



Paterson High School STEM Students "Do the Math" to Move Ahead

Program achieves an 82% successful passing rate

Paterson High School students enrolled in their schools' STEM Program (Science, Technology, Engineering and Mathematics) recently completed a STEM Math Placement Workshop. Comprised of a freshman, nine sophomores, and eight juniors, the students beat the odds by obtaining a college level score on the Math National Placement Exam. By passing this test, these students, who will be enrolled in the Dual Enrollment Program at Passaic

County Community College (PCCC) will be eligible to take college level Math and Science courses while still attending high school. This was a major accomplishment for these students.

To prepare for the Math Placement Exam, the STEM student attended five weeks of after-school instruction at

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Prof. Howard Schwartzberg with High School students as they begin the workshop.

STEM's Summer Bridge Workshops Sizzle in 2013.

As the days warmed up to 100 degrees during July 2013, the STEM lab's air conditioner created a cool atmosphere suited for the start of the Summer Bridge Workshops.

The first of five workshops, presented by Mrs. Diane Dietsch, helped high school students understand the structure and the causes of "Avalanches." Students analyzed, and prepared terrains prone to avalanches. They used special boards that helped them observe and get a better understanding

of this phenomenon which claims lives every winter.

The second Workshop STEM is presenting this summer is on "AutoCAD and 3D Printer;" students are learning and have access to the designing program AutoCAD, an advance tool used in the drafting,
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This Summer's Workshops

- Understanding Avalanches
- AutoCAD & 3D Printer
- Bridge Building
- Physics: How Projectiles Work
- Python Programming

... “Do the Math.”

Passaic County Community College (PCCC). The 90-minute, twice-a-week classes were designed and taught by Howard Schwartzberg, Director of the Math Tutoring Program at PCCC.

The minimum score to pass the Math Placement test was 76. Eighteen of the 22 students who completed the course obtained this college-level score or higher, and one student had a perfect score of 120.

Professor Schwartzberg, whose goal from the beginning was to have 70% of the students pass, said many doubted this could be achieved. In the end, that goal was not only achieved but surpassed – 82% percent of students passed the test!

Schwartzberg believes motivation was critical to the students’ success. “During class, I’d tell my students the difference between the impossible and possible lies in the impact of determination,”

said Schwartzberg, “and that success was always within their reach.” Definitely

As these STEM students ready themselves for college work, Schwartzberg looks forward to motivating the next group of students. In particular, he likes to share a favorite quote from Albert Einstein: “It’s not that I’m so smart; it’s just that I stay with problems longer.”



Students from different high schools fill the Workshop room.



Students take practice tests



“... motivation was critical to the students’ success.”

“It completely applies to being successful on the College Math Placement Exam,” Schwartzberg said. “As long as students are motivated and see their goal as reachable, they will rise to the occasion and accomplish it.”



The students enjoyed a snack as part of the preparations on the day they were to take the test.

*"It's not that I'm so smart; it's just that I stay with problems longer."
Albert Einstein*



One last problem to review along a drink and a delicious cookie.



... Summer Workshops Sizzle.

modeling and designing industries. The students started learning about coordinates, then quickly advanced from drawing lines and other geometric figures to putting together a model plan.

They will also learn and get first hand experience in using a 3D printer. This type of printer creates three-dimensional solid objects designed in AutoCAD, not on paper but bringing objects to life using a special compound created specially for these printers.

PCCC has created scaled replicas of buildings such as the Taj Mahal, the Lincoln Memorial and even a soccer stadium, using this printer. This workshop is being presented by a PCCC



Mrs. Diane Dietsch presenting "Avalanche," the first of 5 workshops for the summer

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What's Your Life Plan?

STEM's "Voices from the Field" is a publication of Passaic County Community College's STEM Program, edited by David Hernandez, STEM Web Developer. dhernandez@pccc.edu.

The STEM department at PCCC offers a unique opportunity for students to become part of the fastest growing sectors of industry.

The STEM program provides students with the academic support necessary to explore, choose, and succeed in STEM disciplines (Science, Technology, Engineering, Mathematics). The program is funded by a grant from the U. S. Department of Education with the intent to assist students transitioning from High School to Passaic County Community College, and ultimately to a four year institution..



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... Summer Workshops. (continued)

alumni, Prof. Leo Almanzar.

On the next workshop, "Bridge Building", students will learn about bridge designs and how to avoid engineering disasters, they will also design and build their own bridges which will be put to test at the end. This workshop will take place from July 29th to August 1st.

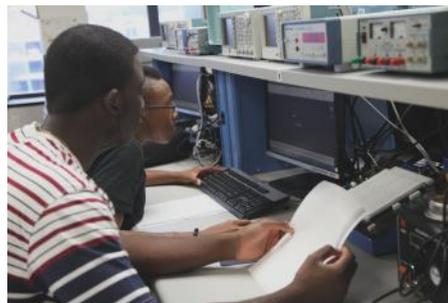
The fourth workshop, "Physics: How Projectiles Work", students will learn about initial velocity, pressure, trajectory path calculations, and maximum ranges. This workshop is scheduled from August 5th to the 8th.

The final workshop will start on August 12th and conclude on the 18th, it will expose students to computer programming, from understanding how a computer understands commands to logically designing a program. They will be using a popular language called "Python".

For information on any of these workshops or other STEM activity, visit www.pccc.edu/stem.



Students inspect different terrain materials using a microscope before putting them to the test, during the "Avalanche" workshop.



Students learn to use AutoCAD to design various objects. The Taj Mahal printed on a 3D Printer in PCCC's Engineering Lab.

