girls who code

CAMPUS

2019 SUMMER COURSE CATALOG

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After Campus, 94% of girls believe they can solve unexpected problems or find new or better ways to do things.

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ABOUT GIRLS WHO CODE CAMPUS

Girls Who Code is a national non-profit that is dedicated to closing the gender gap in technology. Since 2012 we have reached over 90,000 girls with after-school programming, summer courses, and best-selling books.

Girls Who Code Campus offers a range of two-week courses to explore new technologies, like iPhone app development with Swift, or building wearable tech with LilyPad Arduino.

A SISTERHOOD OF GIRLS
Our girls-first environment enables students to build a supportive network of other girls like them! They work on coding challenges, team projects, and building new skills while making friends. Sisterhood activities help students forge bonds and we showcase inspirational women in tech who have led the way.

GET AN EDGE FOR COLLEGE
Girls build projects they're proud to share on college applications and develop a deeper understanding of different roles in the tech industry. A summer with Campus will build confidence for advanced high school courses and get girls ready for all that college has to offer!

AMAZING INSTRUCTORS LEAD THE WAY
Campus Instructors are teachers and technologists with a passion for closing the gender gap in tech. They go through Girls Who Code training before leading Campus and bring their expertise and enthusiasm to the classroom.

BRING YOUR IDEAS TO LIFE
Campus courses encourage girls to apply technology to the problems they see in their own communities, such as climate change, bullying, and stereotype threat. Along the way, they learn about project management, real-world development practices, and team dynamics.

HOW TO CHOOSE THE RIGHT CAMPUS COURSE

Campus has something for every girl, no matter her interests or previous experience with coding. Find the right course for her, or she can double-up and take two in a row!

Course	Introduction to Computer Science	Wearable Tech & Fashion Design	Website Design & Development	iPhone App Development 1	NEW! iPhone App Development 2
Age Range	10-14	11-15	13-18	13-18	13-18
Experience Level	Beginner	Beginner - Intermediate	Intermediate	Intermediate - Advanced	Advanced
Languages & Devices Taught	Scratch & Makey Makey	Arduino-C & LilyPad Arduino	HTML, CSS, & JavaScript	Swift & Xcode	Swift & Xcode
Is this course for her?	This course is for beginners! They don't need any previous programming experience or expertise in math and science.	They've taken a programming course (block or text-based) and want to learn how to make and program physical pieces of tech.	They've taken a programming course (block or text-based) and want to learn how to build things for the web.	They've taken a text-based programming course like JavaScript or Python and want to learn how to build mobile apps.	They've taken an Intro to Swift or iPhone App Development course and want to learn more about mobile app development.
What will they make?	They'll build games and applications with Scratch and interactive devices with Makey Makey.	They'll build wearable tech devices like a light-up advocacy pin, tool bag, and fitness tracker.	They'll build projects like a digital portfolio, personality quiz, and a photo editor app.	They'll build projects like a trivia app, to-do list, and photo editor app for iPhone.	They'll build augmented reality (AR) apps and 2D games for iPhone.

Need some guidance on choosing the right course? Give us a call at **844-226-7622** or email us at **campus@girlswhocode.com**. Our admissions staff is happy to discuss curriculum in detail and make sure you select the right course.

INTRODUCTION TO COMPUTER SCIENCE

AGES 10-14

In this course girls use Scratch, a block-based programming language, and Makey Makey, an electronic invention kit, to explore the fundamentals and creative power of computer science and physical computing. During Week One, girls build projects designed to teach core programming concepts like loops, variables, conditionals, and functions. In the afternoons they dive into the world of physical computing with Makey Makey, learning about circuits and creating devices that interact with the programs they code. In Week Two, girls design, build, and present a team project about a topic that matters to them.

TOPICS COVERED

Programming Fundamentals: Girls learn and apply core programming concepts like variables, loops, conditionals, and functions to create animations, games, and applications with Scratch.

Physical Computing: Physical computing involves translating analog input (like a button press) to digital input (code) through software and hardware. Girls build input devices using everyday materials, then use Makey Makey to translate analog inputs to digital inputs that control software they write in Scratch.

Circuits: Girls learn to design and create simple circuits to build Makey Makey interface devices.

Debugging: All developers face bugs or errors in their code. Girls learn strategies and best practices for debugging in Scratch.

Prototyping & Testing: Girls learn design skills and practices to help them plan, build, test, and revise prototypes and products.

Project Management: Students learn and use industry best practices like scrum, Kanban boards, and stand-ups to organize, track, and manage their development and project work.

Bravery & Resilience: Learning to code is full of challenges. We help girls build a growth mindset, learn how to tackle new material, and understand the importance of making and learning from mistakes.

"It was most important to me that she learned how to face a challenge and continue working toward a solution. I also apreciated the 'girls can do anything' message."

