SUMMER CAMP 2017

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GRADE 1-2

STEAM Works Studio

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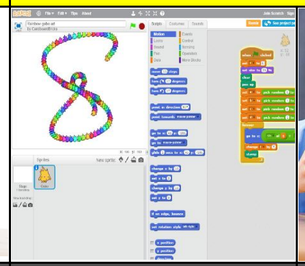
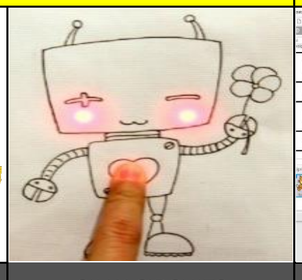
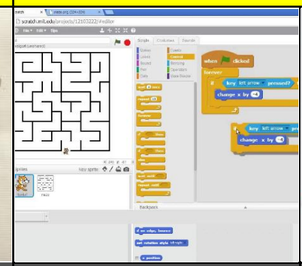
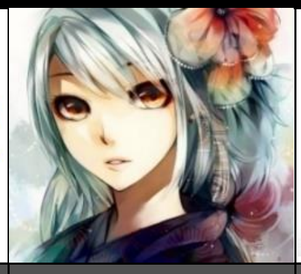
Princeton, NJ, 08540

	19-Jun 23-Jun	26-Jun 30-Jun	5-Jul 7-Jul	10-Jul 14-Jul
MORNING (9-12 PM)				
	MILO THE ENGINEER!	**CRAZY CHEMISTRY**	**SCRATCH GAMES-Coding**	**Amazing World of Cells!**
	Enhance students' curiosity and science and engineering skills with a wonderful introduction to ROBOTICS with LEGO Bricks, Tilt and Motion Sensors, Motors and gears, Block coding while 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!	Practical Chemistry is lots of fun! Learn about the chemistry that you encounter every day in your house and at school. Experiment hands-on with real chemical reactions and test different liquids, salt, vinegar and learn about chemistry. Create your own chromatography applied Tshirt to take home. Make and eat exothermic ice cream! Have you heard about Ooblek?	Kids learn to create their own games & fun stories & animations with SCRATCH using “drag and drop programing”. 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 hands-on Biology class where kids will enjoy observing and learning via compound microscope screen projectors animal and plant cells celery leaf, corn stem, lotus root, cabbage leaf, pumpkin ovary, ginger root, honey bee antenna, butterfly wings, sunflower pollen. Research is Yeast alive? Test for proteins, cell structure & Osmosis, extracting DNA from your own cells.
				
	SHOOT FOR THE STARS	**SILLY CIRCUITS**	**SCRATCH GAMES-Coding**	**SILLY CIRCUITS**
	A LEGO Robotics program with a SPACE theme. Think STAR WARS ™ and Lunar Landers and Mars Rovers! Campers will have a blast using motors, gears, pulleys and motion sensors to create fun space themed LEGO builds! Campers will learn about simple machines like gears to create motion! Develop problem solving and logical thinking with block coding!	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! Squishy circuits are fun Play Dough based circuits with Lights, Sound and movement like a glowing LED light clay Frog or a mean looking Octopus that makes sounds!	Kids learn to create their own games & fun stories & animations with SCRATCH using “drag and drop programing”. 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!	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! Squishy circuits are fun Play Dough based circuits with Lights, Sound and movement like a glowing LED light clay Frog or a mean looking Octopus that makes sounds!

LUNCH TIME (12:00 - 1:00 PM) **Outdoor Blast!** (Soccer, Toss Ball, Frisbee, Hop-Scotch!) - Order a healthy hot delicious meal delivered to our location! Please call for information!

AFTERNOON (1-4 PM)								
	SILLY CIRCUITS	**BAKING IS FUN!**	**ANIMAL ANTICS**	**PIANO, UKELELE & BAND**	**DIGITAL ARTS**	**CRAZY CHEMISTRY**	**CARS, TRUCKS & MORE**	**CALLIGRAPHY-ORIGAMI**
	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? Simple electronics with play dough and paper, paper airplanes, building sturdy bridges, balloon powered cars and many more fun STEM activities.	Baking is a wonderful way to spark a lifelong love of the kitchen in your children. It teaches kids about the processes of cooking: following a recipe (even if you're the one doing it), measuring, combining ingredients and applying heat to create a wonderful transformation. It's messy (and therefore fun!) and the results are hard to resist. Rainbow Cookies, Fruit Tarts, Moon Cycle Cakes and much more!	Enhance students' curiosity and science and engineering skills with a wonderful introduction to ROBOTICS with LEGO Bricks, Tilt and Motion Sensors, Motors and gears, Block coding. Children will be buiding these fun Animal Robots with and then sensing and controlling them using block coding. Develop spatial thinking, motor skills, creative and logical problem solving!	A fun music and movement class where children learn and enjoy playing together Piano, Drums, Wind Instruments in a group. Lots of fun group movement activities while learning to make music together! What are Rumba, Salsa, Swing, Waltz and Polka and Bollywood movements anyway? Learn about Music notes and Chords and have fun playing some nice rhythms and tunes together!	An introduction to learning Japanese form of Graphic arts and many more digital styles using Tablets. Learn to combine multiple brush types using a pressure sensitive digital tablet. Blend watercolour and textures from old textiles and photos to create a mixed media artwork. An experienced teacher trains the whole class step by step while helping each child techniques.	Practical Chemistry is lots of fun! Learn about the chemistry that you encounter every day in your house and at school. Experiment hands-on with real chemical reactions and test different liquids, salt, vinegar and learn about chemistry. Create your own chromatography applied Tshirt to take home. What is Elctrolysis? Make and eat exothermic ice cream! Have you heard about an Ooblek?	Get ready to build! Learn how to use motors, sensors, and simple machines like gears and pulleys to build vehicles, construction trucks, fork lifts, cranes and many more creative projects that move! Make a speedy Go-Cart or a winch crane or a fork lift which senses when a brick payload is put on it! Learn to build and program your robots. Develop problem solving and logical thinking with block coding!	Transforming a piece of paper into something else is an experience both adults and children can truly appreciate. Some kids move up to the harder models very quickly, and they have an amazing capacity to remember the designs as well, so give them heaps of paper, and let them go wild! Watching a child’s eyes light up when he completes an origami for kids model is priceless!

