Minnesota
School Garden Survey

MINNESOTA
Agriculture in the Classroom

DEPARTMENT OF AGRICULTURE

Summary

Survey Purpose

The Minnesota School Garden Survey was designed to answer questions about the status and management of school gardens across the state and identify desirable paths forward to create a well-supported garden network. Findings from this survey are intended to inform future efforts to support and expand school garden programs and better understand their needs, challenges, and successes.

This survey comes on the heels of the Minnesota Department of Agriculture's (MDA) Farm to Kids Strategic Plan (PDF), published October 2024, a 5-year roadmap for advancing local food purchasing and agricultural education in school and early care settings. The recent publication of the Farm to Kids Strategic Plan speaks to an increased interest in Farm to School efforts within Minnesota, including school garden programs, and the need for measurable data to inform next steps and strategies.

This survey also comes more than a decade after publication of the Minnesota Ag in the Classroom (MAITC) Minnesota School Garden Guide (PDF), published fall 2013, identifying the need for MAITC to curate resources that cater to a modern garden audience.

Survey Design and Distribution

The survey was distributed by the MDA and MAITC.

The survey was designed using the SurveyMonkey platform and focused on gathering data related to the status and impact of school gardens. It drew inspiration from several existing surveys, including the 2022 Santa Clara County Growing Gardens Survey (PDF), the 2018 Nebraska School Garden Needs Assessment (PDF), and the 2014–2015 Minneapolis Public Schools School Garden Summary (PDF).

This survey was organized into six sections

1. Demographic Information
2. School Garden Description
3. School Garden Management
4. Garden-Based Learning
5. School Garden Production
6. Barriers and Attitudes

Depending on how a respondent answered, certain questions or sections of the survey were skipped. For example, respondents who indicated their garden was not used for educational purposes were directed to the “School Garden Production” section, bypassing any education-related questions. Depending on the respondent’s path, the survey ranged from 14 to 31 questions long.

The survey collected responses for 3 weeks from November 6th, 2024, to November 27th, 2024. It was distributed through the following channels:

- MAITC social media posts
- MAITC November newsletter
- Minnesota Harvest of the Month November newsletter
- Minnesota Farm to School Leadership team
- Minnesota Farm to School Institute teams
- Agriculture Education listserv
- Sent directly to MDA Farm to School AGRI grantees
- School Garden Coalition listserv
- Schoolyard Gardens listserv

Data Analysis Methods

A total of 104 responses were received, representing 95 unique garden programs. For questions about personal opinions and attitudes, all responses received were counted. For questions about garden specific data, only one response per school or program was included. In cases where multiple responses were submitted from the same garden program, the most detailed response was retained, even if some information contradicted other responses. Due to the skip logic used in the survey design, the number of respondents varied for each question, with responses ranging from 67 to 104 participants.

For questions that included an “other” option with a short-answer component, responses were reviewed to determine whether they could be categorized under existing options. Responses that matched existing categories were grouped accordingly, while those that did not were retained in the “other” category.

Most questions were structured in a “select all that apply” format; as a result, several of the graph totals in this report add up to more than 100%. For questions where answers were anticipated to be mutually exclusive, respondents were only able to select one option, and percentage totals add up to exactly 100%. Within this report, mutually exclusive questions are represented by pie charts while “select all that apply” questions are represented by bar graphs. All percentages were rounded to the nearest whole number.

Limitations

There are several key limitations to consider when interpreting the survey results. First, because the distribution channels used for this survey heavily targeted schools and respondents already involved with school gardens, local food, and agricultural education, the results likely reflect a more positive attitude toward school gardens than might be found in the broader school population. While this targeted approach was appropriate for gathering data to support Minnesota's existing school garden network, the findings should not be generalized to all schools in the state.

Second, the survey gathered responses from 95 unique schools, representing just under 4% of all schools in Minnesota. While this sample size is adequate to identify general trends and make recommendations for more active members of the existing school garden network, it is not large enough to represent the attitudes of all schools in Minnesota.

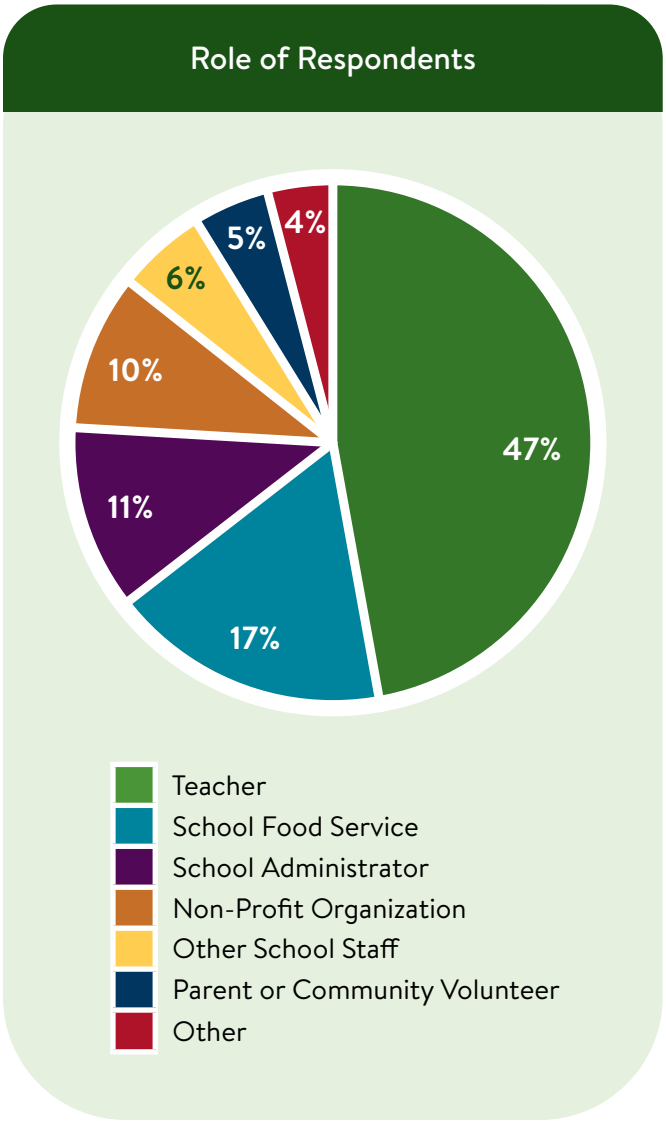
Additionally, the survey relied on standardized questions which may have overlooked specific challenges, creative solutions, or the broader context of individual garden initiatives. Some open-ended responses were collected, which provides more insight into these unique aspects, but most of the information collected by this survey was designed to fit within pre-determined boundaries.

