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ADDRESSING THE LEARNING LOSS DURING THE COVID-19 PANDEMIC THROUGH THE ADAPTATION OF VIRTUAL PLATFORMS

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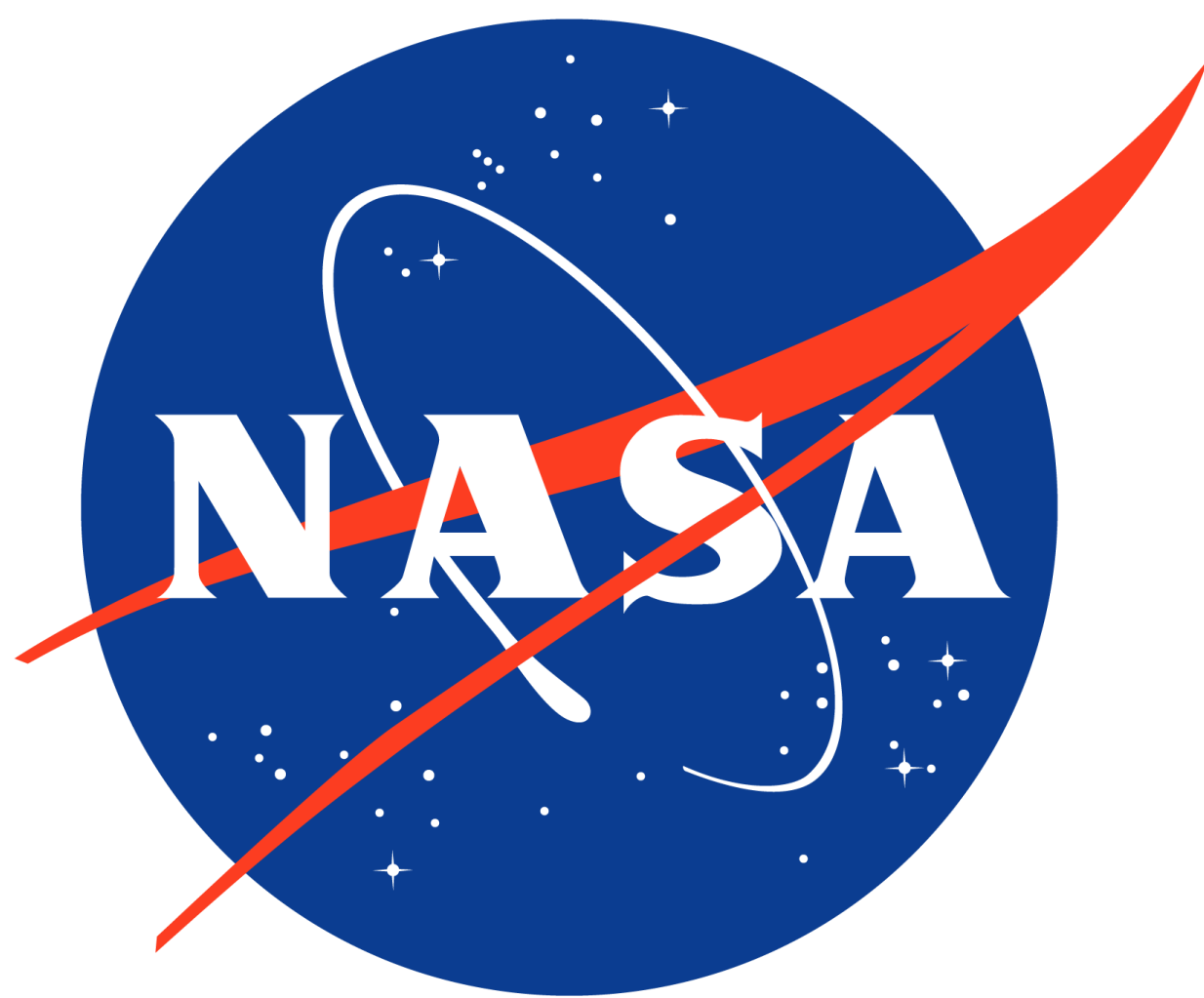
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INTRODUCTION

The York College-hosted NASA MAA (MUREP AEROSPACE ACADEMY) has always played a pivotal role in minimizing the learning loss during the summer months, which was heightened during the pandemic.

Support from AT&T, Con Edison and NASA enabled the MAA program at York College to offer a virtual STEM education with basic science and python-based concentration to 1000 plus underserved K1-12 students from the community last summer, including 160 high school students.

