

“Tissue Model of the Epithelial Mesenchymal Trophic Unit”

Outreach Overview

**Carley Schwartz, Elijah Diederich, Anuraag Shreekanth Belavadi,
Caitriona Treacy & William Onuscheck**

Our group presented outreach on January 26th, 2024 at Bethesda Elementary School in Waukesha, WI. In total, we had 78 fifth graders in our audience and the demographic of the school consisted of 33.8% Hispanic, 58.6% White, and 4.1% Black. Students remained in their individual classrooms and Caitriona, who is fluent in Spanish, presented to the Spanish-primary speaking classroom, while the remainder of the team divided two each to the other classrooms. Due to the large classroom sizes, grade level, and teachers wanting the students to be in their classroom pairs, the presentation was designed to highlight participation and independence in the design process while having the majority of materials prepped ahead of time for efficiency. First, the outreach activity started with a 10-minute presentation covering biomedical engineering, the design process, and prosthetics. The group then transitioned into the activity, each pair of students were provided the materials detailed in our activity template along with an overview of how they can start building the prosthetic hand. The final component of the activity was to test their prototype by grabbing a styrofoam ball or rolling a styrofoam dice. The students then discussed with us how they thought they could have improved their prototype or worked as a team better.

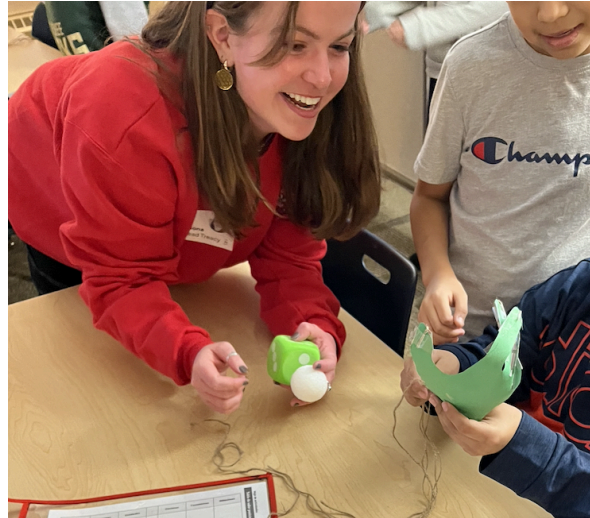
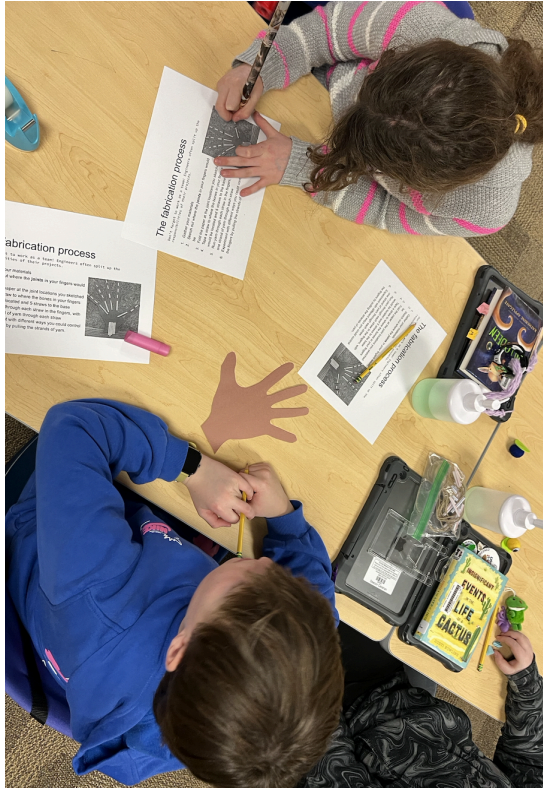
The 5th graders who participated in this activity were nothing short of amazed at what they had created by the end of the activity. Within small groups, they were able to take regular household materials and construct an apparatus capable of picking up foam dice and other small objects. These groups of students reacted very well to the activity, as it seemed like something much different than what they usually do in class. Instead of working on a packet of math problems, they were able to problem-solve and get excited about working through a complex process to create their final product.

The only constraint seemed to be time, as some students took longer than others to complete this activity and found themselves with little time to test out their design. To enhance future versions of this project, a few improvements can be made. Offering a wider range of materials would stimulate creativity and encourage diverse problem-solving approaches. Instead of pre-packaged materials, allowing students to select their supplies would foster deeper engagement and thoughtful decision-making. Also, extending the time allocated for the activity would afford students the opportunity to refine their designs and conduct more comprehensive testing. Implementing these enhancements could transform the outreach activity, fostering greater student participation and learning outcomes.

Photos:

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