



## The Case for Indoor Hydroponic School Garden Programs



### Let learning take root

Establishing a school garden program offers numerous benefits, providing students with an experience that promotes nutritious eating, academic growth, care for the environment, and connection to the community. However, establishing and maintaining a school garden outdoors can come with many hurdles that lead to wasted time and money.

Fortunately, there is another solution: indoor hydroponic gardening. Explore how indoor hydroponic gardens offer distinct advantages over outdoor gardens, ensuring a thriving school garden program that allows for hands-on student learning and transformation.

# Potential Challenges of Outdoor School Gardens

While outdoor school gardens offer several benefits, there are potential challenges that should be considered.

## SEASONAL & WEATHER LIMITATIONS

Outdoor gardens are subject to seasons, which can limit the garden's yield and learning opportunities during certain times of the year, particularly in cold weather climates. Students might miss out on seeing plants grow if the peak growing season doesn't match the school year.

## LIMITED CONTROL OVER GROWING CONDITIONS

Unlike indoor gardens, outdoor gardens have limited control over sunlight, temperature, pests, and diseases. In variable weather climates, extreme conditions can damage the garden and impact plant growth as well. This variability may also add additional costs to manage damaging effects.

## SPACE & INFRASTRUCTURE REQUIREMENTS

Outdoor school gardens require outdoor space so students can safely grow and access plants. Areas with limited space are unable to supply enough fresh produce to impactfully feed students or the greater community. Furthermore, depending on the garden's location, accessibility for all students may be a concern.

## RESOURCE REQUIREMENTS

Outdoor gardens may require significant costs to get started. This could include investment in irrigation systems, fencing, maintenance tools, and other garden infrastructure.

## LONGER TIME TO ESTABLISH & GROW

Compared to indoor hydroponic gardens, establishing an outdoor garden may take longer to get started because of setup requirements. Plants in outdoor gardens also typically take longer to mature from seedlings to harvestable plants. Further, the number of crop cycles per year are limited by the seasons.

## MAINTENANCE AND UPKEEP

Outdoor gardens require regular watering, weeding, pruning, and soil management. Schools need to ensure ongoing commitment to garden maintenance, which can be challenging in a busy school year. Many times, the burden falls on parents or volunteers to manage an outdoor garden - meaning students don't even get the benefits of hands-on learning.



# Advantages of Indoor Hydroponic School Gardens

Implementing an indoor hydroponic garden program at a school offers numerous benefits to reliably and sustainability engage students in growing.

## YEAR-ROUND GROWING

Unlike traditional outdoor gardens, indoor hydroponic gardens can operate year-round regardless of season. This allows students to grow a continuous supply of fresh produce throughout the year - in any climate.

## EXPERIENTIAL LEARNING

Indoor hydroponic gardening offers hands-on, experiential learning opportunities that engage students uniquely and interactively. Students can study root systems, manage nutrient levels, and monitor growing conditions. Many plants can grow from seed to harvest in 5-6 weeks in an indoor hydroponic garden, giving students multiple opportunities to see the plant life cycle from start to finish.

## RESOURCE EFFICIENCY

Indoor gardens grow more nutritious food faster, in less space with less water and electricity than other forms of traditional gardening. For example, the Flex Farm only requires 9 square feet of space, access to a water source such as a sink, and a three-prong electrical outlet. They only require 30 minutes a week to maintain optimal plant growth.

## STEM EDUCATION INTEGRATION

Through indoor hydroponic gardens, students can explore biology, chemistry, physics, and math concepts while learning about hydroponic systems, nutrient management, pH balancing, light requirements, and crop rotations.

## LOW BARRIERS TO START

Indoor hydroponic gardens, such as the Flex Farm, come with all the equipment and supplies necessary to successfully launch a program. No additional resources are required to immediately start growing fresh leafy greens.

Outdoor school gardens have their benefits, but they also face challenges. Indoor hydroponic school gardens offer many advantages, such as year-round growing, hands-on learning, resource efficiency, easy setup, and integration with STEM education. With indoor hydroponics, schools can overcome the challenges of outdoor gardens and provide an engaging learning experience for students.

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