STEAM Works Studio

EDISON, NJ

732 800 1977

Summer Camp 2018

(Menlo Park School Schedule)

REGISTER NOW !

https://tinyurl.com/edisoncamps

July 9- 13

	Grades 1-2		Grades 3-4		Grades 5-6		Grades7+	
Morning	Space Bots Robotics	SCRATCH Games	3D Printing & CAD	Optics & Lasers	Raspberry PI	EV3 Basics	Wearable Electronics	Python Coding
Afternoon	Little Doctors	Flying Machines	EV3 Mars Mission	Electronics LAB	Blender Animation	Python Coding	Raspberry PI / Introduction to IOT	Blender Animation

July 16-20

	Grades 1-2		Grades 3-4		Grades 5-6		Grades7+	
Morning	Origami-tronics	Crazy Chemistry	Car Physics	NASA™ Space Engineers	Arduino	Java Fundamentals	Java Fundamentals	Unity Game Design
Afternoon	Super Science	Animal Bots Robotics	Amazing World Of Cells	Python Art	HTML/JavaScript/ CSS	Rocket Science	Soldering Workshop	DIY Smart Robotic Car

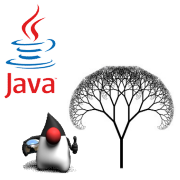|	
Morning	9AM - 12PM
Afternoon	1PM - 4PM
Price	**325$** full day/ **200$** half day. Register for both or either AM or PM Sessions(5% Sibling Discount)
Note:	Some programs (highlighted in GREEN) need outdoor/ground facility
	Parents will have to pack their kids lunch

Questions?

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https://www.facebook.com/SteamWorksStudioEdisonNJ/

SPACE BOTS ROBOTICS		A **ROBOTICS** program with a SPACE theme! Think STAR WARS ™ and Lunar Landers & Mars Rovers! Have a blast using motors, gears, pulleys & motion sensors to create fun space themed builds! Campers will learn about simple machines like gears to create motion! Problem solving & logical thinking with block coding!
LITTLE DOCTORS		Little Doctors camp brings medicine, science & the importance of health and hygiene in an entertaining & fun way! Role play using tools that doctors use in real world, learn how the body works, bones in the body, how the heart works. Use microscopes to see cells! This camp is surely going to inspire our little doctors of tomorrow!
ORIGAMI-TRONICS		Transforming a piece of paper into something else is an experience children can truly appreciate. Watching a child's eyes light up when he completes an origami for kids model is priceless! We add simple coin batteries, colorful LED lights and buzzers to make them come alive!
SCRATCH GAMES		Kids learn to create their own games & fun stories & animations with SCRATCH using "drag and drop programming". SCRATCH, by MIT, helps young kids to learn to think creatively, reason systematically, & work collaboratively. Color coded, intuitive drag & drop block programming, as well as sounds, backdrop images and drawings are used. Get them to code!
SUPER SCIENCE EXPERIMENTS		A practical hands-on science and craft camp for kids to enjoy and explore the amazing world of science! Chemistry experiments with food colors, baking soda and other safe ingredients. Have you made your own Oobleck yet? Paper airplanes, building sturdy bridges, balloon powered cars & many fun STEM activities.
FLYING MACHINES		Make paper planes and rocket craft, colorful straw rockets, balloon powered rockets, bottle airplanes,parachutes! Lots of educational activities forour Campful of aeronautical engineers! A little about history of flight and fun facts in the world of airplanes and rockets!
CRAZY CHEMISTRY		Practical Chemistry is lots of fun! Learn about the chemistry that you encounter every day in your house. Experiment hands-on with real chemical reactions & test different liquids, salt, vinegar. Create your own chromatography applied Tshirt to take home. What is Elctrolysis? Make and eat exothermic ice cream!
ANIMAL BOTS ROBOTICS		Enhance students' curiosity, science and engineering skills with a wonderful introduction to ROBOTICS with LEGO Bricks, Tilt and Motion Sensors, Motors and gears, Block coding. Build these fun Animal Robots controlling them using block coding. Develop spatial thinking, motor skills, creative and lo

Grades 3-4

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Program	Description
3D PRINTING & CAD	CAD and 3D Printing introduces students to basic 3-D modeling. Primitive shapes, measurement, hollow objects & assemblies. Students learn the tools needed to design exciting projects. Students keep the 3-D printed printed models that they make! Save all your work and continue learning more!
OPTICS & ILASERS	This practical Physics program demystifies concepts in Optics (Light as waves, mirrors, lenses, how do lasers work, communication with light etc. with a hands-on learn by making approach. We build projects like Periscopes, Galilean telescopes, Projectors, Virtual Reality Goggles, optical illusions and much more!
CAR PHYSICS	Learn about motion, acceleration, friction. Design your own mousetrap car then race the furthest? How would you make it stop exactly at 10 meters? Design a working Solar car & try racing outside. Learn the art and he science behind air and CO_2 powered dragsters. Fun hands on way of learning & getting interested in Physics!
NASA™ SPACE ENGINEERS	Campers use the Engineering design process & team work to create a satellite in this mission. These satellites will have to survive a fall from 1 meter as well as a straw rocket launch without loosing any parts. Campers will be using science & math. Fun & challenging NASA designed activities that campers will love.
PYTHON ART	Python is a powerful, expressive programming language that`s easy to learn and fun to use. Python Art brings kids into the world of programming. Turtle graphics and tKinter allow students to enjoy making fun graphics, music, game & animation while learning Python language basics. A fun introduction to coding!
EV3 MARS MISSION	Campers learn Robotics, utilizing sensors, gear trains, engineering design, logical thinking & coding, testing and performance, strategy building. This Robotics class is an excellent way to motivate children to get deeper into Robotics while also getting direct goals based outcomes that they can have fun and engagement with.
ELECTRONICS LAB	Young makers explore learning basics of electronic circuits and how electronic components work, which they can then apply to an idea of their own. Students create their project using everyday materials. Students will use breadboards and will learn to build circuits that blink, squeak, tick and whirl.
AMAZING WORLD OF CELLS	A hands-on Biology class where kids will enjoy observing & learning via compound microscope screen projectors. Animal & plant cells, corn stem, lotus root, cabbage leaf, pumpkin ovary, ginger root, honey bee antenna, butterfly wings, sunflower pollen. Research is Yeast alive? Proteins, extracting DNA from your own cells.

