University of Maryland Extension’s

4-H WeDo Robotics Program

**What is WeDo?** – WeDo is a LEGO product that allows elementary aged youth to build robots using LEGO pieces and then program the robot to perform specific function using an icon based software. It engages them in hands-on technology experiments that focus on science, mathematics, social studies and language concepts. The basics of programming, engineering, and constructing are all part of the process.

**How does it work?** – The robot is built by following a full color pictorial building guide. Builds will include typical LEGO bricks, sensors, a motor and a few other specialty pieces. One specialty piece is a USB Hub which will be used to connect your robot to the computer, once connected, special software will be used to tell the robot how to function through basic programming.

**What will my child learn?** – Students are encouraged to use creativity, teamwork and problem solving, which are great lifelong skills that youth can acquire.

Learning Values:
- Language and literacy: narrative and journalistic writing, storytelling, explaining, interviewing and interpreting
- Mathematics: measuring time and distance; adding, subtracting, multiplying, dividing, estimating, randomness; using variables
- Science: working with simple machines, gears, levers, pulleys; transmission of motion
- Technology: programming; using software media; designing and creating a working model
- Programming, using software media, designing and creating a working model

**How much will it cost?** – Total cost to join the club is $15. There is a onetime yearly 4-H fee of $10 and a $5 club fee. If you are currently a Wicomico County 4-Her or when you become a 4-Her you will only have to pay the $10 fee once, and then still be able to join multiple clubs.

**Who leads the youth?** – University of Maryland Extension approved 4-H adult volunteers are selected and screened in order to work with any of our youth programs. You could be the next leader!

**How often will the club meet?** – This depends on the club leader, but typically a club meets once a month for about 2 hours.

**What are the age requirements?** - We are recommending youth between the ages of 5-11. Older youth are welcomed as well. Some of our younger youth may need a little more assistance when it comes to building and programming so parent evolvement is encouraged.

For More information contact Amy Rhodes at 410-749-6141 x108 or arhodes1@umd.edu

University of Maryland Extension, Wicomico County Office

University of Maryland Extension programs are open to all citizens without regard to race, color, gender, disability, religion, age, sexual orientation, marital or parental status, or national origin.
Interested in Being a 4-H Robotics Volunteer Leader

4-H is always looking for willing volunteers and great teachers!

Will you train me how to use the equipment? YES! Amy Rhodes will schedule a time convenient to your schedule or set up a group training to teach you how to build, program and give you a informative look at the curriculum and how to run your club.

Are there resource materials? YES! WeDo provides a wonderful self guided curriculum that allows you the ability to teach right from the book. So need to struggle with trying to figure out what to do for each meeting, by following the curriculum you will see how easy it can be.

What kind of support will I have? Amy Rhodes will assist in any club needs and robotics education.

What does the WeDo kit consist of?

The complete package of LEGO Education WeDo includes:

- 158 LEGO brightly colored elements, including gears, and levers
- One LEGO USB Hub connects directly to a PC, standard, XO or Classmate laptop to allow control of hardware input (tilt and motion sensors) and output (motor), thereby bringing models to life
- One motor, one motion sensor and one tilt sensor
- Drag and drop icon based software that provides an intuitive and easy-to-use programming environment suitable for beginners and experienced users alike
- Activity pack CD-Rom provides up to 24 hours of instruction and includes 12 activities based on four themes: Soccer, Adventure Stories, Wild Animal Park and Mechanical Toys. Running alongside programming software, activities are introduced via animations. Teacher notes and glossary are also included.

Leaders can use WeDo to teach a variety of subjects represented through 12 activities supported with teaching curriculum. However, WeDo is designed to be easily adapted for use in other ways to help young minds understand a wide range of subject matter.

Easy-to-use, drag-and-drop software designed to work with the WeDo Construction Set. The software, powered by LabVIEW, is icon-based and provides an intuitive programming environment. The software automatically detects motors and sensors when they are attached to the LEGO USB Hub. It also, includes a digital Getting Started Guide with simple building tips and programming examples.

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