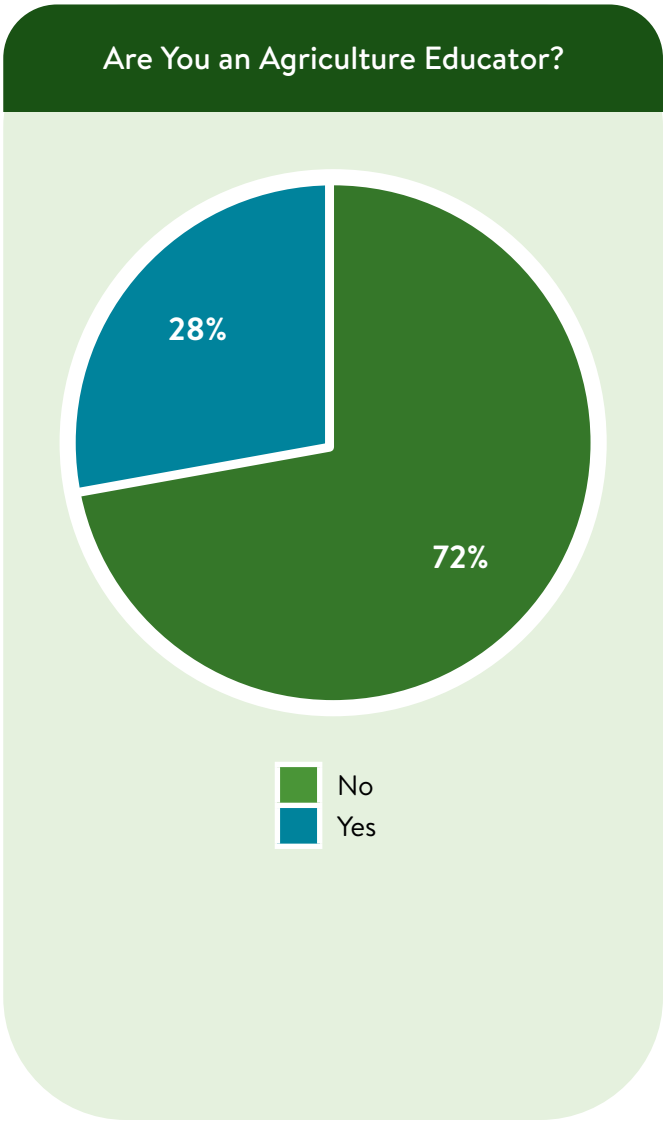
Survey Respondent Demographics

Role of Respondents

Respondents were asked to select the role which best described them. Of 104 survey respondents, the largest proportion identified as teachers (47%), followed by school food service staff (17%), and school administrators (11%). Members of non-profit support organizations (10%), other school staff (6%), and parent/community volunteers (5%) made up a combined 21%. The remaining 4% of respondents selected roles outside of the categories provided.

The 104 respondents were also asked whether they identified as agricultural educators. A majority (72%) did not, while 28% indicated they did.





School Demographics

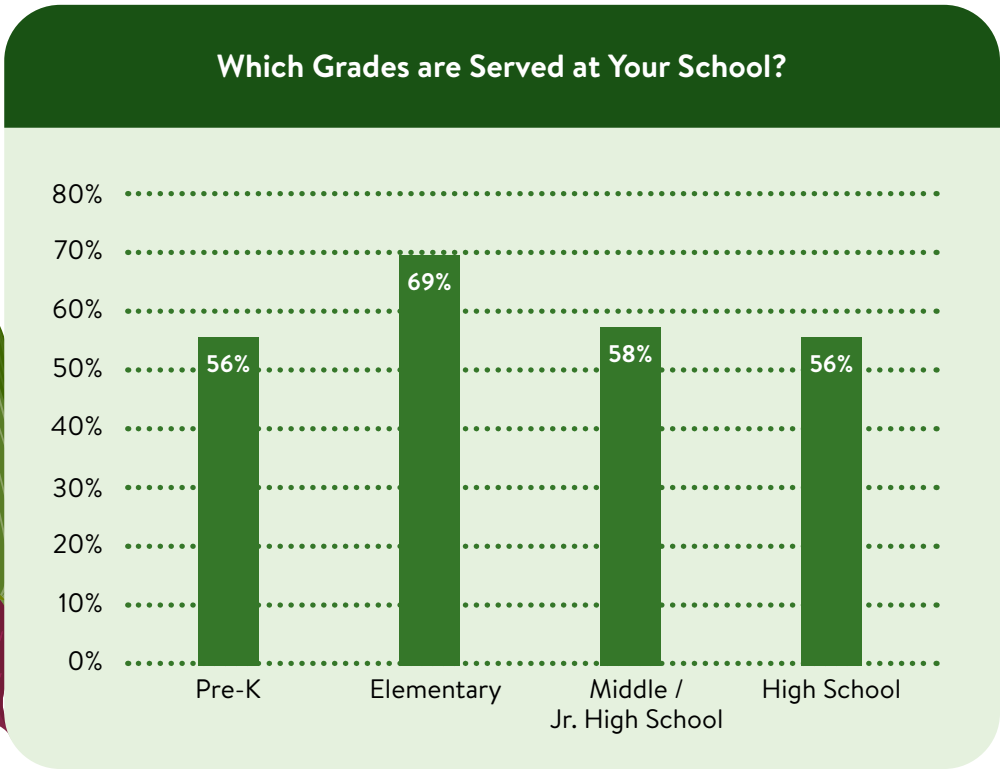
School Enrollment

Respondents were asked to estimate the enrollment of the school(s) they work with. Enrollment figures for entire school districts were excluded as outliers.

1. Individual school enrollment ranged from 9 to 3700 students
2. The most common enrollment size was 500 students
3. The average enrollment was 673 students

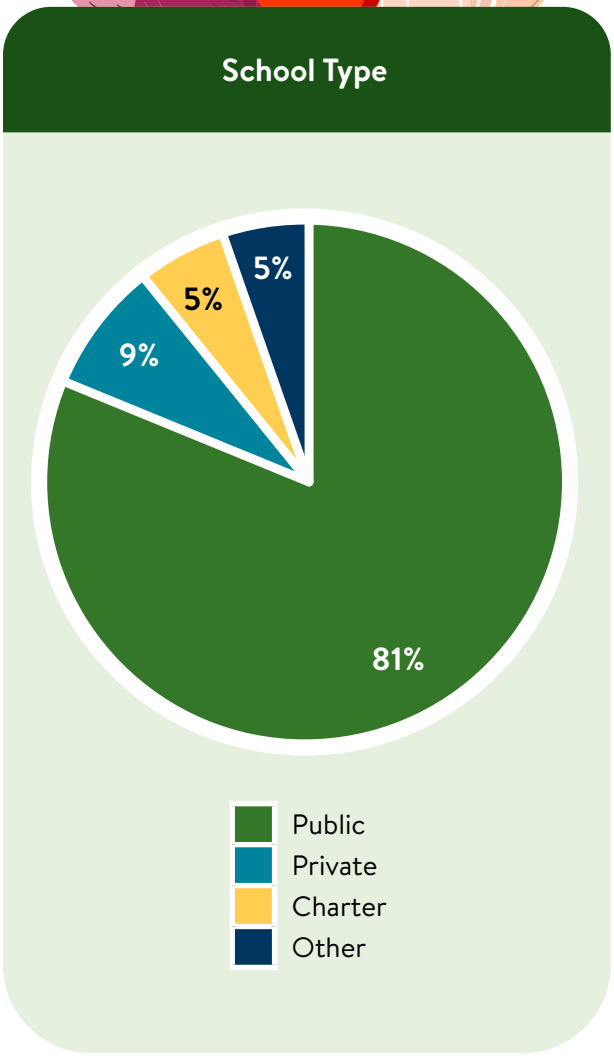
Grades Served at Your School

Respondents were asked to select all grade levels served by the schools they work with. Of 95 respondents, 56% indicated that their schools served pre-K students, 69% served elementary students, 58% served middle school students, and 56% served high school students.