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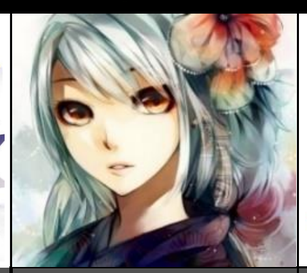
MORNING (9-12 PM)				
	MILO THE ENGINEER!	**Amazing World of Cells!**	**SCRATCH GAMES**	**CRAZY CHEMISTRY**
	Enhance students' curiosity and science and engineering skills with a wonderful introduction to ROBOTICS with LEGO Bricks, Tilt and Motion Sensors, Motors and gears, Block coding while MILO pretends 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!	A hands-on Biology class where kids will enjoy observing and learning via compound microscope screen projectors animal and plant cells celery leaf, corn stem, lotus root, cabbage leaf, pumpkin ovary, ginger root, honey bee antenna, butterfly wings, sunflower pollen. Research is Yeast alive? Test for proteins, cell structure & Osmosis, extracting DNA from your own cells.	Kids learn to create their own games & fun stories & animations with SCRATCH using “drag and drop programing”. 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!	Practical Chemistry is lots of fun! Learn about the chemistry that you encounter every day in your house and at school. Experiment hands-on with real chemical reactions and test different liquids, salt, vinegar and learn about chemistry. Create your own chromatography applied Tshirt to take home. What is Elctrolysis? Make and eat exothermic ice cream!
	LUNCH TIME (12:00 - 1:00 PM)	**Outdoor Blast!** (Soccer, Toss Ball, Frisbee, Hop-Scotch!) - Order a healthy hot delicious meal delivered to our location! Please call for information!		
AFTERNOON (1-4 PM)				
	CALLIGRAPHY/ORIGAMI	**DIGITAL ARTS**	**ANIMAL ANTICS**	**WATER PAINTING**
	Transforming a piece of paper into something else is an experience both adults and children can truly appreciate. Some kids move up to the harder models very quickly, and they have an amazing capacity to remember the designs as well, so give them heaps of paper, and let them go wild! Watching a child’s eyes light up when he completes an origami for kids model is priceless!	An introduction to learning Japanese form of Graphic arts and many more digital styles using Tablets. Learn to combine multiple brush types using a pressure sensitive digital tablet. Blend watercolour and textures from old textiles and photos to create a mixed media artwork. An experienced teacher trains the whole class step by step while helping each child techniques.	Enhance students' curiosity and science and engineering skills with a wonderful introduction to ROBOTICS with LEGO Bricks, Tilt and Motion Sensors, Motors and gears, Block coding. Children will be buiding these fun Animal Robots with and then sensing and controlling them using block coding. Develop spatial thinking, motor skills, creative and logical problem solving!	People are drawn to watercolors due to their vibrant, delicate, and luminous qualities. This fun camp is about experimenting with different color combinations and patterns! Learn about masking, flower printing, water color with coffee filters, stamping, salting, splattering, and stenciling, resist art, water color on canvas. There are so many creative ways to enjoy water painting!

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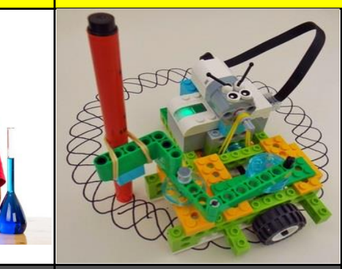
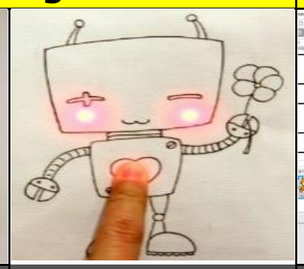
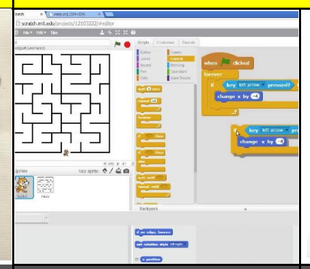
MORNING (9-12 PM)				
	MILO THE ARTBOT	**SILLY CIRCUITS**	**SCRATCH GAMES-Coding**	**CRAZY CHEMISTRY**
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AFTERNOON (1-4 PM)				
	PIANO, UKELELE & BAND	**Amazing World of Cells!**	**MILO IN SPACE!**	**BAKING IS FUN!**
	A fun music and movement class where children learn and enjoy playing together Piano, Drums, Wind Instruments in a group. Lots of fun group movement activities while learning to make music together! What are Rumba, Salsa, Swing, Waltz and Polka and Bollywood movements anyway? Learn about Music notes and Chords and have fun playing some nice rhythms and tunes together!	A hands-on Biology class where kids will enjoy observing and learning via compound microscope screen projectors animal and plant cells celery leaf, corn stem, lotus root, cabbage leaf, pumpkin ovary, ginger root, honey bee antenna, butterfly wings, sunflower pollen. Research is Yeast alive? Test for proteins, cell structure & Osmosis, extracting DNA from your own cells.	LEGO Robotics with a theme of Robots in space. Mars Rovers and Lunar Lander vehicles, lunar orbits and sattelites. Can your robot avoid falling down into these giant craters on Mars? Can they maneuver themselves on uneven terrain? Students use Sensors, Motors, Gears, Pulley systems to make these interesting projects while learning to program with program blocks.	Baking is a wonderful way to spark a lifelong love of the kitchen in your children. It teaches kids about the processes of cooking: following a recipe (even if you're the one doing it), measuring, combining ingredients and applying heat to create a wonderful transformation. It's messy (and therefore fun!) and the results are hard to resist. Rainbow Cookies, Fruit Tarts, Moon Cycle Cakes and much more!

