



MCCE NEWS

MONTANA COUNCIL FOR COMPUTERS
AND
TECHNOLOGY IN EDUCATION

Vol. 20, No. 2

Spring 2008

MCCE stakes out online space

by Vince Long

After quite a few years borrowing a few megabytes of space on the Billings Senior High webserver, MCCE has now moved to its own place on the World Wide Web: www.mcceonline.org. This move is a natural evolution of our web site and will allow us to enable more features than we could in our previous location.

For one, you can look forward to a members-only blog. Shortly you'll receive a notice that the blog is up and running and you'll be able to post and respond to the topics found there. While the blog will be open to the world for viewing, only members will have access to contributing any content or posting comments. For more information on blogging, see our March 2007 newsletter. (<http://www.mcceonline.org/mccenews/07-march-screen.pdf>)

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Lego robotics in the classroom

by Vince Long

(This is the first in a series of articles looking at the Lego Mindstorms Robotics System. In Part 1, we look at the evolution of the product and what is available today. Part 2, in our next issue, we'll see some practical classroom applications.)

For the constructivist teacher who looks for activities where students can make things in the real world, Lego robotics provides a cross curricular launching pad that also spans grade levels. Whether it is math, science, or problem solving with technology, Lego's versatile system can be adapted to meet those needs.



While Lego has been around since 1932, it only gained popularity in the American toy market in the 1960s and it was not until the introduction of the Technic line in the 1980s, with its assortment of gears, axles, and motors that Lego moved beyond basic building blocks. In the 80s, Lego introduced the Dacta system which included sensors and a computer interface that expanded the abilities of the Technic system.

As our computer technology evolved, becoming smaller and less expensive, Lego saw that the separate computer required for the Dacta system could be replaced with a

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By Staci Auck

It is hard to believe that we are already three-fourths of the way through another school year and that it will soon be summer break, then before we know it we will be back to another year of school. With this thought, I am trying to get you to think about presenting at next year's MEA-MFT conference. Applications to present are now online and the deadline to sign up is May 15... which again will be here before we know it!

The conference this fall is in Missoula and seems to be a little harder to attend for a lot of teachers in Montana so if you are planning to be there I hope you will seriously consider presenting. A lot of hard work and time goes into planning this conference and the quality of sectionals and speakers that you can attend for such a small fee is really quite amazing. I always want to see this conference go well regardless of the location and I think that our curriculum group has a lot we can offer to the teachers and ultimately to the students of Montana. Everyone needs technology whether because educational standards require it or simply just trying keeping up with the changing world. I look at it as our duty to share what we can with our fellow teachers to help the students of our state. Please don't think your presentation has to be anything advanced or some cutting-edge technique to qualify. Many educators still need the basics, so even if you have been applying a technology in your classroom for some time and don't think that there is any interest in what you have to share you may be surprised. The application to present is online at www.mea-mft.org or at www.mea-mft.net (the first just takes a couple more clicks to get there.)

We just recently had our winter board meeting in Lewistown (as that is the metropolis closest to my area) and we had some good discussion about what we can do for the members of this curriculum group.

It seems that the majority joined this organization to learn as much we can about technology and for it to be a networking tool in which we learn from each other by sharing ideas and findings. This was the reason for establishing a list serve. We ask your help in posting to this list serve, whether it be a technical problem question, an informative quick "hey, check out this neat site on global warming", asking for an idea and/or lesson plan, or wondering if anyone is traveling to a technology conference. I know we have members willing and ready to respond when they can. I has just been a shame that we just haven't used this tool like we should, I hope you will see this area improved. Speaking of improvements, sometime in the near future you will see MCCE with our own domain name and blog - keeping up with the changing world!



MCCE NEWS

MCCE NEWS is published several times per year by the Montana Council for Computers and Technology in Education. The contents are Copyright © 2007, by MCCE and the authors of the individual articles.

**Next Submission Deadline:
May 1, 2008**

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Mindstorms Robotics

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stand-alone computer implemented as an embedded system just as those found in the real world of industrial robotics. This new system, the Mindstorms Robotics Invention System, was developed in partnership with the MediaLab at the Massachusetts Institute of Technology.

This first generation system, released in 1998, contained a large “brick,” the RCX, that held a computer with its own memory and programming language to which motors and sensors could interact. Programming was done on a regular desktop computer using a visual programming language that allowed the users to program by dragging and dropping graphical tools onto a flowchart. Programs were transferred to the RCX via an infrared link after which the robots could operate autonomously. Advanced users could also program the RCX in standard programming languages similar to C.

In 2006, Lego released a major upgrade called the Lego Mindstorms NXT. It completely replaced the RCX system, although the Lego parts, sensor, and motors can be used on the new system. While the NXT featured an upgraded computer, the biggest advance was in its programming interface. It is now based on the latest version of LabVIEW made by National Instruments. While still a visual programming language, it runs in a Windows XP, or Mac, interface and has many more capabilities than its predecessor.

The new NXT brick has a 100 x 64 gray-scale LCD screen that can output text and graphics, a speaker, and a set of control buttons that let the user navigate through the built-in menu system. It is powered by 6 AA batteries or a Li-Ion rechargeable battery. It connects to the programming computer either through a USB cable or the built-in Bluetooth wireless.

The NXT is joined in its kit (education version) by over 400 Lego parts, 3 motors, a light sensor, sound sensor, 2 touch sensors, ultra-sound sensor, and a variety of cables. The included software has an excellent set of tutorials that cover many aspects of both building and programming.

There are many third-party add-ons including a compass, a color sensor, an accelerometer, and a gyroscope.

