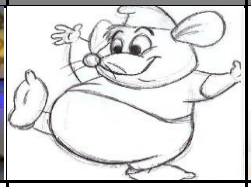
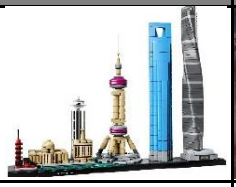
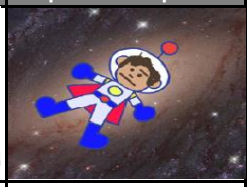
SUMMER CAMP 2022

STEAM WORKS STUDIO
700 Central Park Ave, Scarsdale, NY

Grade K-2

	July 5-8	July 11-15	July 18-22	July 25-29	Aug 1-5	Aug 8-12	Aug 15-19	Aug 22-26
9-12p Morning Session	**Simple Circuits**	**Cartooning: Disney Characters**	**Crazy Chemistry**	**Nanobot Robotics: Amazing Animals**	**Little Artists**	**Nanobot Robotics: Moving Machines**	**I am an Architect**	**Space is the place**
								
	Learn electronic fundamentals in this hands-on DIY circuitry course. Campers will construct and decorate glowing paper and wooden crafts while learning about different types of electrical energy sources, how batteries work, conductivity, switches, LEDs and more!	Learn the art of cartooning! Using just a pencil and paper, students will learn to draw their favorite Disney characters in a step-by-step manner using basic shapes and guidelines. Learn fun techniques, useful for your future artist!	Embrace your inner mad scientist in this Crazy Chemistry camp! Conduct zany, safe experiments to learn about elements, chemical properties, and reactions! Like the combination of baking soda and vinegar, this camp is sure to be a blast!	A robotics program with a jungle theme? Think Mowgli and his animal friends! Monkey around using motors, gears, pulleys, and sensors, then make your creation come to life using drag-and-drop programming!	Get creative in this hands-on Little Artists camp! Campers will refine their motor skills while learning color chemistry and a little art history too! They're sure to create beautiful and unique works of art to be cherished for years to come. Make your artwork come alive using LED lights!	A robotics program with a transportation theme! Use motors, gears, pulleys, and sensors to build motorcycles, trucks, helicopters, and airplanes! Then bring them to life with drag-and-drop programming!	Learn to build castles, bridges, and towers in this exciting architecture camp! Throughout the week campers will learn about famous architectural structures including the Eiffel Tower, Empire State Building, and the Shard, among many others! Build different types of bridges & structures. Understand why? Build using our real mini brick and mortar kits!	Space is the place! Learn all about the wonders and mysteries of what lies beyond Earth. Study planets, black holes, stars, and discuss whether alien life is possible. Campers will complete many fun and engaging STEAM projects including LED star circuitry and a robotic Mars rovers!
	LUNCH (12-1p)							
1-4p Afternoon Session	**Nanobot Robotics: Moving Machines**	**Dinomite!**	**Scratch: Arcade Games**	**Fly High**	**Scratch: Minecraft**	**Little Doctors**	**Under the Sea**	**Going Green**
	A robotics program with a transportation theme! Use motors, gears, pulleys, and sensors to build motorcycles, trucks, helicopters, and airplanes! Then bring them to life with drag-and-drop programming!	Obsessed with dinos? Sign up for this Dinomite camp where we will learn about dinosaurs; how they evolved, where they roamed, what tey ate, and why the're not extinct. Participate in an excavation to uncover myseterious fossils and build an eruptive volcano!	SCRATCH by MIT is a great way for young students to learn coding fundamentals. SCRATCH employs colorful drag-and-drop coding blocks to create classic games such as pong and pacman!	From helicopters to rockets, planes to hot air balloons, learn all about flying machines! Construct spinning light-up "helicopters", a robotic rocketship, and motorized airplane to take home!	SCRATCH by MIT is a great way for young students to learn coding fundamentals. SCRATCH employs colorful drag-and-drop coding blocks to create customized games with Minecraft characters!	Little Doctors camp presents medicine, science, and the importance of health & hygiene in an entertaining way! Role play with tools doctors use in the real world to learn how the body works. This camp will surely inspire our little doctors of tomorrow!	Learn about life under the sea! Campers will have fun studying different sea creatures through a variety of STEM activities. Build and program a robotic dolphin, create a glowing LED angler fish, and experiment with oil and water to learn how marine mammals stay warm.	Going Green teaches children to love and respect the Earth and all she provides. In this camp we will learn about the environment, sustainability, and threats to our planet. Campers will delight in making their own bird feeders and creating toys out of recycled materials!

