Lego Robotics After-School Club at University Park ES

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Site Information:

University Park Elementary School

4315 Underwood St, University Park, MD 20782

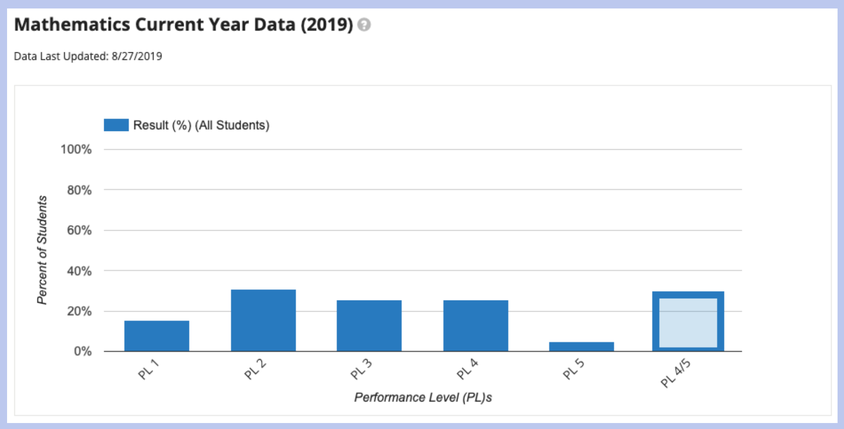
https://www1.pgcps.org/universitypark/

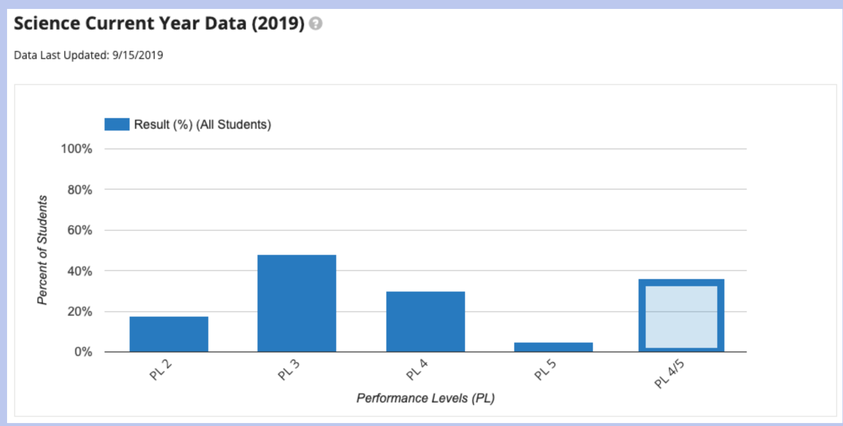
Mr. Timothy Reed

Mission: "To provide a great education that empowers all students and contributes to thriving communities."

Issues Confronting Site:

University Park ES is located in a low-income and minority community. The majority of students are Hispanic and 25% of students have Limited English Proficiency. The school only has 34.2% proficiency in science and 40.9% proficiency in mathematics.





Above is the MCAP data for Mathematics and Science in 2019 for University Park ES. To be proficient in a subject, students must be in PL4 or PL5. The furthest right bar represents the percent of students that are PL4 and PL5, and therefore proficient in the subject. Graphics are from Maryland State Department of Education Report Card (https://reportcard.msde.maryland.gov/Graphs/#/Assessments/MathPerformance/2MA/3/6/3/1/16/1902).

Future Work:

Most students enjoyed the robotics club and expressed their interest in continuing a STEM education. Although these students are expressing interest in STEM in elementary school, it is known that there is less minority students in STEM degree programs and careers. I would like to do a more advanced robotics club at a local high school in hopes it would translate to more students pursuing STEM degrees after high school graduation.

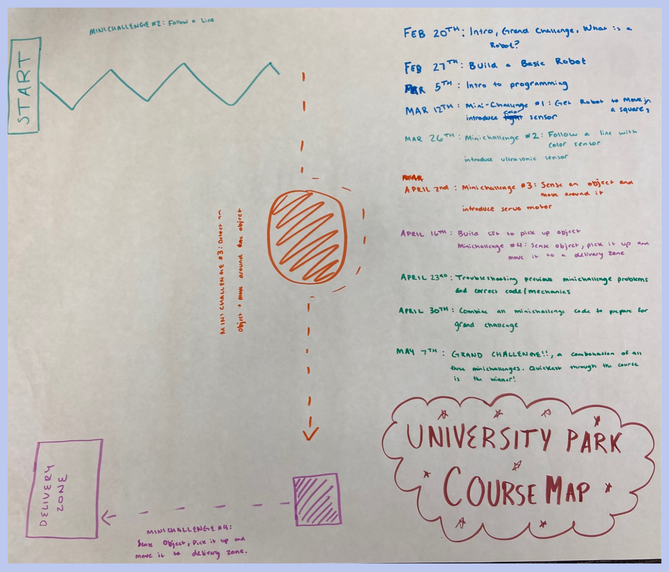
Introduction:

For my practicum project, I completed CPSS240, Contemporary Issues in STEM Education. This course involved running an after-school robotics club at a local elementary school for 3rd through 6th graders and classroom discussions about minority participation in STEM education and careers. My group went weekly to University Park ES, which is only 5 minutes away from campus.

Typical Service Day:

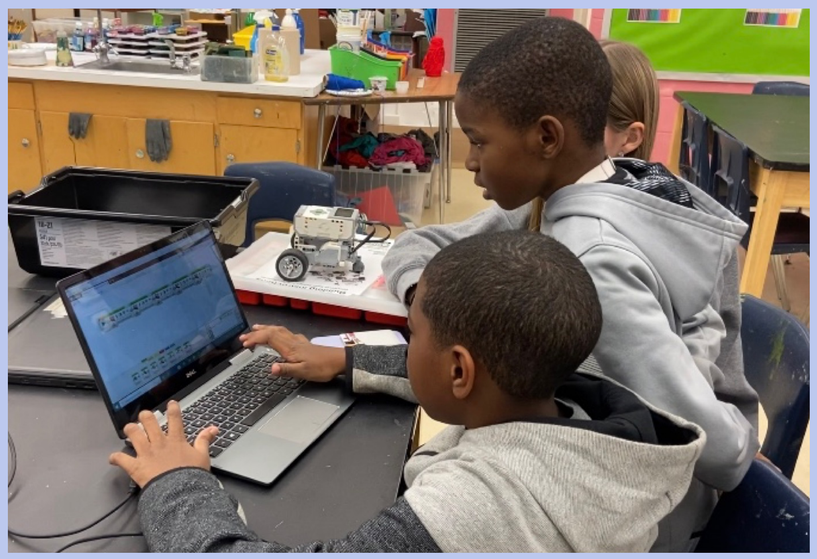
Our after-school robotics club occurred every Tuesday from 2:15 to 3:15. On a typical day we would do the following activities:

- Meet at the chapel at 2:00
- Arrive at the school and sign in
- Review group rules and assign roles for the day to students
- Complete activity on schedule pictured to right
- Pack up robotics equipment and return to campus



Impact on Students:

- All were extremely excited to build and code their robots
- Most students excelled in programming and picked up the language quicker than me
- Expressed interest in continuing their STEM education
- Produced innovative and creative solutions to problems presented to them



Acknowledgments:

First, I would like to thank Dr. Holtz and Dr. Merck for an amazing two years in the Science and Global Change Scholar's Program. I would also want to thank Mr. Timothy Reed for the engaging class discussions on problems in STEM education and potential solutions. Also, a big thank you to University Park Elementary School for allowing us to host our after-school robotics club with their students.

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