



9TH Grade AGORA program student rises to a teacher's challenge using Geomagic Sculpt

In many ways Emily Watson is a normal teenage girl. She is an artistic 15 year old who enjoys hanging out with her friends, being outdoors, longboard skateboarding, and watching movies; especially thrillers. The first movie Emily recalls ever seeing was *Jurassic Park* which ignited a love of dinosaurs. However, *unlike* most teenaged girls, Emily is also part of the Navy Next Generation Outreach and Recruitment Initiative (AGORA) project. Geared toward students with strong math and science skills, the AGORA program was founded in 2014. Its purpose is to reach these high performing students, like Emily, who attend schools in underserved areas. "My math teacher, Ms. Blackwell, introduced me to AGORA because she thought it would be a good fit for me," Emily explains. So, given her artistic and academic talents, building a 3D printed dinosaur model at the request of her teacher, using design software she had no exposure to, in less than two weeks, was right up her alley.

North Carolina's Cumberland International Early College High School (CIECHS) is one of 14 schools selected to participate in the AGORA program. At CIECHS, Emily is among the first group of students to join. Jeff Epps is the IT Director for Richmond County, NC, schools and a lead mentor to the students in

the AGORA program. He first met Emily in the summer of 2015 when she participated in a hackathon event where students learned to use 3D Systems' Cubify Invent to solve a presented scenario. Emily's team placed first in the event and, as an individual, Emily received a perfect score. Mr. Epps was impressed with Emily's skills and ease of operation with the software. With a 2-week trial of Geomagic Sculpt ready to go and knowing her affinity toward dinosaurs, Mr. Epps decided to present Emily with a challenge.

Emily was provided with the software and Mr. Epps dared her to build a model of her favorite dinosaur; the Velociraptor. "I told her, 'you have two weeks to get this done, now show me what you can do' and I couldn't believe what she came back to me with in just 10 days!" Epps marveled.

Geomagic Sculpt is a user-friendly and comprehensive 3D digital sculpting software platform that provides tools that are perfect for the accurate design and sculpting of organic shapes, ready for 3D printing. Provided by 3D Systems, Geomagic Sculpt delivers highly favorable pricing for educational establishments to enable students of every age to learn and use professional design tools.





In 10 days of working with the software Emily proved that Geomagic Sculpt wasn't a challenge at all, but the perfect tool to help her expedite her project within her time limits. Without the restraints of a traditional CAD system, Emily's design was confined only by the limits of her imagination. Even though she did not have access to a 3D Systems 3D Touch haptic device which delivers an enhanced sense of touch while designing, Emily still reaped many creative benefits by using a combination of autosurfaced voxel clay and subD surfaces using a standard mouse provided through her school.

Emily's Velociraptor design is impressive to say the least. In true artist's character, Emily found detailing and texturing to be her favorite part of designing her Velociraptor. "I love how I can tweak it and keep doing more." Geomagic Sculpt allowed her to fine tune the smallest elements as well as incorporate beautiful 3D texturing to truly individualize her model. Despite initially finding her challenge difficult, Emily was able to overcome her challenges independently by relying on Geomagic Sculpt's 'help' tool and some basic trial and error. "At first, I thought it was going to be really hard, but once I got the hang of it I was like, 'I can do this... I got this...'"

Now that Emily has some experience under her belt, she will serve as a mentor to other students in the AGORA program as well as a continuing participant. After revealing an interest in the medical field, specifically neuroscience, during 3D Systems' visit to CIECHS, Emily's latest challenge from her instructor is to sculpt a spine in 30 days or less. Both 3D Systems and Emily's educators are excited to see what the future holds for this bright young talent.