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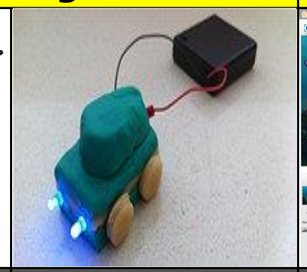
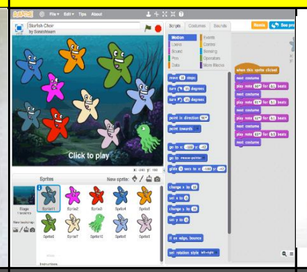
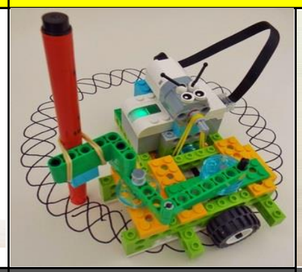
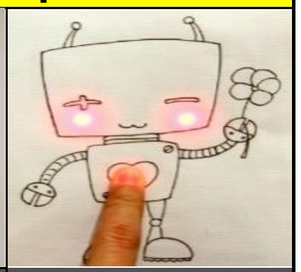
MORNING (9-12 PM)						
	MILO THE CURIOUS BOT	**SILLY CIRCUITS**	**SCRATCH GAMES**	**CRAZY CHEMISTRY**	**MILO THE ARTBOT**	**SILLY CIRCUITS**
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AFTERNOON (1-4 PM)						
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	A hands-on Biology class where kids will enjoy observing and learning via compound microscope screen projectors animal and plant cells celery leaf, corn stem, lotus root, cabbage leaf, pumpkin ovary, ginger root, honey bee antenna, butterfly wings, sunflower pollen. Research is Yeast alive? Test for proteins, cell structure & Osmosis, extracting DNA from your own cells.	An introduction to learning Japanese form of Graphic arts and many more digital styles using Tablets. Learn to combine multiple brush types using a pressure sensitive digital tablet. Blend watercolour and textures from old textiles and photos to create a mixed media artwork. An experienced teacher trains the whole class step by step while helping each child techniques.	Enhance students' curiosity and science and engineering skills with a wonderful introduction to ROBOTICS with LEGO Bricks, Tilt and Motion Sensors, Motors and gears, Block coding. Children will be buiding these fun Animal Robots with and then sensing and controlling them using block coding. Develop spatial thinking, motor skills, creative and logical problem solving!	Baking is a wonderful way to spark a lifelong love of the kitchen in your children. It teaches kids about the processes of cooking: following a recipe (even if you're the one doing it), measuring, combining ingredients and applying heat to create a wonderful transformation. It's messy (and therefore fun!) and the results are hard to resist. Rainbow Cookies, Fruit Tarts, Moon Cycle Cakes and much more!	A fun music and movement class where children learn and enjoy playing together Piano, Drums, Wind Instruments in a group. Lots of fun group movement activities while learning to make music together! What are Rumba, Salsa, Swing, Waltz and Polka and Bollywood movements anyway? Learn about Music notes and Chords and have fun playing some nice rhythms and tunes together!	An introduction to learning Japanese form of Graphic arts, Cartoon characters using Tablets. Learn to combine multiple brush types using a pressure sensitive digital tablet. Blend watercolour and textures from old textiles and photos to create a mixed media artwork. An experienced teacher trains the whole class step by step while helping each child techniques.

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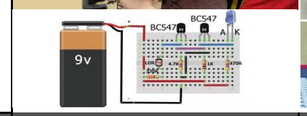
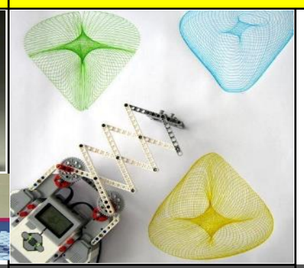
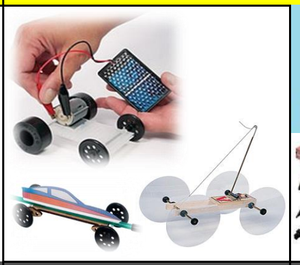
MORNING (9-12 PM)			 					
	EV3 - MARS MISSON	**JAVA MINECRAFT**	**ELECTRONICS LAB**	**STOP MOTION ANIMATION**	**EV3 - ART BOTS**	**OPTICS & LASERS**	**CAR PHYSICS**	**JAVA MINECRAFT**
	Learn about the challenges of creating and operating robots beyond our planet. Build Robots with Infrared, touch and color sensors and overcome terrain obstacles by applying engineering design and cool programming techniques! Applied robotics programs are great for engaging children in math, science, engineering, design, collaboration!	A unique opportunity for young students to learn Java in an exciting & meaningful way. For every item, block or creature they want to add, kids first design the graphics, armor, skin and then add or modify JAVA code to quickly program their new features or change surroundings or character's behavior. Students can then take what programs they build home!	Young makers can explore this exciting and popular field by learning the basics of electronic circuits and how electronic components work, which they can then apply to an idea of their own. They will be able to create their project using everyday materials. Students will use breadboards and will learn to build circuits that blink, squeak, tick and whirl.	You see stop motion animation all the time on TV, movies — even if you don't realize it. This camp offers children ownership and autonomy in the film making process & encourages problem solving. Encourages kids to project & plan out where a story is heading and fosters iteration & experimentation through trying and testing!	Learn about the color spectrum and human vision. Build spin art machines, drawing robots and kinetoscopes (moving pictures). Each day of the camp 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!	This practical Physics program demystifies concepts in Optics (Light as waves, mirrors, lenses, Snell's laws, 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, Laser experiments, optical illusions and much more!	Learn about motion, acceleration, friction. Who can design their own mousetrap car that can race the furthest? How would you make your car stop exactly at 10 meters? Let's design a working Solar car and try racing outside. Learn the art and he science behind air and CO2 powered dragsters. Fun hands on way of learning and getting interested in Physics!	A unique opportunity for young students to learn Java in an exciting & meaningful way. For every item, block or creature they want to add, kids first design the graphics, armor, skin and then add or modify JAVA code to quickly program their new features or change surroundings or character's behavior. Students can then take what programs they build home!
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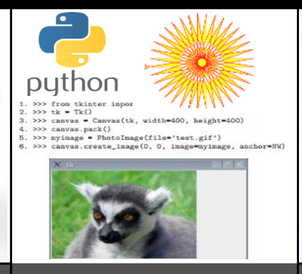
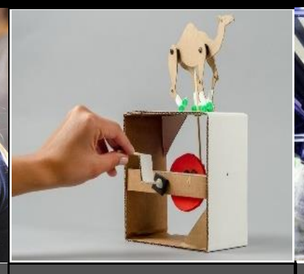
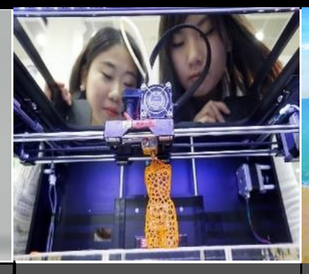
AFTERNOON (1-4 PM)								
	3D PRINTING & CAD	**PYTHON JR**	**FLIGHT SCIENCE**	**CRAZY CHEMISTRY**	**CARDBOARD AUTOMATA**	**3D PRINTING & CAD**	**ACRYLIC PAINTING**	**FLIGHT SCIENCE**
	The CAD and 3D Printing camp introduces students to 2-D sketching and basic 3-D modeling. Primitive shapes, measurement, hollow objects, assemblies Students learn the tools needed to design exciting projects. The last day is for coming up with your own complete design. Students keep the 3-D printed printed models that they make! Save all your work and continue learning more!	Python is a powerful, expressive programming language that`s easy to learn and fun to use. Python for kids easily brings kids into the world of programming. Turtle graphics and tKinter allow students to enjoy making fun graphics, create music and game and animation projects while learning Python language basics. A fun way for a young child to get introduced to coding!	Design and build a variety of flying machines, then launch them! How high can you go? Think gliders, kites, rocket s, and you are on the way to embracing all the engineering fun to be had! Build a complete R/C airplane from scratch with step by step guidance from the teacher. Last day of Camp is reserved for test flights outside! The final airplanes can be purchased with a parts fee!	Practical Chemistry is lots of fun! Learn about the chemistry that you encounter every day in your house and at school. Experiment hands-on with real chemical reactions and test different liquids, salt, vinegar, learn about PH, acids & bases, electro-chemistry . Create your own chromatography applied Tshirt to take home. Explore Atoms, molecules, elements! Make & eat exothermic ice cream!	Cardboard Automata are a playful set of hands-on MAKING projects that allows young children to explore simple mechanical elements such as cams, levers, and linkages, create marble runs or explore creating a moving cardboard sculpture. Cardboard automata use levers, cams, pulleys, cam followers, linkages, and other mechanisms to make unique personalized creations.	The CAD and 3D Printing camp introduces students to 2-D sketching and basic 3-D modeling. Primitive shapes, measurement, hollow objects, assemblies Students learn the tools needed to design exciting projects. The last day is for coming up with your own complete design. Students keep the 3-D printed printed models that they make! Save all your work and continue learning more!	Exploring acrylic painting techniques is a wonderful way to get used to the medium. Any time students play with an art material, they become more comfortable with it & they will approach future projects with confidence. Plus it's just really, really fun to experiment. Get ready to have some Acrylic Paint-fun with us! We use small canvases so that artwork can be taken proudly home!	Design and build a variety of flying machines, then launch them! How high can you go? Think gliders, kites, rocket s, and you are on the way to embracing all the engineering fun to be had! Build a complete R/C airplane from scratch with step by step guidance from the teacher. Last day of Camp is reserved for test flights outside! The final airplanes can be purchased with a parts fee!