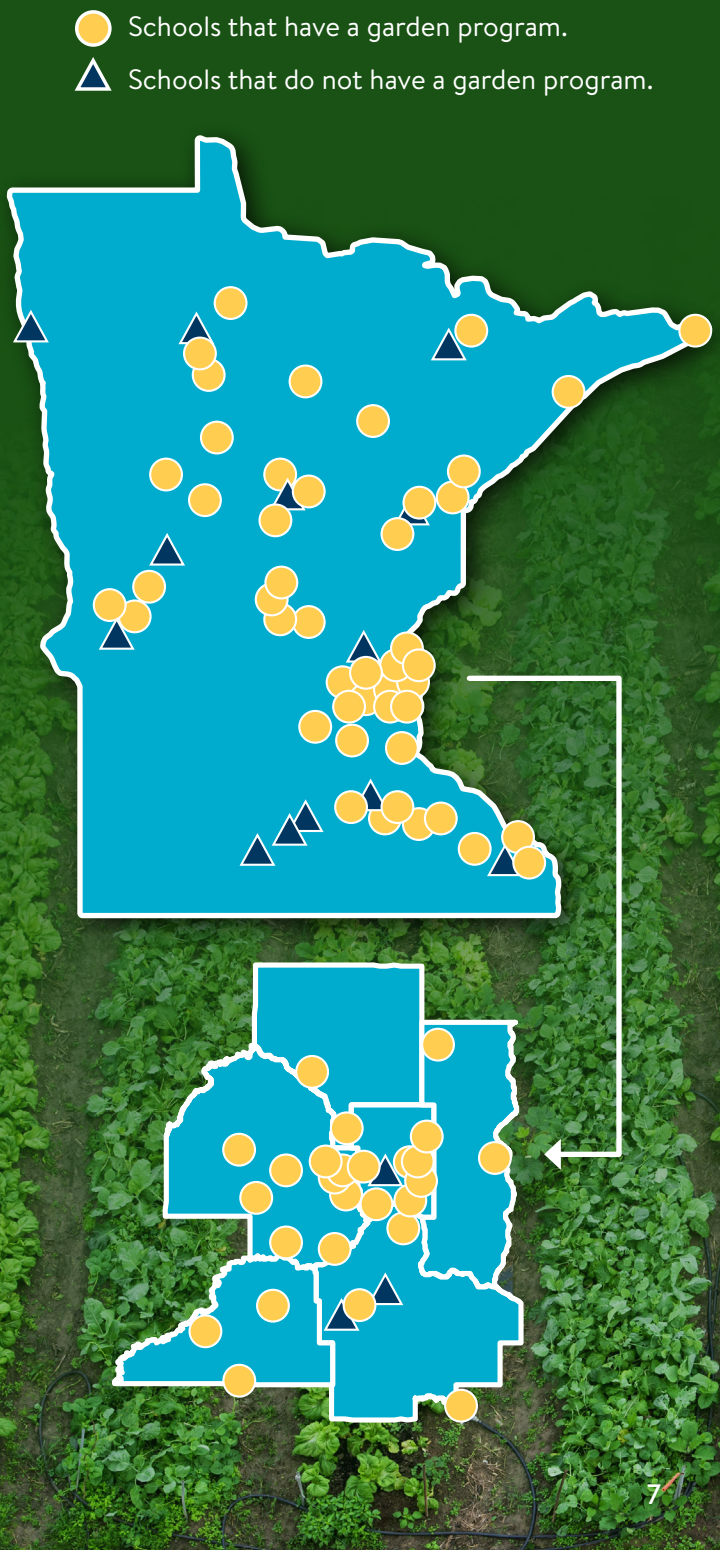
School Type

Respondents were asked to select the school type that best represented the school they work with. Of 95 respondents, 81% reported that their schools were public, 9% were private, 5% were charter schools, and 5% were other types of schools, including online schools and juvenile centers.



Map of Garden Locations

School addresses were mapped to visualize garden locations. Yellow circles represent schools that indicated they have a garden program, while blue triangles represent schools that indicated they do not currently run a garden program. Responses were distributed across the state, with the highest concentration of responses coming from the metro area.



Presence of a School Garden Program

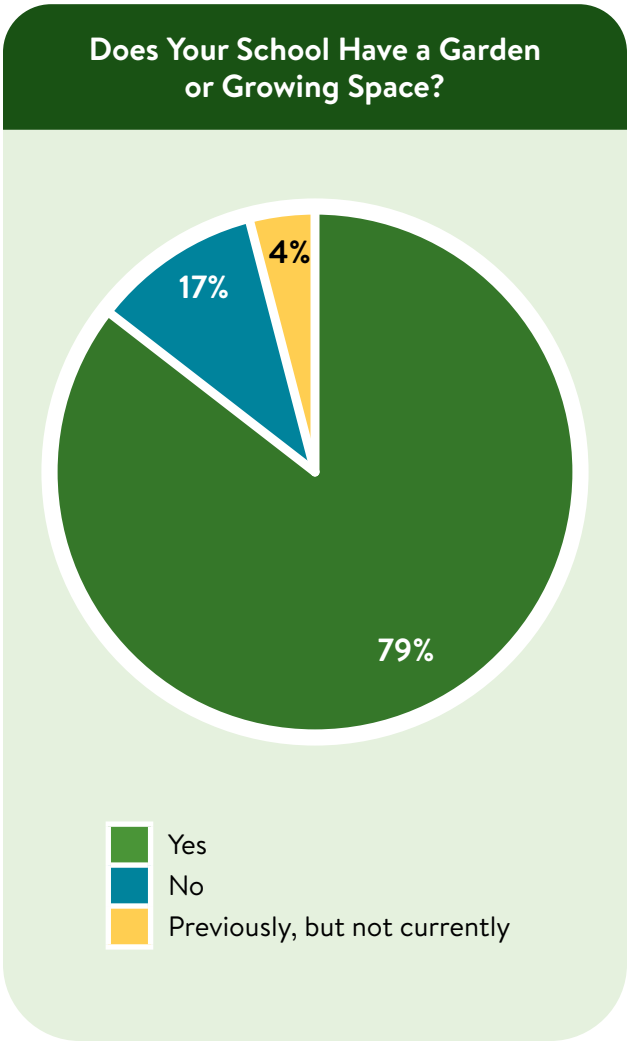
Does Your School Have a Garden or Growing Space?

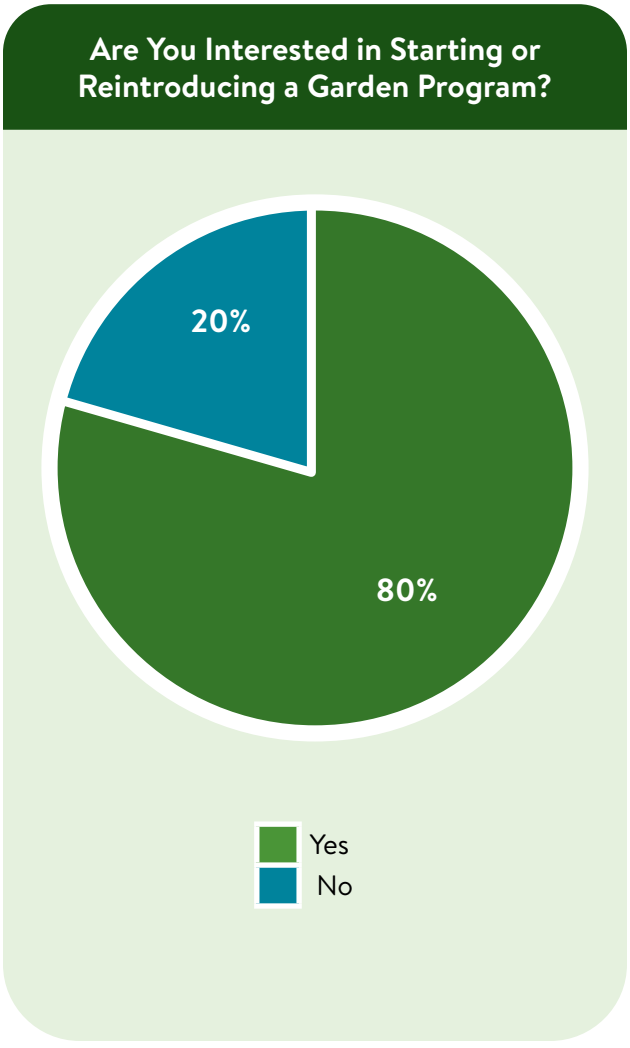
Respondents were asked if the school they represented had a school garden program. Of 95 respondents, a majority indicated they had a growing space (79%) while a total of 21% indicated they did not. Of the 21% of respondents without a garden, 17% indicated they had never had a growing space while 4% responded that they previously had a growing space but did not currently.

Are You Interested in Starting or Reintroducing a Garden Program?

Those without a school garden program were subsequently asked if they were interested in starting or reintroducing a program. Of respondents without a garden, 80% expressed interest in starting or reintroducing a program while 20% indicated they were not interested.

Between these two questions, 91 out of the 95 schools surveyed either had a garden or expressed interest in starting one. Because the survey was distributed through channels closely tied to school gardens, local food, and agricultural education, it is likely that the proportion of respondents with interest in school gardens is higher than in the general school population.