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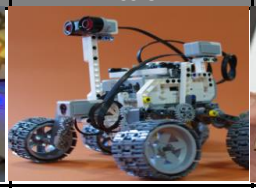
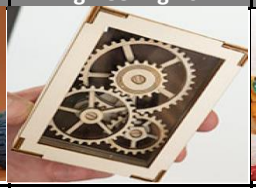
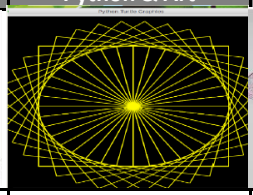
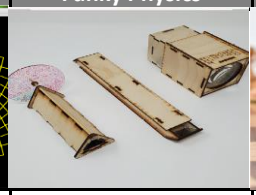
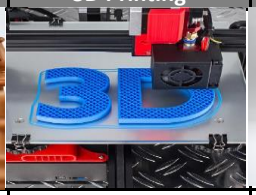
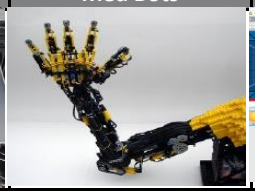
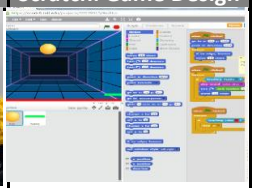
SUMMER CAMP 2022

STEAM WORKS STUDIO
700 Central Park Ave, Scarsdale, NY

Grade 3-5

	July 5-8	July 11-15	July 18-22	July 25-29	Aug 1-5	Aug 8-12	Aug 15-19	Aug 22-26
9-12p Morning Session	**Crazy Chemistry**	**Scratch: Game Design**	**Simple Circuits**	**EV3 Robotics: Mars Mission**	**Engineering 101**	**Soldering 101**	**Stop Motion**	**Drone Coders**
								
	Embrace your inner mad scientist in this Crazy Chemistry camp! Conduct zany, safe experiments to learn about elements, chemical properties, and reactions! Like the combination of baking soda and vinegar, this camp is sure to be a blast!	SCRATCH by MIT is a great way for young students to learn coding fundamentals. SCRATCH employs colorful drag-and-drop coding blocks to create customized animations and classic games such as pong and pacman!	Learn electronic fundamentals in this hands-on circuitry course. Campers will construct and decorate glowing paper and wooden crafts while learning about different types of electrical energy, how batteries work, conductivity, and more!	Using EV3 LEGO Mindstors as a platform, campers will build and code rovers to complete space themed missions! Navigate craters, tow stranded vehicles, and collect soil samples while learning about engineering, sensors, and programming!	Learn engineering fundamentals through the construction of simple contraptions! Campers will design, create, and decorate moving machines out of laser cut parts. Build a spinning dancer, marble maze, and more!	Learn how to solder in this introductory camp. Create unique sculptures and understand simple electronic components and circuit reading to construct simple electronic projects ex. Water alarm system, DIY laser, a little piano. A great way to get kids interested in the world of electronics!	Lights, camera, action! In Stop Motion camp, you call the shots! Learn how to use stop motion software, frames per second, sculpt clay characters, and storyboard your mini movie in this awesome and creative course. Crafting clay characters, LEGO mini figures to painted backdrops, story boarding & scripts!	Practice programming using a drone as a platform! Coding is done using Blockly (for beginners) or Python (for students with some experience). Execute pin-point turns, loops, camera control, gyro turns. Take part in missions like going to an exact place & knocking down pins!
	LUNCH (12-1p)							
1-4p Afternoon Session	**HTML Web Design**	**EV3 Robotics: Recyclops**	**Python & Art**	**Funky Physics**	**Chess**	**3D Printing**	**Med Bots**	**Scratch: Game Design**
								
	Learn to code HTML to develop your own websites! Campers will learn to customize the look & feel of their websites using CSS & HTML5 while also learning techniques to make engaging blogs and mobile friendly web pages.	Using EV3 LEGO Mindstorms as a platform, campers will build and code rovers to complete climate change challenges! Capture solar power and design a rover that will collect ocean debris while learning about engineering, sensors, and programming!	Campers will be introduced to the basic principles of Python programming in a step-by-step structured manner. Practical examples and exercises are employed to make fundamental concepts clear, with an emphasis on graphics, colors & animations.	Learn about light, optics, and illusions in this Funky Physics camp! Create your own perisope, kaleidoscope, and telescope while learning about concepts such as light as waves and colors, convex vs concave lenses, and reflection. This camp puts the FUN in Funky Physics!	Checkmate! Learn chess fundamentals including the rules of the game and its pieces as well as strategies. Students will play each other while a teacher mentors. At the end of the week we'll host a friendly tournament!	Learn the art of 3D Printing and Computer Aided Design! Using SketchUp as a platform, campers will create a series of fun, custom objects we'll print for them to keep! Design your own chess pieces, houses, skyscrapers, and more!	Build robots that can change and save lives! Learn to create a prosthetic arm, program a medicine dispensing bot, even craft a robot to build an artificial bone! How can you use robots for people who cannot walk or lift themselves? Have fun and learn invaluable skills at Med Bot camp!	SCRATCH by MIT is a great way for young students to learn coding fundamentals. SCRATCH employs colorful drag-and-drop coding blocks to create customized animations and classic games such as pong and pacman!

