

Abstract Submitted
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Exploring the Engineering Process MARGARET KAYE, Barnard College, BRANDON MACWHINNIE, PAUL MITTAN, Lockheed Martin — It is becoming more and more important to engage today's youth with enrichment programs to fill the rising need for graduates in STEM-related fields. This project was to design, outline, and model a project for a high school program called Engineering Explorers that would engage students in the engineering process. Margaret Kaye worked as the mechanical lead on this project and created CAD designs for various versions of a rover with a collection mechanism on the front. The team also 3D printed these parts, tested them in various fashions, and constructed a functional vehicle with the help of the Lockheed Martin Owego-based team. The team also created circuit design and software for an iPhone app, which controlled the robot, along with a large amount of documentation and instructions for high school students to repeat the process and make use of these designs. In the end, this prototype was fully functional, and the high school program is set to build a collection of similar robots in the near future to use in a competition. We will present a summary of the project and describe its main goals.

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