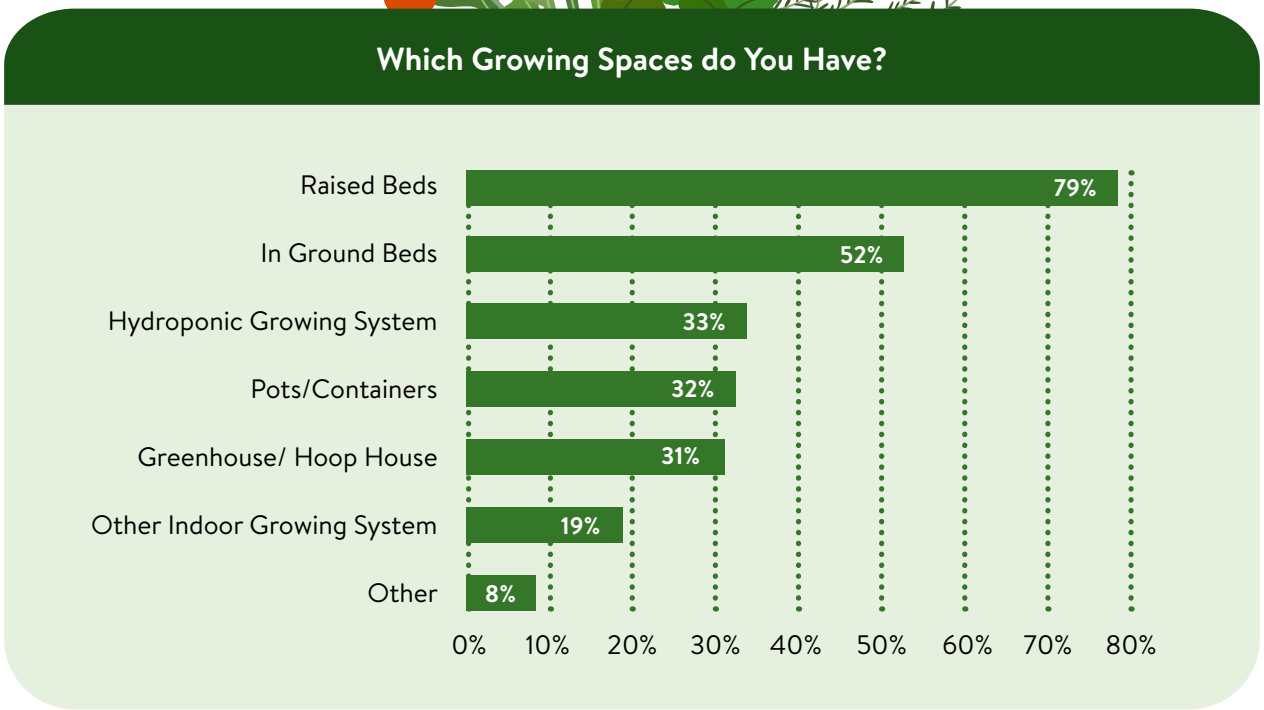


Gardens

The Growing Spaces

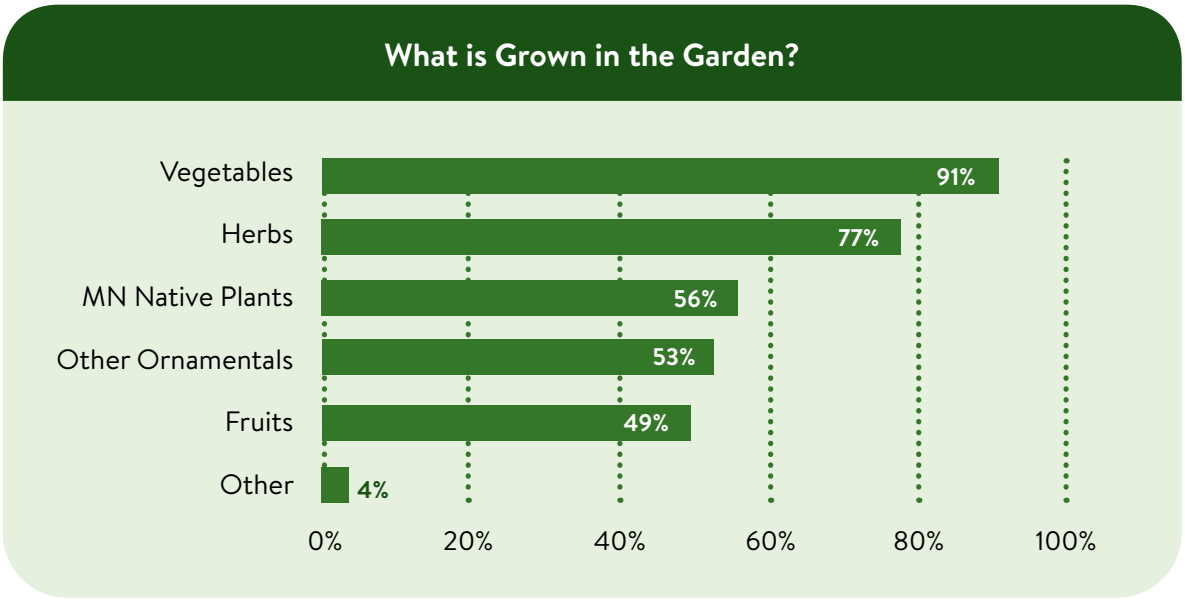
What Type of Growing Space(s) do You Have?

Respondents were asked to select all that applied in terms of which growing space types they utilized. Of 75 respondents, raised beds were the most common (79%). Growing spaces also included in-ground beds (52%), hydroponic systems (33%), pots or containers (32%), greenhouses or hoop houses (31%), and other indoor systems (19%). Growing systems outside of the provided options, such as orchards, rolling garden carts, or vertical green walls, were listed by 8% of respondents. Notably, 42 of 75 schools (56%) indicated having some form of indoor growing space (hydroponics, greenhouses, or other indoor systems). This trend highlights the creativity required to provide growing spaces for students, especially considering Minnesota's limited growing season.



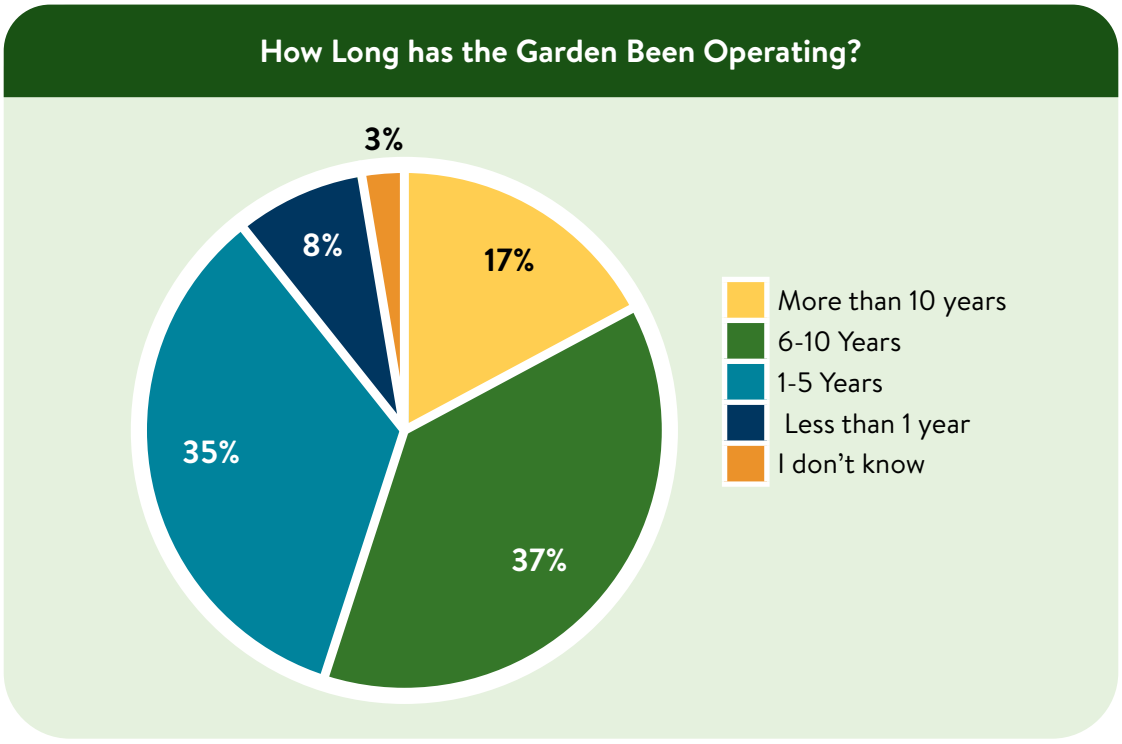
What is Grown in the School Garden?

