



CASE STUDY

Growing Minds, Growing Futures: The Vireo Project at Ligonier Valley Middle School



Located in Ligonier, Pennsylvania, Ligonier Valley Middle School is a tight-knit community of approximately 300 students and 40 staff members. The Vireo project is led by the sixth-grade class of about 100 students. It is set to expand into a blended sixth and seventh-grade initiative by 2024-2025, with full integration across all three grades in the following year. The project already enriches Family & Consumer Science classes school-wide, demonstrating a commitment to sustainability and interdisciplinary learning.

Cultivating curiosity: Bringing gardening inside the classroom

“ I really enjoy learning about different ways to grow food! We also learned about PPM and pH levels and how important it is to keep records thanks to Vireo’s platform. It is fun to take care of the plants. I love that you shared the gift of hydroponics!
- Maddie

“ The hydroponic garden has helped me try new foods. It forced me to eat things I never thought I’d enjoy. It has also introduced me to plants that I didn’t know anything about.
-Emerson

Ligonier Valley Middle School already had a greenhouse and garden on its premises, making the integration of the Vireo indoor hydroponic garden a logical next step.

Since its introduction, **students have delved into the fascinating world of hydroponic gardening**, enjoying salads made from the lettuce they’ve grown and cooking stir-fries with homegrown pak choi. **They’ve learned practical troubleshooting strategies**, such as trimming roots and transplanting plants, and some students have participated in virtual sessions with the school’s Vireo project coordinator. **The whole class is currently taking part in the Tomatosphere Challenge**, of which Vireo is a partner, where students are comparing the growth rate of seeds sent into space with those that have always stayed on Earth.

Surprising discoveries, such as the edibility of pansies, have sparked research into other edible flowers and how to eat flowers safely, and inspired the development of an herbal tea garden. Even the STEAM class got involved, contributing to the design and construction of custom raised beds—all inspired by the humble wild pansy!



This level of collaboration among the students surpasses what I could have taught them directly.

Mrs. Anna Mack, Science Teacher, Grade 6

Adding the Vireo project to my classroom has ignited a passion for lifelong learning in hydroponics and science in my students. Having them come between lessons just to pick and eat a green bean has made all this worth it.

Students who are testing the PPM and pH levels now want to learn more about chemistry. They will come to the school excited to tell me that they looked something up because they had a thought about the garden.

Mrs. Anna Mack



Blossoming potential: Outstanding impact on student engagement and autonomy

Since the Vireo project began, student engagement has reached new heights. **Science teacher Anna Mack has seen her students grow to connect with the natural world and expand their palates by tasting what they've grown.**

Her students look forward to "Funday Monday with Vireo," showcasing **their enthusiasm and investment** in the project. They work together to ensure the plants receive optimal care, demonstrating **a newfound sense of responsibility and teamwork**. Some even take charge of checking PPM and pH or documenting results—a testament to **their growing autonomy**.

What started as a teacher-led initiative has quickly evolved into a student-driven project, with students actively monitoring plant growth and eagerly taking ownership of the project's success. Testimonials from students like Emerson and Maddie underscore the profound impact of Vireo on their learning journey, while Anna's testimonial highlights the transformative effect on classroom dynamics and students' interest in lifelong learning.

Forging tomorrow's innovators: Anna's recommendations for other schools

Reflecting on her experience with the Vireo project, Anna Mack advises educators considering integrating hydroponics into their classrooms: "Don't be intimidated by the idea—the Vireo platform makes it seamless. Students take control and run the project with minimal teacher intervention, yielding remarkable results."

With Vireo, schools empower students to cultivate curiosity, nurture positive environmental awareness, and blossom into tomorrow's innovators.





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