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GRADE 3-5

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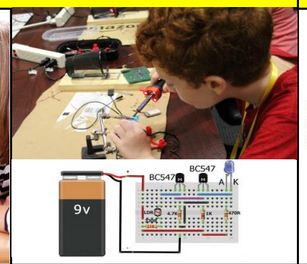
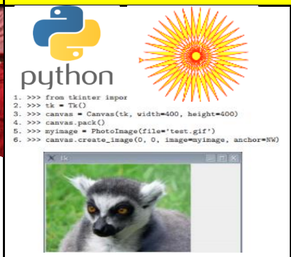
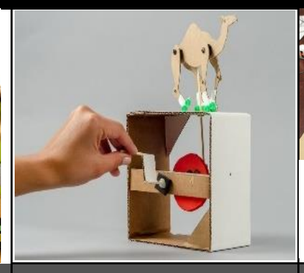
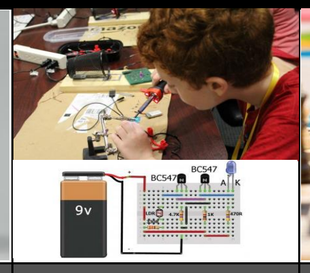
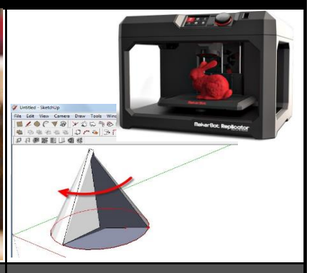
	17-Jul 21-Jul		24-Jul 28-Jul		31-Jul 4-Aug		7-Aug 11-Aug	
MORNING (9-12 PM)								
	Amazing World of Cells!	**ELECTRONICS LAB**	**PYTHON JR**	**CAR PHYSICS**	**ROBOT ZOO - EV3**	**JAVA MINECRAFT**	**OPTICS & LASERS**	**FLIGHT SCIENCE**
	A hands-on Biology class where kids will enjoy observing and learning via compound microscope screen projectors animal and plant cells celery leaf, corn stem, lotus root, cabbage leaf, pumpkin ovary, ginger root, honey bee antenna, butterfly wings, sunflower pollen. Research is Yeast alive? Test for proteins, cell structure & Osmosis, extracting DNA from your own cells.	Young makers can explore this exciting and popular field by learning the basics of electronic circuits and how electronic components work, which they can then apply to an idea of their own. They will be able to create their project using everyday materials. Students will use breadboards and will learn to build circuits that blink, squeak, tick and whirl.	Python is a powerful, expressive programming language that`s easy to learn and fun to use. Python for kids easily brings kids into the world of programming. Turtle graphics and tKinter allow students to enjoy making fun graphics, create music and game and animation projects while learning Python language basics. A fun way for a young child to get introduced to coding!	Learn about motion, acceleration, friction. Who can design their own mousetrap car that can race the furthest? How would you make your car stop exactly at 10 meters? Let's design a working Solar car and try racing outside. Learn the art and he science behind air and CO2 powered dragsters. Fun hands on way of learning and getting interested in Physics!	Learn about robotic locomotion and balancing. Build mechanical versions of your favorite animals like a three legged spider robot or a slithering snake like motion. Understand the mechanics required to make efficient multi-pod movements while learning EV3 Mindstorms coding! Campers will heavily utilize different kinds of sensors as well as remote control!	A unique opportunity for young students to learn Java in an exciting & meaningful way. For every item, block or creature they want to add, kids first design the graphics, armor, skin and then add or modify JAVA code to quickly program their new features or change surroundings or character's behavior. Students can then take what programs they build home!	This practical Physics program demystifies concepts in Optics (Light as waves, mirrors, lenses, Snell's laws, 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, Laser experiments, optical illusions and much more!	Design and build a variety of flying machines, then launch them! How high can you go? Think gliders, kites, rocket s, and you are on the way to embracing all the engineering fun to be had! Build a complete R/C airplane from scratch with step by step guidance from the teacher. Last day of Camp is reserved for test flights outside! The final airplanes can be purchased with a parts fee!

LUNCH TIME (12:00 - 1:00 PM)

Outdoor Blast! (Soccer, Toss Ball, Frisbee, Hop-Scotch!) - Order a healthy hot delicious meal delivered to our location! Please call for information!