Respondents were asked to select all that applied to indicate what was grown in their school gardens. Of 75 respondents, vegetables were the most common (91%). Other responses included herbs (77%), Minnesota native plants (56%), non-native ornamentals (53%), and fruits (49%). “Other” crops not covered by the provided answers were listed by 4% of respondents.



How Long has the School Garden Been Operating?

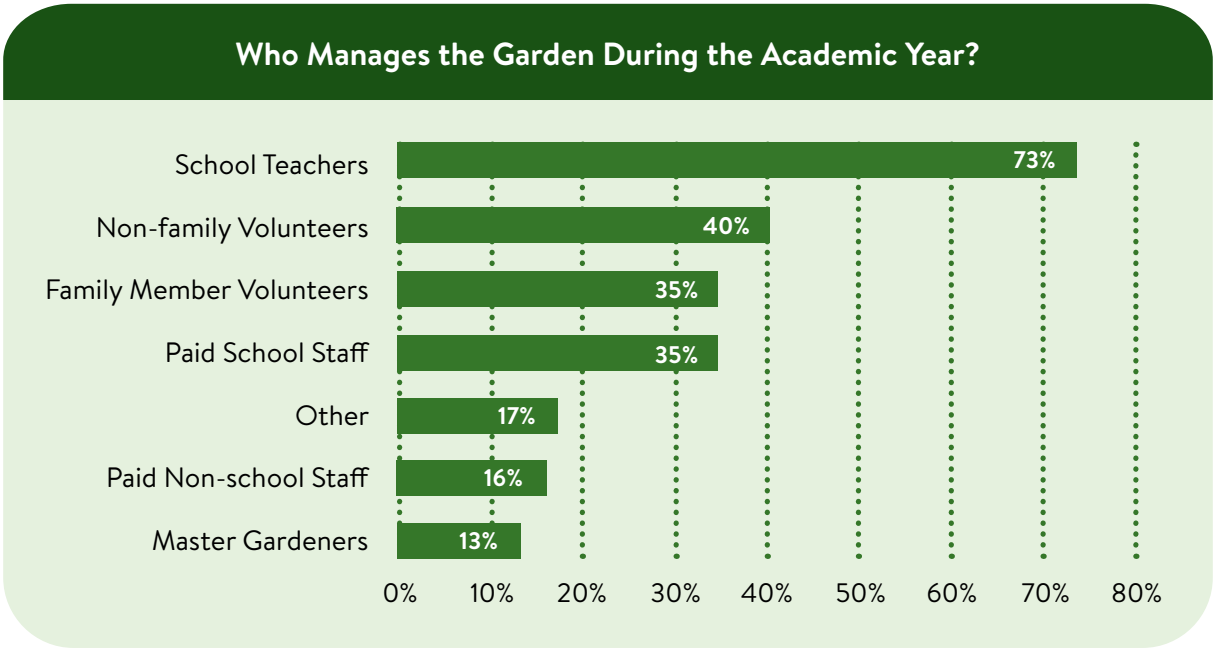
Respondents were asked how long their garden programs had been operating. Of 75 respondents, 8% indicated that their program had been operating for less than a year, 35% had been operating for 1 to 5 years, 37% for 6 to 10 years, and 17% for longer than 10 years. The remaining 3% of respondents were unsure how long their garden had been operating.



Garden Management

Who Manages the Garden During the Academic Year?

Respondents were asked who managed their gardens during the academic year and were able to select all roles that applied. The majority of our 75 respondents (73%) indicated that teachers managed and/or utilized the garden during the academic year. Additional roles included non-family volunteers (40%), family member volunteers (35%), paid school staff (35%), paid non-school staff (16%), and master gardeners (13%). Other roles, such as SNAP-Ed coordinators, students, child nutrition staff, FFA members, retired teachers, and school clubs were listed by 17% of respondents. The relatively high number of "other" responses suggests that many schools must utilize creative, cross-sectoral approaches to manage their garden programs, which are highly variable from garden to garden.

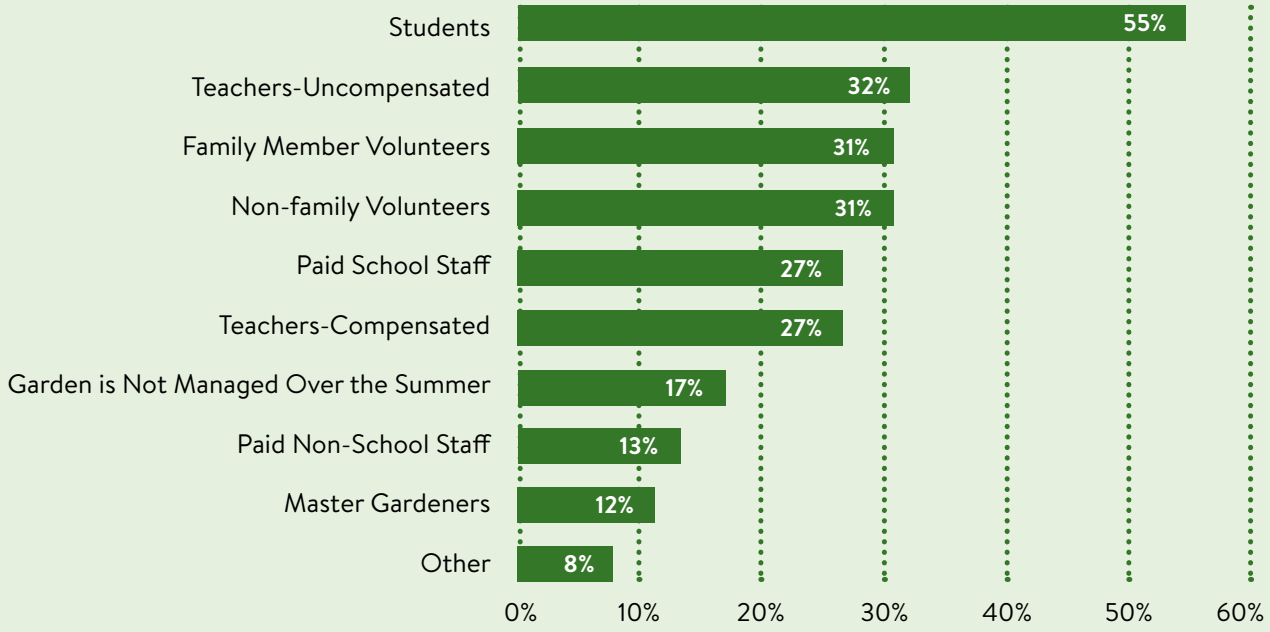


Who Manages the Garden Over the Summer?

Respondents were asked who managed and/or utilized the garden during the summer and were able to select all roles that applied. Of 75 respondents, 55% indicated that students managed the garden over the summer. Other answers included uncompensated teachers (32%), family member volunteers (31%), non-family volunteers (31%), paid school staff (27%), compensated teachers (27%), paid non-school staff (13%), and master gardeners (12%). It is worth noting that 59% of respondents indicated teachers (either compensated or uncompensated) were involved with summer management, making them the most common response. Of our 75 respondents, 17% indicated that their garden was not managed over the summer. Roles outside of the provided options, including SNAP-Ed coordinators, child nutrition staff, retired teachers, and school clubs, were listed by 8% of respondents.

In total, 52% of respondents indicated that paid positions (compensated teachers, paid school staff, or paid non-school staff) were involved in summer garden management. The true percentage of gardens that utilize compensated labor may be higher, as not all provided options specified whether they were compensated or not. See next page for graph.

