



## **Jr. Robotics Engineer**

**Grades 1- 3**

Discover the world of robots inspired by science fiction writers like Isaac Asimov and Karl Capek. Build an **OWI EM4Robot** and a **Rookie Solar Racer v2** to take home. Learn about robot programming with Mad Science's Baby Steps and Sandwich programming. Program a **Lego Mindstorms® Robot** to navigate through an obstacle course.

### **Gear it up**

Students learn what a robot is, the history of robotics, what robots are used for, and how they are changing our lives. Students are introduced to the mechanics of robotics. Activities involve learning about gears, torque, and experimenting with pneumatics. Students are challenged to build a three speed transmission using Lego Technic. Students also learn about robotic arms with the OWI robotic arm trainer.

### **Shocking, isn't it!**

Our robotic cadets learn all about the juice that makes modern robots go, that is, electricity. Students experiment with the force of electromagnetism by building their own electromagnets. Then they learn how the electromagnetic force is used to move robots by building an electric engine from scratch.

### **Real Life Robotics**

Campers get hands-on experience with real robots. Students learn about the use of R.O.V robots through the operation of OWI soccer robots and wireless Lego Spybots. Campers learn about the development of sensors and artificial intelligence while experimenting with OWI Spyder III, OWI Rockit and Hyper Peppy robots. The basics of programming a robot will be experienced first hand using Mad Science's Baby Steps and the Sandwich programming activities.

### **Robots In Action**

Our Robotic Engineers are put to the test in this day's activities. Each team is outfitted with a Lego Mindstorm Robotic Invention System and challenged to build a robot from scratch. Each team decides on the particular propulsion system and sensor systems best suited to the challenge they accept.

### **Robot Challenge** (only in 5 day camps)

Teams finish building the robot that they designed and are challenged to program the robot using the laptop at camp. The robot must be able to evaluate sensory input and make the right decisions or the mission might take a turn for the worse. Are you up for this challenge? Do you have what it takes to be a Robotic Engineer? There is only one way to find out this summer, join the Mad Science Jr. Robotic Engineers' camp.

Revised 1/2/2018