Robogals
Workshop Preview 2023-24

Robogals

WHAT IS ROBOGALS?

Robogals is an international, student-run organization that aims to **inspire, engage, and empower** young women to consider studying engineering and related fields. To achieve this mission, Robogals' primary activity is hosting interactive, engineering-based workshops where **ALL students** are welcome to participate.

Since 2013, the Queen's chapter has partnered with local schools and after school programs, like Girl Guides and the Boys and Girls Club, to help introduce **over 500 students** in the Kingston, Ontario community to robotics and engineering. This document provides a summary of workshop types that will be offered in the 2023 - 2024 school year.

Introduction to <HTML>

Time Required for Workshop:
45 minutes

Intended Age Range:
Grades 4 – 7

Materials Required by Students: Computer

This HTML (Hyper Text Markup Language) introduces students to the code that is used to structure webpages.

Students will learn how to insert headers, text, colour, and images, so that they can create their own website! Exploring the structure of HTML allows students to visualize and articulate abstract ideas effectively; with every change in their code, their website will respond accordingly.


Robogals Queen's
"Inspiring tomorrow's engineers today."
Robogals is a student-run organization that encourages young students to pursue STEM.
Our EV3 Lego Robot worshops teach students basic coding skills.

Hello World
How is your day?
It hovers, its a cat...
Its Hover-Cat!

workshop1.html - Notepad
File Edit Format View Help

```
<h1 style = "color: orange"> Hello World </h1>

<p style = "color: blue"> How is your day? </p>

<body style = "background-color: pink">
</body>

<img src = hover_cat.jpeg width = "200" height = "200">
```

HTML

iRobot Coding

iRobot is an online coding website that allows students to learn coding in three levels by letting them explore programming the movements of a virtual robot. Level 1 uses drag-and-drop blocks to teach basic coding principles. Level 2 uses a combination of graphics and code to build code fluency, and level 3 uses full text-code to teach students.
Workshops usually focus on level 1, students complete challenges such as drawing their name, playing music and flashing lights.
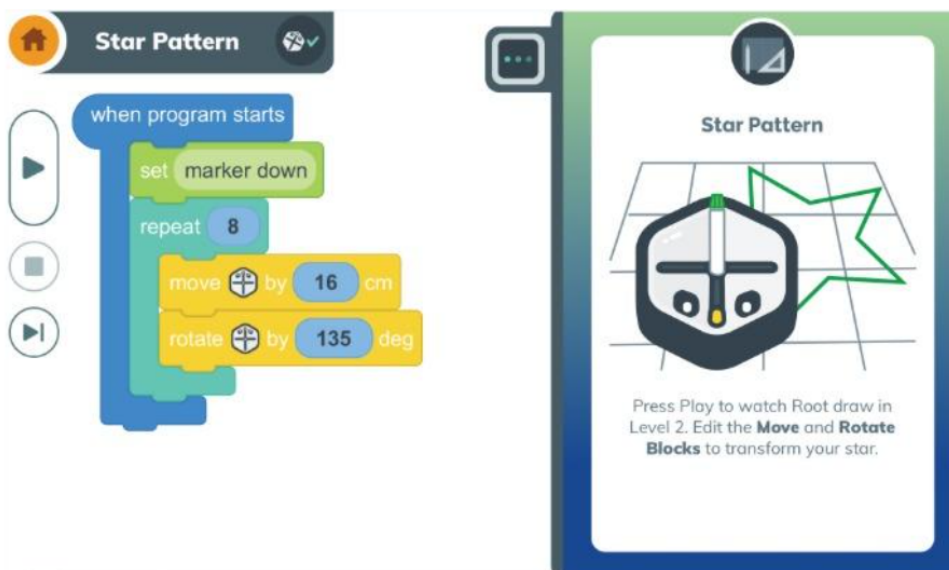
Level 2 challenge above, for more iRobot information visit: https://code.irobot.com/#/

TinkerCAD

TinkerCAD is similar to CAD (Computer-aided design) software used in engineering and related industries to model 3D objects. TinkerCAD is based on constructive solid geometry which teaches users how to create complex 3D models by combining similar objects together.
The Robogals workshop teaches students step-by-step how to model a 3D object. Student can create a pizza, a cake, or a rocket ship that can be programmed to blast off!
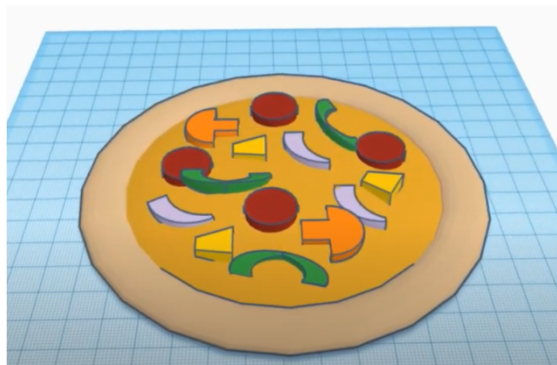
The TinkerCad workshop equips students with the foundational skills for innovation while having fun! Robogals Queen's has an educator account with TinkerCAD; students are required to enter the code provide by workshop volunteers to join the activity.
For more TinkerCAD information visit: https://www.tinkercad.com/

Circuits

Time Required for Workshop:
70 minutes +

Intended Age Range:
Grades 4 +

The Robogals Queen's circuits workshop teaches student how to design a circuit similar to that of Hasbro's Operation game.
This original workshop was first presented in May 2021 at the Girls in Tech Conference, hosted by the University of Toronto Schools.
Students learn basic circuits by connecting wires to a battery, buzzer and LED to create their own game.
This is a great hands-on workshop that does not require students to have a computer.

To participate in this workshop each student requires a circuit kit consisting of two AA batteries, and LED diode, a buzzer, alligator clips, a resistor, a pair of tweezers, a battery holder, cardboard, tinfoil and scissors. Robogals Queen's is glad to purchase kit items free of charge for students and teachers in the Kingston, ON area.

NEW Finch Robot Fun

Time Required for Workshop:
90 minutes

Intended Age Range:
Grades 1-12

Queen's Robogals is excited to introduce the new Finch robots. These Robots teach simple block-based coding all the way to advanced text-based programming, making it suitable for a large student age range.

Students will have the opportunity to program the robots to play games (red light green light), complete drawing challenges, and move through obstacle courses.

To learn more about the Finch robot visit: https://www.birdbraintechnologies.com/products/finch-robot-2-0/