AFTERNOON (1-4 PM)								
	AUTO BOTS - EV3	**CRAZY CHEMISTRY**	**3D PRINTING & CAD**	**ART OF HEALTHY COOKING**	**CARDBOARD AUTOMATA**	**ELECTRONICS LAB**	**BEGINNER'S CHESS**	**3D PRINTING & CAD**
	Learn about gear ratios, steering mechanisms and traction. Build dragracers, treaded vehicles and Remote controlled cars. This camp is all about cars and vehicles and the engineering behind brakes and propulsion. We will in the process understand MINDSTOMS EV3 sensors like infrared, touch, color, gear trains, motor control using EV3 programming. Enjoy lots of racing challenges and competitive fun!	Practical Chemistry is lots of fun! Learn about the chemistry that you encounter every day in your house and at school. Experiment hands-on with real chemical reactions and test different liquids, salt, vinegar and learn about chemistry. Create your own chromatography applied Tshirt to take home. What is Elctrolysis? Make and eat exothermic ice cream! Make OOBLEK and bouncy balls!	The CAD and 3D Printing camp introduces students to 2-D sketching and basic 3-D modeling. Primitive shapes, measurement, hollow objects, assemblies Students learn the tools needed to design exciting projects. The last day is for coming up with your own complete design. Students keep the 3-D printed printed models that they make! Save all your work and continue learning more!	In this fun, five-day camp, young chefs will practice essential kitchen skills and master the fundamentals of cooking. Kids will enjoy working alongside campers learning techniques in measuring & baking. Campers are instructed on cleanliness and elements of healthy cooking. Pizza, Muffins Baking, Smoothies, Taco Cookies, Guacomole dips, Fruit Tarts are amongst many fun activities!	Cardboard Automata are a playful set of hands-on MAKING projects that allows young children to explore simple mechanical elements such as cams, levers, and linkages, create marble runs or explore creating a moving cardboard sculpture. Cardboard automata use levers, cams, pulleys, cam followers, linkages, and other mechanisms to make unique personalized creations.	Young makers can explore this exciting and popular field by learning the basics of electronic circuits and how electronic components work, which they can then apply to an idea of their own. They will be able to create their project using everyday materials. Students will use breadboards and will learn to build circuits that blink, squeak, tick, send signals and are touch sensitive!	Chess is an incredibly fun and educational game that requires skill and strategy. It's been around for centuries as a game for intellectuals and scholars; however, playing does require a level of genius -- but that doesn't mean children can't beat adults. The camp teaches students basic rules of the games, opening moves, strategy and lots of practice with the teacher and other campers!	The CAD and 3D Printing camp introduces students to 2-D sketching and basic 3-D modeling. Primitive shapes, measurement, hollow objects, assemblies Students learn the tools needed to design exciting projects. The last day is for coming up with your own complete design. Students keep the 3-D printed printed models that they make! Save all your work and continue learning more!

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	14-Aug 18-Aug	21-Aug 25-Aug	28-Aug 1-Sep
MORNING (9-12 PM)			
	ROBOT OLYMPICS - EV3	**FLIGHT SCIENCE**	**ROBOT ZOO - EV3**
	Learn about sport mechanics, construction for competition and control design. Build robots to compete in races, obstacle courses, and other competitions. This camp teaches a whole set of engineering techniques and design as well as programming with Mindstorms Robots to control Robots using various Sensors and the infra red remote control!	Design and build a variety of flying machines, then launch them! How high can you go? Think gliders, kites, rocket s, and you are on the way to embracing all the engineering fun to be had! Build a complete R/C airplane from scratch with step by step guidance from the teacher. Last day of Camp is reserved for test flights outside! The final airplanes can be purchased with a parts fee!	Learn about robotic locomotion and balancing. Build mechanical versions of your favorite animals like a three legged spider robot or a slithering snake like motion. Understand the mechanics required to make efficient multi-pod movements while learning EV3 Mindstorms coding! Campers will heavily utilize different kinds of sensors as well as remote control!
	ELECTRONICS LAB	**CAR PHYSICS**	**ELECTRONICS LAB**
	Young makers can explore this exciting and popular field by learning the basics of electronic circuits and how electronic components work, which they can then apply to an idea of their own. They will be able to create their project using everyday materials. Students will use breadboards and will learn to build circuits that blink, squeak, tick and whirl.	Learn about motion, acceleration, friction. Who can design their own mousetrap car that can race the furthest? How would you make your car stop exactly at 10 meters? Let's design a working Solar car and try racing outside. Learn the art and he science behind air and CO2 powered dragsters. Fun hands on way of learning and getting interested in Physics!	A unique opportunity for young students to learn Java in an exciting & meaningful way. For every item, block or creature they want to add, kids first design the graphics, armor, skin and then add or modify JAVA code to quickly program their new features or change surroundings or character's behavior. Students can then take what programs they build home!
	LUNCH TIME (12:00 - 1:00 PM)		**Outdoor Blast!**
AFTERNOON (1-4 PM)			
	ACRYLIC PAINTING	**BEGINNER'S CHESS**	**CARDBOARD AUTOMATA**
	Exploring acrylic painting techniques is a wonderful way to get used to the medium. Any time students play with an art material, they become more comfortable with it & they will approach future projects with confidence. Plus it's just really, really fun to experiment. Get ready to have some Acrylic Paint-fun with us! We use small canvases so that artwork can be taken proudly home!	Chess is an incredibly fun and educational game that requires skill and strategy. It's been around for centuries as a game for intellectuals and scholars; however, playing does require a level of genius -- but that doesn't mean children can't beat adults. The camp teaches students basic rules of the games, opening moves, strategy and lots of practice with the teacher and other campers!	Cardboard Automata are a playful set of hands-on MAKING projects that allows young children to explore simple mechanical elements such as cams, levers, and linkages, create marble runs or explore creating a moving cardboard sculpture. Cardboard automata use levers, cams, pulleys, cam followers, linkages, and other mechanisms to make unique personalized creations.
	3D PRINTING & CAD	**ART OF HEALTHY COOKING**	**CHEMISTRY**
	The CAD and 3D Printing camp introduces students to 2-D sketching and basic 3-D modeling. Primitive shapes, measurement, hollow objects, assemblies Students learn the tools needed to design exciting projects. The last day is for coming up with your own complete design. Students keep the 3-D printed printed models that they make! Save all your work and continue learning more!	In this fun, five-day camp, young chefs will practice essential kitchen skills and master the fundamentals of cooking. Kids will enjoy working alongside campers learning techniques in measuring & baking. Campers are instructed on cleanliness and elements of healthy cooking. Pizza, Muffins Baking, Smoothies, Taco Cookies, Guacomole dips, Fruit Tarts are amongst many fun activities!	Practical Chemistry is lots of fun! Learn about the chemistry that you encounter every day in your house and at school. Experiment hands-on with real chemical reactions and test different liquids, salt, vinegar and learn about chemistry. Create your own chromatography applied Tshirt to take home. What is Elctrolysis? Make and eat exothermic ice cream!

