GRADE 9 - 10

Code N Beyond

BOOTCAMP - 20 hours

Beginner Course, No Prior Experience Required

First Steps in Game Development

This course is the perfect introductory experience for learning digital skills in the world of gaming and programming.

Students will learn how to plan, design, and develop their very first web-based game using HTML, CSS, and JavaScript. They will pick up valuable skills along the way such as storyboard planning, designing gaming assets, and creating digital special effects.

INTERMEDIATE - 40 hours

Technology and The Community

Students will explore intermediate-level Guided Projects that connect to community themes like making a mobile app, designing a health logger, and multi-page website for a community organization. By building on previous learning from Technology and Me, students will learn more skills in developing with HTML, CSS, and JavaScript. Along with learning more advanced coding concepts, students will explore best practices in digital design for optimal user experience, data analysis, and digital communication.

SUMMIT - 120 hours

Technology and the Community

Students will explore intermediate-level Guided Projects that connect to community themes like making a mobile app, designing a health logger and multi-page website for a community organization. By building on previous learning from Technology and Me, students will learn more skills in developing with HTML, CSS and JavaScript. Along with learning more advanced coding concepts, students will explore best practices in digital design for optimal user experience, data analysis and digital communication.

Technology and the World

By participating in advanced-level Guided Projects, students will explore technology themes that relate to global interests such as artificial intelligence and game development. With more emphasis on JavaScript programming, students will create projects like a scrolling video game, a vertical jumper game, and explore how artificial intelligence is used in art and music. To enhance the development of projects, students will also explore the ethical decision-making of AI technologies and video games.

Video game Design with Phaser

Start programming games like a professional with this course. Using the popular desktop and mobile gaming framework, PhaserJS, students will learn how to create a platformer game.

Engaging their creativity and design thinking skills, they will create, customize and enhance their games by adding their own set of characters, environments, gravity, and world physics.

Using Design Thinking methodology, students will gather feedback from classmates and iterate to improve their games.

Code N Beyond

SUMMIT - 120 hours

Code the Future with Artificial Intelligence

Students will explore intermediate-level Guided Projects that connect to community themes like making a mobile app, designing a health logger, and multi-page website for a community organization. By building on previous learning from Technology and Me, students will learn more skills in developing with HTML, CSS, and JavaScript. Along with learning more advanced coding concepts, students will explore best practices in digital design for optimal user experience, data analysis, and digital communication.

Build Your Tech Startup

For aspiring technologists, this start-up course teaches students about cutting-edge new technologies to help them innovate a fresh new tech startup idea.
Starting with the fundamentals of technology, students will learn how programming works using HTML, CSS, and JavaScript.
Following this, students will identify a real-world problem that they would like to solve. Through design thinking activities and their newly acquired coding skills, they will design and prototype a working tech solution.
Working independently or in small teams, students will then develop a business plan, company brand, and digital online presence.
At the end of the course, students will have created a fully programmed chat-bot simulator, a tech prototype, and a business plan presented as a website.

Code N Beyond

First Steps in Game Development

Explore: game development using design techniques to plan games. See how professional game designers take an idea to market.

Learn: the basic skills in HTML, CSS, and JavaScript needed to make a game and how to develop game assets and game mechanics.

Create: an online adventure game with special effects that can be shared online. Customize everything about the game to keep the adventure going.

Skills

- Learn digital skills for gaming & programming
- Storyboarding
- Designing game assets and mechanics
- Creating digital special effects

Technology and the Community

Explore: Students will be introduced to methods and design protocols that real web designers use and will explore how data is used to inform the design of applications. By looking at industry examples of applications and designs, students will consider how user experience affects design decisions..

Learn: Teachers will lead students through 5 Guided Projects that teach the necessary skills in HTML, CSS and JavaScript to design custom web pages that will continue to cultivate computational thinking. Students will also learn how to gather real-world data for use in projects.

Create: Students will create 5 unique projects throughout the course. At the end of the course, students will be asked to customize a project of their choice based on the 2 project briefs that are provided. Each of the projects will be customizable and can be shared using a public URL or QR code.

Skills

- Build community-oriented projects like mobile apps, a health logger, and a multi-page website
- Learn best practices in digital design
- Learn about optimal user experience, data analysis, and digital communication
- Learn how data is used to inform the design of applications

Technology and The World

Explore: Students will be introduced to methods and design protocols that real web designers use and will explore how to interact and engage safely in online environments through activities that develop digital citizenship.

Learn: Teachers will lead students through 7 Guided Projects that teach the necessary skills in HTML, CSS, and JavaScript to design custom web pages that will start to cultivate computational thinking. Students will also learn how to plan out project ideas as a design process.

Create: Students will create 7 unique projects throughout the course. At the end of the course, students will be asked to customize a project of their choice as a capstone to the course. Each of the projects will be customizable and can be shared using a public URL or QR code.

Skills

- Learn methods and design protocols used by reak web- designers
- Explore how to interact and engage safely online
- Develop Digital Citizenship
- Build 7 projects and publish to the Internet

Code N Beyond

Video game Design with Phaser

Explore: JavaScript-based video game development and play-test example games to understand best approaches for 2D game design.

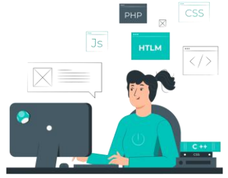
Learn: Platformer game design with Phaser and gain real-world game development skills. Learn advanced JavaScript concepts by programming game physics and multiple game levels.

Create: A Platformer 2D game that contains custom characters, backgrounds, levels, and more. Once the game is completed, it can be shared online with friends.

Skills

- Program & design games like a professional
- Use a popular & powerful desktop/mobile gaming framework: Phaser JS
- Create a platformer game
- Engage creativity and design thinking skills
- Add own set of characters, environments, gravity, and world physics

Code the Future with Artificial Intelligence



Explore: The AI technology behind modern vision recognition systems, digital assistants, chatbots, and other AI tools.

Learn: To design and program AI tools using JavaScript and HTML

Create: a fully-responsive vision classifying tool, a chatbot, and a smart assistant.

Skills

- Introduction to AI
- Use Machine Learning (ML) and code to develop and train a vision recognition system
- Explore how ML is applied to art, music, games, and digital assistants
- Learn the similarities between AI and how the human minds work
- Study the effects of bias and categorization of data

Build Your Tech Startup

Explore: New technologies that entrepreneurs use to develop business ideas using the same technologies that empower the major tech companies of today.

Learn: The tools that entrepreneurs use to launch businesses, like design thinking, advertising, coding, marketing, and brand development..

Create: a single-page website to learn HTML, CSS, and JavaScript, then prototype a business website and a digital portfolio that can be shared online. Use what you learn to launch your own business.

Skills

- Intro to entrepreneurship
- Innovate a fresh tech startup idea
- Identify a real-world problem to solve
- Develop a business plan, company brand, and online presence
- Program a chatbot simulator, prototype, and business plan website