SPRING 2026

DEERWOOD ELEMENTARY

Greenhouse Proposal

Engineers Without Borders Georgia Tech Chapter

PRESENTED TO:
Deerwood Elementary School and Community Members

PRESENTED BY:
Georgia Tech Engineers Without Borders - Atlanta Project Technical Team

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INTRODUCTION

Deerwood Academy and Community Stakeholders,

We are thrilled to present this proposal for the Deerwood Academy Elementary School Greenhouse Project, an initiative that combines sustainability, education, and community collaboration with a robust foundation of technical planning and execution. At Engineers Without Borders, we are committed to designing and implementing solutions that inspire learning, innovation, and hands-on engagement for students.

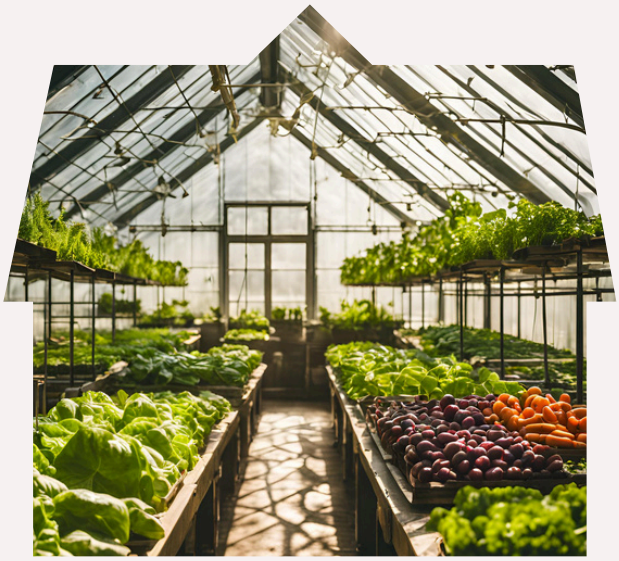
This proposal provides an in-depth overview of the greenhouse project, including its objectives, technical specifications, detailed budget analysis, timeline, and research findings. Additionally, it highlights insights from site visits and feasibility studies. The greenhouse will transform a back field into a functional, interactive space where students can explore agriculture, sustainability, and environmental stewardship through hands-on learning.

Your insight, input, and involvement in this process are critical. By offering feedback, and engaging with our team, you can play a pivotal role in refining and advancing this initiative. Together, we can create a sustainable resource that not only enhances educational opportunities but also serves as a model for future community-driven projects.

Thank you for considering this opportunity to collaborate with us. We look forward to working together to create a meaningful and impactful resource for Deerwood Elementary and the surrounding community.

Warm regards,
Engineers Without Borders - Atlanta Project - Georgia Tech Chapter

About Engineers Without Borders and CE Corps



Engineers Without Borders (EWB) is an international organization built on the mission of building a better world through the collaboration of students and professional engineers with communities worldwide. EWB addresses a range of humanitarian issues including access to clean water and sanitation, healthcare, energy, and education. Throughout all of its projects EWB keeps values of community voices, human dignity, and sustainability at the center of its work.

Community Engineering Corps (CE Corps) is an EWB program founded in 2014 that seeks to promote equity by improving infrastructure in communities in the United States. This is achieved through collaboration between engineers and the community, which allows the community's needs to be prioritized and fully realized.

Several key missions of CE Corps include promoting community centered design, equity, and sustainability by addressing issues relating to access to clean water, food, and safe roadways. The technical expertise of multidisciplinary teams are leveraged in order to best fulfill these missions, and the impacts have been seen nationwide, with over 350 communities helped over the past 10 years.

ORGANIZATION AND MANAGEMENT

Margaret Wade
Project Lead

Gracie Redmond
Vice President

Sarah Ninan
Community Outreach Lead

Emiline Baxter
Networking Lead

Alexandra Lovett
Technical Lead

Goals for the project

Greenhouse Design, Planning and Construction

Undergo the construction of a greenhouse from the first step of the design process.

Educational Enhancement

Support STEM education through the greenhouse space.

Sustainability and Environmental Awareness

Incorporation of sustainable features that teach students about the enviornment.

Community Engagement

Cultivation of community involvement through a shared space.

