ARROW MONTESSORI SCHOOL

-2018-

Summer Program

at Arrow Montessori

Engineering For Kids brings science, technology, engineering, and math (STEM), to kids ages 5 - 14 in a fun and challenging way through classes, camps, and workshop. We are proud to inspire children to build on their natural curiosity by teaching engineering concepts through hands - on learning.

Wk1

Junior Inventor's Workshop: Toys have always inspired crea vity in children. In this weeklong camp, young en- gineers will learn the concepts of Mechanical Engineering and put them into ac on to become expert Toy Mak- ers as they design and build their very own toys.

Mechanical Engineering: During the Mechanical Engineering camp, students design, create, test, and re ne a variety of machines and mechanical systems. Students learn basics of uid mechanics, simple machines, and other design and engineering concepts while construc ng roller coasters, egg-drop vehicles, and an incredibly fast air powered dragster.

Wk2

Junior Aerospace Engineering: This class introduces our youngest engineers to fundamental concepts of aircra and spacecra design. Through open and focused explora on, students explore and construct airplanes, rock- ets, helicopters, and more.

Aerospace Engineering: During our Aerospace Engineering class, students use the Engineering Design Process to design, create, test, and re ne a variety of ying machines. They construct a shock absorbing system designed to protect two marshmallow astronauts in a lunar vehicle, create their own air-powered rockets, and assemble a hot air balloon model that actually takes ight!

Wk3

Junior Civil Engineering: Put on your hard hats engineers and join us for the Engineering of Ci es! During this week, students work hard to apply their knowledge of construc on build their very own city from the ground up. From roads and tunnels to buildings and skyscrapers, students discover that no job's too tough for an engi- neer.

Civil Engineering: How do our communi es become wonderful places to live, work, grow up and play? Dur- ing this week, students are challenged to design and build their own scale-model city. Students will learn how to dra a Master Plan and study various land uses and the real world engineers play in building a city in order to make them be er places to live.

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Wk4

Junior Environmental Engineering: Are you ready to get down and dirty searching for solu ons to some of our biggest environmental problems? In Junior Environmental, students ponder some truly "hot" environmental issues. Students save endangered animals, help plants grow and create protec on from the sun's heat. By in- ves ga ng natural process, we discover ways that engineers can be inspired by the world around us to take on all sorts of challenges.

Environmental Engineering: During our Environmental Engineering camp, students use the Engineering Design Process to design, create, test, and re ne basic solu ons related to alterna ve energy and environmental is- sues. They learn principles behind cra ing e cient wind-powered machines and discover how those machines can be used to help reduce the use of fossil fuels. During the culmina ng project, students test di erent materi- als to discover which ones most e ec vely clean up a er an oil spill.

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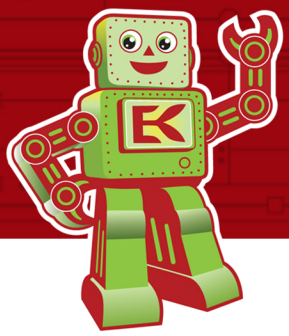

Wk5

Junior Marine & Electrical Engineering: What causes something to sink or oat? How can engineers help explore and protect the ocean below? During this week, students explore the concepts of marine engineer- ing and mechanics, harnessing the power of water, and discovering designs that help us make the impossible, possible.

Marine & Electrical Engineering: During the Marine Engineer- ing classes, students use the Engineering De- sign Process to design, create, test, and re ne several types of marine based devices and vehicles. Students construct working prototypes that teach and reinforce the concepts of above water transporta on, under- water explora on, and harnessing the power of water. They gain exposure to careers in naval, ocean, and marine engineering.

Wk6

Junior Chemical Engineering: The Junior Chemical Engineering classes introduce our youngest engineers to fundamental concepts of solids, liquids, and solu ons. Students inves gate the proper es of several crazy con- coc ons and make their own samples of bubbles, play dough, ub, and more.

Forensic Engineering: Using principles of inves ga ve science and forensic engineering, students will analyze evidence in the simulated crime scene using math, science, and technology. Students will inves gate speci c DNA sequences that code for certain physical characteris cs such as eye and hair color. Embark on a new jour- ney each day to decipher cryp c clues and biological codes.

Wk7

Junior Robo cs: Play Soccer: This week is a perfect mixture of fun and learning to program. Using LEGO® bricks, students build several projects such as a goal kicker and a goal keeper. Students will learn how to program and operate their crea ons using a laptop computer.

EFK Robo cs Academy: The EFK Robo cs Academy o ers hands-on, minds-on robo cs curriculum supported by the latest research and innova on. Students will construct authen c, open-ended designs to meet real-world challenge. Robo cs challenge teaches important skills in founda onal mathema cs, engineering, programming, problem-solving, crea ve thinking, and computa onal thinking.

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