to follow, test, and debug.</p> <p>3A-AP-14 Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.</p> <p>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.</p> <p>3A-AP-21 Evaluate and refine computational artifacts to make them more usable and accessible.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.c Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</p> <p>1.2.c Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.5.c Break problems into component parts, extract key information, and develop descriptive models to understand complex systems to facilitate problem-solving.</p> <p>1.6.b Create original works or responsibly repurpose or remix digital resources into new creations.</p> <p>1.6.c Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations models or simulations.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>

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<p>Code Blocks</p> <p>Skills Mastery: Learn how to create and use sequences, variables, loops, conditionals and events as you create a platformer game, and practice remixing existing projects.</p>	<p>1B-AP-09 Create programs that use variables to store and modify data.</p> <p>1B-AP-10 Create programs that include sequences, events, loops, and conditionals.</p> <p>1B-AP-11 Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.</p> <p>1B-AP-12 Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.</p> <p>1B-AP-13 Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.</p> <p>1B-AP-14 Observe intellectual property rights and give appropriate attribution when creating or remixing programs.</p> <p>1B-AP-15 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p> <p>1B-AP-17 Describe choices made during program development using code comments, presentations, and demonstrations.</p> <p>1B-IC-20 Seek diverse perspectives for the purpose of improving computational artifacts.</p> <p>1B-IC-21 Use public domain or creative commons media, and refrain from copying or using material created by others without permission.</p> <p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-12 Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.c Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</p> <p>1.2.c Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</p> <p>1.4.a Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.5.c Break problems into component parts, extract key information, and develop descriptive models to understand complex systems to facilitate problem-solving.</p> <p>1.6.b Create original works or responsibly repurpose or remix digital resources into new creations.</p> <p>1.6.c Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations models or simulations.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>

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2-AP-17 Systematically test and refine programs using a range of test cases.

2-AP-19 Document programs in order to make them easier to follow, test, and debug.

3A-AP-14 Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.

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3A-AP-21 Evaluate and refine computational artifacts to make them more usable and accessible.

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<p>Sphero</p> <p>Learn basic programming concepts such as loops, conditionals and functions.</p> <p>Learn how hardware interacts with software.</p>	<p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p> <p>2-AP-15 Seek and incorporate feedback from team members and users to refine a solution that meets user needs.</p> <p>2-AP-17 Systematically test and refine programs using a range of test cases.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.c Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.4.d Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</p> <p>1.5.c Break problems into component parts, extract key information, and develop descriptive models to understand complex systems to facilitate problem-solving.</p> <p>1.6.b Create original works or responsibly repurpose or remix digital resources into new creations.</p> <p>1.6.c Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations models or simulations.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>
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<p>Ozobot</p> <p>Learn basic programming concepts like loops, conditionals and functions. Also</p>	<p>1B-AP-09 Create programs that use variables to store and modify data.</p> <p>1B-AP-10 Create programs that include sequences, events, loops, and conditionals.</p> <p>1B-AP-11 Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.c Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p>

learn how hardware interacts with software.

1B-AP-12 Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.

1B-AP-13 Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.

1B-AP-14 Observe intellectual property rights and give appropriate attribution when creating or remixing programs.

2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.

2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.

2-AP-15 Seek and incorporate feedback from team members and users to refine a solution that meets user needs.

2-AP-17 Systematically test and refine programs using a range of test cases.

1.4.d Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

1.5.c Break problems into component parts, extract key information, and develop descriptive models to understand complex systems to facilitate problem-solving.

1.6.b Create original works or responsibly repurpose or remix digital resources into new creations.

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<p>JS Web</p> <p>Learn how to access the contents of a web page with Javascript through the DOM API. Create interactive events and animations as you create a website project.</p>	<p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-12 Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p> <p>2-AP-14 Create procedures with parameters to organize code and make it easier to reuse.</p> <p>2-AP-15 Seek and incorporate feedback from team members and users to refine a solution that meets user needs.</p> <p>2-AP-16 Incorporate existing code, media, and libraries into original programs, and give attribution.</p> <p>2-AP-17 Systematically test and refine programs using a range of test cases.</p> <p>2-AP-19 Document programs in order to make them easier to follow, test, and debug.</p> <p>3A-AP-14 Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.</p> <p>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.</p> <p>3A-AP-21 Evaluate and refine computational artifacts to make them more usable and accessible.</p> <p>3B-AP-15 Analyze a large-scale computational problem and identify generalizable patterns that can be applied to a solution.</p>	<p>1.1a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.c Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</p> <p>1.2.c Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</p> <p>1.3.d Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.6.b Create original works or responsibly repurpose or remix digital resources into new creations.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>