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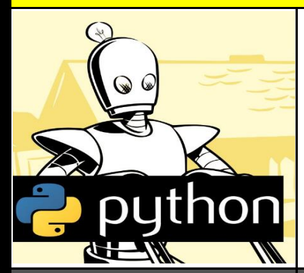
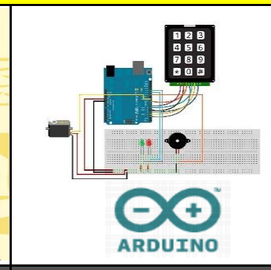
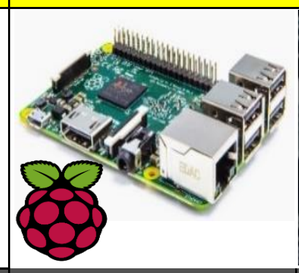
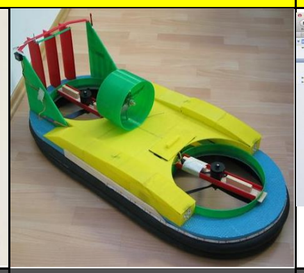
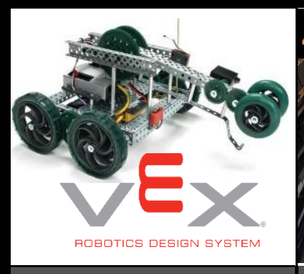
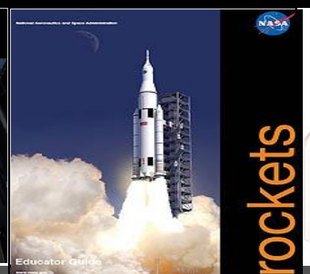
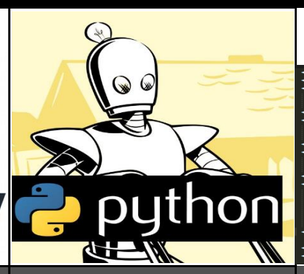
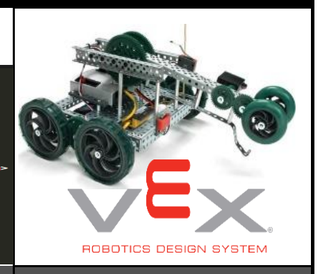
MORNING (9-12 PM)

19-Jun 23-Jun		26-Jun 30-Jun		5-Jul 7-Jul		10-Jul 14-Jul	
							
PYTHON	**ARDUINO**	**RASPBERRY PI**	**VR GAME PROGRAMMING**	**ARDUINO**	**3D PRINTED HOVERCRAFT**	**iOS APP DEV**	**ELECTRONICS & SOLDERING**
Python is a powerful, expressive programming language that`s easy to learn and fun to use. Python for kids easily brings kids into the world of programming. 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!	Build fun & practical applications using the famous but inexpensive Arduino processor. Smart phone door openers, an Electronic kaleidoscope, wireless dog or home security camera that streams videos. There are endless applications for Arduinos in Home Automation & the world of Internet of Things! Learn both programming & applied electronics together!	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 conducted in Python.	Oculus Rift is a hardware platform consisting of a headset and earphones that allows people to experience virtual reality.Learn the how to use the Unity® game engine and tackle the unique design challenges that arise when building for Virtual Reality. You'll learn how the game engine controls everything from moving platforms to artificial intelligence.	Build fun & practical applications using the famous but inexpensive Arduino processor. Smart phone door openers, an Electronic kaleidoscope, wireless dog or home security camera that streams videos. There are endless applications for Arduinos in Home Automation & the world of Internet of Things! Learn both programming & applied electronics together!	The Campers learn about CAD and 3D Printing and build an actual fully functional 3D printed Hovercraft that raises above the ground and can move around with a Remote Control. They also understand, assemble and install R/C control electronics that allows for controlling the Hovercraft. This is the perfect STEM Camp for Makers to learn a variety of skills!	In this step-by-step introductory camp course learn to use XCode, Objective-C and Swift programming language to build your own simple games ex. Tic-Tac-Toe, Maze, Web Blogs and other useful apps. For joining with Web applications Databases and REST is introduced. **PLEASE NOTE**: **This course requires students to bring in their own apple laptop.**	Learning how to solder is quite easy and, with a little practice, you will be soldering your own electronics circuits. Soldering is very rewarding and satisfying. You can create something new that never existed before. Campers in this class learn about electronics circuits and various components typically used to build LED flashers, a radio transmitter, a touch sensing lamp, a 555 IC based tone generator and much more!

LUNCH TIME (12:00 - 1:00 PM) — **Outdoor Blast!** (Soccer, Toss Ball, Frisbee, Hop-Scotch!) - Order a healthy hot delicious meal delivered to our location! Please call for information!

AFTERNOON (1-4 PM)

							
VEX ROBOTICS	**BLENDER**	**ITS ROCKET SCIENCE**	**3D PRINT QUADCOPTER**	**UNITY Video Game Design**	**PYTHON**	**Javascript/HTML5/Website**	**VEX ROBOTICS**
Build a fully capable, autonomous robot using the included programmable VEX ARM® Cortex®-based Microcontroller and 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.	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 being used for numerous short films, ads, TV series and feature films now. Campers learn use Blender to make awesome 3D Projects!	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.	Learn principles of flight, what makes things go up against the air and why, basics of 3D Printing and CAD. As an application 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. Learn the electronics required, principles of flight, programming the controller. KIT SOLD SEPARATELY	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".	Python is a powerful, expressive programming language that`s easy to learn and fun to use. Python for kids easily brings kids into the world of programming. 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!	Learn to code HTML5, JavaScript & CSS to develop your own websites! Learn JavaScript to control & interact with Webpages you build yourself. Students will learn to customize the look & feel of their websites using CSS & HTML5 while also learning techniques to make blogs, counters, mobile friendly web pages. JavaScript allows students to develop interesting games & interactive widgets!	Build a fully capable, autonomous robot using the included programmable VEX ARM® Cortex®-based Microcontroller and 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.

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MORNING (9-12 PM)

