

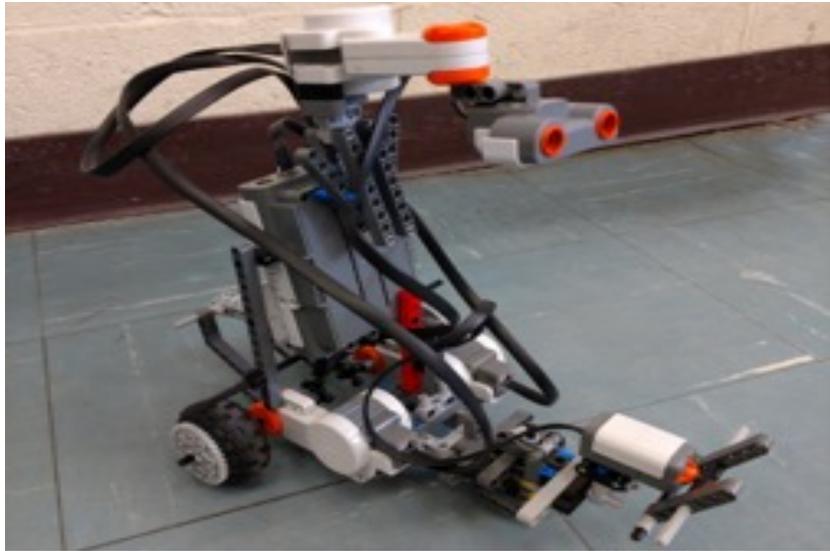
The Knightspot

A Spotlight on Education in New Milford, New Jersey.

DEO Middle School Electives Provide A Variety of Engaging Experiences

At David E. Owens Middle School, the electives offerings reinforce the districts' emphasis on student-centered learning. These classes, primarily project-driven and collaborative, aim to give students varied, hands-on, in depth experiences. They don't merely expose students to art, music, computers and science, they give students the chance to explore these areas, make connections to the real world and create learning experiences children can apply to their own lives, both at the middle school stage and in the future. When discussing how DEO's elective courses complement core academic programs, Principal James DeLalla comments, "Our programs teach our students how to constantly see other perspectives, be open to other perspectives, be open to other people's knowledge and be able to work together for a common goal."

For each year of middle school, the elective offerings vary slightly with the exception of band, orchestra and choir which are available all three years. In sixth grade, all students take Computer Applications and can select from Art, Music of the World and Current Events. In seventh grade the options are Computer Graphics, Art, Careers and Junior STEM. In eighth, Art and Junior Stem are again



In Robotics class, students create a robot that solves a maze.

available as well as Advanced Computers, Robotics and Business Plan.

The music program provides a number of opportunities. Children who take band or orchestra do so for the whole school year and it is one of their classes during the school day. Choir is offered during several recess times each week. In orchestra, taught by Juliya Berenshtein, not only do participants play various pieces of music, but they also learn about the history of a piece and its composer. "It's not that they are just playing notes," says Berenshtein. "They need to understand what's behind them." Students also have the opportunity to choose and research a

composer. Selections range from Bob Marley to Amadeus Mozart and result in projects displayed in the building.

The Music of the World class, also taught by Berenshtein, strives to give students a multicultural understanding of music. When studying music in cultures of Latin America, Asia and Africa, children learn about the origin of various instruments, different languages, and dances. One unit early in the year focuses on national anthems around the world and culminates with students writing anthems about themselves. This class helps students understand the relevance of music historically,

currently, and in their own lives.

The art classes taught by Mr. Justin Muratore not only provide students with ample hands-on work in various mediums, but they also give students a comprehensive understanding by exploring Art History and famous artists. Examining different painters or sculptors at the start of each new project helps shape students' own work. A child who takes art for all three years learns about Donatello, Picasso, Calder, Keith Haring, DaVinci and Escher as well as Native American pottery. When creating their pieces, students use many different mediums and build on knowledge from previous years. For example, when working with plaster in sixth grade, students pour plaster into shallow trays and make relief sculptures. In seventh grade, they pour plaster into Styrofoam cups and create 3-D sculptures.

