

Ramey School's 5<sup>th</sup> graders dove into STEM this fall with a focus on Earth's most precious resource - water. The homeroom teacher and his 5<sup>th</sup> grade environmental scientists, along with Ramey's environmental high school science teacher, explored and tested water from various beaches located on the northwest side of Puerto Rico.



The initial STEM unit began with a focus on the story "Saving Salila's Turtle." Salila finds a turtle while walking on the banks of the Ganges River. The river is quite polluted near her home in India and she becomes concerned of the pollution's effect on the turtle. Salila's mother happens to be an environmental engineer and helps her learn about water pollution, microbes, and the ways water can be purified. Salila learns how engineers use "The Engineering Design Process" to conquer major problems in design and building of environmental equipment such as water filters. The readers are then challenged to use this process to test and design filters.

During the process of understanding and using "The Engineering Design Process" Ramey's 5<sup>th</sup> graders were also exposed to a cultural education of India. They had the opportunity to interview an Indian teacher from New Delhi, India. The teacher was excited to talk to the Ramey School 5<sup>th</sup> graders via video phone. The 5<sup>th</sup> graders asked various questions of her country's customs as well as environmental questions of the Ganges and other river tributaries of the Ganges River. The students asked the teacher to speak Hindi so they could hear the language of her native country. She commented on how polite and thoughtful the students were in their questions.

The 5<sup>th</sup> graders then learned a lesson on how we are able to drink safe water. The high school environmental science teacher, began a lesson on the sewage treatment process from flush to



the sewage treatment plant and then back to the river or ocean. This part of the unit was quite an eye opener for the 5<sup>th</sup> graders as they gained a greater appreciation of how important safe water keeps us from getting sick. He then moved the students to perform hands on testing of samples of water from local beaches near Aguadilla.

The students donned protective gear and listened intently to the teacher's instruction on how to test the samples for contaminants. The 5<sup>th</sup> graders were, at that moment, true environmental scientists. They were quite enthused with the process and the results.



After the experience with the high school science teacher, the 5<sup>th</sup> graders then tested various materials in water filtration. The students were given various materials that had varying degrees of filtering properties. The results were recorded and later analyzed. This hands-on and engaging activity was another eye opener in why environmental engineers must constantly ask, imagine, plan, create, and improve materials in keeping our world safe from microbes that can make us very sick. As one student told their homeroom teacher, “I want to be an environmental engineer, they save lives.”