A fully functional greenhouse is at the core of this project. It will be developed from the initial ideas to floorplan designs to the actual construction. Sustainability and environmental awareness will be at the heart of the greenhouse as it will be built with features that integrate renewable energy systems, such as solar panels, water conservation systems for rainwater collection and eco-friendly materials. Not only will it integrate sustainability through its physical features, but the greenhouse also aims to create environmental awareness among the upcoming generation of students at Deerwood Elementary School.

Education is also at the core of this project. Outside of the typical purpose of a greenhouse (producing crops), the greenhouse will be a space geared towards supporting STEM education and student development. The space will be a practical environment for students to expand their learning both during and outside of class time. Students won't be the only ones benefitted by the greenhouse, as it also hopes to be a hub for local community members to engage with.

Project Description

Background/Location

Deerwood Elementary School, located in Atlanta, is a part of a food desert, limiting the availability of fresh produce to the students, families, staff, and surrounding community. By regulating temperature, humidity, and irrigation, the greenhouse will allow the school to grow fresh produce year round in the generally hot, humid climate of Atlanta. Additionally, the greenhouse will enhance the STEM curriculum at Deerwood by allowing students to get hands experience with plant biology, agriculture practices, sustainable technology, and nutritional eating.

Technical Description

The greenhouse will include two parts: one main greenhouse section for an environment to grow plants and a classroom section for instructors to teach lessons related to the greenhouse and provide a space for students to group and talk about what they are learning.

In addition to the greenhouse, the project will also develop workshops that will enhance the STEM curriculum for Deerwood Academy students in their STEM classes. The workshops will incorporate aspects of the interactive greenhouse, so students can get hands-on learning experiences with growing plants, conducting experiments, and collecting data.

