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Creekers Create DIY Augmented Reality Sandbox

By Mikayla Eyler, Youngsville High School Student

Are you “Loco for Topo?” Well, my friends and I from Youngsville High School are. My name is Mikayla Eyler, and my friends Collin Clough, Reagan Chase, and Ethan Kesterholt, and I created an Augmented Reality (AR) Sandbox for our 9th-grade science symposium project. We really wanted to allow students to learn by interacting with the AR sandbox. We decided the best way to accommodate that was to create an AR Topographic Map Sandbox.

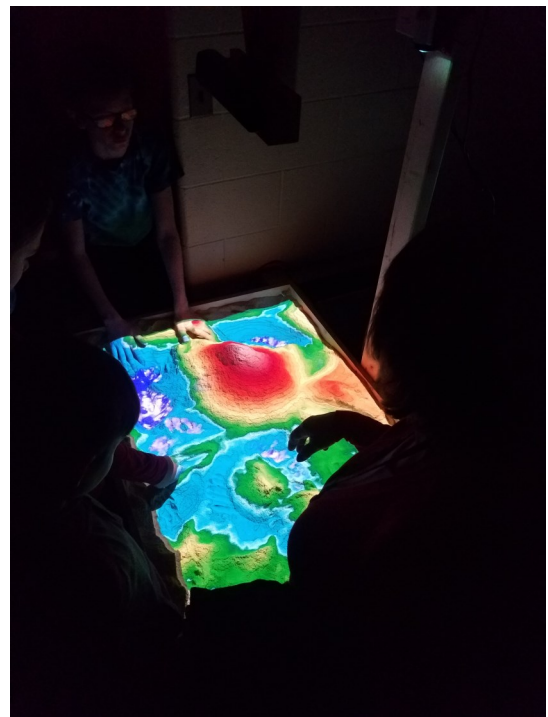
To begin this building adventure, we found all of the instructions we could. Then, my dad helped me build the box for the sand. Collin worked on the technology needed to create this, while Reagan and Ethan obtained all of the sand. Once the materials were gathered, construction began. When it was completed, we had a functioning AR sandbox.

An XBOX Kinect was connected to a computer that had a software program running. The computer was then connected to a projector that projected the colors representing elevation on the sand. The Kinect read the topography of the sand and sent it to the computer.

The results of the science symposium were phenomenal. We all heard things like “your

project is so cool,” and “how did you guys think of this?” The answer to this question had an easy answer: Mrs. Dorunda, our science teacher! Mrs. Dorunda supported us every step of the way.

This project was a challenge, but we enjoyed working together to bring it to fruition!



Above: Students demonstrating their AR Sandbox during the Youngsville High School Science Symposium on April 27, 2018.

Allegheny College Symposium

By Melissa McCann, Allegheny College Student

The students' eyes lit up in awe as they entered the Campus Center at Allegheny College on April 6 for the Creek Connections Annual Student Research Symposium! Research posters lined the tables as students prepared to present their findings to curious onlookers. Creativity was in abundance, with projects on almost any aquatic animal you can think of as well as effects of pollution, successes of restoration, and so much more! Throughout the year-long research project, students learned how to promote environmental awareness through investigating specific watershed parameters that interested them! Most projects were colorfully displayed on trifold poster boards, but a few brave students shared their research findings through an oral presentation in Shafer Auditorium. Way to go!

In all, 371 students presented their projects, 32 teachers were involved, and 55 environmental professionals supported the cause for one huge successful

symposium! Specifically, Amy Williams from the Pennsylvania Department of Environmental Protection - Harrisburg Office was the keynote speaker! She presented about their new webstories, specifically "Looking Below the Surface" about macroinvertebrates found in our streams. Other environmental organizations brought live macroinvertebrates, computer-generated wetland restoration maps, and interactive games to educate and add to the excitement of the day!

The day was just getting started after the research presentations. The students later broke out into focus group activities that afternoon. Underwater robots, pipeline adventures and explorative nature walks were just a few of the topics that environmental organizations and Allegheny students led. Overall, the Creekers had an absolute blast at the symposium! Thanks for coming, and we can't wait to see what projects will be at the next Allegheny College Symposium!



Above: Allegheny College campus center full of projects and Creekers.