- Minneapolis Parent, Intro to CS

WEARABLE TECH AND FASHION DESIGN

Girls enrolled in this course explore the ever-expanding world of wearable tech using LilyPad Arduino and the Arduino-C programming language. In Week One, students dive into different fields of wearable technology, including health, fashion, fitness, and assistive technology by sewing, building, and programming daily projects that teach core programming concepts like loops, variables, conditionals, and functions. In Week Two, girls work in teams to design, build, and present their own wearable tech innovations.

TOPICS COVERED

Arduino-C Fundamentals: Girls learn and apply core programming concepts like variables, loops, conditionals, and functions to write programs in Arduino-C that control their wearable tech.

Physical Computing: Girls use sensors and LilyPad Arduinos to translate analog inputs to digital inputs for software they create in Arduino-C. The software takes that input and processes it to provide output for the user like turning on LEDs, vibrating, or playing a sound.

Soft Circuits: Students learn how to plan, design, and sew soft circuits.

Sewing Basics: Girls learn and practice different stitches, sewing, and finishing techniques to create beautiful pieces of wearable tech.

Debugging: Girls learn strategies and best practices for debugging in Arduino-C.

Project Management: Students learn and use industry best practices like scrum, Kanban boards, and stand-ups to organize, track, and manage their development and project work.

Industry Exploration: Each day, girls build projects and explore different fields and industries that use wearable tech, showing them the wide range of career opportunities that exist.

Bravery & Resilience: Learning to code is full of challenges. We help girls build a growth mindset, learn how to tackle new material, and understand the importance of making and learning from mistakes.

"GWC Campus provided my daughter with a large range of wearable tech projects that she absolutely loved, continuously talked about, and looked forward to each day."

- NYC Parent, Wearable Tech

WEBSITE DESIGN AND DEVELOPMENT

AGES 13-18

In this course, girls learn the fundamentals of website development with HTML, CSS, and JavaScript. In Week One, girls launch a personal website portfolio and work together on projects designed to teach essential programming concepts like variables, conditionals, and functions in JavaScript. Girls also learn and apply visual design principles to build beautiful websites and web applications. In Week Two, girls work in teams to design, build, and present an interactive website about a topic that matters to them.

TOPICS COVERED

HTML & CSS: Girls learn how to use HTML and CSS to create well-designed and well-formatted websites.

JavaScript Fundamentals: Girls learn core JavaScript including data types, variables, conditionals, and functions to process user input in their websites.

JS DOM Manipulation: The Document Object Model (DOM) allows developers to update the content, style, and structure of a website in response to user actions. Girls will use event listeners and query selectors to create interactive websites.

APIs: Developers use APIs or Application Program Interfaces all the time to access services, data, and features from other web sources. Girls will use the CamanJS API to manipulate images using filters.

Responsive Layout: Girls learn the Flexbox layout model so they can create websites that respond and adapt to changes in screen size.

Debugging: Girls learn strategies and best practices for debugging in JavaScript.

Project Management: Students learn and use industry best practices like scrum, Kanban boards, and stand-ups to organize, track, and manage their development and project work.

Bravery & Resilience: Learning to code is full of challenges. We help girls build a growth mindset, learn how to tackle new material, and understand the importance of making and learning from mistakes.

"It was such an empowering and supportive experience that boosted not only my interest in coding, but also my confidence in my capabilities."

- Hannah, NYC, 17

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IPHONE APP DEVELOPMENT 1

AGES 13-18

In this course, girls use the programming language Swift and Apple's Xcode development environment to design and build their own iPhone apps. In Week One, girls learn Swift and Xcode by working on small projects designed to teach them core programming concepts like loops, variables, conditionals, and functions, and Apple's UIKit, Core Image, and CoreData frameworks. In Week Two, girls develop teamwork and leadership skills by designing, building, and presenting an iPhone app about a topic of their choosing.

TOPICS COVERED

Xcode: Students learn how to navigate and use Xcode, Apple's Integrated Development Environment (IDE), to design and build iPhone Apps.

Swift Fundamentals: Girls learn the fundamentals of Swift, including data types, loops, variables, conditionals, and functions.

UIKit: Girls learn to use Xcode's Interface Builder, UIKit framework, and apply constraints to create an intuitive user interface.

Core Data: Students use the Core Data framework to manage the model layer of a to-do list app, so they can store data persistently.

GitHub & Version Control: Girls learn the basics of version control and how to collaborate on code using the built-in source control features of Xcode.

Deploying iOS Apps: Girls learn how to load their apps onto their own devices for testing and use.

Project Management: Students learn and use industry best practices like scrum, Kanban boards, and stand-ups to organize, track, and manage their development and project work.

Debugging: Girls learn strategies for debugging in Xcode and Swift.

