

## Noteworthy News:

### Computer Science and Engineering Curriculum Update

Two years ago, over 500 parents and 750 students responded to a strategic planning survey. At that time, our school community specified computer science, technology, programming and engineering as the most requested enhancements to our curriculum. The following is an update on our progress and a look into our future.

#### **A Contiguous Achievement of Skills from K-12**

At **Concord Road School**, our focus is to ensure that students are comfortable, confident and curious about technology. We introduce students to a variety of web-based learning sites, applications and programs. By using technology such as iPADS, Smartboards, Skype, Apple TV, News-o-Matic and others, our students begin to understand the power of technology and how to use it to enhance their learning. Concord Road's new MakerSpace program for third graders allows students to tinker, design, collaborate and create. These skills are the foundation for further technology learning.

When students enter **Ardasley Middle School**, our emphasis is on providing a deeper understanding of technology across a broader spectrum of uses and disciplines. Middle school students take five quarters of a technology class/seminar, where the focus is on the engineering design process from idea conception to prototype development to testing and evaluation. With support from the AEF and PTA, new technologies such as a 2D laser cutter, 3D printers and updated computer aided design software (CAD) have allowed us to grow this curriculum to include more complex opportunities for problem-solving.

At AMS, 7<sup>th</sup> graders also take an engineering seminar where they learn the principles behind mechanical, electrical, chemical, and physical engineering. Students are encouraged to direct their learning and explore their interests through various projects. It is common, for example, to see students taking apart donated printers and old computers to understand circuitry and then wiring parts back together to build new designs.

At **Ardasley High School**, two computer science classes were introduced: Introduction to Programming and AP Computer Science. Using coding languages/tools such as HTML, CSS, and Scratch, students create websites for their capstone projects. Seniors in AP Computer Science learn a more advanced programming language, Java, and are challenged to link global ideas about computer science to broader projects. They end the term with "Shark-Tank" like presentations which are judged by volunteers from the community.

#### **A Future Built on Our Strong Foundation**

In January, we surveyed 344 AHS students to clarify and quantify their interests in computer science and engineering classes. Over half the respondents in grades 9, 10 and 11 expressed the desire to take an introductory course in engineering. In the area of computer science, a majority

showed interest in an introductory course in computer science and programming with Java, AP Computer Principles and AP Computer Science A. (see [Computer Science Presentation](#))

As a result of these strong indicators, we have built into the 2016-2017 proposed budget the resources needed to expand the AHS computer science program and to offer our first engineering class. As the course selection process begins in the high school, teachers will be meeting with students to provide information and answer questions about these new offerings.

In order to implement engineering across the District, we are considering a rigorous, articulated K-12 curriculum, Project Lead the Way, which is widely used across the country. For more information, please visit [www.pltw.org](http://www.pltw.org).

### **Learning Doesn't Stop in the Classroom**

Enhancing the core curriculum, our teachers also support many diverse student-driven clubs and activities. At AHS, for example, Club Innovate organized the first district wide Hour of Code, trips to Facebook and Google, and created a speaker series where entrepreneurs talk to students about careers and the intersection of technology and business. The newly formed Robotics Team, held technology nights for AMS students and made it to the Regional Championship. At CRS and AMS, programs such as Young Inventors and Science Olympiad provide students with the opportunity to delve into technology. These are just a few of the many activities that develop student curiosity, their ability to problem solve and to think critically and creatively.

In order to help our children succeed in a world of rapid change, we believe that our curriculum must continually evolve to incorporate new learning technologies and promote new ways of interacting with the world. We must also support our teachers with ongoing professional development and encourage them to maximize their talents, passions, skills and knowledge for the benefit of our students. With the ongoing support of our community, we will continue to build on our tradition of academic excellence and success for every student, as we strive to cultivate passionate learners and informed global citizens who actively influence their world.