

IDEA CAMP



SUMMER 2025

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 13th, 2025

LOCATION:
UMass Lowell

TIME: 8:00AM - 3:00PM
DATES: June 23-June 27
& July 7-July 11

Open to Grades 5th - 12th

QUESTIONS?
padams@lowell.k12.ma.us

SCAN
ME



SUMMER 2024 STEM WORKSHOPS

Session I

June 23 - June 27

Carnival Contraptions

Grades 5 - 7

Gamemakers

Grades 5 - 8

Sphero Battle Bots

Grades 8 - 11

Wearable Tech

Grades 8 - 12

Recycling & Upcycling

Grades 8 - 12

Careers in Medicine

Grades 9 - 12

Session II

July 7 - July 11

Crime Science

Grades 5 - 6

STEM Mash Up

Grades 5 - 8

Architecture & Design

Grades 7 - 11

Harvard MEDScience

Grades 9 - 12

Forensics

Grades 9 - 12



SESSION I

June 23rd - June 27th



Carnival Contraptions (Grades 5 - 7)

Students will design and build awesome carnival inventions. spin art machine, and electric carnival games. Students will visit Triton Research Fascility in Chelmsford to see what innovtive projects they are developing.

Gamemakers (Grades 5-8)

Game development has come a long way from Pacman and Pong, yet 2D games still hold their own in the gaming world. In this camp, students will learn the basics of game development that allow video games like Undertale and Terraria to compete with the bigger game studios. Students will learn mechanics and design techniques through the development of multiple games and will have the opportunity to create their own personal games from scratch!

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 Tech (Grades 8 - 12)

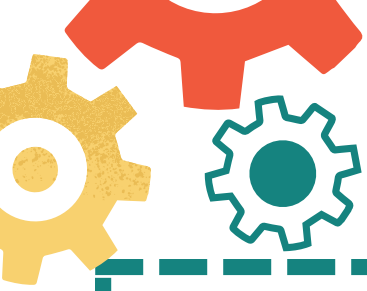
Students will combine creativity and computer science to design, program, and build their very own wearable technology using Arduino boards & various sensors. We will spend time writing block code, learning how to use Arduino boards, and designing circuits to power our technology. At the end of this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

Recycling & Upcycling (Grades 8 - 12)

This course will focus on raising public awareness about environmental issues in Lowell. Participants will learn how to use everyday items to upcycle by using items which would normally be put into our landfills. We will use plastic bottles to make art, turn Cds into clocks, use newspaper to make baskets and mjuch more! This camp will also include a tour of the Plastic Engineering Lab at UMASS Lowell.

Careers in Medicine (Grades 9 - 12)

In this course students will explore various medical professions through hands-on investigations. 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. Students will explore the UMASS Physical Therapy program as well as the Biomedical programs at MCC. Students will also be certified in First Aid and CPR.



SESSION II

July 7th - July 11th

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 Forensics camp.

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!

Architecture & Design (Grades 7 - 11)

Students will learn about the field of structural engineering. Students will design and create a model tree house and wind turbine. Students will complete a 3D kit of their dream house including 3-D furniture. They will use simple tools to complete their designs.

Forensics (Grades 9 - 12)

In this more advanced crime science course students will be exposed to the physical and biological evidence of a crime scene. Students will be introduced to the knowledge and laboratory techniques used by forensic scientists in their analysis of crimes and the role of forensic evidence in criminal and civil proceedings. Topics include DNA Analysis, facial recognition, fingerprinting and cause of death. Students will evaluate a crime scene for evidence. Officers from the Lowell Police Department will be in to talk with the students about crime scene evidence.

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.