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<p>Animation</p> <p>Learn basic web animations using Javascript as you create a marketing website.</p>	<p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-12 Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p> <p>2-AP-14 Create procedures with parameters to organize code and make it easier to reuse.</p> <p>2-AP-17 Systematically test and refine programs using a range of test cases.</p> <p>2-AP-19 Document programs in order to make them easier to follow, test, and debug.</p> <p>3A-AP-14 Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.</p> <p>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.</p> <p>3B-AP-15 Analyze a large-scale computational problem and identify generalizable patterns that can be applied to a solution.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.c Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.4.d Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</p> <p>1.5.c Break problems into component parts, extract key information, and develop descriptive models to understand complex systems to facilitate problem-solving.</p> <p>1.6.b Create original works or responsibly repurpose or remix digital resources into new creations.</p> <p>1.6.c Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations models or simulations.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>

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<p>Code Blocks Games</p> <p>Use variables, loops, functions, conditionals, and events as you create three different games in Scratch.</p>	<p>1B-AP-09 Create programs that use variables to store and modify data.</p> <p>1B-AP-10 Create programs that include sequences, events, loops, and conditionals.</p> <p>1B-AP-11 Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.</p> <p>1B-AP-12 Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.</p> <p>1B-AP-13 Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.</p> <p>1B-AP-14 Observe intellectual property rights and give appropriate attribution when creating or remixing programs.</p> <p>1B-AP-15 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p> <p>1B-AP-17 Describe choices made during program development using code comments, presentations, and demonstrations.</p> <p>1B-IC-20 Seek diverse perspectives for the purpose of improving computational artifacts.</p> <p>1B-IC-21 Use public domain or creative commons media, and refrain from copying or using material created by others without permission.</p> <p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-12 Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.c Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</p> <p>1.2.c Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</p> <p>1.4.a Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.</p> <p>1.5.c Break problems into component parts, extract key information, and develop descriptive models to understand complex systems to facilitate problem-solving.</p> <p>1.6.b Create original works or responsibly repurpose or remix digital resources into new creations.</p> <p>1.6.c Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations models or simulations.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>

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2-AP-17 Systematically test and refine programs using a range of test cases.

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3A-AP-14 Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.

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3A-AP-21 Evaluate and refine computational artifacts to make them more usable and accessible.

3B-AP-09 Implement an artificial intelligence algorithm to play a game against a human opponent or solve a problem.

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<p>Drawing</p> <p>Learn how to use the HTML Canvas to draw on a webpage with Javascript, and animate your drawings as you create an artistic webpage.</p>	<p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-12 Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p> <p>2-AP-14 Create procedures with parameters to organize code and make it easier to reuse.</p> <p>2-AP-17 Systematically test and refine programs using a range of test cases.</p> <p>2-AP-19 Document programs in order to make them easier to follow, test, and debug.</p> <p>3A-AP-14 Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.</p> <p>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.</p> <p>3B-AP-15 Analyze a large-scale computational problem and identify generalizable patterns that can be applied to a solution.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.2.b engage in positive, safe, legal, and ethical behavior when using technology, including social interactions online or when using networked devices.</p> <p>1.2.c Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</p> <p>1.4.a Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.4.d Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</p> <p>1.5.c Break problems into component parts, extract key information, and develop descriptive models to understand complex systems to facilitate problem-solving.</p> <p>1.5.d Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.</p> <p>1.6.c Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations models or simulations.</p>

