



UTeach Maker - Showcase Lesson Overview Krystal Evans (Spring 2018)



Lesson Title	Living Sculpture
UTeach Maker	Krystal Evans
Subject and grade level	10th/Geometry
Link to lesson plan and materials	https://evansequation.weebly.com/maker-education.html

Lesson Description:

This Maker Project provides a place for math and art to intersect. Students are asked to Make a sculpture that is meaningful to them in some way. Then, students put together a presentation that included how the sculpture was meaningful, the math included in their sculpture, and a short reflection about putting their projects together.

Lesson Development:

This lesson started with me taking the UTeach Maker online Professional Development course. I could not think of anything that had the potential to be very creative outside of the 3D figures unit. Having students create sculptures can be very open ended, but there is also a lot of potential to be meaningful to students. Then, I spoke with Shelly and she encouraged me to have this lesson include multiple units. I said yes, but I had no idea how that would look. Students learned the material in the 4th quarter. They had 4 days at the end to build their sculptures and 2 days to present. I still do not think I achieved it including multiple units, but if there is one thing I learned being a part of UTeach Maker, it is that revision is part of the process, and I have many ideas about how to revise this lesson.

One thing that I was sure of from the beginning, is that this is an individual project. No two students have the exact same things that are meaningful to them, and the point of this project was for the students to make something meaningful.

Lesson Implementation:

I taught this lesson to my two on-level geometry classes at John B. Connally High School. In total, there were 45 students who I taught this to. Many of the students were English Language Learners and/or came from low-income families. There was only a handful of students who received special

education or 504 services. I came into their classroom in the middle of the year, and they had previously not been exposed to a lot of open ended instruction.

Connection to important concepts and skills within the discipline and/or across subject areas:

The following are the Geometry TEKS that are used in this project.

- G.11(A): area of regular polygons
- G.11(B): area of composite 2D figures
- G.11(C): Lateral and total surface area of 3D figures
- G.11(D): Volume of 3D figures

For future iterations of this project, I would like to include more TEKS. I also feel like this Maker project could be translated to different subjects, in and out of math.

Reflection:

What Went Well:

Students who usually did not do much work or were not engaged in class did this project. It was amazing to see them engaged, working hard, and excited to show off their sculptures.

There was a conversation between two students, where one of them defended their shape categorization by using the definition of the shape. She said that her sculpture had rectangles, but another students said they were squares. The first student said that the sides were not the same length, so they could not be squares.

For the launch of the lesson, I had students find art that inspired them. This was a struggle for a lot of students, but for a few it was empowering. One student choose the official portraits of former President Barack Obama and First Lady Michelle Obama because they were the first black presidents who choose to have black artists make their portraits and she found that inspiring because she is black. Another student choose two pieces of art by different artists who were told to stop doing what they loved because they were not good at it, but they are renowned artists, Vincent van Gogh and Tim Burton.

Thoughts for the Next Iteration:

I want to bring more math concepts into this sculpture. I would like to include similar and congruent triangles, more concepts about properties of quadrilaterals, and properties of circles.

I would also like to weave the Making throughout this project. This year, my ideas for this project really formed after I told the students what we were doing, so I wasn't able to bring Making into this project other than the end. I think I want students to create the shapes as we learn about them, and then find a way to put them together at the end.

I need to start early with getting students to think about what inspires them. That was one of the most challenging parts about this project. Students kept asking me what to make, and I kept telling them to make something meaningful to them, but many did not know what that was.