



APPLICATION FORM

All applications must include the following information. Separate applications must be submitted for each eligible program. **Deadline: June 1, 2020.** Please include this application form with electronic entry. If you do not receive an email confirming receipt of your entry within 3 days of submission, please contact [Gage Harter](#).

PROGRAM INFORMATION

County: County of Henrico

Program Title: A No-Cost Camp Expands Access to Robotics, Engineering and Coding

Program Category: Information Technology

CONTACT INFORMATION

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SIGNATURE OF COUNTY ADMINISTRATOR OR DEPUTY/ASSISTANT COUNTY ADMINISTRATOR

Name: Brandon Hinton

Title: Deputy County Manager for Administration

Signature: 

Program Overview

A collaborative program created by two specialists in Henrico County Public Schools' Career and Technical Education program, Summer Robotics, Engineering and Coding — or REC — Camp provides up to 40 rising seventh-graders the chance to explore computer science at no cost. The mission of the program was to promote, enrich and increase learning experiences available to students who are part of underrepresented, and often underrecognized, demographics in computer science fields. Offering transportation and a no-cost alternative for the two-week program eliminated the financial burden and a roadblock experienced by many disadvantaged students within the community. Removing obstacles put the focus on engaged learning as a primary objective.

Problem/Challenge/Situation Faced by Locality

Based on research by the school division, there are no summer camps in Henrico County that provide access to and exploration of computer science at zero cost. Placing a financial burden on additional experiential and hands-on learning can create a barrier to participation. This can discourage families and students from actively pursuing computer science courses, leading to underrepresentation in this career field.

To solve funding-related issues, the camp's facilitators were paid with Title IV grant funds and equipment was borrowed from existing inventories. We aim to build the computer science workforce, and we share in the pride of educating and empowering our students to grow in the field of computer science.

How Program Fulfilled Awards Criteria

Our commitment to the education and preparedness of our students and future leaders through an innovative summer program fulfills the criteria of the VACo awards. Summer REC Camp provides hands-on exploration to middle school students underrepresented in the computer science career pathway. It also eliminates the financial hardships many of our families face that can be a barrier to students investigating computer science. Our achievement in successfully capitalizing on existing summer school resources while keeping expenses to a minimum has offered a new service to our community that actively empowers and engages our students to achieve beyond the classroom. We are proud to enhance the education of our students and provide them with the tools and skills necessary to succeed in their upcoming school years and beyond.

How Program Was Carried Out

The program was a collaboration created by two specialists in Henrico County Public Schools' Career and Technical Education program — a business education specialist and middle school STEAM (science, technology, engineering, art and mathematics) specialist. Planning for the camp began in February 2019. We frequently met to determine camp needs, create a timeline, and map out a plan of action. We met with the HCPS summer school team to learn the requirements, the best location to host the camp, costs to consider, technology constraints, and transportation logistics.

A name and logo were needed for the camp, details of our plans were shared with marketing students at Glen Allen High School. Students were given one week to create and present to the specialists their marketing plan, a logo, and a name for the camp. The selected name – Summer

REC Camp – was created by these students. Their graphic creation and flyer are attached to this application.

Two teachers were selected to facilitate the camp: one middle school business teacher and one elementary school innovative learning coach. We met as a team twice to plan and prepare for the camp. We ultimately decided to provide two one-week sessions to rising seventh-graders at specific middle schools, based on their free and reduced-price meals percentages. Promotional flyers were provided to the selected middle schools to display within their buildings. School counselors were asked to announce the camp at their schools. We also used SchoolMessenger (our home call/email service) to inform parents. Registration was available to parents via a Google form that captured students' home school and grade level in addition to name and closest elementary school for transportation purposes. After registration closed, we sent an acceptance email to parents that included a letter outlining what to expect for the week, bus stops, and the required school health forms that needed to be completed and returned on the first day of each session.

Session one of Summer REC Camp began Monday, July 8, and ended July 11. Students attended each day from 7:15 a.m. to 12:45 p.m. and used school buses or parent-provided transportation. A general schedule of the day is below. Session 2 began on July 15 with a new group of 20 students and followed the same general schedule:

General Schedule:

- Arrival: Students enter the building beginning at 7:15 a.m.
- Breakfast: 7:30-8 a.m.
- REC Camp activities
- Lunch: 10:50-11:15 a.m.

- REC: Camp activities
- Dismissal: 12:45 p.m. (Buses depart at 1 p.m.)

On the first day of each session, introductions were made, students got an overview of the camp, and were informed about behavior expectations. This was followed by diagnostic activities to determine skills and prior knowledge. Day two allowed for exploration of equipment (Spheros, Legos, We Dots, Ozobot, scratch coding, circuit kits, drones, Merge Cubes, Makey Makey, Bloxels, and more). There was also time spent sharing and reflecting before dismissal. On day three students were presented with a specific challenge and asked to provide an answer using their selected equipment or coding platform. Parents were invited on day four, the last day of the session, to view students' solutions.

Financing and Staffing

Costs attributed to Summer REC Camp 2019 were minimal because we used the summer school's existing resources, such as program space, meals and transportation. Summer REC Camp strategically relied on existing resources to ensure the success of the program. The camp was held at an established and well-equipped in-session summer school site, which had school staff (administrators, school nurse, cafeteria staff, etc.), summer school bus transportation, cafeteria meals and HCPS laptops. Securing and relying on Title IV grant funds as a means of paying teachers and purchasing equipment and supplies eliminated the need to access general funds allocated towards classrooms for the following school year.

Title IV grant funds in the amount of \$2,800 were allocated to two teachers to write the curriculum, plan daily sessions and facilitate the two one-week sessions for 40 students at a total of 104 hours. We purchased 50 T-shirts and 50 string backpacks for all participants at the cost of \$300.

At the end of each session, students were given a circuit kit to continue their computer science exploration at home, which cost \$1,000. Our total expenses were \$4,100. We had budgeted \$5,000 in expenses. The leftover funds of \$900 were returned to a general Title IV account and used by the school division for other educational purposes.

Program Results

Since the 2019 Summer REC Camp was our first iteration of the program, it was necessary to seek feedback about the overall effectiveness and students' experiences. At the end of each session, students and parents were asked to provide feedback using a survey regarding their experiences. The results would highlight areas of excellence, and more importantly, determine areas of improvement to adjust and implement for summer 2020. Out of 36 students, 22 completed the survey. 57% loved their experiences and felt the program provided enough equipment to explore; 76% noted they would suggest the camp to a friend, and nearly all participants suggested we extend the camp beyond one week.

As a result of Summer REC Camp's success, we will extend the outreach of the program by raising the number of participants to 30 students per one-week session. We will also provide firsthand internship opportunities to high school students who will serve as additional assistants to our teacher-facilitators. The camp will remain cost-free for all families, emphasizing accessibility to gaining and increasing knowledge within the many fields of computer science.

Brief Summary

A collaborative program created by two specialists in Henrico County Public Schools' Career and Technical Education program, Summer Robotics, Engineering and Coding — or REC — Camp provides up to 40 rising seventh-graders the chance to explore computer science at no cost. The

mission of the program was to promote, enrich and increase learning experiences available to students who are part of underrepresented, and often underrecognized, demographics in computer science fields. Offering transportation and a no-cost alternative for the two-week program eliminated the financial burden and a roadblock experienced by many disadvantaged students within the community. Removing obstacles put the focus on engaged learning as a primary objective.

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Supplemental Material