The Current Events class currently taught by Mrs. Lee connects students with what goes on in the world. Children read student news publications and watch CNN10, a ten minute news segment designed to deliver news to youngsters. A big focus of the course is the Stock Market Game, a statewide competition that teaches students about business and finance. By creating and managing a mock stock portfolio, students develop a basic understanding of various businesses and how the stock market works. Students also participate in the national InvestWrite essay contest in which they apply their learned knowledge of finance by

responding to a prompt. This course culminates in students creating board games that highlight what they learned during the semester.

The eighth grade Business Plan course, also taught by Mrs. Lee, gives participants the unique opportunity to spend a semester designing a restaurant from start to finish. Working in groups, students determine every aspect of their restaurant including cuisine, decor, budget, logo and more. Based on a program created by the Foundation for Free Enterprise, this course incorporates a multitude of real-world experiences culminating in a binder and portfolio outlining the restaurant.

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—Alex Ivchenko

The Robotics selective is one that is growing in popularity. The course focuses on the philosophy and theory behind robots—what they are, how they move, what their purpose is and robot intelligence. Students also learn how to build and program robots. To help create a solid understanding, the course's instructor, Mr. Alex Ivchenko, asks students to design their own robots and write essays explaining them. “Most robots in the real world are single purpose, they have one job and they want to do it well.” comments Ivchenko. “So I ask

them, ‘What kind of job would you have the robot do?’” Ivchenko also invites students to ponder advanced technologies robots possess such as the potential for nanobots, or microscopic robots, and what they might do if working together in large quantities. Could they enter the blood stream to detect disease? Could they take the form of objects such as clothing that changes form from say a shirt to a sweater? Through these various experiences, the beginning roboticists gain a strong understanding that informs them for the “challenges” they participate in.

The first challenge asks students to build a robot and program it to do a certain task. Using Lego Mindstorms robot kits, students create one that dances for one minute. For the next few challenges, students build and program their robots, but for guidance, they can use the support of nxtprograms.com, a site that has many designs for Lego Mindstorms robots. Students also build Dragster robots, ones that will solve a maze and robots that can grab a can and eventually go through an obstacle course! Using trial and error, it may take students different amounts of time to build and program their various robots, but they all eventually do it. “Students ask in my class, ‘How many tries do we get?’” comments Ivchenko, “and I say you get as many tries as you need until you are successful.” If time allows at the end of the course, the beginning roboticists can design and create their own robots. Ivchenko likes to



Eighth graders in Junior STEM created a Rube Goldberg inspired invention. Using 5 simple mechanisms, this group knocked over a glass of water in 22 seconds and 14 steps.

include a three-stage device inspired by Rube Goldberg, a famous inventor of multi-step machines.

Another elective gaining popularity is Junior STEM. Offered to both seventh and eighth graders, it is a course written by its teacher, Mrs. Diana Daley. “I have a passion for science,” remarks Daley, “and I just want kids to like science.” Children in Junior STEM engage in hands-on science throughout the entire course. There is no homework and no tests. Students cycle through collaborative projects which range in length from several days to several weeks, some of which are student-determined and others determined by Daley. During each project, students explore a concept and later reflect on the science of it. “It’s all about, let’s build it,” says Daley, “but then let’s look at the science behind it. What makes it work, why does it work, etc.”

One of the projects challenges students to use 100 toothpicks and 50 gum drops to build a bridge that will span 18 inches and be weight bearing. Students use pennies to determine how much weight their bridge can bear. In another, groups are given 50 index cards, 25 seconds and a pair of scissors. They investigate, “How tall can we build a tower?” One of the most talked about activities asks students to use glue sticks and tissue paper to create hot air balloons. Classes go outside and use propane and a balloon launcher to test their balloons. Some have gone higher than the trees and flown the length of the field behind DEO! In a recent self-discovery lab focused on the environment, a group brought in lemons, some genetically modified and others organic. They compared the differences to determine significant contrasts between the two types. Through these experiences that encompass

asking questions, testing theories, trial and error and reflection, children are learning science by doing science. “I’m not telling the kids what load is, or what force is,” points out Daley. “they are finding it out for themselves.”

The electives at DEO create learning environments which encourage self-driven exploration and discovery. These classes, along with core academic programs, strive to engage children in their own learning by making them active participants. Vice Principal Timothy Coughlin comments, “[The various programs] allow for a lot of trial and error, but kids see, “Oh I failed, but it’s not a horrible thing to fail. That’s what We are trying to do in this whole building is to teach them that it’s okay to fail. That’s how we learn.”

Check out DEO Electives
[Photo Gallery.](#)