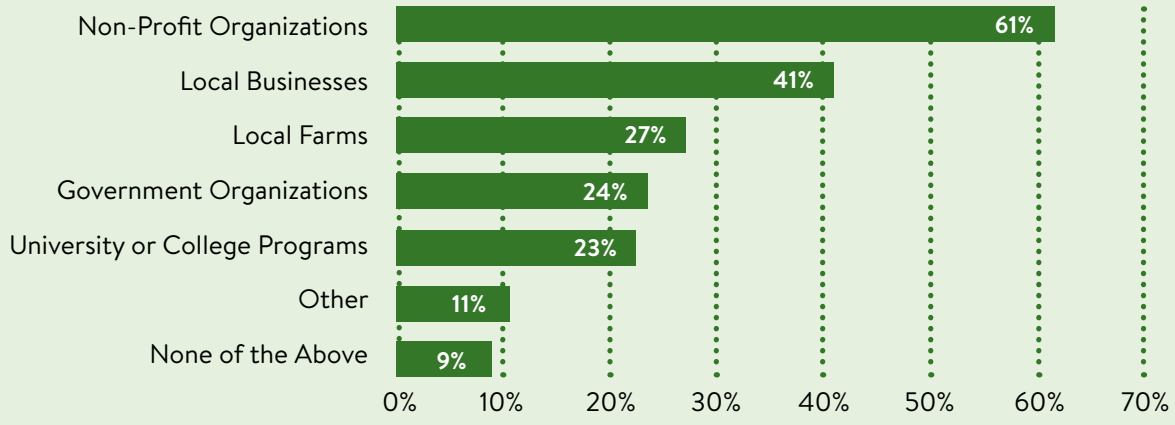
Who Manages the Garden Over the Summer?



Which Partner Organizations Help Support the Garden?

Respondents were asked about their partnerships with external organizations and were able to select all that applied. Nonprofit organizations were the most common, with 61% of 75 respondents reporting partnerships with nonprofits. Other partnerships included local businesses (41%), local farms (27%), government organizations (24%), and university or college programs (23%). Partnerships outside of the provided categories were listed by 11% of respondents, and 9% indicated they did not partner with outside organizations. With 91% of respondents partnering with at least one external organization, it is clear that community collaboration plays a critical role in the success of school garden programs.

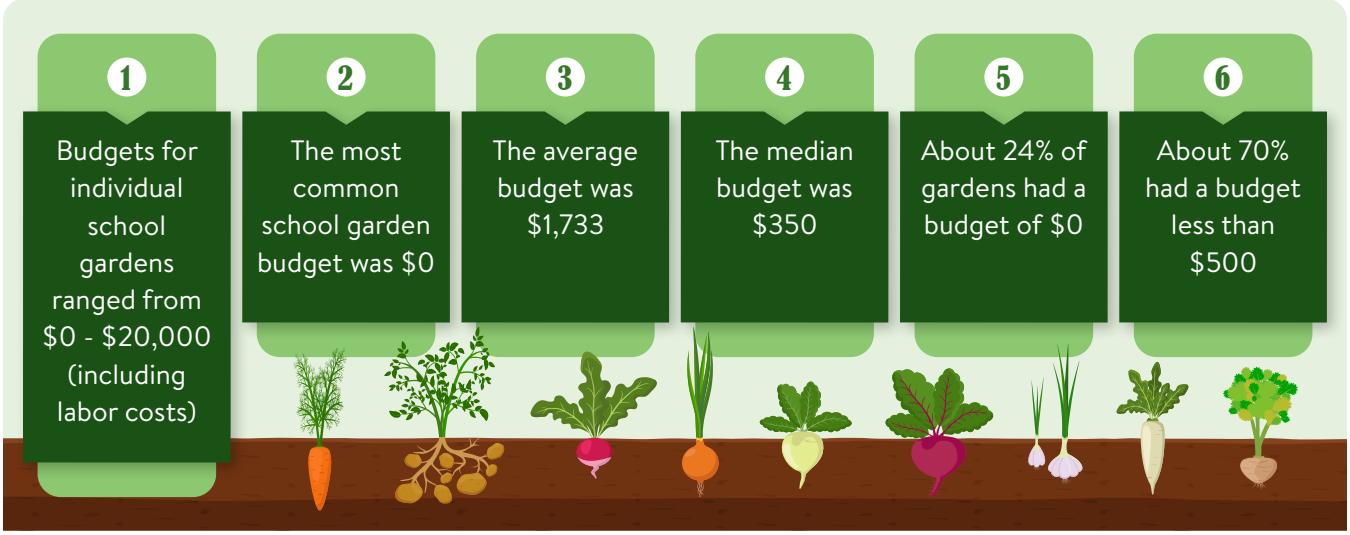
Which Organizations Have You Partnered with to Support the Garden?



Garden Budgets and Funding

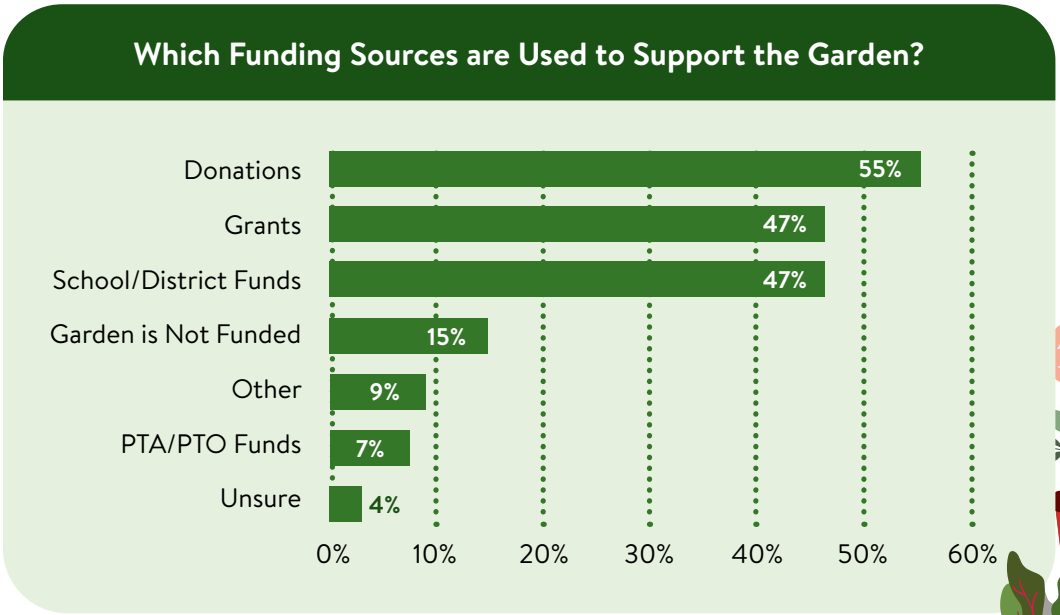
Garden Budets

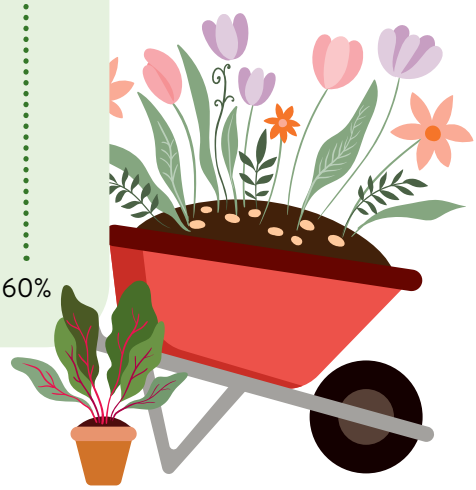
Respondents were given an optional question to estimate their school garden budget. Of 75 eligible respondents, 59 provided an estimated budget. Budgets provided for entire school districts were removed as outliers.



Sources of Funding

Respondents were asked to select all applicable funding sources for their garden. Of 75 respondents, donations were the most common source (55%), followed by grants (47%) and school district funds (47%). Additional sources included PTA or PTO funds (7%) and funding sources other than those provided by the survey (9%). Four percent of respondents were unsure of their funding sources, and 15% indicated that their garden was not funded.





