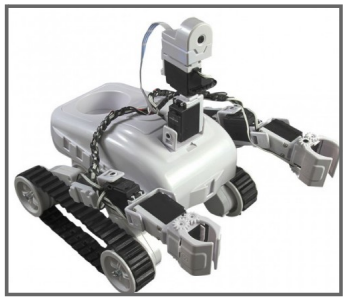
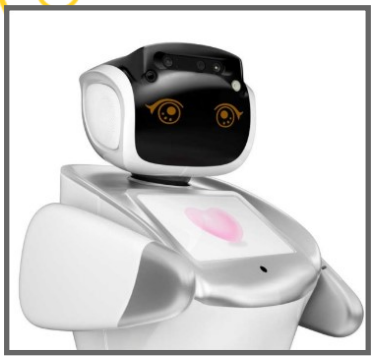
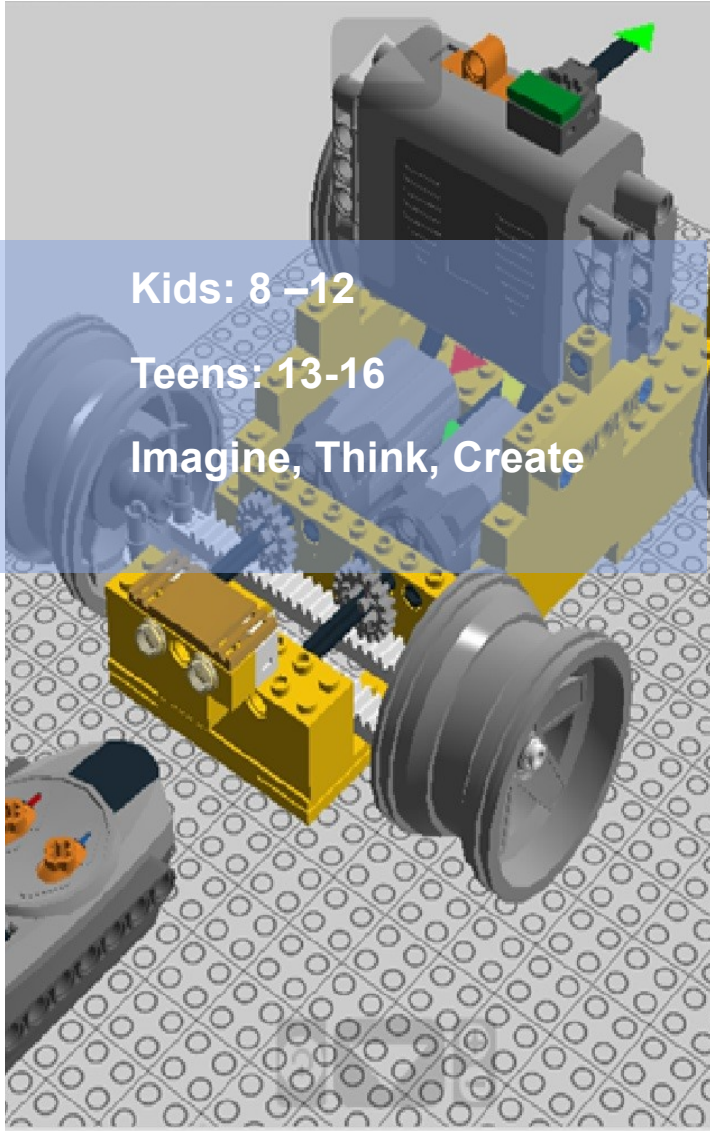




Virtual Coding and Robotics Camps



Kids: 8 –12

Teens: 13-16

Imagine, Think, Create

1.800.414.4109

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www.robo-geek.ca

ROBO-GEEK

Coding, Electronics & Robotics

Summer 2020 Camps

Kids Camps (**8-12 years old**): 4 different camps offered:

> Java & Robotics

> Python and Pygame & Robotics

>Arduino & Robotics

> Python and Computer Vision & Robotics

Teens Camps (**13-16 years old**): 5 different camps offered:

> Java with Android Studio

> Python and Pygame

> C# with Visual Studio

> Arduino Advanced

> Python and Computer Vision

Please check the ***schedule*** to see if you are interested in a particular camp.

System Requirements

- **Requirements for Kids Camps:**

  Laptops or PCs with the following **specifications**:

  > Windows 10 Operating System

  > 4 GB RAM minimum, **8 GB preferred**

  > HDD 20 GB free

  > Fast internet access

  > Headphones with microphones preferred

  > Free 30-60 minutes appointment with our technical staff to install all the required software ahead of camp. **Parent/Guardian required.**

- **Requirements for Teens Camps:**

  Laptops or PCs with the following **specifications**:

  > Windows 10 Operating System

  > 4 GB RAM minimum, **8 GB preferred**

  > HDD 50 GB free to install Visual or Android Studio

  > Fast internet access

  > Headphones with microphones preferred

  > Free 30-60 minutes appointment with our technical staff to install all the required software ahead of camp. **Parent/Guardian required**

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Summer 2020 Kids Schedule

Kids Camps (**9 AM - 12 PM**):

> July 6th— July 10th: **Arduino & Robotics**

> July 13th— July 17th: **Python and Pygame & Robotics**

> July 20th— July 24th: **Java & Robotics**

> July 27th— July 31st: **Python and Pygame & Robotics**

> Aug. 4th— Aug. 7th: **Java & Robotics**

> Aug. 10th— Aug. 14th: **Java & Robotics**

> Aug. 17th— Aug. 21st: **Arduino & Robotics**

> Aug. 24th— Aug. 28th: **Python Computer Vision & Robotics**

Summer 2020 Teens Schedule

Teens Camps (**1 PM - 4 PM**):

> July 6th— July 10th: **Arduino**

> July 13th— July 17th: **Python and Pygame**

> July 20th— July 24th: **Java**

> July 27th— July 31st: **Python and Pygame**

> Aug. 4th— Aug. 7th: **C# with Visual Studio**

> Aug. 10th— Aug. 14th: **Java with Android Studio**

> Aug. 17th— Aug. 21st: **Arduino**

> Aug. 24th— Aug. 28th: **Python Computer Vision**

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PYTHON and Pygame CAMPS

KIDS

Intro to Python – Practical

Students will be introduced to Python programming language. Python is a high-level programming language used in many universities and work institutions. Python is powerful and fast, yet friendly and easy to understand. Students will learn the fundamentals of coding using Python Turtle.

