# Maine Robotics eNewsletter     April 23, 2013

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  (The EV3 and the VEX IQ)
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## 2013 - The New Robots:

There are two new players coming on the market soon.  These two robotic platforms are both aimed for the elementary and middle school markets and have a long history behind them.  The EV3 is the 3rd generation from LEGO® and has some upgrades from the NXT brick that came out in 2006.  Alongside it is the brand new VEXIQ controller from the same folks who brought us the VEX robotic platform back in 2005.

The EV3 is due to start shipping in August and the VEXIQ is scheduled to start shipping in June.  So either one should be available for the 2013-14 school year.

| | LEGO® EV3 Robotics System | VEX® IQ Robotics System |
|---|---|---|
| | | |
| The brain[1] | TI ARM 9 Processor | TI Tiva ARM Cortex-M4 Processor |
| Motors | 3 interactive servo motors | 4 smart motors |
| Sensors | Color, Gyro, Ultrasonic, Touch (2), built in rotational sensors on motors <total of 8> | Color, Gyro, Distance, Bumper Switch (2), Touch LED (2), built in rotational sensors on motors <total of 11> |
| Cables | 7 component cables, 1 USB cable | 6 component cables, 1 USB cable, 1 tether cable |
| Batteries & | Rechargeable Robot Battery | Rechargeable Robot Battery |

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[1] Both controllers use ARM chips, which are 32 bit RISC processors and are found in most small mobile devices in today's market.  Both the ARM9 and Tiva chips are produced by Texas Instruments.

| chargers | Power adapter for battery | Rechargeable Controller Battery Power adapters for both |
|---|---|---|
| I/O | 4 input ports 4 output ports | 12 self-configuring input/output ports |
| Download | USB WiFi or Bluetooth dongles (not included)[2] | USB |
| Components | Not listed, but we counted 540 pieces | >650 pieces |
| Remote Control | No | Yes, handheld remote control unit. Similar to a game controller. |
| Datalogging | Yes | No (that we know of) |
| Compete | FIRST® LEGO® League | VEX® IQ Challenge |
| Kit Cost | EV3 Core Kit: $339.95 (plus software) | Super Kit: $299[3] |
| Software | Extra: $99.99 single, $399.99 site | Modkit – Free RobotC - $79 single, $499 classroom (guestimate, but probably same as for the VEX kit) |

While we don't have either one of these robots to play with yet, we are anxious to get our hands on them and try them out.  I think we'll miss having the built in Bluetooth of the LEGO® NXT, but if we need it we can add a dongle for about $10 a unit.  We use a lot of NXT-NXT communications in our current programs to teach communication and control, so I think that will be missed.

If the VEX IQ programming is similar to the VEX Cortex programming then it will be nice that you have to program the IQ to work with the remote control.  We like it when the students we work with have to "make it work" rather than "play with how it comes".


We're also looking forward to seeing both the new software for the EV3 and the Modkit for the IQ.  The Modkit was developed by some MIT students/alum and surprise, from the pictures it looks just like Scratch.  The EV3 software looks similar to the NXT MindStorms software, but could not find reviews that compared it to the MindStorms NXT software.

The new VEX IQ with its twelve, self-configuring ports should be a HUGE feature for that unit. Imagine being able to run either 12 motors; 12 sensors; or any combination without regard to where you plug them in.  Of course you'd have to have 12 motors or 12 sensors to do that.

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[2] The EV3 has lost the built in Bluetooth capability of the LEGO® NXT but allows for either Wi-Fi or Bluetooth connectivity (and downloading) by using an appropriate dongle.  This also means there is no EV3 to EV3 communication without a paired dongle system.

[3] Subtract $50 if you don't want the remote controller and its battery.

For those of you who compete with this age level, the FIRST® LEGO® League will still be able to use the RCX, the NXT, and now the new EV3.  And for those who get started up with the VEX IQ, there is a new VEX IQ Challenge that will run with the VEX Robotics Competition, so there will be a place for you to compete as well.

We think people will be happy with either set, but this is just a prediction.  We'll have more to say once we can get our hands on the kits and give a proper report back to you.

Tom Bickford

| Maine Robotics Summer Camp Registrations are open |
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Our Summer 2013 schedule is set!  We encourage you to sign up your students/children for the 2013 season.  We are offering 32 weeks of camp at 20 different locations this summer.  That means we'll have over 450 campers this summer, our largest camp season ever!

The camps use the LEGO® MindStorms kits to teach engineering and programming to campers.  It is both fun and educational.  This is Maine Robotics 9th year offering the camps and our Director's 12th year of offering the camps.

Please visit our camp website to learn more.

http://www.mainerobotics.org/summer-camps.html

| Maine Robot Track Meets Start this Weekend |
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Saturday, April 27th, 2013
South Portland, Maine

Come see teams of elementary and middle school students compete in 10 different track meet style robot events! Check out our website for more information.

 http://www.mainerobotics.org/track-meet.html0

May 4th we'll be in Ellsworth and
May 11th in Oakland
No charge to come and watch.

Please share this with your class, your friends, your family.  We know we don't reach everyone out there that does robotics in Maine, but we hope you can help us reach everyone close to you that might be interested.

Sincerely,
Tom Bickford
Director, Maine Robotics

Maine Robotics is a Maine non-profit corporation that serves schools and families in Maine by providing STEM related activities for youth and adults.

Established in 2004 by the Director, Tom Bickford, Maine Robotics works with almost 100 schools and 1600 students each year.

Our largest programs are the FIRST LEGO League in the fall, the Robot Track Meets in the spring, and our Summer Robotics Camps.

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