Garden Education

Timing of Education

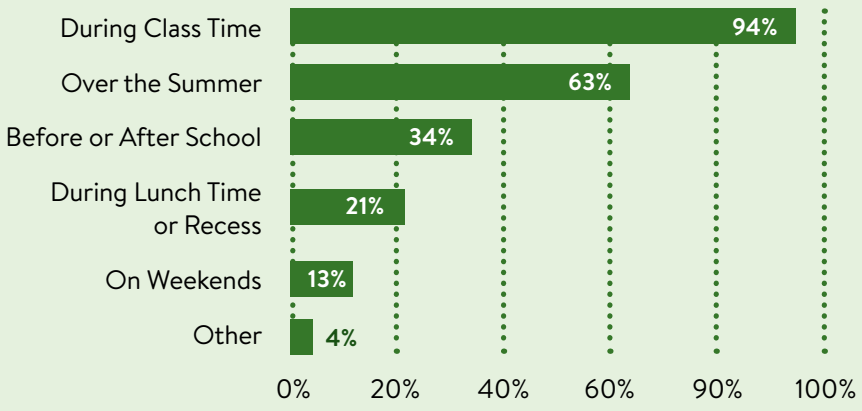
When is the Garden Used for Student Learning?

Respondents were able to select all applicable times that the garden was used for student education. The most common response was during class time, with 94% of 67 respondents selecting this option. The garden was used for education over the summer by 63% of respondents, 34% used it before or after school, 21% during lunch time, and 13% on weekends. "Other" times outside of those provided by the survey were listed by 4% of respondents.

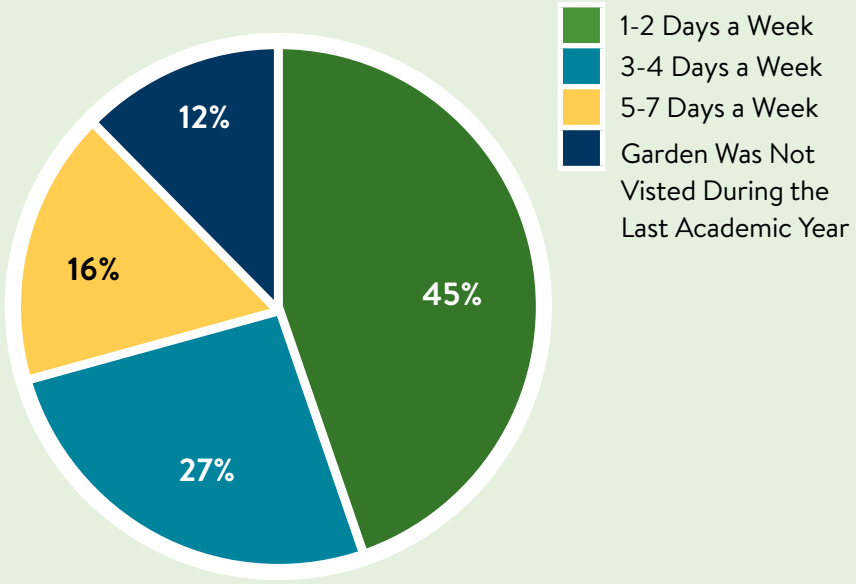
During the Past Academic Year, How Often was the Garden Visited by Students?

Respondents were asked how often the garden was visited by students within the previous academic year. Of 67 respondents, 45% indicated that students visited the garden 1 to 2 days a week. 27% reported visits 3 to 4 days a week, and 16% had visits 5 to 7 days a week. The remaining 12% of respondents indicated that their garden was not visited during the past academic year; this informs us that, even for schools that currently operate a program, challenges remain to fully utilize a garden space.

When is the Garden Used for Student Learning?



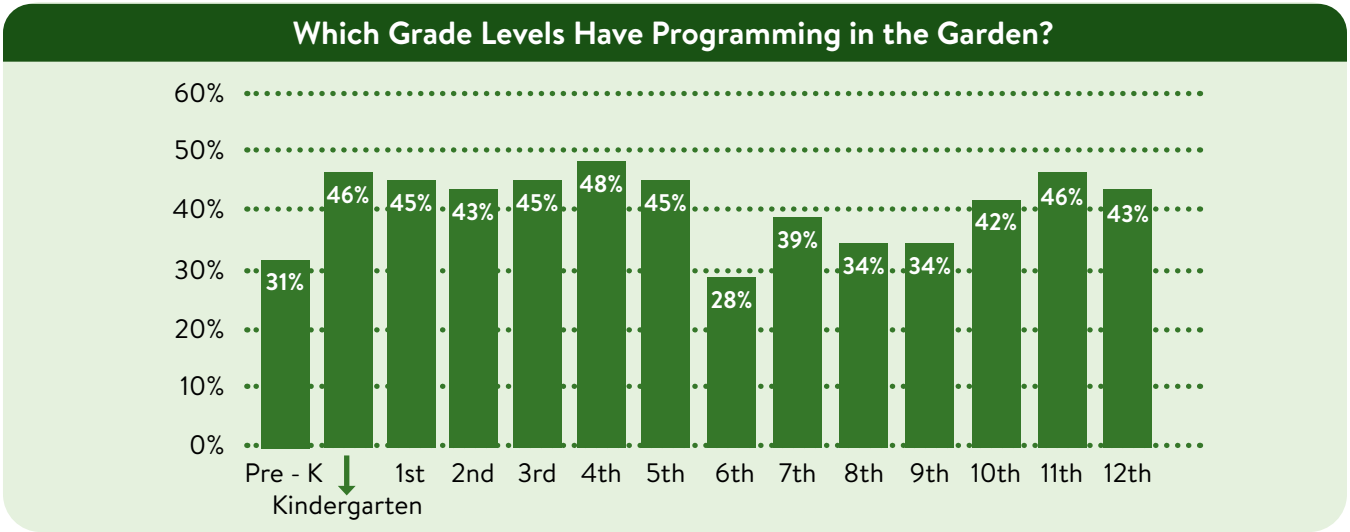
How Often was the Garden Visited During the Past Academic Year?



Educational Content

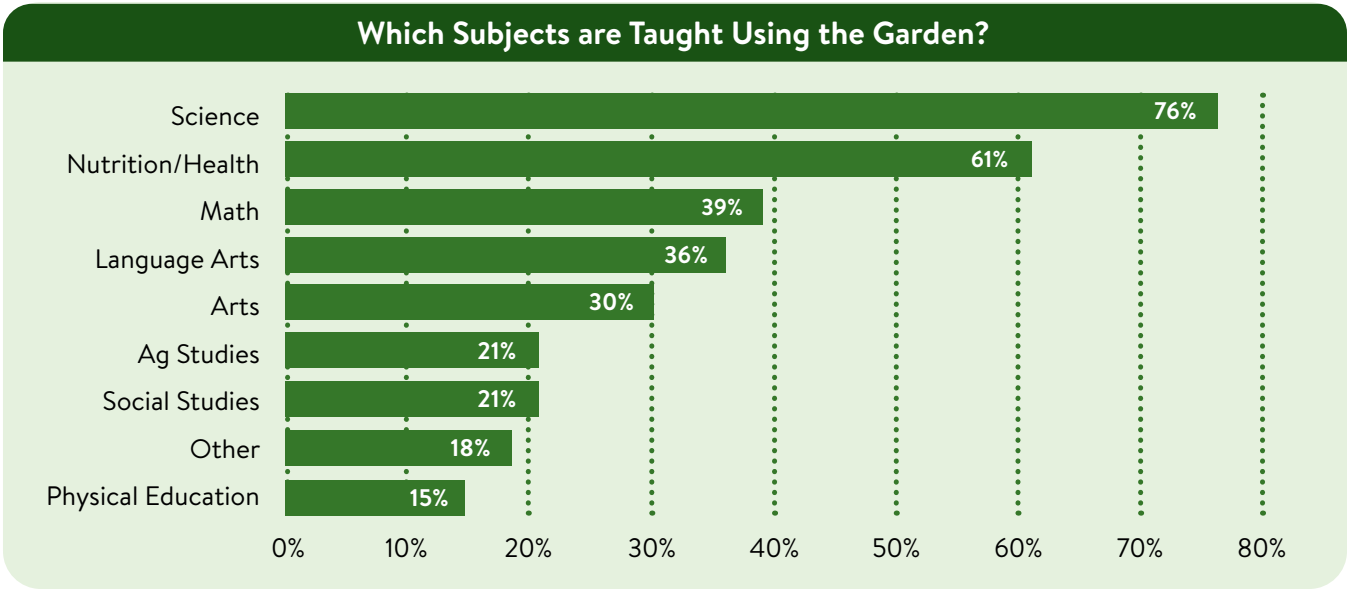
Which Grade Levels Have Programming in the Garden?