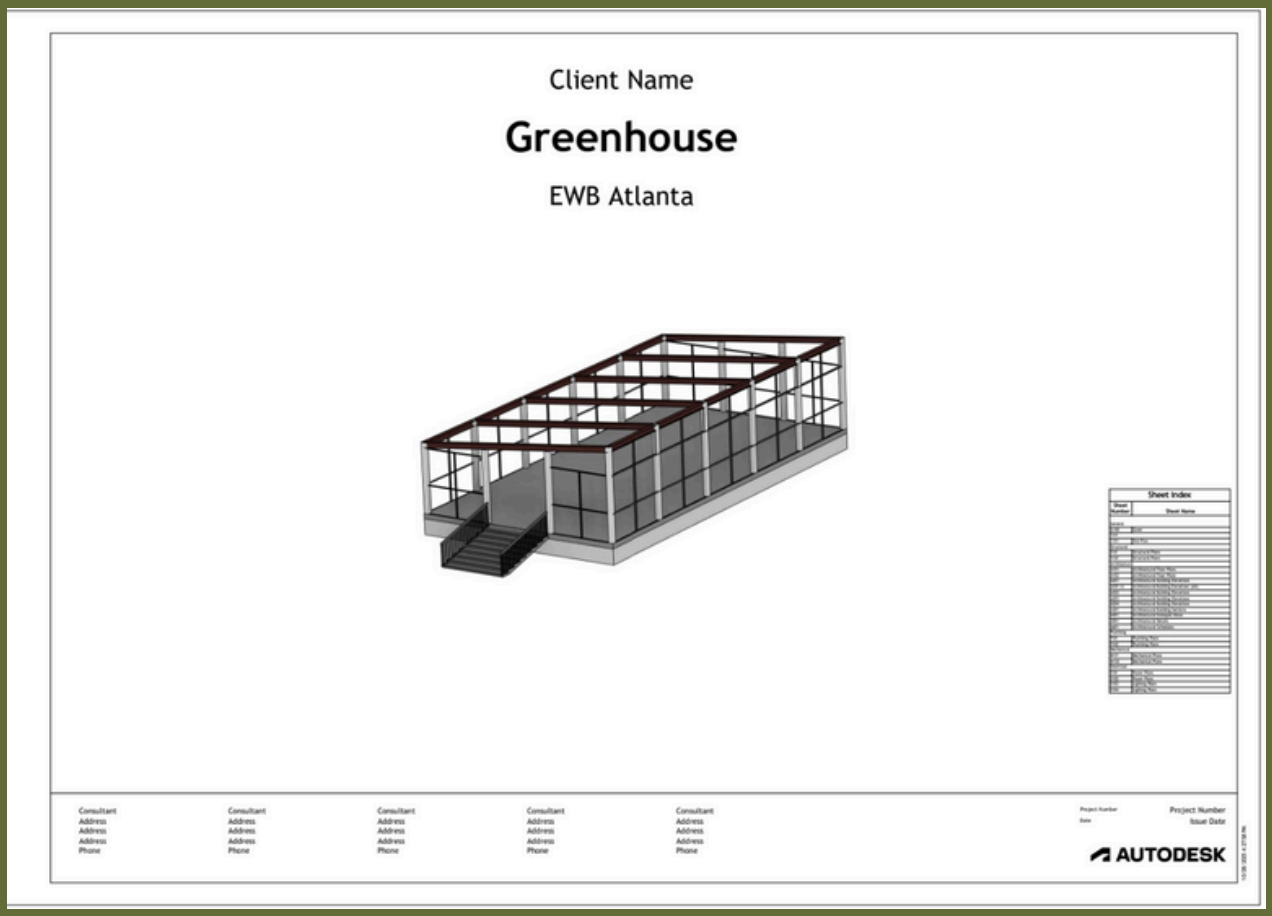
Partnerships

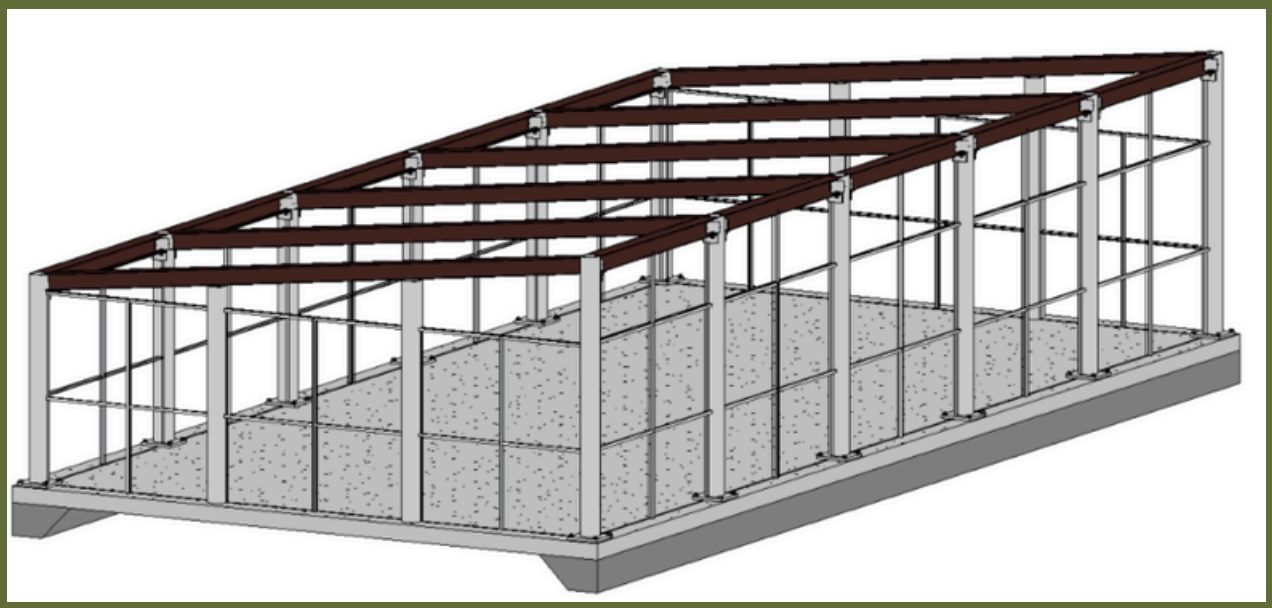
Engineers Without Borders-Atlanta will partner with teachers and faculty at Deerwood Elementary School as well as the surrounding community members to ensure the greenhouse best supports the school and its students and is maintained.