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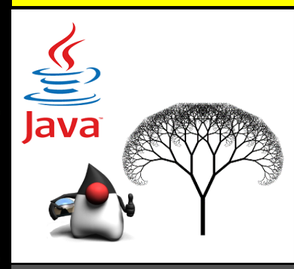	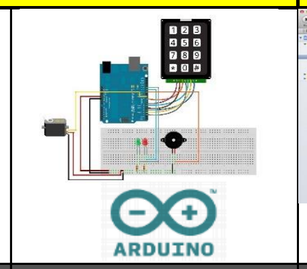		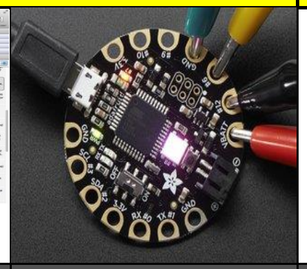	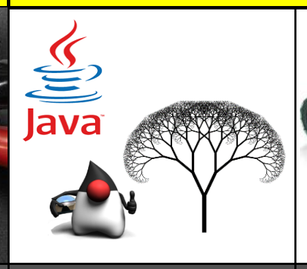		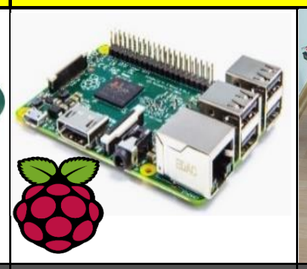	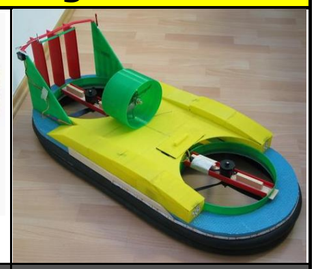
JAVA FUNDAMENTALS	**ARDUINO**	**iOS APP DEV**	**WEARABLE ELECTRONICS**	**JAVA FUNDAMENTALS**	**VEX ROBOTICS**	**RASPBERRY PI**	**3D PRINT HOVERCRAFT**
A Jumpstart to Coding! Begin with a quick programming orientation using the Eclipse environment. Campers will learn to program using best practices and understand what makes JAVA unique and so powerful. Basics about JVM, Objects & Classes, Data Types, Arrays, Decision Structures, File I/O, and SWING Graphics will be introduced!	Build fun & practical applications using the famous but inexpensive Arduino processor. Smart phone door openers, an Electronic kaleidoscope, wireless dog or home security camera that streams videos. There are endless applications for Arduinos in Home Automation & the world of Internet of Things! Learn both programming & applied electronics together!	In this step-by-step introductory course learn to use XCode, Objective-C and Swift programming language to build your own simple games ex. Tic-Tac-Toe, Maze, Web Blogs and other useful applications. Databases and REST is introduced. **PLEASE NOTE**: This course requires students to bring in their own apple laptop.	What if your clothing could change color to complement your skin tone, respond to your racing heartbeat, or connect you with a loved one from afar? 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 from across the room.	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. Basics about JVM, Objects & Classes, Data Types, Arrays, Decision Structures, File I/O, and SWING Graphics will be introduced!	Build a fully capable, autonomous robot using the included programmable VEX ARM® Cortex®-based Microcontroller and 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.	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 conducted in Python.	The Campers learn about CAD and 3D Printing and build an actual fully functional 3D printed Hovercraft that raises above the ground and can move around with a Remote Control. They also understand, assemble and install R/C control electronics that allows for controlling the Hovercraft. This is the perfect STEM Camp for Makers to learn a variety of skills!

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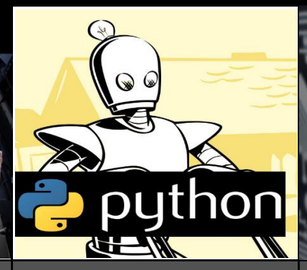
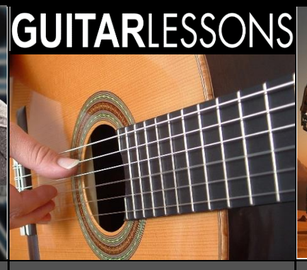
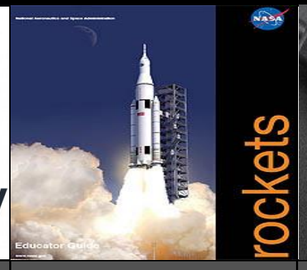
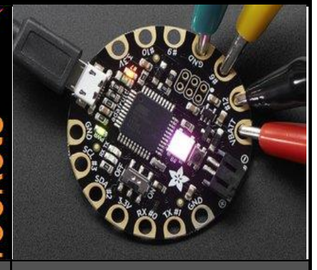
AFTERNOON (1-4 PM)

							
3D PRINT QUADCOPTERS	**BLENDER**	**PYTHON**	**VR GAME PROGRAMMING**	**GUITAR CHORDS/BENDING**	**UNITY Video Game Design**	**ROCKET SCIENCE**	**WEARABLE ELECTRONICS**
Learn principles of flight, what makes things go up against the air and why, basics of 3D Printing and CAD. As an application 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. Learn the electronics required, principles of flight, programming the controller. KIT SOLD SEPARATELY	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 being used for numerous short films, ads, TV series and feature films now. Campers learn use Blender to make awesome 3D Projects!	Python is a powerful, expressive programming language that`s easy to learn and fun to use. Python for kids easily brings kids into the world of programming. 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!	Oculus Rift is a hardware platform consisting of a headset and earphones that allows people to experience virtual reality.Learn the how to use the Unity® game engine and tackle the unique design challenges that arise when building for Virtual Reality. You'll learn how the game engine controls everything from moving platforms to artificial intelligence.	This Camp is for beginners to get a step by step idea of notes and basic chords and guitar theory. How to tune a guitar, how to do simple plucking, read and follow guitar tablature, simple string bending. We will all do lots of practice together as only then can you make some interesting music! Serious students only and its highly encouraged to bring in your own guitar.	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".	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.	What if your clothing could change color to complement your skin tone, respond to your racing heartbeat, or connect you with a loved one from afar? 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 from across the room.

SUMMER CAMP 2017

REGISTER ONLINE at www.steamworksstudio.com

CALL US at 1(844) 265 9880

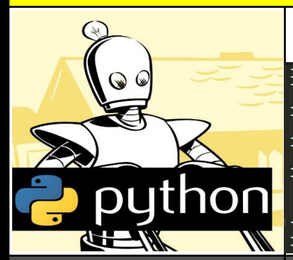
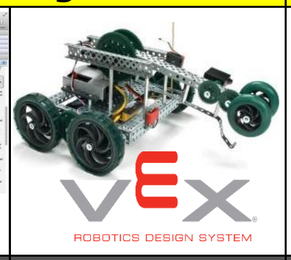
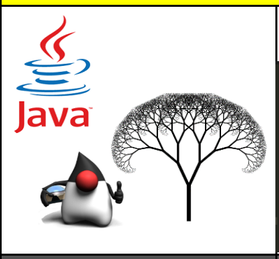
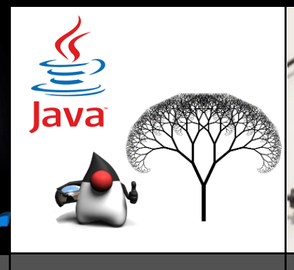
Click here to register now

