

STEM Inventions with Little Bits (Ages 7-12)

STEM stands for Science, Technology, Engineering, and Math. In this invention workshop, students enhance their skills with a great new system of discovery called Little-Bits. Little-Bits is a platform of easy-to-use electronic building blocks that empower you to invent anything, from your own remote controlled car, to a smart home device. The Bits snap together with magnets, no soldering, no wiring, and no programming is needed. In our program, students will begin with several inventions designed to let them figure out how the components go together, and then they will design and create their own inventions. **Please bring snack and a drink.**

ZZZ640A0 | \$109

M,T,W,R/Aug. 7-10, 9 am – 12 pm, Room a321

App Attack! Make Your First Game App (Ages 8-12)

Take the first steps into the world of mobile app design and customize your own game app! Using a specialized app & game development tool, students will explore the world of web-based (HTML5) mobile apps. In addition to learning the basics of mobile app design and game development, you will also see firsthand how the world of App publishing functions. Student-created apps will be accessible on a private site and can be played on any mobile device or computer. Publishing to App Stores not included. No prior experience is necessary and students do not need to own a smartphone or tablet to take the class. Students will work in pairs or teams for most of the program. Returning students can create more advanced projects that build on previous years. **Please bring a snack and drink.**

ZZZ639A0 | \$139

M,T,W,R/Aug. 7-10, 9 am – 12 pm, Room A317

Introduction to LEGO and Vex IQ Robotics (Ages 9-14)

Have fun building, designing, and programming robots with Lego Mindstorms & VEX IQ robotic systems. Build robot projects and creations that use working sensors and motors. LEGO MINDSTORMS (EV3 & NXT) combines the unlimited versatility of the LEGO building system with an intelligent microcomputer brick and intuitive drag-and-drop programming software. VEX IQ offers unique building challenges, a Wii – style remote control, and unlimited possibilities. No prior robotic or programming experience is necessary for this introductory course. Please bring snack and a drink.

ZZZ640B0 | \$109

M,T,W,R/Aug. 7-10, 12:30 pm – 3:30 pm, A321

Code Breakers (Ages 12-14)

Calling all future coders, programmers, & designers! Learn the basics of coding languages like HTML, JavaScript, and CSS through a series of web projects and design challenges each day and be on your way to becoming the next tech star! Whether you want to be the next Mark Zuckerberg or the high school student who just made \$1 million dollars for programming in his bedroom, this course has the essentials you need to begin your journey. Projects will be available on a Black Rocket website to share with friends and family. Students will work in pairs or teams for most of the program. Returning students can create more advanced projects that build on previous years. **Please bring a snack and drink.**

ZZZ639B0 | \$139

M,T,W,R/Aug. 7-10, 12:30 pm – 3:30 pm, Room A317

NEW - Super Science STEM Challenges (Ages 7-12)

In this engineering camp, you will have fun integrating Science, Technology, Engineering, and Mathematics by building and designing a wide range of gadgets, inventive machines, towers, crazy contraptions, and more. Projects include: the Great Tower Challenge, the Standing Cup Pyramid Challenge, Egg Drop Challenge, Wooden Coaster Challenge, Structural Engineering Challenge, Magnificent Marble Machine, and a host of other fun contests designed to bring out the engineer in you! **Please bring snack and a drink.**

ZZZ640C0 | \$109

M,T,W,R/Aug. 14-17, 9 am – 12 pm, Room A321

Minecraft© Designers (Ages 8-12)

If you love the game Minecraft, and always wanted to design your own world, this class is for you! Learn how to create a custom map, the basics of creating 3D models using a new software to design your very own objects, how to build with Redstone and Command blocks, and create custom textures for you to import at home or share with friends. To access their project at home students, must own a PC/MAC version of Minecraft. Tablet, phone, and game console versions of Minecraft are not compatible. Parent email address is required to use 3D modeling software. Students will work in pairs or teams for most of the program. Returning students can create more advanced projects that build on previous years. **Please bring a snack and drink.**

ZZZ639C0 | \$139

M,T,W,R/Aug. 14-17, 9 am – 12 pm, Room A317

BATTLE-BOT BUILD-A-THON (AGES 7-12)