Grades 5-6

Raspberry PI		Learn computer hardware fundamentals like RAM, I/O buses, CPU, Cores and computer organization, Operating Systems while assembling a fully functional Raspberry PI Computer. Build and control LED blinking lights, proximity sensors, a Musical organ and many other fun and educational projects. Coding will be in Python.
EV3 BASICS		Ignite student engagement and energize learning through real-life problem solving. Engage your students in Computer Science, Science, Technology, Engineering and Math. Boost learning curves and help all your students reach their curriculum targets. With LEGO® MINDSTORMS® Education EV3 hands-on, minds-on approach the only challenge you'll have is getting your students to leave the classroom!
PYTHON CODING		Python is a powerful, expressive programming language that`s easy to learn and fun to use. We build cool Graphics & Games during the course. We use IDLE as a development tool as well as common Libraries that help with Graphics and Game building like tkinter and pygame to explore the power of Python language!
ARDUINO		Build fun & practical applications using the famous but inexpensive Arduino processor. Smart phone garage door openers, an Electronic kaleidoscope, wireless dog or home security camera that streams videos to YouTube. There is endless applications for Arduinos in Home Automation and the world of Internet of Things!
JAVA FUNDAMENTALS		A Jumpstart to Coding! Begin with a quick programming orientation using the Eclipse environment. Campers will learn to program using best practices and understand what makes JAVA unique and so powerful. JVM, Objects & Classes, Data Types, Arrays, Decision Structures, File I/O & Graphics are introduced!
BLENDER ANIMATION		Blender is a free and open source 3D creation suite. It supports the entirety of the 3D pipeline —modeling, rigging, animation, simulation, rendering, compositing & motion tracking. Thanks to high quality rigging and animation tools, Blender is used for numerous short films, ads, TV series and feature films now.
ROCKET SCIENCE		The scientific, technological, engineering and mathematical foundations of rocketry provide exciting opportunities for authentic hands-on, minds-on experimentation. Learn prediction, data collection and interpretation, teamwork, problem solving, and history of rocketry. Campers engage in building paper/straw rockets, air pressure powered rockets and rocket engine.
HTML/CSS/ JAVA SCRIPT		Learn to code HTML5, JavaScript and CSS to develop your own websites! We will learn how to use JavaScript to control and interact with Webpages you build yourself. Students will learn to customize the look and feel of their websites using CSS and HTML5 while also learning tricks and techniques to make blogs, counters, mobile friendly web pages. JavaScript will allow students to develop interesting games and interactive widgets for their websites!

Grades 7+

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WEARABLE ELECTRONICS		What if your clothing could change color based on mood or respond to your racing heartbeat? Welcome to the world of shoes that can dynamically shift your height, jackets that display when the next bus is coming, and neckties that can nudge your project partner across the room. Build your own Wearable!
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DIY SMART ROBOTIC CAR		Students learn about the ARDUINO UNO microcontroller and its sensor, motor eco-system. Understand and learn to write code for line tracking, obstacle avoidance, IR-remote control and Bluetooth control over their phone with apps on iOS and android. Take your final Robotic Car you built home (add. $50).
RASPBERRY PI & INTRODCTION TO IOT		IOT allows objects to be sensed and/or controlled remotely across existing network infrastructure, creating opportunities for more direct integration of the physical world into computer-based systems, and resulting in improved efficiency, accuracy and economic benefit. When IOT is augmented with sensors and actuators, the technology created encompasses applications such as smart grids, smart homes, intelligent transportation and smart cities. Python & C++ is the programming language used in the projects.
SOLDERING WORKSHOP		Learning how to solder is quite easy and, with a little practice, you will be soldering your own electronics circuits. You can create something new that never existed before. Campers in this class learn about electronics circuits to build LED flashers, a radio transmitter, a touch sensing lamp, a 555 IC based tone generator.
UNITY GAME DESIGN		We will discuss the very basics of coding, including variables, functions and classes and how to use them. We will also discuss using the most common of Unity's built in functions and when to use them and when to write our own. When this session is finished, we will be able to start the introductory project Roll-a-ball, and then onto more advanced projects like "Space Shooter" and "Nightmares".