Maintenance

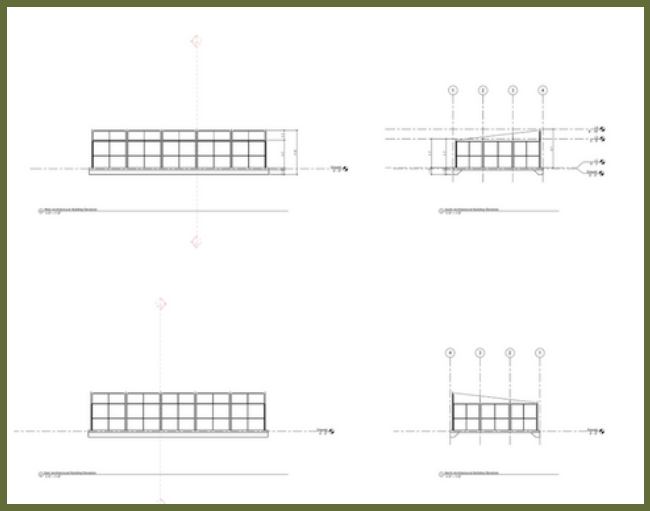
The greenhouse and STEM curriculum will be sustained within the Deerwood Elementary School community by teachers, staff, parents, and students who have been trained on how to operate and maintain the greenhouse and to operate a volunteer and maintenance schedule. Depending on the kit we decide to build to best fit the needs of Deerwood, teachers may be required to frequently visit the greenhouse to adjust our sustainable systems to best regulate the climate. The prefab kit will have mostly automatic systems meaning, in this case, only routine maintenance will be required from the teachers and staff.