Bravery & Resilience: Learning to code is full of challenges. We help girls build a growth mindset, learn how to tackle new material, and understand the importance of making and learning from mistakes.

"We were very impressed with the rigor of the program. The topics and concepts varied each day and it provided a good foundation for iOS programming."

- NYC Parent, iPhone 1

IPHONE APP DEVELOPMENT 2

AGES 13-18

In this follow-up course for iPhone App Development 1, girls refresh their skills building apps with Swift and Xcode while also learning two new Apple frameworks, ARKit and SceneKit, to design and build augmented reality apps and 2D games. In Week One, girls build a series of projects that review fundamentals from the first iPhone course and introduce new frameworks and topics. In Week Two, girls develop their teamwork, project management, and presentation skills to design, build, and present an iPhone app about a topic of their choosing.

TOPICS COVERED

Xcode: Students refresh their knowledge of Xcode, Apple's IDE, to design and build iPhone Apps.

Swift Fundamentals: Girls refresh their understanding of the Swift programming language, including data types, loops, variables, conditionals, and functions.

ARKit: Girls design and build augmented reality experiences using Apple's ARKit.

SpriteKit: Students use SpriteKit to create 2D sprite-based games and program realistic movement by simulating a physics world using the built-in physics engine.

GitHub & Version Control: Girls practice version control and collaboration on code using the built-in source control features of Xcode.

Deploying iOS Apps: Girls learn how to load their apps onto their own devices for testing and use.

Debugging: Girls learn strategies and best practices for debugging in Xcode and Swift.

Project Management: Students learn and use industry best practices like scrum, Kanban boards, and stand-ups to organize, track, and manage their development and project work.

Bravery & Resilience: Learning to code is full of challenges. We help girls build a growth mindset, learn how to tackle new material, and understand the importance of making and learning from mistakes.

"It is so refreshing to work in an accepting environment and see girls working together. In only two weeks I was able to create several iPhone apps when I had no previous experience."

- Marie, Bay Area, 14

EXPLORE A SAMPLE DAY AT GIRLS WHO CODE CAMPUS

Every day of Campus will look a little different but we structure Campus to maximize learning, sisterhood, and fun! Week One of Campus is about building skills and practicing techniques, while Week Two focuses on building a capstone project that brings many of Week One's lessons together.

9:00 AM	Girls arrive and get to work! The instructor will go over the plan for the day and lead a Sisterhood activity.
9:30 AM	Students learn a core computer science concept through hands-on activities, instruction, reading, and coding.
10:30 AM	Girls practice their new skill on a small, creative project, sometimes with a partner and sometimes on their own.
11:30 AM	Break! Students move around and keep their brains fresh.
11:45 AM	Students jump back into their project work.
12:30 PM	Lunch! During this break, students relax and get to know each other. Groups can play games, go outside, or spend time alone for girls who like to recharge solo.
1:15 PM	Women in Tech Spotlight! Students learn about a female role model working in the tech industry through videos, interviews, or articles.
1:30 PM	Girls tackle another new computer science concept, or dive deeper into the morning's work.
2:30 PM	Mini-Break and Gallery Walk. Students explore what other girls are working on and share their accomplishments!
2:45 PM	Students put the finishing touches on their project for the day.
3:30 PM	Girls showcase their work, wrap up, and reflect on what they learned!
4:00 PM	Class ends for the day.

MEET OUR INSTRUCTORS

Campus course instructors are excited to share their experience and enthusiasm with our girls. All of our instructors go through a rigorous, unique Girls Who Code training focused on managing different learning styles and bringing computer science concepts to life through fun, hands-on activities and lessons.

MEET EMILY

Emily discovered her love of coding at Williams College in Massachusetts. She loved how creative and empowering learning to code was, so she double-majored in Computer Science and Psychology. Now, she's a full-time computer science teacher and teaches with Girls Who Code over the summer. "Code has the amazing potential to change the world, and when girls feel comfortable coding, they can use their power and vision to make positive changes in their communities."

MEET ROBYN

Robyn is a Ph.D. student in mathematics who focuses on Algebraic and Computational Topology. She has taught with Girls Who Code for three consecutive summers. "Working with GWC for the last two years, I have seen the powerful impact that sisterhood and creativity can have on a computer science education. Being a part of a GWC classroom is a life-changing experience for all those involved – we not only gain knowledge and skills, but also create a community in which each member is encouraged to engage in their passions and meaningfully impact the world around them."

WHAT WILL GIRLS BUILD?

During the second week of Campus, girls pitch, plan, and build capstone projects as teams. They are empowered to observe and research problems they see in their daily lives, and to brainstorm solutions they can create with their new technical skills. They also explore different technical roles, like Scrum Master or Quality Assurance, to learn how real development teams function and to practice leadership.