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<p>JS Games</p> <p>Use variables, loops, functions, conditionals, methods, and debugging skills as you build four classic arcade games.</p>	<p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-12 Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p> <p>2-AP-14 Create procedures with parameters to organize code and make it easier to reuse.</p> <p>2-AP-15 Seek and incorporate feedback from team members and users to refine a solution that meets user needs.</p> <p>2-AP-16 Incorporate existing code, media, and libraries into original programs, and give attribution.</p> <p>2-AP-17 Systematically test and refine programs using a range of test cases.</p> <p>2-AP-19 Document programs in order to make them easier to follow, test, and debug.</p> <p>3A-AP-14 Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.</p> <p>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.</p> <p>3A-AP-21 Evaluate and refine computational artifacts to make them more usable and accessible.</p> <p>3B-AP-09 Implement an artificial intelligence algorithm to play a game against a human opponent or solve a problem.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.d Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge their to explore emerging technologies.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.4.d Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</p> <p>1.5.d Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.</p> <p>1.6.c Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations models or simulations.</p> <p>1.5.d Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.</p>
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<p>SQL</p> <p>Learn about databases, create and edit tables, and run queries as you gain the skills needed to isolate a single piece of data from a large data set.</p>	<p>2-DA-07 Represent data using multiple encoding schemes.</p> <p>2-DA-08 Collect data using computational tools and transform the data to make it more useful and reliable.</p> <p>2-DA-09 Refine computational models based on the data they have generated.</p> <p>3A-DA-09 Translate between different bit representations of real-world phenomena such as characters, numbers, and images.</p> <p>3A-DA-10 Evaluate the tradeoffs in how data elements are organized and where data is stored.</p> <p>3A-DA-11 Create interactive data visualizations using software tools to help others better understand real-world phenomena.</p> <p>3A-DA-12 Create computational models that represent the relationships among different elements of data collected from a phenomenon or process.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.d Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge their to explore emerging technologies.</p> <p>1.5.a Formulate problem definitions suited for technology assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.</p> <p>1.5.b Collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.</p> <p>1.5.c Break problems into component parts, extract key information, and develop descriptive models to understand complex systems to facilitate problem-solving.</p> <p>1.6.b Create original works or responsibly repurpose or remix digital resources into new creations.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>
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<p>Makey Makey</p> <p>Learn about computer systems and how hardware interacts with software. Use basic programming skills, like sequences and events, to program the Makey Makey.</p>	<p>1B-CS-02 Model how computer hardware and software work together as a system to accomplish tasks.</p> <p>1B-CS-03 Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies.</p> <p>2-CS-02 Design projects that combine hardware and software components to collect and exchange data.</p> <p>2-CS-03 Systematically identifies and fixes problems with computing devices and their components.</p> <p>1B-AP-10 Create programs that include sequences, events, loops, and conditionals.</p> <p>1B-IC-21 Use public domain or creative commons media, and refrain from copying or using material created by others without permission.</p> <p>1B-CS-02 Model how computer hardware and software work together as a system to accomplish tasks.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.d Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge their to explore emerging technologies.</p> <p>1.2.c Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</p> <p>1.4.a Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.4.d Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</p>

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<p>Raspberry Pi</p> <p>Learn about computer systems and how hardware interacts with software through sensors, cameras, and more.</p>	<p>2-CS-02 Design projects that combine hardware and software components to collect and exchange data.</p> <p>2-CS-03 Systematically identify and fix problems with computing devices and their components.</p> <p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-12 Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p> <p>2-AP-14 Create procedures with parameters to organize code and make it easier to reuse.</p> <p>2-AP-15 Seek and incorporate feedback from team members and users to refine a solution that meets user needs.</p> <p>2-AP-15 Seek and incorporate feedback from team members and users to refine a solution that meets user needs.</p> <p>2-AP-16 Incorporate existing code, media, and libraries into original programs, and give attribution.</p> <p>2-AP-17 Systematically test and refine programs using a range of test cases.</p> <p>2-AP-19 Document programs in order to make them easier to follow, test, and debug.</p> <p>3A-AP-14 Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.d Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge their to explore emerging technologies.</p> <p>1.4.a Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.4.d Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</p> <p>1.5.d Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.</p> <p>1.6.c Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations models or simulations.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>

