

TCPL Robotics Club x WICC Collaboration

Fall 2022

Dates and Times:

10/14/22, 4:15 – 5:45pm

11/4/22, 4:15 – 5:45pm

Location:

Tompkins County Public Library

101 E Green St.

Ithaca, NY 14850

Room:

Maker Space and Digital Lab

Maximum Participation:

10 seats per session

Age Range:

Kids – Teens

Description:

This program focuses on teaching youth Scratch based coding through autonomous wrestling robots. Wrestling robots use an array of sensors to navigate a ring while detecting for opposing robots. The participants will have access to one ultrasonic sensor and two IR distance sensors. The participants will use an Arduino Nano to control the robot's movement and behavior. The subjects on coding that will be covered includes variables, control flow, loops, the clock, functions, and logic. Participants will use the syntax covered to create timing loops for each movement function to create a program for their robots. The robots are pre-assembled.

Program Goals:

- Use age-appropriate tutorials
- Introduce basic syntax of MBlock Scratch to participants
- Allow participants to experiment with Arduino robots

Program Objectives:

- Provide step-by-step group tutorial
- Provide one-on-one help.
- Provide Arduino Wrestling Robots

Session Breakdown:

- Session 1 -- Youth ages 8 -12
- Session 2 – Teens ages 13 – 18
- 10 min greetings and introductions
- 20 min group timing loop and how to upload tutorial
- 5 min break into groups of 1 -2 participant per leader (WICC or Staff member)
- 20 min battles and coding
- 5 min homeward bound

Equipment:

10x TCPL Wrestling Robots V2

10x Lab Laptop

MBlock software

Set of screwdrivers

Hot Glue Guns

Voltmeter

Sessions: 2

Part list:

20x Rechargeable 9v batteries

10x TCPL SUMO kits

Extra breadboard wires

5x sets of extra IR sensors

5x extra SR04 sensors

10x USB cables