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NORTHJERSEY.COM NEWS

Ridgewood Education Foundation enhances education

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THE RIDGEWOOD NEWS

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BOOM!

There's nothing like fiery (but safe) explosions to wake hundreds of Ridgewood High School (RHS) students up on a Friday morning.

Each loud burst startled jumpy students in the RHS Campus Center earlier this month as three hydrogen balloons were popped with a flame, leaving three orange fireballs momentarily suspended in midair.

"Why don't [balloon vendors] give you a gas that actually floats a lot better and is a lot cheaper [than helium]?" said David Maiullo, presenter of the "Fun with Physics in All the Sciences" event.

Because "hydrogen burns," he said.

The demonstration was made possible by an annual grant program funded by the Ridgewood Education Foundation (REF), a 24-year-old non-profit seeking to enhance district education.

The assembly also included demonstrations about sound waves and Newton's laws of motion.



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Ridgewood High School students react to an explosive physics demonstration.

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Students and teachers were awed by gas-fed flames on a perforated pipe arrange into a visual sound wave as a musical note played into the pipe. The flames varied in height, finally resembling the sound wave graphs usually seen only in physics textbooks.

"That's so cool," several students audibly uttered.

A lesson on force left the 200-pound presenter sandwiched between two beds of 3,000 nails each, with two student volunteers standing on top of Maiullo. He emerged unharmed, because, he explained, it takes 13 pounds of pressure for a nail to puncture human skin, and his body weight was safely distributed over the thousands of nails.

A Rutgers University physics specialist, Maiullo gives 50 to 60 presentations a year at schools, street fairs and senior centers.

"It's not about being magical. I want to explain these effects. I want to make sure the science behind it is transparent to them," Maiullo said. "I think it's important our citizens are as educated as possible. ... Maybe they'll look at the iPhone and say, 'How does that actually work?'"

Enhancing education

The one-hour show was also funded by The Valley Hospital, which this year made "a major commitment" to the REF for health and science programs, said REF President Jennie Wilson.

It was an uncommon learning experience, but it was just one of many examples in the REF's history of curriculum enhancements. From 1989 to 2010, in addition to funding programs like Super Science Saturday, the REF awarded 275 innovative classroom grants totaling about \$430,000. Most recently, it gave more than \$100,000 to the RHS Learning Commons project.

This year, the REF funded 13 grants, totaling about \$17,000. In May, a "Civil War Time Travelers" in-school field trip at George Washington Middle School will feature Abraham Lincoln and other re-enactors and introduce a historical music unit.

At Ridge School, an "iPad revolution" grant provided kindergarten classrooms with eight iPads.

While the REF works closely with the Board of Education and Home and School Associations, it is independent, Wilson said. It is supported by local businesses and [Ridgewood's](#) current and former students, parents, teachers and principals.

"Everyone always talks about budget cuts at the district level. Sadly, that is a reality we all live with," she said. "But the other reality is that there are amazing, creative and innovative ways to enhance the curriculum and make learning more fun, more interesting, more exciting. That is why REF grants to the schools are so important."

RHS science teachers Sandra Kunzle, Harold Nelson and Nancy Reilly wrote the grant proposal for Maiullo's demonstration.

"This grant is basically an extension of our three different subjects. ... The kids see it in action," Nelson said. "It's something we can't do well in the classroom."



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"We're so lucky to have the REF with us," Reilly said, adding that she appreciated how a student's parents once thanked her with an REF donation.

Unlike Kunzle and Nelson, Reilly said this was the first time she utilized a REF grant. She learned about Maiullo after his Ridgewood Public Library appearance last year.

Some educators may think the REF's online grant application is time-consuming, "but it's really not true," Kunzle said.

According to Wilson, Nelson has become well-known by REF trustees for his many detailed grants, displaying "some of the most complex and exciting learning ideas."

"His grants are always focused on not only enhancing the course of study but expanding the students' minds," Wilson said. "For example, last year, the REF funded a grant to build a hologram and study its application in physics and the health-related sciences."

According to the science teachers, these grants are not just one-time events.

"We get things now that we can use in future years," Kunzle said. "We were able to now acquire knowledge, materials, equipment."

Nelson said his current classroom labs on hearing and sight, propulsion rockets and holograms originated as grants.

"I have it, so we do it, and then I integrate it," he said. "Now I wrote a lab. We do it every year."

Students filmed the "Fun with Physics" show, so it can be shown in the future, the teachers noted.

"I'd never seen anything like this. I thought it was awesome," said Greg McDonald, supervisor of Mathematics, Science and Technology. "Just gauging by the kids' reaction, they were all attentive. They were all into it."

"It was fun," said RHS senior Christian Delliveneri. "It was visual, not all PowerPoints. ... I think a lot of people liked it."

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