

# Afterschool Club STEM Engineer projects - Robotics/Programming/Renewable Energy

Kindergarten through 5th Grade

Fall session (8 weeks) – Sept - Dec (\$210)

Winter/Spring Session (10 weeks) - February-May )\$230)



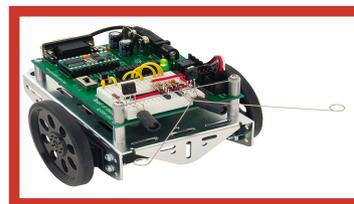
## K – 2<sup>nd</sup> Grade

### Remote-Control Rovers/Structures/Renewable Energy

- Learn the basics of electronics and the functions of circuit components.
- Build fun devices such as flying saucers, music players, lie detectors, motion detectors, alarm systems, sirens, am radios and more.
- Learn how remote-control transmitters and radio receiver's work
- Learn how gears and motors work
- Participate in fun Rover races and Disc shooting contests.
- Learn about the different types of bridges and how they are built to support load.
- Build and investigate various types of bridges (Beam, Truss, Cantilever, suspension, etc.)
- Build Solar model homes and learn about renewable and non-renewable forms of energy.

**Location: School class room -TBA**

*These materials are neither sponsored nor endorsed by the Board of Education of Montgomery County, the superintendent of schools, or this school.*



## 3<sup>rd</sup> - 5<sup>th</sup> Grade

### Adventures in Robotics:

- Explore the field of autonomous robotics while working in teams to build and program autonomous robots.
- Learn about electrical circuit theory, electrical components, programmable microcontroller interfacing, servo motors, photo-resistors, infrared sensors and transmitters.
- Participate in team-based robotics challenges
- Learn to write simple robotics control programs in Pbasic, enhance math skills and develop problem solving skills.
- Build real circuits while creating and programming photo- and obstacles sensing robots.
- By the end of the course, students will have developed robots that can sense their environment and navigate using tactile, light-sensitive phototransistors, and infrared sensing.



How much: Fall Session \$210 participant/Session (all materials included)  
Winter/Spring Session \$230 participant/Session (all materials included)

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