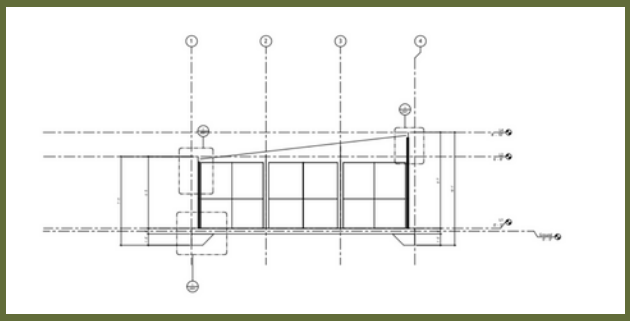
Greenhouse Model

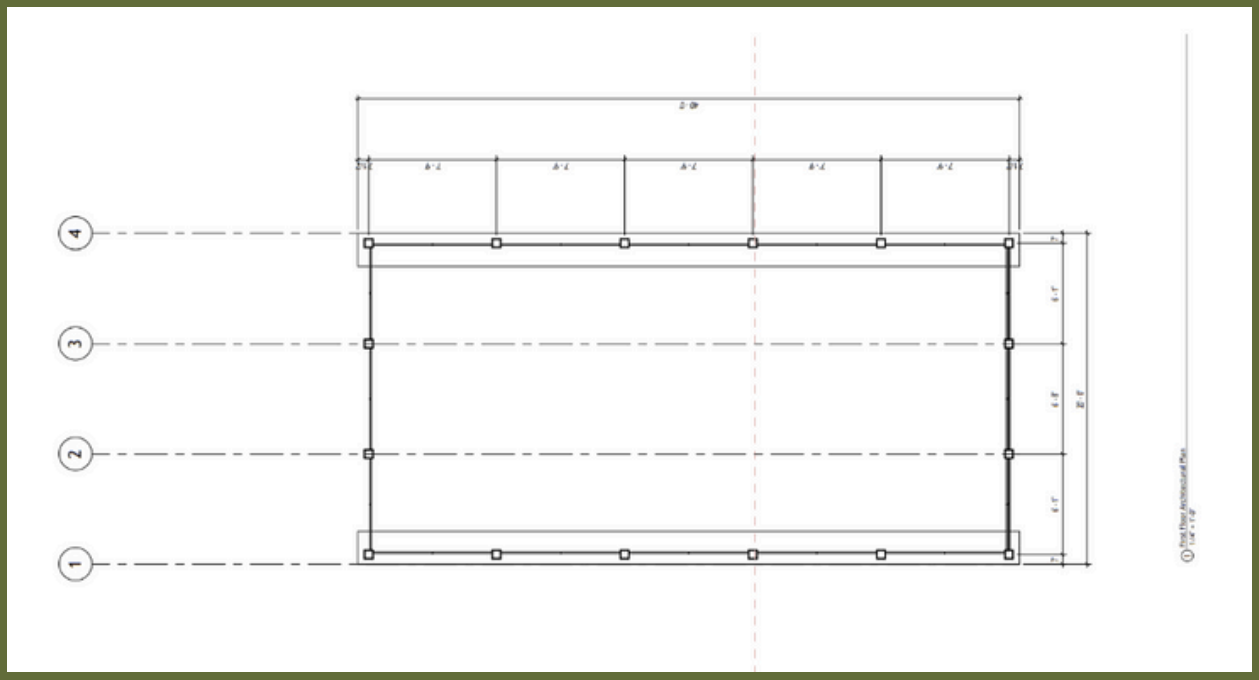




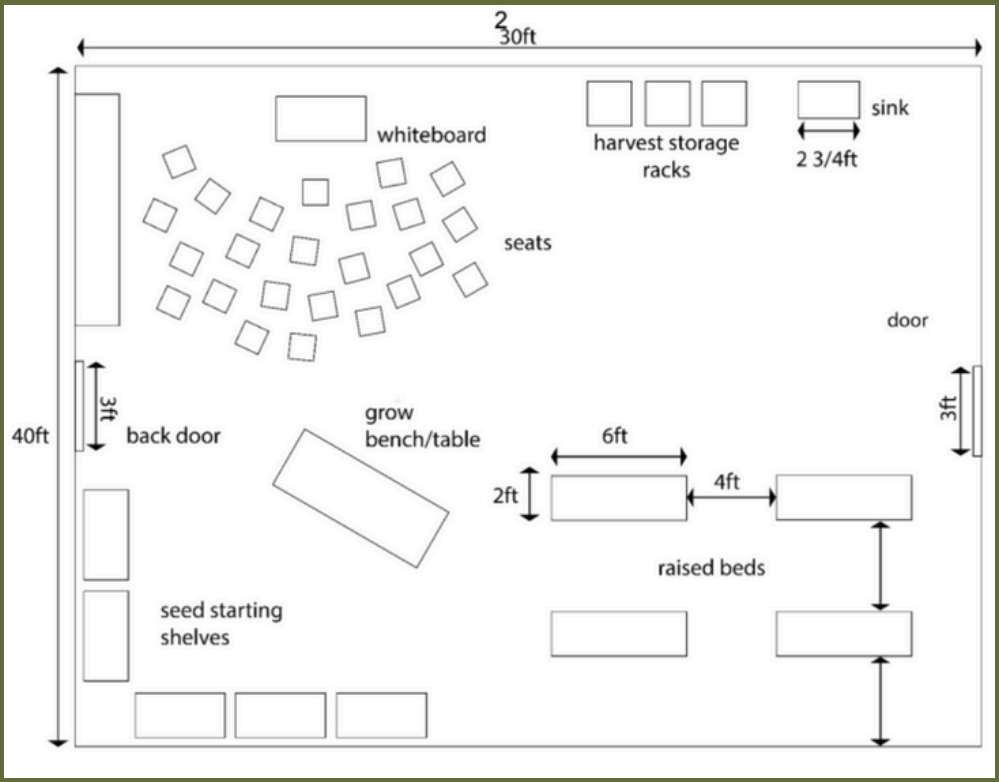
Architectural Drawings







Proposed Features

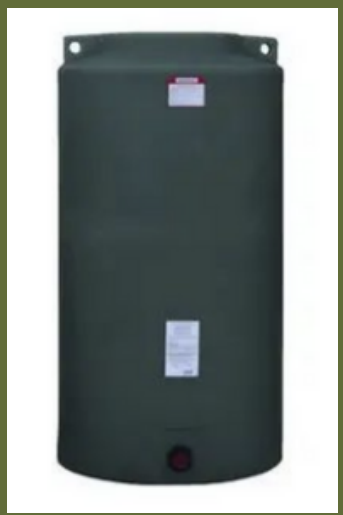


Proposed Features

Outdoor Lighting

Solar Powered Fans

Indoor Lighting



Water Tank

Sink & Hose

Site Visit

SEPTEMBER 5TH, 2024

Site Visit

SEPTEMBER 5TH, 2024

Green House Starting Cost

Project and Initiative	Value
Concrete Foundation	$10,000
Concrete Excavation	$5,000
Steel Frame	$6,679.97
Polycarbonate Sheet	$5,706.56
Other Structure Materials (doors, screws, hinges, handles, etc.)	$616.67
Energy (solar kit + electrician)	$150
Water System (tanks + gutters)	$977.60
Flood Lights	$50
Total	$29,190.80

Funding

Non Profit

We're excited to share that Engineers Without Borders – Georgia Tech Chapter, as a nonprofit organization, is fully committed to creating lasting, positive change in our community. Being a nonprofit means that every resource we gather and every dollar we raise goes directly toward benefiting the community and advancing projects like this greenhouse.

