



Propane Kids Day Uses AI Robot to Teach Students About Propane

Propane businesses engage their communities in a variety of ways. Many host an annual Customer Appreciation Day or Barbeque, some have a booth at the county fair, while others may participate in the local parade. Judy Taranovich, president and owner of Proctor Gas Inc., enjoys all-things propane, and is eager to share her knowledge about propane whenever and wherever she can. Her warm, outgoing personality draws people to her, and the many activities and events Proctor Gas hosts each year has made her a well-respected businesswoman, civic leader, and philanthropist in her Proctor, Vt. community.

With her late husband Jimmy's love of community in mind, she has ventured off in her own direction by engaging the town's elementary school children. Each year, she teaches them something new about propane during Propane Kids Day. This year, with the help of her friend Bonnie Walker, she introduced an artificial intelligence (AI) robot by the name of Pilot to teach the kids.

Taranovich fondly reflects how Jimmy supported the local humane society, of which she is president of the board today, in addition to schools and youth organizations. "He pretty much never turned a student away," she stated. "If a youth organization needed something, whether we were donating a 100-pound cylinder for a Fryolator down at the Little League field, or they needed a bus to go to the championship

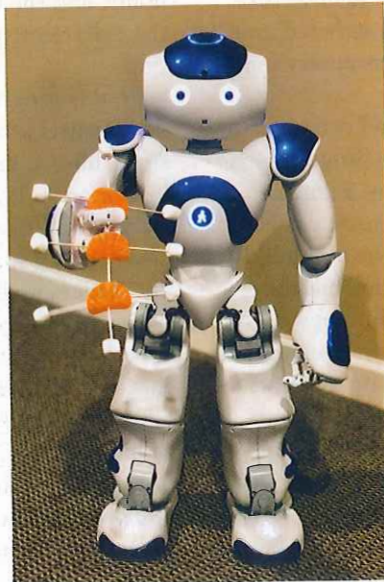
game, it didn't matter. He was very community-minded."

Propane Kids Day is especially close to her heart. "I couldn't be more proud of what Propane Kids Day accomplishes each year." It started as a school assembly with Taranovich teaching the kids about propane. Now in its fourth year, the event has captured the imaginations of hundreds of school children at an age when they're excited to learn. She coordinates the annual program to ensure the young students learn about propane in a positive, creative way.

"When you reach children at the elementary-school age, they are eager and excited to learn. It's fun to watch them discover what propane is, where it comes from, what it's made of, its many uses, safety aspects, and

more. We always hand out a 'scratch 'n sniff' and do a demonstration because the kids just love it and it is an excellent way to make sure they are informed about propane safety at a young age. I have to admit the boys like it more than the girls. They like putting the card up to the girls' faces," Taranovich adds with a chuckle. "We give each student a copy of the PERC propane safety brochure to take home and share with their parents. We also hand out material from the Propane Kids website [www.propanekids.com]."

One year, she received a call from the principal at Proctor Elementary to tell her about a student who had detected the odor of propane in his grandparents' home. He told his parents he'd





learned about propane's smell in school. Through the education of Propane Kids Day this student was able to recognize the smell of propane from the stove at his grandmother's house before there was an issue.

The number of students participating in Propane Kids Day has grown over the years, as has the curriculum. Taranovich says somehow she's managed to outdo what was done in the prior year.

She is hoping to get into the high schools in her area starting next year and encourage students looking for careers to see the good opportunities the propane industry holds. Some of the students she had as sixth graders four years ago will be part of her target market for recruitment. After all, she has already planted the seeds.

Last year, Taranovich invited two certified commercial hot air balloon pilots to present a demonstration and school enrichment program to help elementary students learn how hot air balloons are powered by propane. Later that day, the community was invited to Proctor High School for an "Eat A Little & Share A Little" balloon event aimed at uplifting spirits while helping the Proctor Pittsford Food Bank and the elementary school program. The giant 60-ft balloon was inflated on the field so people could get a close look. The balloon was tethered and free balloon rides were available for the community until dark.