Have fun building and creating using your imagination. Campers will construct a complex Battle-Bot robot from our huge Robotix modular collection. Enjoy working together to build a robot that can clobber its opponent in our sumo-style robot ring. Make your robot as huge and destructive as you'd like as the goal of this competition is to flip your opponent over, pull pieces off, or ram it right out of the arena. Then get ready to modify your design to compete in our robot tug-o' war, Olympic competition, soccer match, and more. Campers will learn engineering principles in a fun, hands-on atmosphere. All campers will take home a Hexbug Warrior. **Please bring a snack and drink.**

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M,T,W,R/Aug. 14-17, 12:30 pm – 3:30 pm , Room A321

Minecraft© Modders (Ages 8-12)

Use your favorite game to learn the basics of modding and foundations of programming. Learn scripting and logic statements as you create your first mods! Introductory coding will also be taught through a simulated environment inspired by Minecraft. Student projects will be available on a password protected Black Rocket website to share with friends and family. To access their project at home students must own a PC/MAC version of Minecraft. Tablet, phone, and game console versions of Minecraft are not compatible. Students will work in pairs or teams for most of the program. Returning students can create more advanced projects that build on previous years. **Please bring a snack and drink.**

ZZZ639D0 | \$139

M,T,W,R/Aug. 14-17, 12:30 pm – 3:30 pm, Room A317

Make Your First Video Game! (Ages 8-12)

If you love playing video games, this is the camp for you! Make your first video game in this one-of-a-kind class that shows you the keys to designing your first 2D platformer game. Conceptualization, play experience, level design, graphics, sounds, and simple coding are just some of the concepts that we'll explore. No prior experience necessary, just a desire to have fun. Student created games will be available on a password protected Black Rocket website to share with friends and family. Games are only compatible on PC computers, Mac versions can be created after the program for \$15.00 conversion fee. Students will work in pairs or teams for most of the program. Returning students can create more advanced projects that build on previous years. **Please bring a snack and drink.**

ZZZ639E0 | \$139

M,T,W,R/Aug. 21-24, 9 am – 12 pm, Room A317

LEGO Star Wars & Motorized Machines (Ages 7-12)

LEGO enthusiasts, have fun building your favorite adventure from a Star Wars galaxy that is far, far away. Star Wars projects will vary depending on availability from LEGO headquarters, but will include age-appropriate new models and the best of some of the older models. Campers will also build a wide assortment of non-Star War motorized LEGO Education machines and create their own projects that illustrate science concepts. This is a stimulating enrichment program and not geared as a teacher-driven education class. All campers will take home a LEGO Star Wars project. **Please bring a snack and drink.**

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M,T,W,R/Aug. 21-24, 9 am – 12 pm, A321

NEW – Architecture and Engineering Challenges (Ages 7-12)

Architecture and engineering are the focus of this program. You will work to design and build towers, balsa bridges and a wide array of Lego and K'nex™ architecture projects. Have fun building famous architectural designs from around the world including Adam Tucker Reed's famous brick structures including the Empire State Building, Imperial Hotel, Whitehouse, Imperial Hotel, Flat Iron Building, Seattle Space Needle, and more. You will also build bridges, towers, and other structures using a variety of materials and learn about structural engineering principles and forces that act on structures. Develop science, technology, engineering and mathematics skills in a fun, hands-on environment. **Please bring snack and a drink.**

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M,T,W,R/Aug. 21-24, 12:30 pm – 3:30 pm, Room A321

Video Game Animation! (Ages 12-14)

Take your game design skills to the next level by creating and animating your own character sprites, objects, and backgrounds. Start with a name, develop the character's personality, signature moves, special powers, and a story line. Finish with a fully animated character to be used in your very own game. Students do not need any prior experience in game design, animation, or sketching. Student-created games will be available on a password protected Black Rocket website to share with friends and family. Games are only compatible on PC computers; Mac versions can be created after the program for \$15.00 conversion fee. Students will work in pairs or teams for most of the program. Returning students can create more advanced projects that build on previous years. **Please bring snack and drink!**

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M,T,W,R/Aug. 21-24, 12:30 pm – 3:30 pm, Room A317