

IDEA CAMP



SUMMER 2024

Engage in **1-week STEM workshops**. Learn & participate in hands-on labs, activities, and field trips! **Daily breakfast, lunch & supplies** included. **

REGISTER NOW!

Registration Deadline: June 14th, 2024

LOCATION:
UMass Lowell

TIME:
8:00AM - 2:30PM

Open to Grades 5th - 12th

QUESTIONS?

padams@lowell.k12.ma.us



SUMMER 2024 STEM WORKSHOPS

Session I

June 24th - June 28th

Wire your Bedroom
Grades 5 - 7

Sea Perch
Grades 8 - 11

Recycling & Upcycling
Grades 8 - 12

Career in Medicine
Grades 9 - 12

Session II

July 8th - July 12th

Carnival Contraptions
Grades 5 - 7

Crime Science
Grades 5 - 6

Sphero Battle Bots
Grades 8 - 11

Wearable Technology
Grades 8 - 12

Harvard MEDScience
Grades 9 - 12

Session III

July 15th - July 19th

STEM Mash-Up Grades 5 - 8

Kinetic Sculpture Grades 7 - 12

Forensics Grades 8 - 11

Drones & Robotics Grades 8 - 11

Harvard MEDScience Grades 9 - 12



SESSION I

June 24th - June 28th

Wire Your Bedroom (Grades 5 - 7)

Students will wire frisbee with LED lights, design their own bedroom security system, candy safe, and more. Students need to be able to work independently and will learn to work with tools to wire their projects.

Sea Perch (Grades 8 - 11)

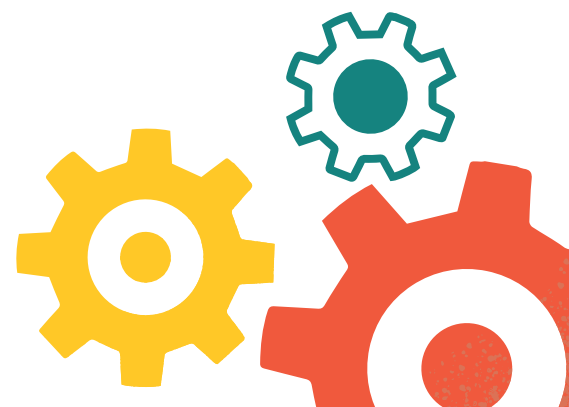
Students will build and program an Underwater Robot to navigate through obstacles. Students will learn about neutral buoyancy and wire their own controller. There is a significant amount of soldering in this workshop. This camp includes a field trip to the Merrimack River to launch the sea mobiles.

Recycling and Upcycling (Grades 8 - 12)

This workshop focuses on raising public awareness about environmental issues in Lowell. Students will learn how to upcycle everyday items that would normally be put into our landfills. We'll use plastic bottles to make art, turn CDs into clocks, use newspapers to make baskets, and much more! We'll also go into the field to learn about the Urban Heat Island Effect and Combined Sewer Overflows. This camp includes a tour of the Plastic Engineering Lab at UMass Lowell.

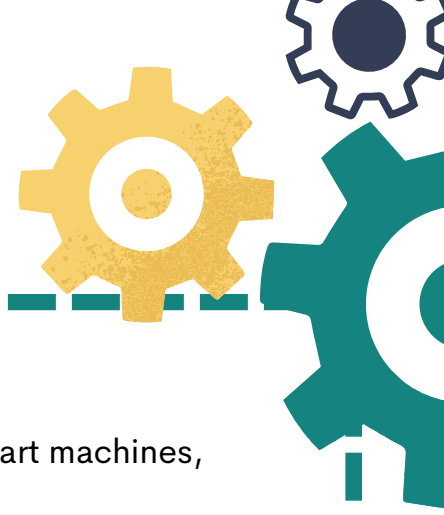
Careers in Medicine (Grades 9 - 12)

Students will explore various medical professions through hands-on investigations. Students will be challenged to think critically, communicate effectively, and work collaboratively in teams. This camp involves a field trip to UMASS-Lowell's Physical Therapy Department and the Biomedical program at Middlesex Community College. Students will also receive certification in First Aid and CPR.**



SESSION II

July 8th - July 12th



Carnival Contraptions (Grades 5 - 7)

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

Crime Science - (Grades 5 - 6)

Students will participate in hands-on activities to solve a crime! Labs & activities such as fingerprinting, DNA typing, chromatography, blood typing, and handwriting analysis will help students put clues together to identify suspects in a crime. This workshop is geared towards younger students who can continue the following year to a more advanced Forensic Science.