Money raised so far

Thanks to the incredible support we've received so far, we're proud to share that we've already raised around $12.300 toward making this vision a reality. In addition to these funds, we're actively working to secure even more resources by reaching out to potential sponsors and applying for grants. These efforts demonstrate our commitment to ensuring the success and sustainability of this project, transforming it into a resource that will benefit students, families, and the surrounding community for years to come.

Proposed Timeline

Our partnership with the Community Engineering Corps ensures that we can properly evaluate site conditions and assign timely deliverables, keeping us on track to deliver a safe and functional greenhouse for Deerwood Elementary School. By leveraging their expertise, we can ensure that all structural and environmental considerations are met effectively.

Our team at Georgia Tech is committed to adhering to the proposed timeline and staying transparent and collaborative throughout the process. We aim to secure additional support from stakeholders when we transition into the final phase of construction, working together to bring this vision to life for the Deerwood community. We hope this additional support will include open communication and feedback between parties, striving to make the greenhouse a human-centered design.

1. Fall-Winter 2024: Research and Development
2. Spring 2025: Planing Phase Part 1
3. Fall 2025: Finalize Model & Architectural Drawings
4. Spring 2026: Engineer Approval Process
5. Fall 2026: Execution Phase I, Pour Concrete & Finalize Layout
6. Spring 2027: Finish Construction (steel frame & polycarbonate panels)

For inquiries, contact us.

seedatlanta.org

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Deerwood Elementary Greenhouse Proposal

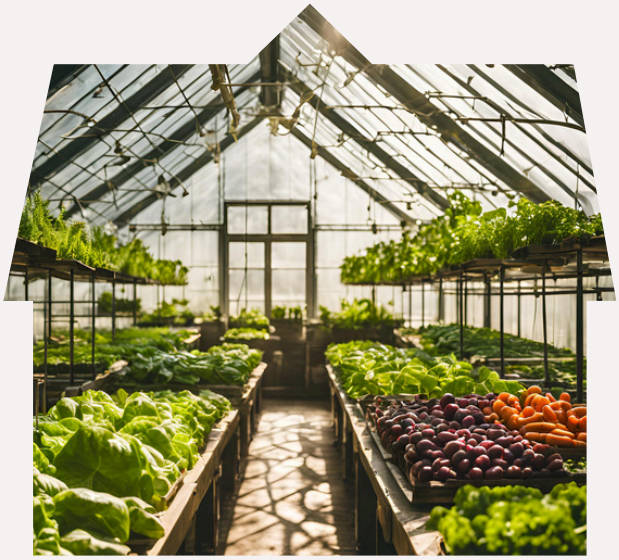
Engineers Without Borders @Georgia Tech

The Atlanta Project, founded in 2024 by Georgia Tech students, is dedicated to promoting accessible STEM education and sustainability. In partnership with Deerwood Elementary, we are building a greenhouse to provide fresh produce for the Fulton County community and serve as a hands-on learning space integrated into the school's STEM curriculum. Collaborating with civil engineers, architects, and community consultants, our team is committed to creating a sustainable, innovative space that inspires students and fosters environmental stewardship. This project aims to leave a lasting impact on both the school and the surrounding community.

Scan here to give feedback!

WHY WE NEED YOUR VOICE

Your voice and involvement are vital to bringing our greenhouse to life. This space will inspire STEM learning and foster a sense of community at Deerwood Elementary. By volunteering your time or expertise, you can help build, maintain, and enrich this sustainable resource for generations to come. Together, we can create a lasting impact.



Get in Contact with Us!

seedatlanta.org
seed.georgiatech@gmail.com
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We Need You:
How You Can Support Our Greenhouse

DONATIONS

MATERIALS

VOLUNTEERS

WHO YOU ARE SUPPORTING

This greenhouse learning environment will be a foundation for community growth and engagement, providing hands-on opportunities for students to explore STEM concepts. By supporting this project, you are investing in a resource that empowers the students of Deerwood Elementary School. The greenhouse's sustainability ensures it will continue benefiting future students and promoting education for years to come. With your help, this greenhouse will become a long-lasting source of inspiration, learning, and growth.

WHY WE NEED SUPPORT

Your support is crucial to bringing our greenhouse project to life and ensuring its sustainability. Financial contributions and material donations are essential and will go directly to construction costs, integrating systems, and resources inside of the greenhouse. Equally important is the support of volunteers who can help build, maintain, and enrich this space. Together, we can create a resource that not only enhances STEM education but also strengthens the community's connection to sustainability.

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