GRADE 6-8

STEAM Works Studio

135 Village Blvd.

Princeton, NJ, 08540

	14-Aug 18-Aug		21-Aug 25-Aug		28-Aug 1-Sep	
MORNING (9-12 PM)						
	PYTHON	**Javascript/HTML5/Website**	**iOS APP DEV**	**VEX ROBOTICS**	**JAVA FUNDAMENTALS**	**Javascript/HTML5/Website**
	Python is a powerful, expressive programming language that`s easy to learn and fun to use. Python for kids easily brings kids into the world of programming. We build cool Graphics & Games during the course. We use IDLE as development tool as well as common Libraries that help with Graphics and Game building like tkinter and pygame.	Learn to code HTML5, JavaScript & CSS to develop your own websites! Learn JavaScript to control & interact with Webpages you build yourself. Students will learn to customize the look & feel of their websites using CSS & HTML5 while also learning techniques to make blogs, counters, mobile friendly web pages. JavaScript allows students to develop interesting games & interactive widgets!	In this step-by-step introductory course learn to use XCode, Objective-C and Swift programming language to build your own simple games ex. Tic-Tac-Toe, Maze, Web Blogs and other useful applications. Databases and REST is introduced. **PLEASE NOTE**: This course requires students to bring in their own apple laptop.	Build a fully capable, autonomous robot using the included programmable VEX ARM® Cortex®-based Microcontroller and 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.	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. Basics about JVM, Objects & Classes, Data Types, Arrays, Decision Structures, File I/O, and SWING Graphics will be introduced!	Learn to code HTML5, JavaScript & CSS to develop your own websites! Learn JavaScript to control & interact with Webpages you build yourself. Students will learn to customize the look & feel of their websites using CSS & HTML5 while also learning techniques to make blogs, counters, mobile friendly web pages. JavaScript allows students to develop interesting games & interactive widgets!
	LUNCH TIME (12:00 - 1:00 PM)				**Outdoor Blast!**	
AFTERNOON (1-4 PM)						
	BLENDER	**JAVA FUNDAMENTALS**	**ARDUINO**	**VR GAME PROGRAMMING**	**PYTHON**	**Unity Game Programming**
	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 being used for numerous short films, ads, TV series and feature films now. Campers learn use Blender to make awesome 3D Projects!	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. Basics about JVM, Objects & Classes, Data Types, Arrays, Decision Structures, File I/O, and SWING Graphics will be introduced!	Build fun & practical applications using the famous but inexpensive Arduino processor. Smart phone door openers, an Electronic kaleidoscope, wireless dog or home security camera that streams videos. There are endless applications for Arduinos in Home Automation & the world of Internet of Things! Learn both programming & applied electronics together!	Oculus Rift is a hardware platform consisting of a headset and earphones that allows people to experience virtual reality.Learn the how to use the Unity® game engine and tackle the unique design challenges that arise when building for Virtual Reality. You'll learn how the game engine controls everything from moving platforms to artificial intelligence.	Python is a powerful, expressive programming language that`s easy to learn and fun to use. Python for kids easily brings kids into the world of programming. We build cool Graphics & Games during the course. We use IDLE as development tool as well as common Libraries that help with Graphics and Game building like tkinter and pygame.	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".

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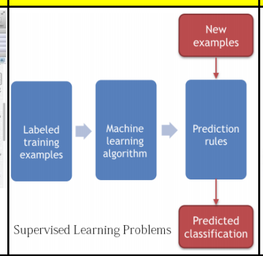
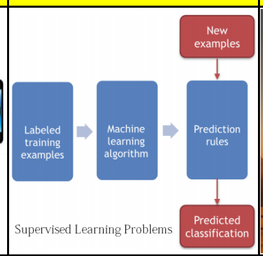
MORNING (9-12 PM)									
	iOS App. Dev	**Machine Learning (Python)**	**Internet of Things**	**Machine Learning (Python)**	**Unity Game programming**	**Java Advanced**	**iOS App. Dev**	**VR Game Programming**	**Alexa Move It**
	In this step-by-step introductory course learn to use XCode, Objective-C and Swift programming language to build your own simple games ex. Tic-Tac-Toe, Maze, Web Blogs and other useful applications. Databases and REST is introduced. **PLEASE NOTE**: This course requires students to bring in their own apple laptop.	Learn about machine learning by making end-to-end actual projects that cover steps from loading data, summarizing data, evaluating algorithms and making predictions. Learn about useful Python libraries like scipy, numpy, sklearn, matplotlib, pandas that are often used in ML. We will delve into linear regression & ensemble methods.	Can a car talk to a house? In the future, your car might tell your house that you are five miles away and please turn on the lights and warm up the house. Imagine water and gas pipes that notified your town when they had a leak. Or sensors in the woods that notified firefighters of a fire. We will use Arduino and Cloud hosted services (coding) to build some!	Learn about machine learning by making end-to-end actual projects that cover steps from loading data, summarizing data, evaluating algorithms and making predictions. Learn about useful Python libraries like scipy, numpy, sklearn, matplotlib, pandas that are often used in ML. We will delve into linear regression & ensemble methods.	We will discuss 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. We will be able to start the introductory project Roll-a-ball, and then move onto more advanced projects like "Space Shooter".	Java advanced camp builds up on a students basic Java skills to teach higher level Java constructs ex. recursion, fractals, polymorphism, useful data structures, sorting and searching, making a connection with a Web Server etc. A very useful course for high school students to utilize for projects. **PLEASE NOTE:** Bring your own laptop. Carry projects home!	In this step-by-step introductory course learn to use XCode, Objective-C and Swift programming language to build your own simple games ex. Tic-Tac-Toe, Maze, Web Blogs and other useful applications. Databases and REST is introduced. **PLEASE NOTE**: This course requires students to bring in their own apple laptop.	Oculus Rift is a hardware platform consisting of a headset and earphones that allows people to experience virtual reality.Learn the how to use the Unity® game engine and tackle the unique design challenges that arise when building for Virtual Reality. You'll learn how the game engine controls everything from moving platforms to artificial intelligence.	Can you control Robots, Home electronics, circuits, cameras and other "things" by just talking to them? Learn, make and explore the amazing world of Amazon's Echo and its programming interface to control what you want! Learn on the way about lambdas and coding that will help you get there!
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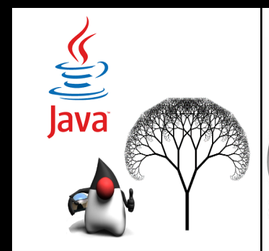
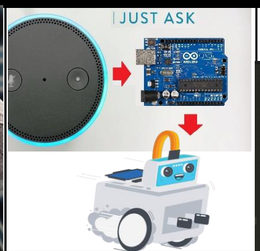
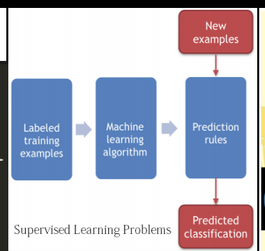
AFTERNOON (1-4 PM)									
	Java Advanced	**Internet of Things Jr.**	**iOS App. Dev**	**Alexa Move it!**	**VR Game Programming**	**Alexa Move it!**	**Javascript/HTML5/Web**	**Machine Learning (Python)**	**Learn Python Programming**
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