Coding with Sphero Battle Bots (Grades 8 - 11)

Students will first learn how to code and then develop robotic designs for battle bots. Using the engineering design process, students will build protective armor for their sphero robot that focuses on offense, defense, and controllability in different situations. Once completed students will compete and "battle" with fellow students' robots. May the best battlebot win!

Wearable Technology (Grades 8 - 12)

Students will combine creativity and computer science to design, program, and build their very own wearable technology using Arduino boards & various sensors. We will spend time writing block code, learning how to use Arduino boards, and designing circuits to power our technology. At the end of this camp, you will have a fully functional piece of wearable technology that is yours to take home!

Harvard MEDScience (Grades 9 - 12), some off-site workshops**

MEDscience is an innovative high school Biology course immersing students in simulated medical emergencies. This program motivates students to think critically, communicate effectively, and work collaboratively in teams. Includes two field trips to Harvard Medical School's patient simulation lab in Boston, MA.



SESSION III

July 15th - July 19th

STEM Mash-Up (Grades 5 - 8)

Students will use the engineering design process to complete fun challenges like a Shark Tank escape, Paper Airplane Challenge, Popsicle Bridge, and more!

Kinetic Sculpture (Grades 7 - 12), held at the Stoklosa

Students will work as a team to design and build a kinetic sculpture for Lowell's annual Kinetic Sculpture Race in Fall 2024.

Forensics (Grades 8-11)

In this more advanced crime science workshop, students will be exposed to the physical and biological evidence of forensics. Students will be introduced to laboratory techniques used by forensic scientists in their analysis of a crime scene and the role of forensic evidence in criminal/civil proceedings. Topics include DNA Analysis, facial recognition software, fingerprinting, and cause of death.

Drones and Robotics (formerly Flight School) (Grades 8-11)

This workshop explores the field of robotics, and drones and exposes students to the core technologies and systems through practical exercises and simulation. Students will also be introduced to the science of flight.

Harvard MEDScience (Grades 9 - 12), some off-site workshops**

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IDEA CAMP

Registration Fees

| | | School District Enrollment | Registration Fee (per week) |
|-----------------------|---|--|--------------------------------|
| General IDEA Camp | { | Lowell Public Schools (LPS) with LASID | \$30 |
| | | Non-LPS/Lowell Resident | \$150 |
| | | Non-LPS/Non-Lowell Resident | \$250 |
| Harvard MEDscience | { | Lowell Public Schools (LPS) with LASID | \$130 |
| | | Non-LPS without LASID | \$400 |

IDEA Camp receives funding from the District and private foundations which seek to make IDEA Camp accessible for all students enrolled in Lowell Public Schools.

- **Lowell Public Schools**

Select this option if you are currently enrolled at the: Bartlett, Butler, Career Academy, Daley, Lowell High, Pyne Arts, Robinson, STEM Academy, Stoklosa, Sullivan or Wang.

- **Non-Lowell Public Schools/Lowell Resident**

Select this option if you live in Lowell and are currently enrolled at a Lowell Private/Charter School, Lowell Tech, or work with Lowell Public Schools or UMass-Lowell.

- **Non-Lowell Public Schools**

Select this option if you are currently enrolled in Chelmsford, Dracut, Tewksbury, Tyngsborough, Westford, or other surrounding town.

****Scholarships** are available, as needed. Email padams@lowell.k12.ma.us who will send you scholarship application.