SUMMER CAMP 2018

STEAM Works Studio - Bridgewater NJ
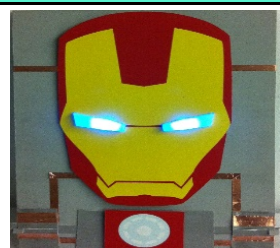
bridgewater@steamworksstudio.com

(908) 864 7824

STEAM Works Studio

Click here to Register   Grade 1-2

	JULY 16 - JULY 20	JULY 23 - JULY 27	JULY 30 - AUG 3	AUG 6 - AUG 10
	MILO THE ENGINEER	**SILLY CIRCUITS**	**WILD LIFE SAFARI**	**FLYING MACHINES**
	ROBOTICS	ELECTRONICS	ROBOTICS	ENGINEERING
9-12p Morning Session				
	Nurture curiosity, science & engineering skills with a wonderful introduction to ROBOTICS with LEGO Bricks, Tilt and Motion Sensors, Motors and gears. MILO pretends to be a super engineer lifting tables, dragging and cleaning up spaces. Block coding is super easy and fun while developing creative & logical problem solving skills!	Learn about Electronics while doing fun crafts. Add LED lights, Motors, Sound to your paper circuits ex Greeting Cards, Paper crafts, Origami projects. Explore the fun world of electronics! Our cool silly circuits with Lights, Sound and movement are bound to nurture the campers interest in basic Electronics!	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 logical problem solving!	Make paper planes and rocket craft, colorful straw rockets, fast moving balloon powered rockets, bottle airplanes, rubberband gliders & your own custom parachutes! Lots of educational activities for our Campful of aeronautical engineers! A little about history of flight and fun facts in the world of airplanes and rockets!

LUNCH (12-1pm) + INDOOR GAMES + STRETCHING EXERCISES

	SCRATCH GAMES	SPACE BOTS	CRAZY CHEMISTRY	ART BOTS
	PROGRAMMING	ROBOTICS	CHEMISTRY	ROBOTICS
1-4p Afternoon Session				
	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!	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!	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!	A LEGO Robotics program with ART & MUSIC Themes! Spirograph Builder, MILO the Drawing Bot! Music Maker, Drum Master. 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!

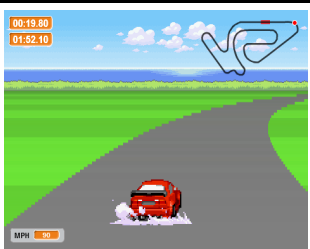# SUMMER CAMP 2018

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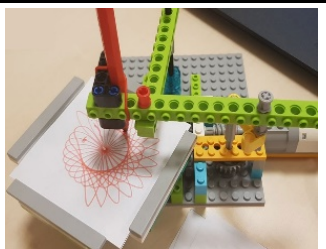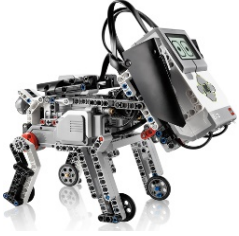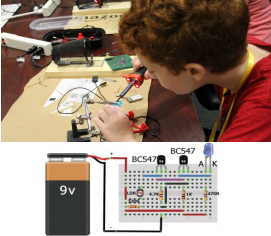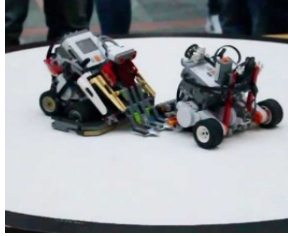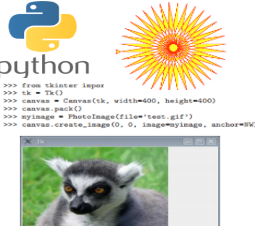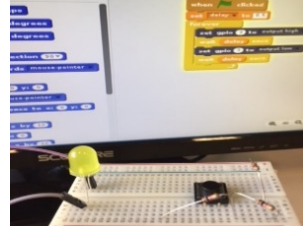
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	JULY 16 - JULY 20	JULY 23 - JULY 27	JULY 30 - AUG 3	AUG 6 - AUG 10
9-12p Morning Session	**EV3 MOVING CREATURES**	**3D PRINTING & CAD**	**ELECTRONICS LAB**	**BATTLE BOTS**
	ROBOTICS	CAD & PRINTING	ELECTRONICS	ROBOTICS
	Campers use Mindstorms EV3 Robots to make moving Creatures like a vicious scorpion that senses your presence, an adorable puppy, 8 legged spider and a caterpillar that slithers. Children run Robotics and different ways of movement using mechanical parts. Teaches Problem solving, block coding, engineering design!	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!	Explore basics of electronic circuits & how electronic components work, which they can then apply to an idea of their own. Create projects using simple electronics like LEDs, batteries, motors. Students use bread boards & will learn to build circuits that blink, squeak, tick & whirl.	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.