While the software comes with an adequate set of tutorials that teach both the building and programming of a standard mobile robot, the NXT Robotics Engineering Curriculum from Lego, is an add-on that is more than worth its cost. Developed at Carnegie-Mellon, this curriculum is detailed, superbly sequenced, packed with videos, and contains an assortment of challenges that integrate the math and science connections. The videos are all closed-captioned meaning that headphones or speakers are an option.

In the next article in this series, we'll look at the building of the standard mobile robot and how the programming language interacts with the various input and output devices.



Do you want near-immediate answers to your tech questions?

Join MCCE and have access to the expertise of our membership through our online mailing list. See our membership form on Page 6.



MCCE online

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Another feature, not visible to the user, will be a content-management system that will make it easier to keep the site up-to-date by using an online editor rather than hand coding the individual pages. For a description of the online editor, see our Fall 2007 newsletter. (<http://www.mcceonline.org/mccenews/07-winter-screen.pdf>)

Many other options await and members who are interested now have a place to try them out. For example, in the October 2006 newsletter (<http://www.mcceonline.org/mccenews/06-oct-screen.pdf>), there was feature article about using Moodle, which is an online course management system. If members wanted to try it out, we could install it on our own site and members could see what it is like to set up and manage an online class.

Another possibility would be for members to have their own pages hosted on our site. This would be a good option for members whose schools do not provide that feature.

So, how does one get a name and a place on the web?

This is one of the most frequently asked questions I get from students once they have learned how to build a web page. Since MCCE just went online under its own name, I thought it would be worthwhile to cover it here.

Once you have your site built on your computer you need to select a domain name and a hosting service. In the early days of the web, domain names were handled by a very short list of providers, but now there are many from which to choose. The old stand-by, www.networksolutions.com is still a solid choice, but it now has competition from many others including www.godaddy.com, www.register.com,

and even www.yahoo.com. They all have different pricing structures so you'll have to comparison shop to find the one that best suits your needs.

The first step is to find whether your domain name is available. Visit any of the sites listed above and you'll find a form into which you type the name you would like to have for your site. You also select whether it is a dot-com, dot-net, dot-org, etc. Since there are so many names already taken, you might have to try a few to find one that is available. Most of the name registration sites will provide suggestions if the name you wish to use is already taken. When you buy a name it is for one year and must be renewed or you can lose it. Most services will let you buy for multiple years and have automatic renewal or notification if it is about to expire.

Now that you have your name selected you need to sign up for a hosting service. This is a space on a webserver where you will store your files and will be tied to the domain name you selected. Hosting has many options: file space, bandwidth, etc. For most users, the basic service will likely be adequate.

Other features you might want to look at include whether email is included, does the service provide support for PHP or other scripting language, and is there support for MySQL or other database server.

As an example, I used www.godaddy.com to set up the MCCE Online site. I selected godaddy because I'm quite familiar with them as they host four other web sites that I maintain. The cost of the domain name and hosting for two years was \$104.02, which is \$4.34 per month. For that we get 10 gigabytes of storage space, up to 300 gigabytes of traffic per month, ten MySQL database accounts, and email.

As you can see, having your own domain name and site is fairly inexpensive and considering that all the setup is done online, it's never been easier.

Conventional television on countdown to oblivion

On February 17, 2009, the frequencies used by your analog television will be shut off in the international switch to digital broadcasting. Standard NTSC receivers will be unable to receive the new signals without an add-on adapter box. The federal government is subsidizing the cost of these boxes. Analog televisions that are currently receiving their signals via a cable or satellite system will be unaffected by the change.

HD format war settled

Like the Beta vs. VHS war of the 70s, the battle for the high definition DVD format has raged with proponents and critics lining up on both sides. Would it be the Blue-ray or the HD that would dominate? In February 2008, Toshiba, the primary force behind the HD format, bailed out leaving Blue-ray as the winner. An improvement over conventional DVDs, the dual-layer Blue-ray features 50 gigabytes of storage.

Montana EdTech Summit
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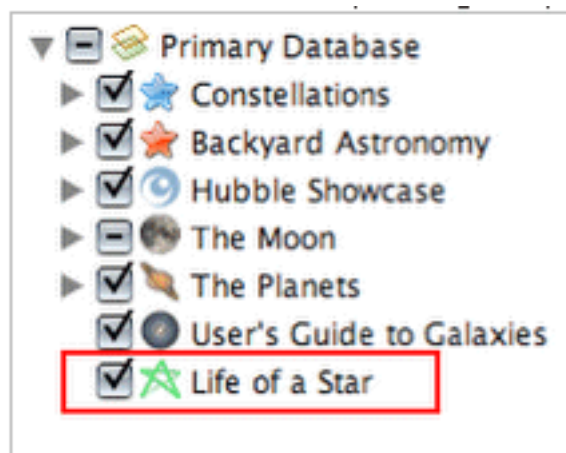
by Desireé Caskey

If you have been using Google Earth to simply span the globe...think about spanning the sky. Google Earth has a feature that lets you switch to viewing the sky from earth, turning your window into a virtual telescope. Google Earth has also incorporated some fantastic layers. I really enjoyed the "Life of a Star" layer. This shows you actual stages of a star's life and explains that particular stage. It is really cool.

What a great way for students to learn about stars. Just open Google Earth and click on the "Switch between sky and earth" button.



This will give you a view of the sky above the location you were viewing in Google Earth and it will give you a different set of layers. I double-clicked on the "Life of a Star" layer to get my lesson started.



This is just one of the thousands of uses for Google Earth. You can use Google Earth for history, math, science and more. For more new features in Google Earth, check out the latest edition of their online newsletter, Sightseer.

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