KEY TO THE OPERATIONAL SUCCESS

Two factors made this endeavor fruitful:

- 1) Allowing additional time to engage in STEM lessons
- 2) increasing self-motivation to successfully accomplish assigned tasks.

Students built partnerships and resolved technical issues with the smaller class size.

MAA students normally receive more than three hours of uninterrupted STEM lessons, as opposed to less than 90 minutes of instruction time in math and science classes in their respective public schools.

STEM EDUCATION AND CONTINUITY

Based on the successful outcome from the 2020 operation, York's NASA MAA will be continuing its peer mentoring initiative, with the goal to increase the scope and allow additional students to receive both academic and research training during summer 2021, fall 2021 and spring 2022.

Applied mathematics including analytical geometry, trigonometry, number theories, and algebra, as well as science and python-based programming lessons will be offered to students (Image 1 through 6).

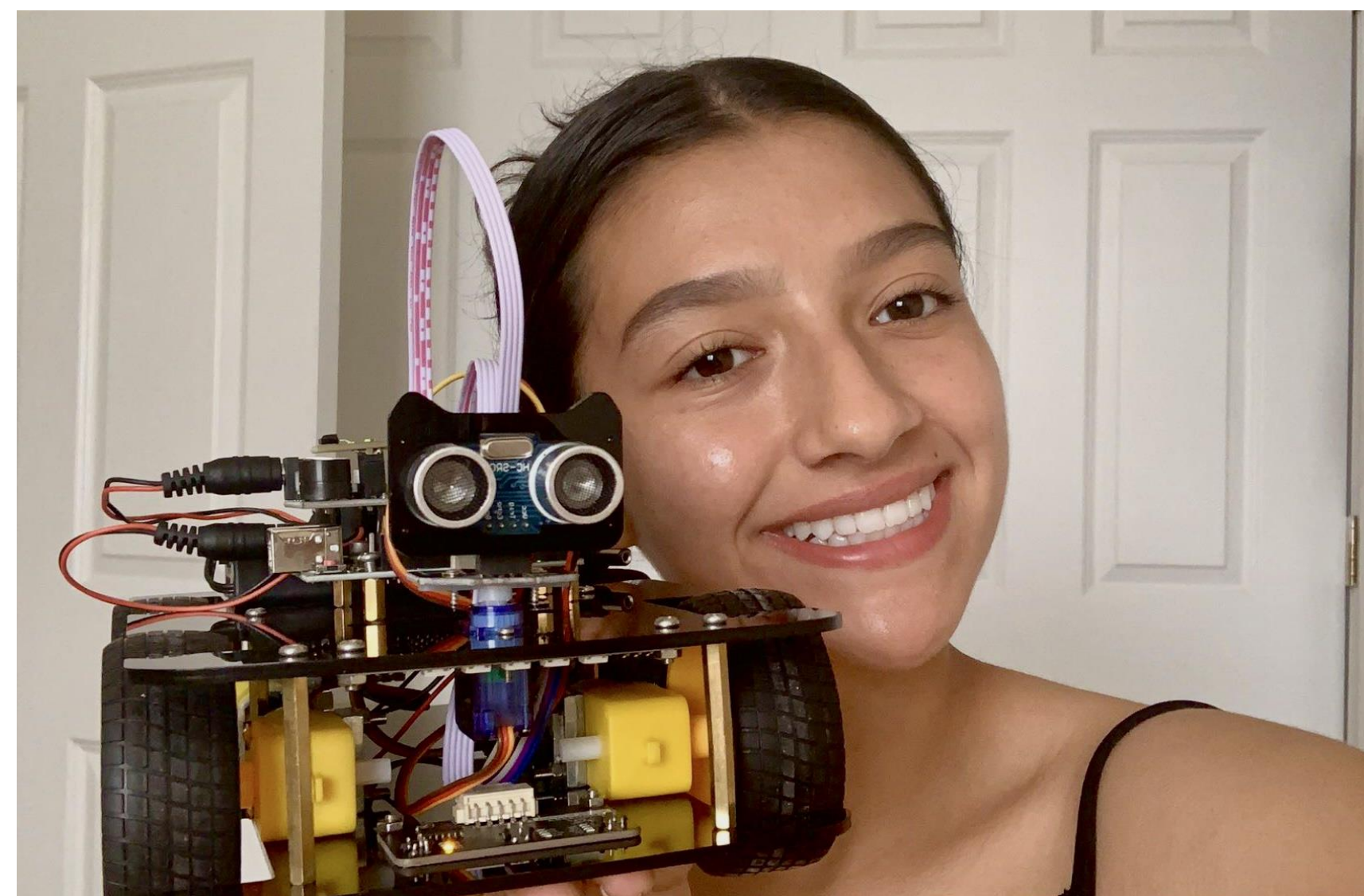


Image 1: Very happy to assemble robot car following programming language.