This year's program debuted the humanoid artificial intelligence (AI) robot named Pilot that was programmed to teach children about propane in a fun way. Pilot, an interactive AI robot, enjoys boasting about some of his hard plastic parts that are made with propane as a building block. The robot guided nearly 350 schoolchildren through a 40-minute STEAM (Science, Technology, Engineering, Arts, and Math) program. Age-appropriate, propane-focused curriculum was developed for students from pre-kindergarten through sixth grade.

Taranovich's conversation with business associate and friend, Bonnie Walker, a software engineer who consults for Propane Resources (Mission, Kan.), sparked the idea of having a robot for the next Propane Kids Day. Walker has traveled the world studying robotics and was telling

Taranovich all about it, when they said at the same time, "We should use a robot at Propane Kids Day." It turns out, it's the perfect way to capture students' attention and teach them about propane.

Walker went to work developing three original programs utilizing a SoftBank Robotics NAO robot, a humanoid robot standing 58 cm, or just under two feet, in height. With the assistance of industry veteran Marty Lerum, managing partner, Propane Resources; Ericka Pratt, an educator and director of STEAM education at FunDaLogic Robotics; and Doug Walker, musician and engineer, the team took great care in creating the curriculum—including programming the robot's movements, voice inflections, and personalization of classroom information. This made the interaction and presentation by Pilot a fun, accurate, and memorable method to teach kids about propane.

The 40-minute presentations, taught entirely by Pilot, provided the background information about propane to support the hands-on models and experiments. These classes included many propane facts such as where it comes from, how it is used, how it gets into the tank and home, and the type of jobs it provides. The robot invites the children to join in the conversation by answering questions.

Pilot is programmed to respond according to how a student answers the question. It is like a little person; it talks, sings, blinks, dances, and engages students so they don't lose interest. It also helps them remember what they've learned and drives home the point that propane is a safe, clean energy source. At the end of each class, Pilot sings and dances and encourages the students to do the same.

Getting to come up and interact directly with Pilot was the students' favorite part of each class, although they also enjoyed the hands-on STEAM activities. Each class used candy orange slices and mini-marshmallows to learn what C_3H_8 means. Pilot guided the students on how to assemble the materials to create enlarged and edible propane molecules. This tasty illustration is designed to leave a lasting impression that propane is made up of

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Propane Robot

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three carbon and eight hydrogen atoms.

Pilot walked the first-grade through third-grade students through an experiment to demonstrate the concept of how propane can change from a liquid to a gas. A simple tap on top of Pilot's head indicated when to move forward with the step-by-step instructions. The final step of this experiment involving baking soda, vinegar, a water bottle, and a balloon received many excited reactions from the students as the balloon inflated without blowing into it.

The fourth-grade through sixth-grade students learned about fossil fuel density with a hands-on "rainbow" experiment using different liquids and objects. During several steps of this STEAM experiment, Pilot gave the students an opportunity to make hypotheses about what would happen as corn syrup, liquid soap, water, oil, and rubbing alcohol were added to a jar, and then again when different objects such as jacks and marbles were added. The students were so engaged

in this experiment that many of them pulled out their phones to photograph, video, and even live tweet about the process.

This year's Propane Kids Day was expanded to include pre-kindergarten through sixth-grade students at two schools. Pilot taught 15 classes over the course of two days. Word is out about Pilot, the propane-teaching robot. Walker has received requests from other schools to use the robot and curriculum as a way to teach science and technology to their students.

"This year, Pilot was such a success that we definitely would like the robot back again next year. The kids love the singing and dancing, especially at the end when Pilot stands up and sings a special propane song. It was great to watch these kids having fun while learning about propane," said Taranovich.

"There is no better way to build a future customer base than educating children about propane in a fun and memorable way," say FunDaLogic Robotics and Propane Resources. They have plans to utilize the humanoid AI robots for other programs that are beneficial to retail propane marketers and vendors.

—Andrea Young