	<p>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.</p> <p>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.</p> <p>3A-AP-21 Evaluate and refine computational artifacts to make them more usable and accessible.</p>	
Fiero Course Unit	CSTA Standards	ISTE Standards
<p>HTML</p> <p>Learn basic HTML syntax and the most popular tags as you create an online job posting.</p>	<p>2-AP-15 Seek and incorporate feedback from team members and users to refine a solution that meets user needs.</p> <p>2-AP-16 Incorporate existing code, media, and libraries into original programs, and give attribution.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.2.b engage in positive, safe, legal, and ethical behavior when using technology, including social interactions online or when using networked devices.</p> <p>1.2.c Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</p> <p>1.4.a Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.4.d Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</p> <p>1.5.d Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>

Fiero Course Unit	CSTA Standards	ISTE Standards
<p>Design</p> <p>Learn basic design principles such as a design process, and specific web design principles as you create a website for a fictional town.</p>	<p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p> <p>2-AP-15 Seek and incorporate feedback from team members and users to refine a solution that meets user needs.</p> <p>2-AP-16 Incorporate existing code, media, and libraries into original programs, and give attribution.</p> <p>2-AP-17 Systematically test and refine programs using a range of test cases.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.d Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge their to explore emerging technologies.</p> <p>1.4.a Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.</p> <p>1.4.d Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</p> <p>1.6.c Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations models or simulations.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>
Fiero Course Unit	CSTA Standards	ISTE Standards
<p>Fiero Missions</p> <p>In Fiero, we have over 50 projects for students to work on. These vary by coding discipline (web, games, scripting), and are opportunities for students to use</p>	<p>1B-AP-09 Create programs that use variables to store and modify data.</p> <p>1B-AP-10 Create programs that include sequences, events, loops, and conditionals.</p> <p>1B-AP-11 Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.</p> <p>1B-AP-12 Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.</p>	<p>1.1.a Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1.1.c Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</p> <p>1.1.d Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge their to explore emerging technologies.</p>

<p>their own creativity to complete the project.</p>	<p>1B-AP-13 Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.</p> <p>1B-AP-14 Observe intellectual property rights and give appropriate attribution when creating or remixing programs.</p> <p>1B-AP-15 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p> <p>1B-AP-17 Describe choices made during program development using code comments, presentations, and demonstrations.</p> <p>1B-IC-20 Seek diverse perspectives for the purpose of improving computational artifacts.</p> <p>1B-IC-21 Use public domain or creative commons media, and refrain from copying or using material created by others without permission.</p> <p>2-AP-11 Create clearly named variables that represent different data types and perform operations on their values.</p> <p>2-AP-12 Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.</p> <p>2-AP-13 Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p> <p>2-AP-14 Create procedures with parameters to organize code and make it easier to reuse.</p> <p>2-AP-15 Seek and incorporate feedback from team members and users to refine a solution that meets user needs.</p> <p>2-AP-16 Incorporate existing code, media, and libraries into original programs, and give attribution.</p> <p>2-AP-17 Systematically test and refine programs using a range of test cases.</p> <p>2-AP-19 Document programs in order to make them easier to follow, test, and debug.</p>	<p>1.2.b engage in positive, safe, legal, and ethical behavior when using technology, including social interactions online or when using networked devices.</p> <p>1.2.c Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</p> <p>1.4.c Develop, test, and refine prototypes as part of a cyclical design process.</p> <p>1.5.a Formulate problem definitions suited for technology assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.</p> <p>1.5.c Break problems into component parts, extract key information, and develop descriptive models to understand complex systems to facilitate problem-solving.</p> <p>1.5.d Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.</p> <p>1.6.b Create original works or responsibly repurpose or remix digital resources into new creations..</p> <p>1.6.c Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations models or simulations.</p> <p>1.6.d Publish and present content that customizes the message and medium for their intended audience.</p>
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	<p>3A-AP-14 Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.</p> <p>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.</p> <p>3A-AP-21 Evaluate and refine computational artifacts to make them more usable and accessible.</p> <p>3B-AP-09 Implement an artificial intelligence algorithm to play a game against a human opponent or solve a problem.</p> <p>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.</p> <p>3A-AP-19 Systematically design and develop programs for broad audiences by incorporating feedback from users.</p> <p>3A-AP-21 Evaluate and refine computational artifacts to make them more usable and accessible.</p>	
<p>CSS</p> <p>Learn the basic syntax of CSS and common properties as well as advanced concepts such as positions, grid, and flexbox as you create a library digital display.</p>		