Image 2: Students are receiving Robotic Excavator Engineering Kit to take home and conduct research.



Image 3: (left) This is what it looks after putting together all the puzzle pieces. (right) A completed task using programming language. Top Robotic Excavator Engineering Kit.

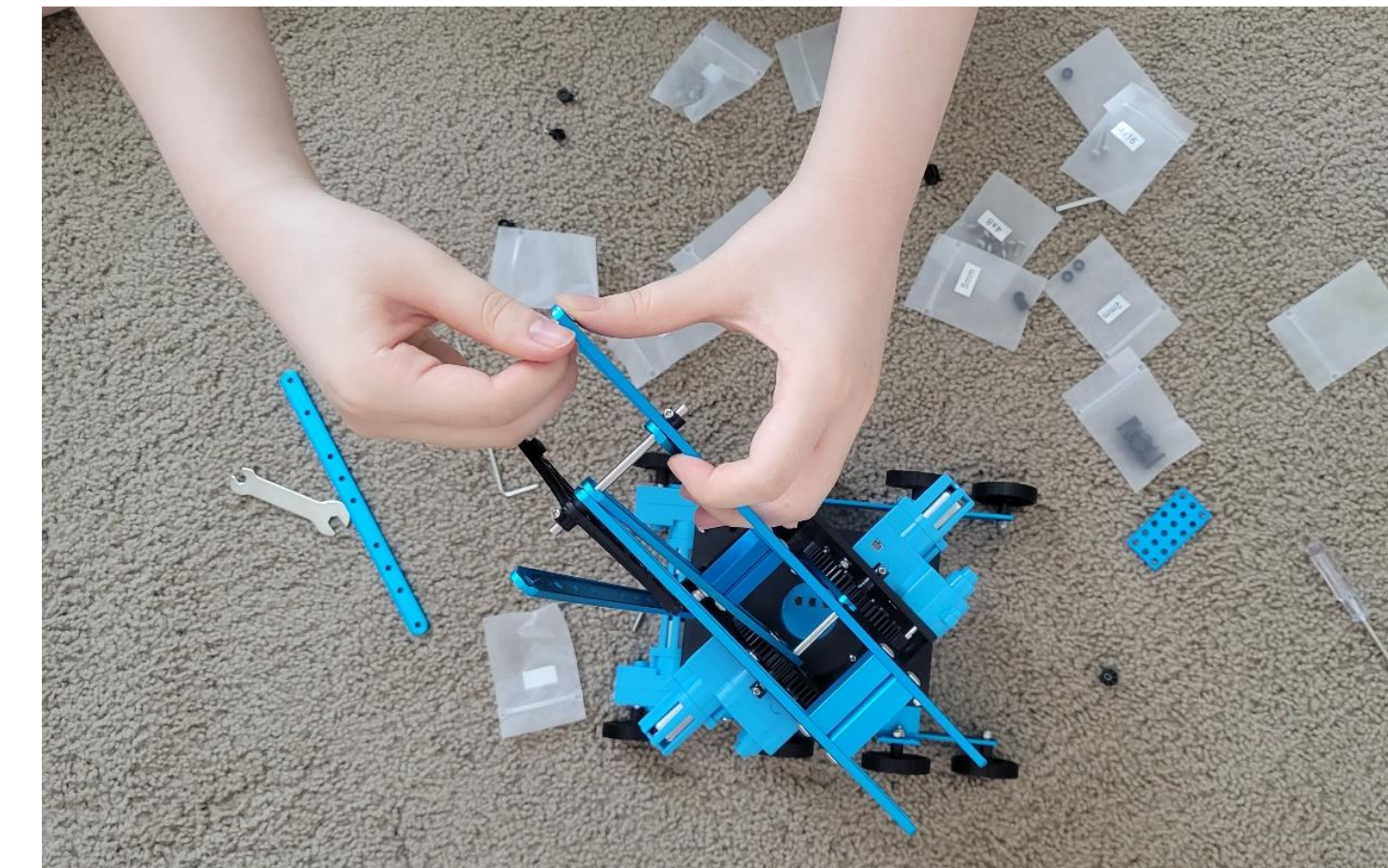


Image 4: Certainly a tedious job to assemble all of the parts; luckily students had enough time to complete in "stay home" situation.

