



SUBMISSION FORM

All submission forms must include the following information. Separate submission forms must be turned in for each eligible program. **Deadline: July 1, 2024.** Please include this submission form with the 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: Christmas Under the Clocktower
Program Category: Community & Economic Development

CONTACT INFORMATION

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SIGNATURE OF COUNTY ADMINISTRATOR OR DEPUTY/ASSISTANT COUNTY ADMINISTRATOR

Name: Monica Smith-Callahan
Title: Deputy County Manager for Community Affairs
Signature: *MS Callahan*

Program Overview

High Tech Academy students enrolled in Henrico County Public Schools' Advanced Career Education Center at Highland Springs collaborated with the Henrico Education Foundation on a unique real-world engineering opportunity to create a holiday tree that was put on public display for an upcoming community event. Students used the engineering design process to research, design and construct the tree. Like other real-world engineering tasks, the students had many limitations, which included only using items they brought or could salvage from other classes. Other ACE Center programs — including carpentry, electricity and HVAC classes — contributed materials and expertise in cutting wood and metal.

The tree was publicly displayed inside Richmond's 1901 Main Street Train Station during December for the "Christmas Under the Clocktower" community event. The ornaments on the tree were made by Henrico County Public Schools elementary students, representing what they want to be when they grow up.

Problem/Challenge/Situation Faced by Locality

The Henrico Education Foundation sponsors an annual Christmas Under the Clocktower community event; this year the event's theme centered on careers. Organizers wanted to engage community students and contacted the ACE Center at Highland Springs to help build a tree. This was a unique way of engaging students from elementary through secondary levels to showcase careers for the community.

How Program Fulfilled Awards Criteria

This project is an example of collaboration — how community partners like the Henrico Education Foundation can work with schools to provide work opportunities. Students had the chance to engage in a community event that helped everyone learn about career

opportunities. This project spanned elementary through high school students and showcased careers with the elementary ornaments. High school students were able to demonstrate their engineering abilities by participating in a tree design challenge, prompting them to think differently about how a tree could display ornaments.

How Program Was Carried Out

The High-Tech Academy students had approximately six weeks to research, design and construct the tree. The Henrico Education Foundation provided clear criteria and constraints at the beginning of this challenge, enabling students to begin brainstorming solutions. Students quickly realized they had more questions as they generated ideas and connected with HEF to get regular feedback about their ideas as they narrowed their focus.

Once students had a solution in mind, they developed a materials list and began to seek additional assistance from other programs to help build their tree. They worked with carpentry, electricity and HVAC students and teachers to learn standard material sizes, weights and other important factors that needed to be considered for the project. One challenge they had to think through was how to fit the tree in a vehicle so it could be transported to the Clocktower event.

Students began to construct their designs with donated materials and supplies. They kept safety as a top priority when learning how to use cut, paint and fasten materials. Materials included metal, wood, paint, lighting, fasteners and pipe cleaners.

Financing and Staffing

There were no costs to the school division. All materials were donated to support this project and existing staff members helped manage it.

Program Results

High Tech Academy students completed an engineering journal to research, design, develop and construct their solution to this unique challenge. This was a real-world challenge with a client. It enabled students to experience an opportunity to create something unique for a community event that would help showcase career and technical education in our community. Students loved the project and went to visit their tree at the beautiful 1901 train station during the event (see image on the last page as an example).

Brief Summary

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Christmas Under the Clocktower Supplemental Material

