

Our Bland Satellite team's face-to-face and online collaborations with Virginia Space, NASA experts, Twigg's Space Lab, and other SW VA student teams, gave our students unique STEM learning experiences. Students developed better technology skills and STEM career interests with these interactions. We were able to travel to NASA Wallops to watch the launch of our 2018 BCHS satellite into space where it orbited Earth and sent back environmental data from outer space and at the edge of our atmosphere. We are now working on our second Bland Thinsat satellite and students were inspired to send another Bland satellite into space in 2020.

Students in Mrs. Tiller's Biology class tested the local rivers and soils for environmental quality. Materials purchased with Wythe-Bland Foundation and Quill funds were also used to enhance curriculum and for projects to promote STEM career interest. Students in Biology, Geology, Math, and Agriculture courses were involved in meaningful problem-based learning with real world investigations of the local environment. Students in Mrs. Trail's statistics class graphed real data collected from space chip sensors. Ms. Tiller's Biology students learned important biological and environmental health concepts with the local stream and soil investigations. Mrs. Cole directed the program and mentored students as they practiced with environmental testing materials. Mr. Hankla and a community volunteer Mr. Schell, both IT specialists, served as technology support throughout all projects. Students in Mrs. Sexton's Geology course and Mr. Miller's Agriculture classes constructed the drones and applied their drone piloting skills to fly air quality, space technology, sensors aboard their drones.

In all of the problem based investigations, students could experience first-hand how human health relates directly to changes in environmental health, even in outer space, in the open air, and in the streams and soils at our feet. There was so much data collected that analysis will continue into the next school year and as they compare data sets from different environments and from different times.

Throughout the project, students developed better critical thinking abilities, gained high level technology and engineering skills, and explored STEM careers. The grant funds directly impacted 101 students from Bland High School and many others that were not associated with the project as they engaged voluntarily in the real-world STEM learning. The program was implemented as planned. We achieved our progress goals and we are ready to take on new learning challenges in the coming year!