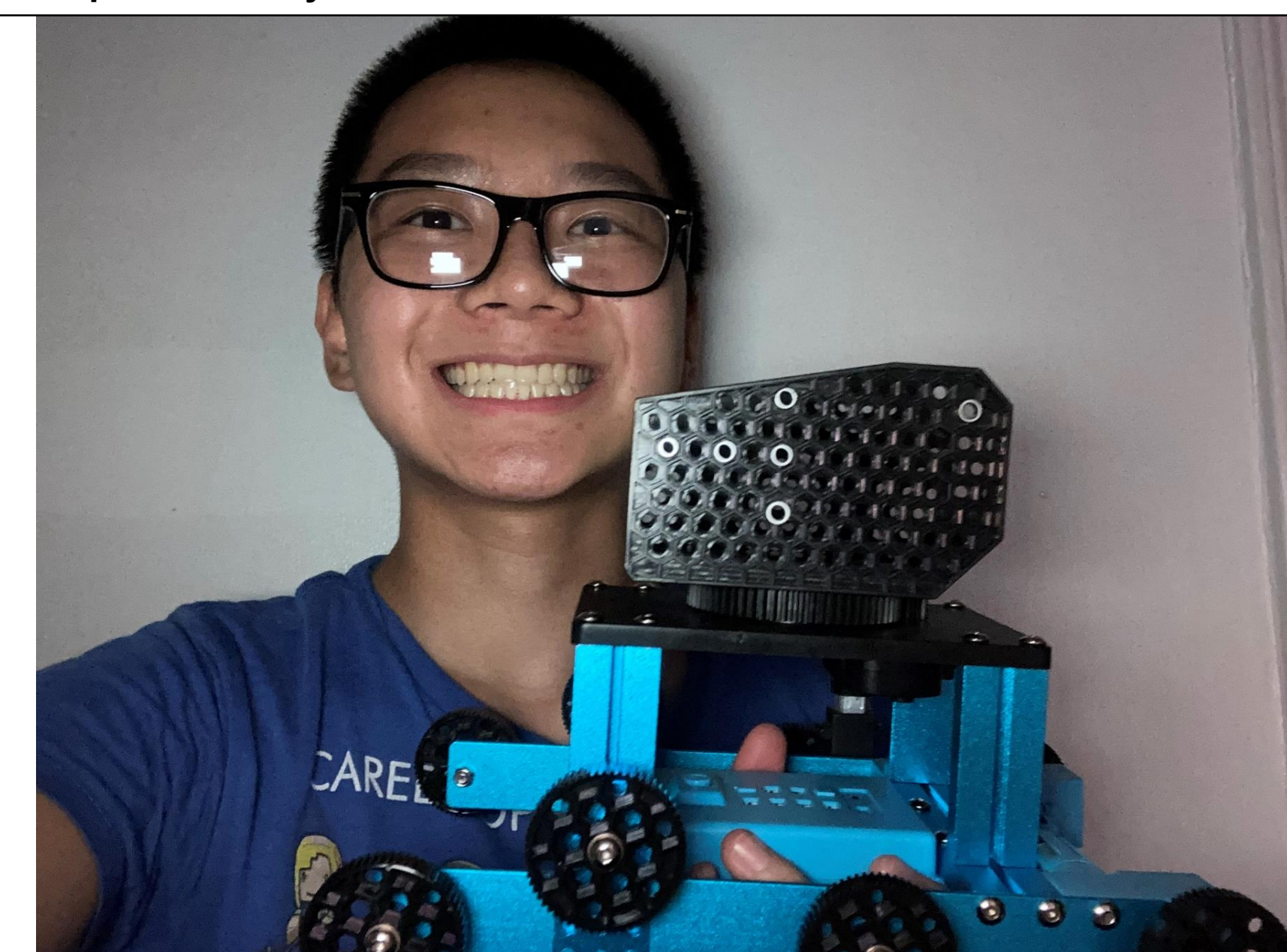


Image 5: Super happy! The finished robot.