LUNCH (12-1pm) + INDOOR GAMES + STRETCHING EXERCISES

	PYTHON ART	EV3 SIMPLE MACHINES	EV3 ART BOTS	SCRATCH 0 MATIC
1-4p Afternoon Session	PROGRAMMING	ROBOTICS	ROBOTICS	PROGRAMMING
	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!	With LEGO® MINDSTORMS® Education EV3 hands-on, minds-on approach campers will learn to build cars with real suspension, steerable crawlers, ball-shooters, grasping robotic arms, and others	Learn about color spectrum, optical illusions & the human vision. Build spin art machines, drawing robots, kinetoscopes (moving pictures). Each day is a completely new fun Robot building and block coding challenge with art or music in mind. Learn about light, color, touch sensors and controlling your robots while building fun robots!	A creative coding exploration class with SCRATCH that allows students to explore how to control Motors, Electronics, react to Sensors from SCRATCH. Can a Tilt sensor allow you to make and play a Super Mario game? Can you make a magic wand that creates colorful magic circles in SCRATCH using the Motion Sensor and Tilt sensor? Control LED lights using SCRATCH and more.

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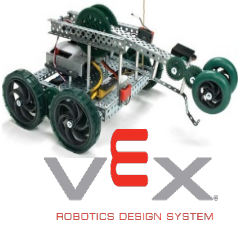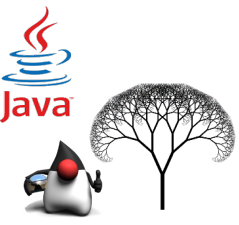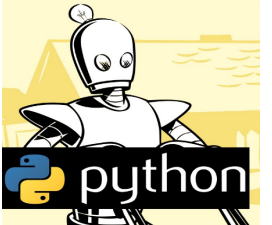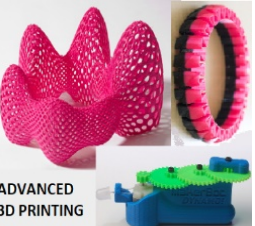**STEAM Works Studio - Bridgewater NJ**
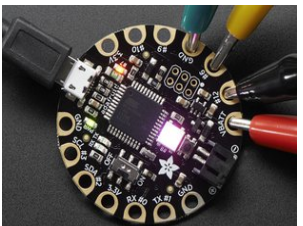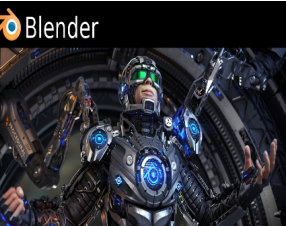
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	JULY 16 - JULY 20	JULY 23 - JULY 27	JULY 30 - AUG 3	AUG 6 - AUG 10
9-12p Morning Session	**VEX ROBOTICS** ROBOTICS Build a fully autonomous robot using the included programmable VEX ARM® Cortex® based Microcontroller & various sensor types. Students learn programming skills such as Robot-C, Robot Design and engineering process. Students can get ready and join teams to participate in VEX competitions organized widely across the nation	**JAVA FUNDAMENTALS** PROGRAMMING 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!	**BUILDING DIY DRONES** CAD & PRINTING Learn principles of flight, what makes things go up against the air & why, basics of 3D Printing & CAD, soldering & electronics. Build a load bearing fully functional Quad Copter which can fly using remote control & as an add-on you can make your copter take aerial photos. Take your drone home!	**PYTHON** PROGRAMMING 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!
LUNCH (12-1pm) + INDOOR GAMES + STRETCHING EXERCISES				
1-4p Afternoon Session	**ADVANCED 3D PRINTING** CAD & PRINTING Campers will explore Coding/Program based methods of generating 3D Printed projects. They will also explore two different advanced 3D printed projects that use electronic components. Ex. A water cooled mini pump that can shoot high speed water and a Hand Crank electricity generator with a LED torch light.	**WEARABLE ELECTRONICS** 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!	**BLENDER ANIMATION** 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.	**ELECTRONICS W SOLDERING** ELECTRONICS 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.