Intro to Game Program-

Students will learn step by step how to develop a working 2D game from designing characters, game rules and developing multiple game levels. In this course students will be introduced to Object Oriented Programming using Python Pygame. Games are highly portable capable to run on nearly every platform and operating system.

TEENS

STEM + Python Turtle

Students will learn about three STEM subjects: Solar System, Bridge Building and Gravity. For each subject, students will create programs in Python to simulate and demonstrate understanding. This course is based on the material developed in our STEM Club

Advanced Game Programming

Students will develop a multi-level game using Pygame using Object Oriented Programming integrating all the concepts learned.

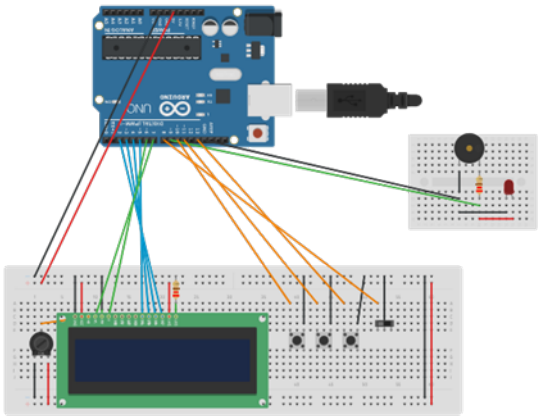
Arduino CAMPS

KIDS

Introduction to Arduino

Students will learn coding in C with Arduino Uno Wi-Fi Board working with digital interfaces to control different arrays of LEDs virtually using TinkerCad. Moreover, students will learn basic concepts of Electronics and Electricity through experimentation and hands-on activities including building of circuits on breadboards.

TEENS



Arduino Advanced

Working with simulators is a fundamental skill required in Engineering to develop troubleshooting and collaboration skills. Moreover simulators help students develop discipline to conduct tests prior to prototyping. We selected TinkerCad for this purpose. In addition can continue practicing at home as they will have their own accounts.

Java CAMPS

KIDS

Introduction to Java

Students will learn fundamentals of Java, type of variables, statements and operators, arrays, methods, and control structures. Moreover, we will expand into Object-oriented programming System (OOPs) concepts. We will cover each and every feature of OOPs in detail : Abstraction, Encapsulation, Inheritance and Polymorphisms. The section for Input /Output has included here too.

TEENS

Advanced Android Studio

Android Studio is a powerful tool based on Java. Students will learn how to work with API (Application Programming Interfaces), Project Structure, gradle, libraries, methods, onCreate() method, MainActivity and XML Layout. Students will learn how to create Apps for Android Tablets using Android Studio.

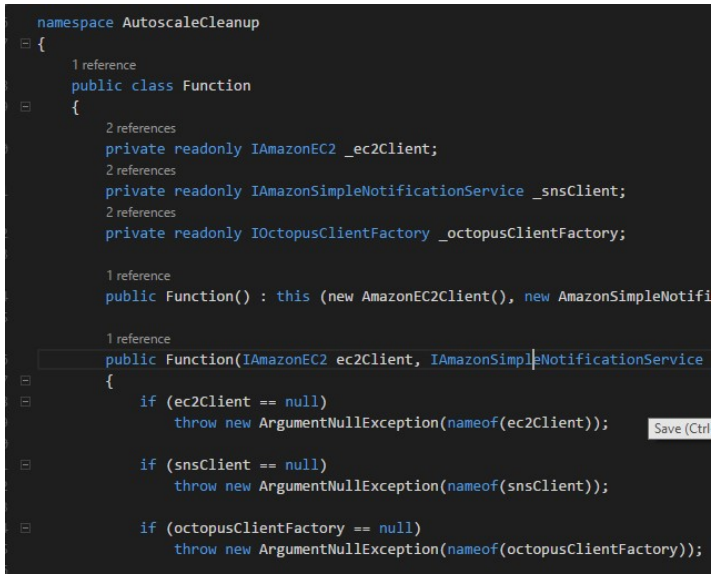
C # Visual Studio

TEENS ONLY

Advanced Coding with C# and Visual Studio

Students will learn C# (C Sharp) using Visual Studio. Students will learn Visual Studio with C# , they will write code and learn about variables, Loops, Conditional Statements, how to use classes. They will learn how to troubleshoot in C#, they will have to write their own code and methods to complete challenges.

Once students learn the fundamentals, then they will be working on projects : Creating Forms, Drawing Shapes and Bingo APP; they will have to add and supported by the instructor.



Visual Studio

Python Computer Vision CAMPS

KIDS

Introduction to Computer Vision

Students will learn about the fundamentals of Computer Vision using Python OpenCV. This course is designed to prepare students for more difficult and concepts in robotics and machine learning.

Students also learn how to apply advance algorithms using OpenCV for image processing including shape detection and object detection.

TEENS

Advanced Computer Vision

Students will learn the practical applications of computer vision in robotics and mobile applications such as QR code recognition, OCR recognition. Last part of the course focuses on integration with the application of AI to play