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SUMMER CAMP 2022

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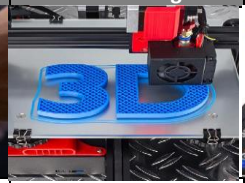
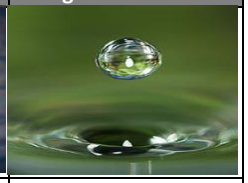
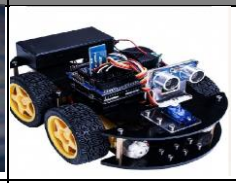
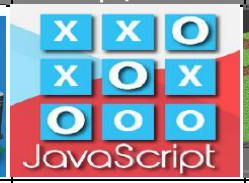
Grade 6-8

	July 5-8	July 11-15	July 18-22	July 25-29	Aug 1-5	Aug 8-12	Aug 15-19	Aug 22-26
9-12p Morning Session	**Electronics Lab** Explore electronic fundamentals while building awesome projects such as circuits that can blink, squeak, play music, tick and whirl! Campers will learn about electronic components and how to read schematics.	**HTML Web Design** Learn to code HTML to develop your own websites! Campers will learn to customize the look & feel of their websites using CSS & HTML5 while also learning techniques to make blogs and mobile friendly web pages.	**Photoshop** Campers will learn to use basic Photoshop tools to create works of art including galaxy scenes, money manipulation, and face swap photos! The projects will build upon each other in complexity and will focus on the use of vivid colors and textures.	**Wearable Tech** Learn to code using Circuit Playground as a platform. Turn on, blink, rotate, and color customized LEDs! Use sensors to display acceleration and volume. Build a pedometer or voice activated pendant. The possibilities are endless!	**3D Printing**  Learn the art of 3D Printing and Computer Aided Design! Using SketchUp as a platform, campers will create a series of fun, custom objects we'll print for them to keep! Design your own chess pieces, houses, skyscrapers, and more!	**Solar Tech** Go green! Campers will learn electronic fundamentals while building their own solar powered phone charger! Construct devices with real world applications such as a solar powered "cheetah chaser" or a zero cost solar light bulb!	**Python Coding** Campers will be introduced to the basic principles of Python programming in a step-by-step structured manner. Practical examples and exercises are employed to make fundamental concepts clear, with an emphasis on graphics, colors & animations	**Digital Art Studio**  A soup to nuts camp covering Photography, Digital Art Work on tablets, tools such as Adobe Animate, Photoshop and production process for Video and Audio. Youtube, instagram and websites! Create your own themes and work on them with expert guidance from our Digital Arts specialists.
LUNCH (12-1p)								
1-4p Afternoon Session	**Funky Physics** Learn about light, optics, and illusions in this Funky Physics camp! Create your own perisope, kaleidoscope, and telescope while learning about concepts such as light as waves and colors, convex vs concave lenses, and reflection. This camp puts the FUN in Funky Physics!	**Python Coding** Campers will be introduced to the basic principles of Python programming in a step-by-step structured manner. Practical examples and exercises are employed to make fundamental concepts clear, with an emphasis on graphics, colors & animations	**Arduino Car**  Learn electrical engineering fundamentals through the creation of your own robotic smart car! Campers will assemble and code an RC vehicle that can line follow and avoid obstacles!	**Java** Learn JAVA fundamentals! This course employs many practical examples and exercises that make programming concepts clear. An emphasis is given to examples that use graphics, colors & animations to keep students engaged, curious and interested.	**Spy Gear** Cue the Mission Impossible theme! Over the course of a week, campers will learn about lasers, electronic components, and how to read schematics while creating a DIY laser and alarm system, perfect for catching intruders!	**Wonder World of IoT** Make IoT Applications like switching on/off an LED from your phone, or via webpage, a home security camera on your mobile phone triggered by motion! Long duration Temp & Humidity monitor connected to the internet. Learn coding with Python while exploring electronics. Maybe your idea can be the next cool startup!	**Javascript / AI Games**  Websites world wide utilize a versatile and easy to learn language called JavaScript. Learn coding in JavaScript, HTML5 and CSS to build cool interactive graphical games with interactivities. AI adds intelligence such as the computer playing a Tic-Tac-Toe game against you! Incorporate AI to take your game to the next level!	**Blender 3D** 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 rigginer and animation tools, blender is used for numerous short films, ads, TV series and feature films now.

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