

Design challenge engages students



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From left Gabriel Morales, Nola Tosolt and Arjun Leal, middle school students at the River Valley Nature School in Lewisburg, work on their Waste Reaper V6 at the K'Nex STEM challenge at the Central Susquehanna Intermediate unit in Milton.

BY JIM DIEHL

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MILTON — Regional elementary and middle school students tackled environmental issues with specialty building toys during an educational session held Thursday morning at the Central Susquehanna Intermediate Unit (CSIU).

The CSIU is one of 20 intermediate units statewide that hosts a K'Nex STEM Design Challenge, funded by Thermo Fisher Scientific.

Eight teams of students participated in the two-hour Face2Face competition where they designed, devel-

oped, and implemented a solution to an engineering problem with an environmental challenge.

The students were challenged to solve current major environmental issues.

Teams were tasked to research environmental issues, identify one that the team would like to address, and create a solution to that issue by building a prototype out of K'Nex that supported their solution.

Teams of up to four students worked together on their projects.

“This is play with a purpose,” said Colleen Epler-Ruths, STEM education

consultant with CSIU. “This is the ninth year that the CSIU has held the event, sponsored by Thermo Fisher Scientific. This is the first time we’ve held the event in person since 2019.”

Teams were allowed to use up to 1,400 K'Nex pieces. String, tape and rubber bands were also permitted. Schools had to bring their own K'Nex pieces to the event, and students had two hours to put together their project.

The teams were competing for trophies designed out of K'Nex by Columbia-Montour

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Vo-Tech students Justin Gibson, Leland Altamirano, Ben Gearhart and Donovan Michael. The trophies were solar powered recharging stations for electric powered helicopters.

Middle school students from the River Valley Nature School in Lewisburg created the Waste Reaper V6.

“The Waste Reaper V6 picks up garbage and places it in a bin where plastic eating bacteria digests it,” said middle schooler Gabriel Morales. “The reason it’s a V6 is because that’s how many prototypes we built to come up with this one; six of them.”

The River Valley Nature School — a private school — had three teams in the competition. Third graders Leonardo Serra-Harris, Mia Locorini, Adelina Manotti and Rosie Timms created the Habitat Helper.

“The Habitat Helper is solar powered and was designed to house animals until their homes are restored and rebuilt and then they can be returned to

their natural habitats,” said Timms.

The other team of elementary schoolers from the River Valley Nature School included Jack Pfeifer, Isley Parrish and Sarah Stevenson.

They created The Plastic Eating Fishy King.

“We chose ocean pollution for our environmental challenge and our machine takes plastic from the ocean and breaks it down with plastic eating bacteria,” Pfeifer said.

“The interest and passion to do something for nature is already there with our students,” said teacher Elizabeth Sterling. “It’s empowering to the students to create something that helps the environment.”

Central Columbia elementary school students Jake Klingerman, Crue Flick, Caden Barber and Hank Bowman created the Eco Ship.

“Our machine was designed to collect oil and trash from the ocean, solving two of the most challenging pollutions in our oceans today,” Bowman explained.

Danville Middle schoolers

Munjaal Mehta, Henry Naylor, Isaiah Sundaresan and Henry Cotner created the Salinization through Distillation Machine.

“This machine we developed for poor families, families that live near the ocean but have no fresh water,” Cotner said. “It takes the salt out of the ocean water and makes the water drinkable for poor people in third-world countries.”

Mehta said the students “really wanted to make a system that would be cost effective.”

The work by the students was judged on creativity, teamwork, challenge success, design and presentation. Students also had to have a design notebook which included elements of their engineering design process, a blueprint of their apparatus and prototypes of their projects.

Judges for the event were Special Project Technology Manager for the CSIU Jeff Kay, Alex Lewis from BAE Solutions, Pam Slusser from Columbia-Montour AVTS, and George Venios from The



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From left, Jack Pfeifer, Isley Parrish and Sarah Stevenson from the River Valley Nature School compete in Thursday’s challenge.

Improved Milton Experience (TIME).

“When I age myself and remember playing with tinker toys,” Kay said. “We used to think we were so creative, but to see these kids and their complex designs and their creations, I feel like we are in good hands.”

He said students likely don’t realize how much they are learning through the process.

“There’s teamwork in that everybody has a role and they all work well together; it is nice to see,” Kay said. “There are so many brilliant young minds, and that makes me feel good, and is a credit to the teachers who

are also here “

Awards were given to the top teams. First-place teams in each division will advance to the state competition.

The winners in the Elementary division were: 1. Danville Area School District; 2. River Valley Nature School; 3. River Valley Nature School.

The winners in the Middle School division were: 1. Mid-West Area School District; 2. River Valley Nature School; 3. Danville Area School District.

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