

Summer 2019 3rd-6th Descriptions

3rd Grade-6th grade:

| Title | Curricula | Description |
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| Ahhh... the Power of Math | Mathematics | See math come alive in business and engineering scenarios. Participants step into the shoes of a magician, a factory production scheduler, an architect, a flight engineer or a hardware engineer and see math in action in the real world of science, technology and engineering. |
| Animating with SCRATCH | Computer Programming | Watch your imagination come to life! Discover the amazing world of computer programming through animation. You will gain foundational coding skills while you express your unique ideas. You will leave with a new appreciation of the endless possibilities of code and the limitless fun it has to offer! |
| Competitive Robotics | WeDo 2.0 Robotics | Competitive Robotics will provide real-world opportunities for experienced roboteers to use the skills they gained and challenge themselves to step up their understanding and application of robotics and coding. |
| Engineering Design Challenges | Engineering | Campers will be presented with a new challenge each day. Participants will use their ingenuity to find a way to meet the challenge. We will focus on the engineering design process, imagine, plan, build, test, and reimagine. This fun and engaging curricula will leave the participants proud of the way they brought their creativity, collaboration, communication, and critical thinking skills together! |

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| Engineering our Environment | Environmental Engineering | Earth's environment makes life possible. Environmental engineers focus on ways to sustain and improve the natural environment. This program provides a hands-on exploration of our environment. Participants take a fresh look at air and water; fight the evil pollution; work as environmental detectives to investigate the 3 Rs of green living - reduce, reuse and recycle. Participants conduct experiments to understand the Greenhouse Effect, air and water pollution; witness water's vanishing color act!; make air catchers, a model greenhouse and an environmental souvenir. |
| Engineers Take Flight! | Aerospace Engineering | As the next frontier of asteroid mining and space travel unravels, let's understand what it takes to get off the ground and fly. This program delves into the foundations of aerospace technologies. Participants face off with powerful air; experience its drag and pressure; learn about laws of motion and how they impact flying things. Participants create parachutes, design force rockets, understand air foils, and make keepsake model planes. |

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| Entrepreneur Exhibition | Entrepreneurship | The great inventions and technologies that shape our worlds today are a result of successful market launches. STEM and innovations need business ethos and acumen to become a desirable product or service. It is never too early to educate young children in the process of designing, launching and running a new business. In this special series of programs, our goal is to inspire the next generation of STEMpreneurs! The total package includes: STEM + Innovation + Entrepreneurship In Build to Market Challenges, participants will work like innovators in designing a robot to solve an engineering or entertainment problem, build its prototype and then, like an entrepreneur, they will explore ways to market their product. |
| Environ Investigations | Environmental Investigations | Let your child explore the great outdoors and learn about the world of nature around them. This program focuses on local ecosystems and your child's place within the system. Through hands on activities your child learns about bird migration, pollution, the life cycle of plants and bugs, and how humans can help. |
| Escape Room DIY | STEM Combination | Sharpen you STEM skills as you work towards escaping! Use your ingenuity, STEM skills, as well as your imagination to develop your own escape room. Spend the last day inviting others to escape from your challenge while you escape from others! |

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| Game Making with SCRATCH | Computer Programming | This is an exciting introduction to computer programming. Curriculum is designed to engage young minds and help them advance from being merely computer users to creators. Participants learn the basics of creating using computers through some unplugged activities followed by drag-and-drop programming; Various tools are utilized including code.org and Scratch programming. They apply their programming skills to create simple, yet engaging video games. |
| Hitting the Funny Bone! | Biomedical Engineering | Biomedical engineering, a new emerging field of engineering, deals with the application of engineering principles and design concepts to medicine and biology for healthcare purposes. Closing the gap between engineering and life sciences, this is an exciting intersection of two classic industries: health and mechanical engineering. Utilizing our innovative STEM For Kids Way™ of taking complex real life applications and making them a child's play, participants in this program will explore three organ systems in human body: Skeletal System – supports and protects the body while giving it shape and form Muscular System – enables movement through the contraction of muscles. Respiratory System – provides the body with oxygen. Engaging activities include the The bare bones on Joints!, Grippy Test, Get a Mask! and Prosthetics Engineering Design Lab™. |