Above: Students check out the projects on display at YMCA Camp Kon-O-Kwee.

Pittsburgh-Area Symposium

By Kala Mahen, Allegheny College Student

On April 20, more than 270 students and 18 teachers from schools in the Pittsburgh area arrived at YMCA Camp Kon-O-Kwee for the annual Creek Connections Pittsburgh-Area Student Research Symposium. As buses were unloaded, poster boards covered with a year's worth of research started to fill the tables in the dining hall. Twenty-five different environmental professionals greeted the students as they entered the building.

After everyone arrived, Gary Walters, the keynote speaker from the Pennsylvania Department of Environmental Protection - Harrisburg Office, welcomed everyone and talked about the importance of macroinvertebrates in our local watershed. He highlighted data from the DEP to further explain concepts to the students in attendance.

Students were able to browse other displays before they were invited to watch presentations from other local students. Presentations ranged from researching chytrid fungus to pollinator gardens.

Environmental groups and organizations were waiting for the students when they got back to go to their focus group activity. Topics ranged from crayfish to macroinvertebrates to nature walks. Students were excited to get outside in the nice weather.

Students returned to eat lunch and receive awards for their participation during the 2017-2018 school year. Overall, it was an excellent event that taught students about their local environment! We can't wait for next year!

What would the Lorax do?

Plant more trees around the rivers, so he could cut off access to the river so people can't litter in it—
Ethan, Lakeview

What the Lorax says is true, the skies should be blue. So don't pollute and get a clue! - Dora, Seneca Valley

Don't use straws, buy in bulk, reuse containers— Hope, Maplewood High School

Plant plants along the sides of streams to help stop erosion and to help clean the water— Ethan, Gateway Middle School

Find ways to help the environment in your own house, like putting two bricks in the toilet tank to conserve water— Anna, Fort LeBoeuf Middle School

Use a reusable bag instead of a plastic bag. A small change can make a big difference— Felicity, Quaker Valley

Turn your water off when you brush your teeth, go out to water your plants, and take shorter showers— Quinn, Crawford Central Gifted

The Lorax would collect data about pollution and present it to his local government— Maria, North Hills High School





Above: Creekers at the Pittsburgh-Area Student Research Symposium: Back row, left to right: Laura Branby, Brian Toma, Mimi Zipparo, Melissa McCann, Grace O'Malley, Paul Sutkowski; Front row, left to right: Cortney Carr, Matt Hutchinson, Kala Mahen, Gretchen Barbera, Bella Petitta, Wendy Kedzierski.

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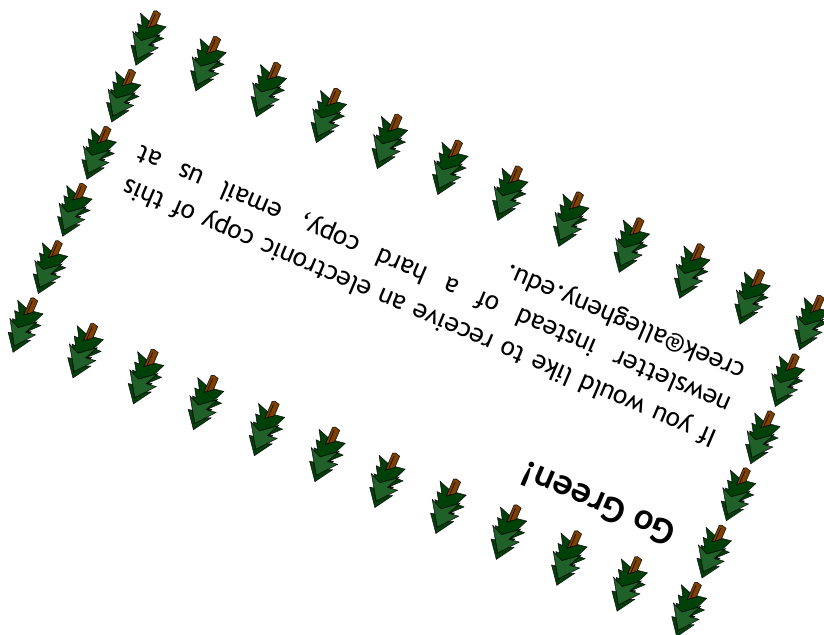
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