

IDEA CAMP

SUMMER 2022 STEM WORKSHOPS
Invent. Build. Experiment.
Grades 5-12



Session I: June 27 - July 1st

Session II: July 5 - 8th

Session III : July 11 - July 15th

8 am - 3 pm



- Free for Lowell Public Schools students
- Workshop Fee (non-Lowell Public Schools students): \$165
- Workshop Fee (non-Lowell residents): \$300

Includes Program Supplies

Register Today:

<https://bit.ly/3H40U7e>

Questions? Contact:

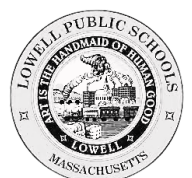
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Cummings
Foundation



PROJECT
LEARN



SUMMER 2022 STEM WORKSHOPS

Session I

- **Wire Your Bedroom**
(Grades 5 & 6)
- **Game Makers**
(Grades 5 - 8)
- **Sphero Battle Bots**
(Grades 8 - 11)
- **Crime Science**
(Grades 6 - 9)
- **Cooking & Baking in the Kitchen**
(Grades 5 - 9)
- **Harvard Medical Science***
(Grades 9 - 12)

Session II

- **Game Makers**
(Grades 9 - 12)
- **Robotics**
(Grades 7 - 10)
- **Coding with Sphero**
(Grades 7 - 10)
- **STEM Mash Up**
(Grades 5 - 8)
- **Sea Perch**
(Grades 8 - 11)
- **The Art of Being Present**
(Grades 9 - 12)

Session III

- **Architecture** -- (Grades 7 - 10)
- **Drones** -- (Grades 8 - 11)
- **Coding with Sphero** -- (Grades 7 - 10)
- **Farm to Table** -- (Grades 6 - 10)
- **Carnival Contraptions** -- (Grades 5 & 6)
- **Kinetic Sculpture** -- (Grades 6 - 10)
- **Mind-Body Wellness** -- (Grades 5 - 8)

Session I

June 27th - July 1st

Wire Your Bedroom - (Grades 5 & 6)

Students will design their own bedroom security system, candy safe and more.

Game Makers - (Grades 5 - 8)

Students will learn the basics of 2-D game design, similar to Space Invaders and Pacman, using drag and drop programming. This workshop requires a computer with the following minimum requirements : Windows 7 or Mac Mojave and 2 GB ram

Sphero Battle Bots - (Grades 8 - 11)

Students will use the engineering design process to build protective armor for their sphero robot. Once completed students will compete and "battle" with fellow students robots. Students will also build their own "battle bot" and wire a remote control for the battle bot.

Crime Science - (Grades 6 - 9)

Students solve a forensic mystery using science and critical thinking. In the activities, students analyze 4 different pieces of evidence (fingerprints, shoe prints, unknown powder, and pen samples) and keep track of evidence and suspects. They use their power of observations to "crack the case" and prove their innocence by figuring out who really committed the crime.

Cooking & Baking in the Kitchen - (Grades 5 - 9)

Students will learn all about the science of cooking. They will learn and prepare certain recipes

Harvard Medical Science* - (Grades 9 - 12)

MEDscience is an innovative high school Biology course immersing students into simulated medical emergencies. The science curriculum motivates students to think critically, communicate effectively, and work collaboratively in teams. We bring classroom learning into the real world with hands-on experiences, giving them the confidence they need to succeed. This workshop will be held at the Youth Innovation Space and there are field trips to Harvard University.

* There will be a \$100.00 charge for transportation and materials associated with the program.

Session II

July 5th - July 8th

Game Makers - (Grades 9 - 12)

Students will learn the basics of 2-D game design, similar to Space Invaders and Pacman, using drag and drop programming. This workshop requires a computer with the following minimum requirements : Windows 7 or Mac Mojave and 2 GB ram. This week of Game Makers is for High School students only!

Robotics - (Grades 7 - 10)

Build and program lego robotics to overcome obstacles and find their way through maze.

Coding with Sphero - (Grades 7 - 10)

Learn how to use code.org and program a Sphero (a spherical mini-robot). Students will build an obstacle course and complete many challenges.

STEM Mash Up - (Grades 5 - 8)

Students will use the engineering design process to complete challenges like a Shark tank escape, Paper Airplane Challenge & a popsicle bridge and more.

Sea Perch - (Grades 8 - 11)

Students will build and program an Underwater Robot to navigate through obstacles. Students will learn about neutral buoyancy and will wire their own controller. There will be a field trip to the Merrimack River to launch the sea mobiles.

The Art of Being Present - (Grades 9 -12)

Located at the Innovation Space in Lowell, students create works of art inspired by their emotions, thoughts, experiences & learn the art of being present in the moment.

Session III

July 11th - July 15th

Architecture - (Grades 7 - 10)

Students will complete a 3D kit of their dream house. They will use simple tools to complete their design.

Drones - (Grades 8 - 11)

In this course we will cover an abridged 8 unit drone curriculum that covers the basic concepts of drone flight with flying activities. Each unit includes a Google Slides Presentation, Flight vocabulary quizzes, Unit quizzes and student activities.

Coding with Spheros - (Grades 7 - 10)

Learn how to use code.org and program a Sphero (a spherical mini-robot). Students will build an obstacle course and complete many challenges.

Farm to Table - (Grades 6 - 10)

Students will learn the basics of working in the garden and importance of growing food locally. We will be supporting Mill City Grows and their local CSA. We will also explore using fresh local ingredients to create healthy snacks. This workshop will be held at the Stoklosa Middle School.

Carnival Contraptions - (Grades 5 & 6)

Students will design and build awesome carnival inventions. spin art machine, launchers and electric carnival games.

Kinetic Sculptures - (Grades 6 - 10)

Students will work to design and build a kinetic sculpture for the annual kinetic sculpture race in the fall.

Mind-Body Wellness - (Grades 5 - 8)

Practice and learn about the benefits of meditation, journaling, yoga, stretching and movement on the brain and body.