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| KODU Game Making Lab | KODU Game Making Lab | <p>We experience computers and its digital creations every day. It is not enough to just know how to use a computer anymore. Creating, developing computational thinking and ability to personalize & customize applications to solve your problems are needed skills too. Participants work with leading edge tools and learn to program and express their creativity as video games. Participants will work collaboratively like video game designers to design, develop and test their own video games. Participants will gain basic coding skills.</p> |
| Maker's Movie Magic | Multiple STEM curricula | <p>Invent new ways for your favorite movie characters to take on their challenges! Design a space ship that can travel through galaxies, create a biosphere for Mars, make tools to help you survive like Mowgli, design a vehicle for the Incredible's family, and much more!</p> |
| Minecraft Aquanauts | Minecraft STEM and Coding | <p>Minecraft has entered the underwater worlds! Campers will start with creating their own aquarium, move into building an observatory for Aquanauts, and finish up with an ocean habitat! The amazing world of Aquanauts will be brought right to their screens. Minecrafters will work collaboratively to build unique and inspiring underwater worlds!</p> |

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| Minecraft Coding | Minecraft: Coding Conundrum | Create a game in a fantasy castle, code your imagination and watch your Minecraft agent go to work. Take your Minecraft builds and games to the next level. Minecraft coding will be introduced as well as complex challenges for experienced coders! Don't miss out on this one of a kind experience! |
| Minecraft Engineering | Minecraft Engineering | Participants will work together to bring their imaginations to engineering challenges. Campers will learn how to use code to make a Minecraft Agent work for them. Collaborative engineering should result in pretty amazing island community by the end of the week! |
| Robotic Challenges | WeDo 2.0 Robotics | Take WeDo 2.0 Robotics to the next level! Build and code robots that meet daily challenges! Battle for top ranking amongst your campmates! Every day will bring new challenges, new fun, and exciting unexpected results. |
| Sustainability Mission | Sustainability Engineering | Did you know that each of us tosses a car worth of trash every year! While clean drinking water is taken for granted in industrial economies, globally, 1 in 9 people lack access to it. Sustainable engineering deals with designing systems and processes that use our natural resources responsibly. In this program, participants will explore sustainability at home as they design a sweet sustainable home for their client. The clients include the TechMex family, the McMassive family, the ScoutOut family and the Flower family. Clients have their unique lifestyle habits and are assigned at random. Children will get into "trash talk" and experience Garbology, engineering design of a warm home, rain barrels and critical thinking. Which design will win the Certificate of STEM Sustainable Housing |

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| Taste of STEM | Multiple STEM curricula | Participants will experience a vast number of different STEM activities. The fun will stretch from robotics, to coding, to engineering challenges, to virtual reality! Discover how important STEM is to improving our world and what piece of the puzzle you love the most! |
| Underwater Exploration | Marine Biology | Explore the fascinating world of marine animals and the incredible ecosystems they spend their time creating and thriving in. Discover just how humans can learn from the intricate interdependent relationships the marine animals have with both their environment and fellow marine habitants. Have a blast with hands on activities and travel into the world of a marine biologist |
| Virtual Reality: Underwater Exploration | Virtual Reality | Virtual reality (VR) is taking arts, gaming, movies and technology to a whole new frontier. VR involves creating 3D computer generated immersive environments that allow the player / viewer to manipulate objects or perform a series of actions. Instead of just playing a VR game or watching a VR movie, make one! In this program, students will design and create their VR games and/or animations. |
| Website Design | Website Design: Google Sites | Over 700,000 search queries are made on Google every minute! These searches lead us to various websites. Businesses, organizations, families and individuals develop websites to create their unique digital presence on the web. What does it take to create one? In this beginner workshop, participants learn how to create a basic website from scratch. |

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| <p>Welcome to Robotics</p> | <p>WeDo 2.0 Robotics</p> | <p>Participants learn the basics of computer programming and apply it to design robots to complete various challenges. They will design, build and program Lego® WeDo2.0robots. Creations include simple rovers and mechanical contraptions. The program specifically designed for young students, bundles designing, building, problem-solving, computer programming, critical thinking, collaboration and communication into one exciting program.</p> |
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