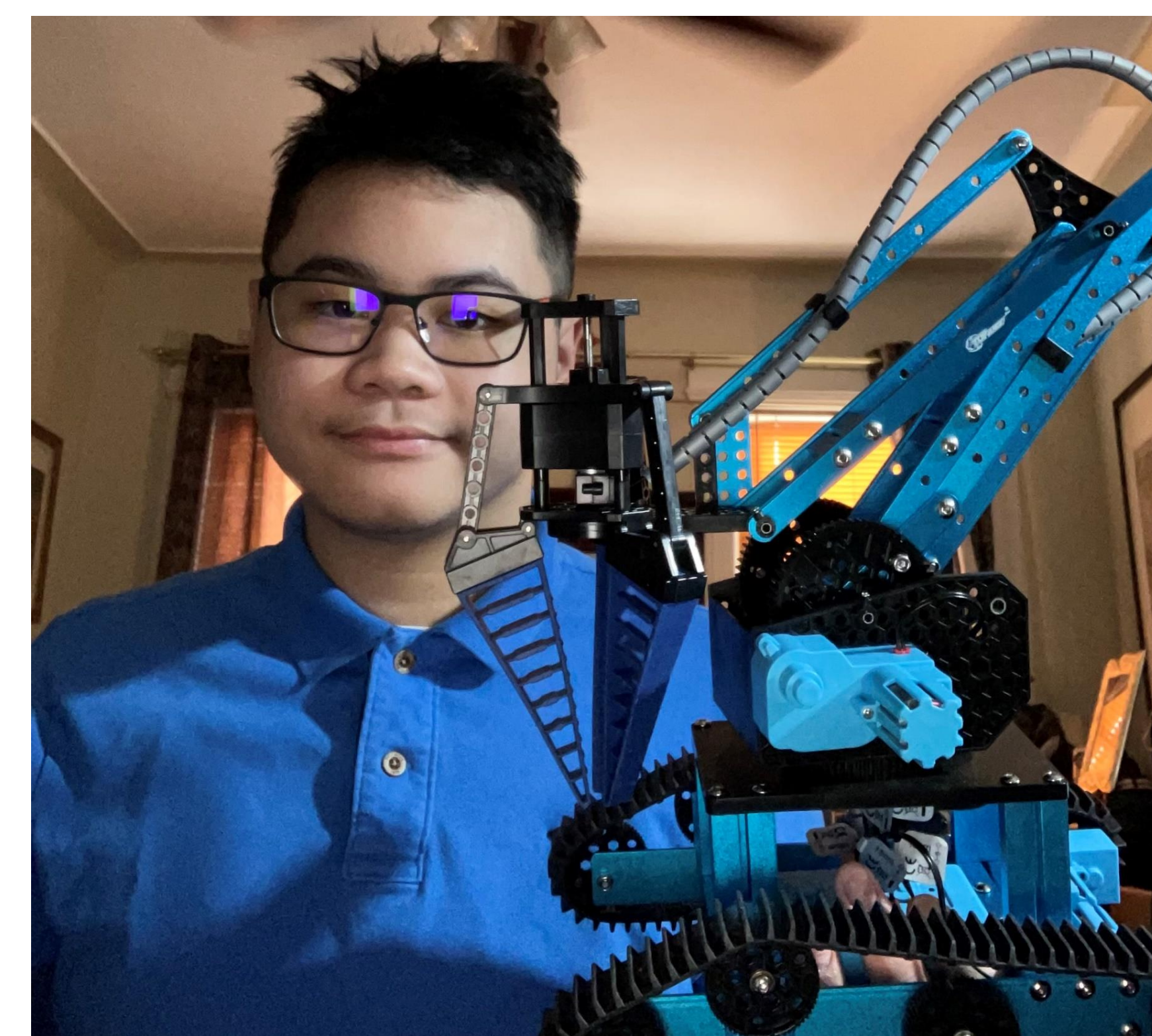


Image 6: Wasn't that bad! Another successful accomplishment.

ENHANCED CURRICULUM ACTIVITIES

The other notable pedagogical focus will be to provide meaningful connections with scientific vocabulary and how to communicate effectively.

Group or individual presentations will be used in classroom activities. Modified and newly structured math and science curricula will enable participating students to fully engage in an interactive learning environment through discussion, breakout sessions, and homework.

Individual math and science lessons are built on the best practices tailored down to the students' reach and are aimed at fostering teamwork and group learning.

CONCLUSIONS

It is very important for the MAA summer program to continue to offer evidenced-based STEM education to minority students and allow them to become knowledgeable, well informed, and ready to apply for internships and attend college focusing on STEM subjects.

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ABSTRACT

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