THE TRASH PLATFORMER

In Intro to Computer Science, Jenna, Gianna and Alana built a Scratch game that encourages users to pick up trash. The team said, "The problem we were trying to solve is seen everywhere: people litter left and right, without even thinking twice about what they're doing." The game has multiple levels and custom music and art!
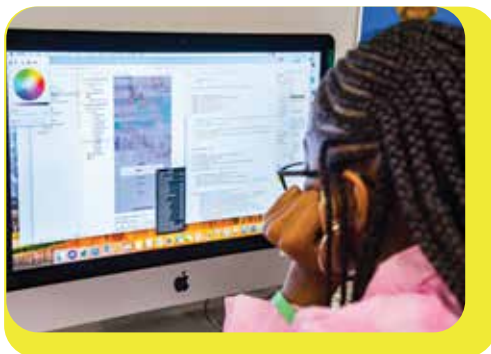
PARK PLANNING PARTNER

Nikki and Deanna built an iPhone app called Park Planning Partner to make visiting parks and outdoor spaces more accessible. Their app includes searchable maps and recommendations of National Parks and Monuments as well as local conservation areas.

VEG-UCATE

Veg-ucate is a website by teen girls for teen girls to help build healthy eating habits. It includes recipes, tips to incorporate more vegetables into your meals, and suggestions to keep groceries affordable. "We've created a website that combats common misconceptions such as 'there are no affordable healthy foods' and 'more is better.'"

SISTERHOOD AND BEYOND

WHY CHOOSE A GIRLS-FIRST PROGRAM?

Girls Who Code was founded with a single mission: to close the gender gap in the tech industry. Through our range of courses, clubs, books, and teaching tools, we're building a massive pipeline of future women engineers. So why is Campus just for girls? Because with girls-first programming, we can offer solutions to the unique challenges facing girls interested in computer science, and better equip them to become future women in tech.

SISTERHOOD IS POWERFUL
Many girls interested in coding will find themselves to be the only girl, or one of few, in other co-ed coding programs. At Girls Who Code, not only will they build the skills, they will meet other girls like them that they can lean on and learn with in the future. Daily **Sisterhood Activities** help girls build bonds with each other.

YOU CAN'T BE WHAT YOU CAN'T SEE
Each Campus program incorporates **Women in Tech Spotlights** that use video, interviews, and articles to teach girls about women role models in the tech industry. Girls will leave with the knowledge that there already are brilliant, creative, talented women in the field that they can look up to.

REAL LIFE ROLE MODELS
At least one adult in every Campus classroom is a woman. It's important for girls to see women in roles with technical authority and expertise. They can ask these women directly about their experiences studying computer science or working in the industry.

90% of girls reported that because of Campus they got to know girls with a different background from themselves.

TUITION

Campus courses are tuition-based and tuition varies by course and location. Tuition includes:

- All the technology used in the program: **you do not need to bring your own computer.**
- Our trained instructors and teaching assistants.
- Access to Girls Who Code's unique HQ learning platform.
- Any materials used during the course.

Please note, *transportation and lunch are not included*.

Make the most of your summer with Girls Who Code Campus!

Register for two courses and your second course is 50% off.

Register two girls and your second registration is 50% off.

SCHOLARSHIPS

Need-based scholarships covering the full program tuition are available for families that qualify and scholarship applications are processed on a rolling basis. Our scholarship application is available at **www.girlswhocode.com/campus**. Thanks to our generous sponsors and donors for supporting Girls Who Code.

"This was exactly what I had hoped for. My daughter had been uninterested in coding and is now excited about it."

- NYC Parent, Intro to CS

TAKE THE NEXT STEP

LEARN MORE AND REGISTER

Visit our website at **www.girlswhocode.com/campus** to learn more and register for summer courses.

Visit Our Website!

CONTACT US

Have questions? Email us at **campus@girlswhocode.com** or call our Admissions team at **844-226-7622**.

844-226-7622

Email Us!

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Follow us on social media for updates on course offerings and program locations.
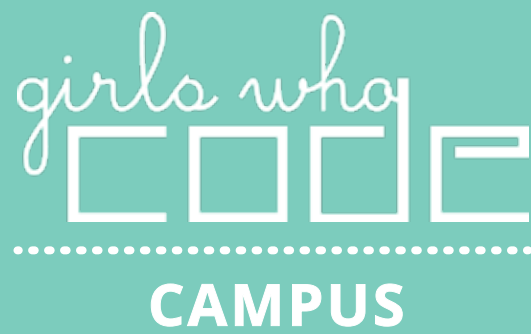
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2019 LOCATIONS

- Bay Area
- Boston
- Los Angeles
- New York
- Seattle
- Washington DC & Baltimore

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CAMPUS