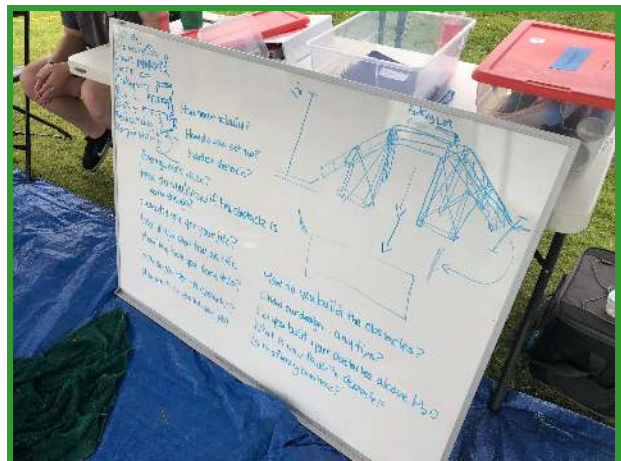


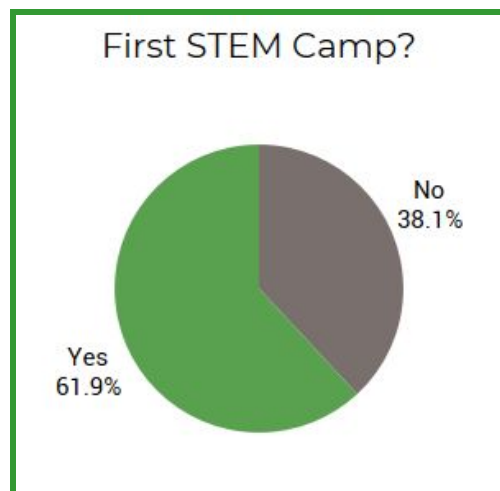


Conquer Youth Summer Camp combined obstacle racing with STEM to make a week long adventure for Tulsa area students. Participants were challenged to design and create a unique obstacle for the Conquer Youth race at the end of camp. Through the process, science experiments were conducted and tests were ran on the obstacles. Moreover, students were able to connect with the engineers at *American Ninja Warrior* to gain a behind-the-scenes perspective on obstacle building for television.



## Participation

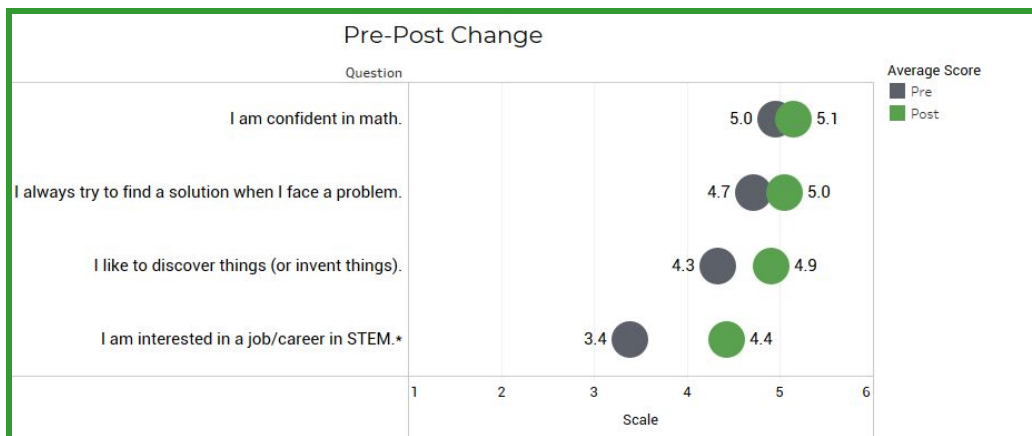
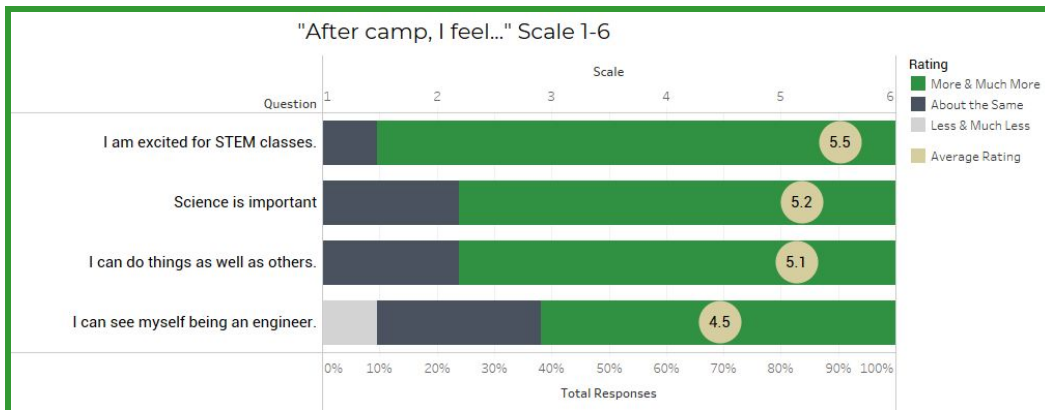
Thirty-four students from across northeast Oklahoma participated in the week long camp. Fifteen schools and nine districts were represented. Participants were divided into elementary and middle/high school sessions. For 19 students, Conquer Youth Summer Camp was his or her first STEM camp. Additionally, roughly 450 Tulsa-area boys and girls participated in the obstacle race on the following Saturday after camp.





## Surveys

Students were surveyed at the beginning and end of camp to measure any changes in STEM attitudes. Surveys were separated into two sections: retroactive and pre-post analysis. In retroactive analysis, students were asked to think about their time at the camp and determine if they feel more or less the same with each statement. In pre-post analysis, students were given statements on both surveys to report any significant changes.





## Results

In retroactive, all reported feeling more aligned with the statements after camp. Excitement for STEM classes reported the highest rating. Additionally, identifying as an engineer saw the largest improvement. Pre-surveys averaged a 3.8 response, showing the importance of the change in retroactive. For pre-post statements, all showed an increase in average ratings. However, STEM career interest was statistically significant in the changes from pre to post survey ( $p < .001$ ). This follows recent research that hands-on STEM experiences lead to higher career or academic identity in the STEM field, especially in middle school students<sup>1</sup>.



## Quotes

### What was your favorite part?

"Working together with others and getting challenged."

"Seeing what we can do as a team."

### How did camp make you feel about yourself and STEM classes?

"Awesome, I feel much more confident."

"I feel more confident, STEM is easier."



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<sup>1</sup> Williquette, H. A., & Khaliqi, D. H. (2016). STEM academic & career identity formation among middle school students. *Educational Research: Theory & Practice*, 28(2), 31- 35.