Respondents were asked to select all grade levels that had educational programming in the garden. Of 67 respondents, 31% indicated they had programming for pre – k students, 46% for kindergarten students, 45% for first grade, 43% for second grade, 45% for third grade, 48% for fourth grade, 45% for fifth grade, 28% for sixth grade, 39% for seventh grade, 34% for eighth grade, 34% for ninth grade, 42% for tenth grade, 46% for eleventh grade, and 43% for twelfth grade.



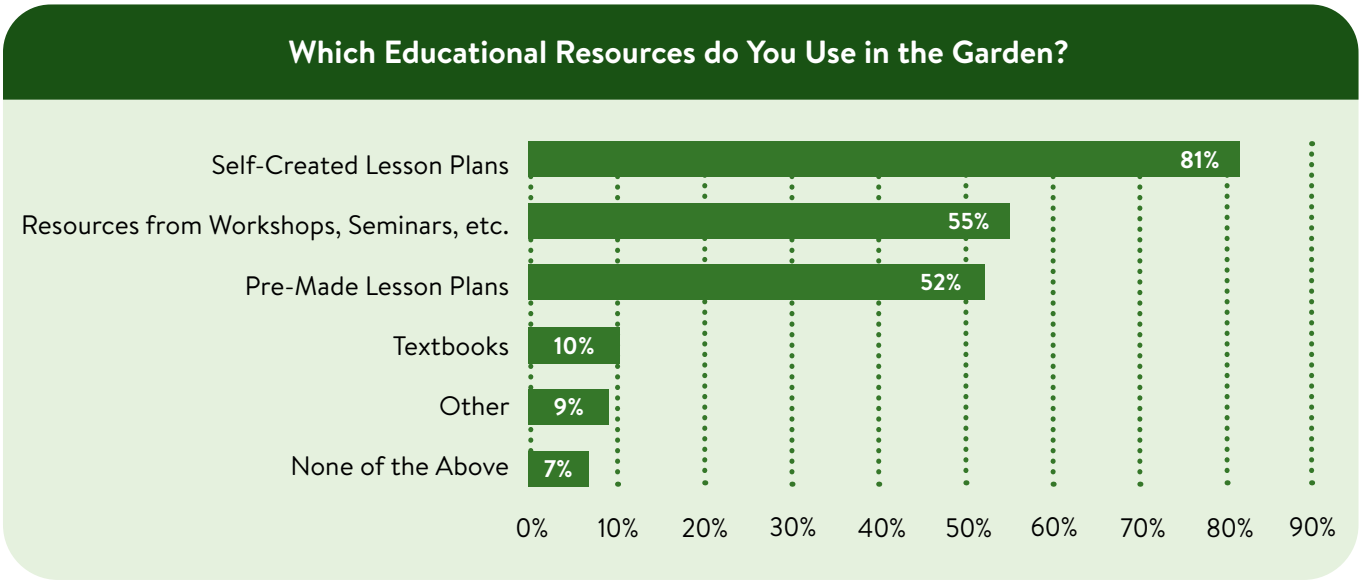
Which Subjects are Taught Using the Garden?

Respondents were asked to select all subjects that were taught using the growing space. Science was the most common subject with 76% of 67 respondents indicating the garden was used for science curriculum. Other subjects included nutrition/health (61%), math (39%), language arts (36%), art (30%), agricultural studies (21%), social studies (21%), and physical education (15%). Subjects outside the provided options, including social-emotional learning, family and consumer science, cultural connections of plants, and foreign and indigenous languages, were listed by 18% of respondents. This wide range of subjects taught in school gardens helps highlight their value as educational tools.



Which Educational Resources do You Use in the Garden?

Respondents were asked to select all that applied in terms of educational resources they used to facilitate garden-based learning. Of 67 respondents, 81% indicated that self-created lesson plans were used, 55% used resources obtained from workshops or seminars, 52% utilized pre-made lesson plans, and 10% used textbooks. Educational resources outside of the options provided were used by 9% of respondents, and 7% of respondents did not use educational resources to supplement their garden-based learning.

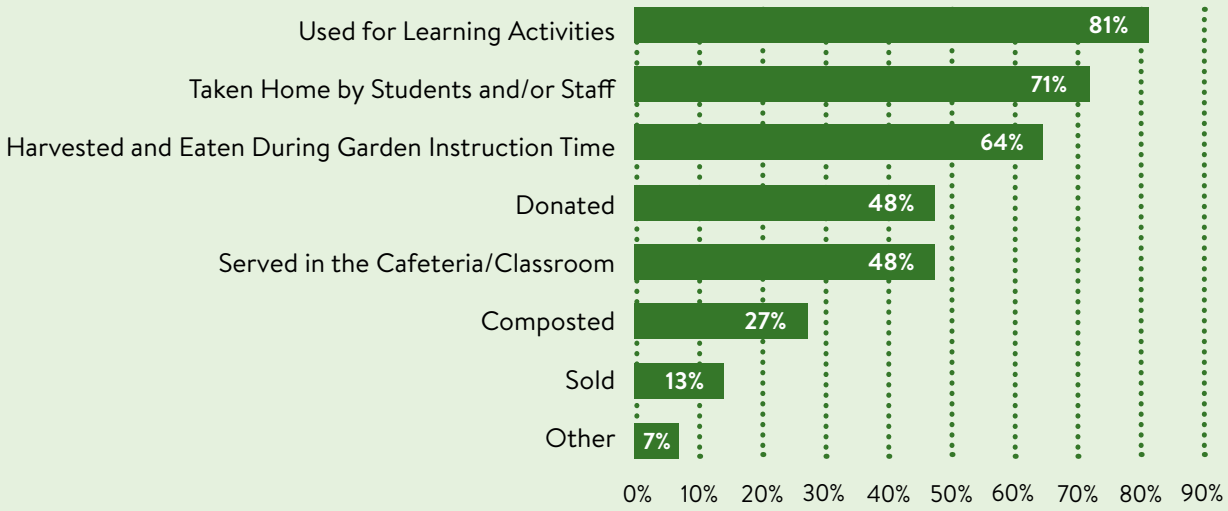


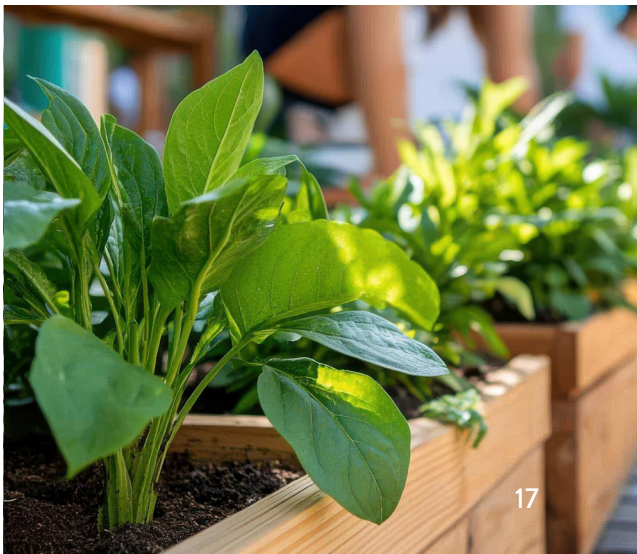
Garden Production

What Happens to Food Grown in the Garden?

Respondents were asked to select all that applied to describe how food grown in the garden was used. Of 75 respondents, 81% indicated food was used for learning activities, 71% said food was taken home by students or staff, 64% harvested and ate food during garden instruction time, 48% donated food grown in the garden, 48% served harvested food in the cafeteria or classroom, 27% composted what was grown, and 13% sold the food grown in the garden. Other uses, such as feeding food scraps to animals, making traditional medicines, or processing harvested food for seed collection, were listed by 7% of respondents.

What Happens to Food Grown in the Garden?





Garden Attitudes

Barriers

Barriers to a Garden Program

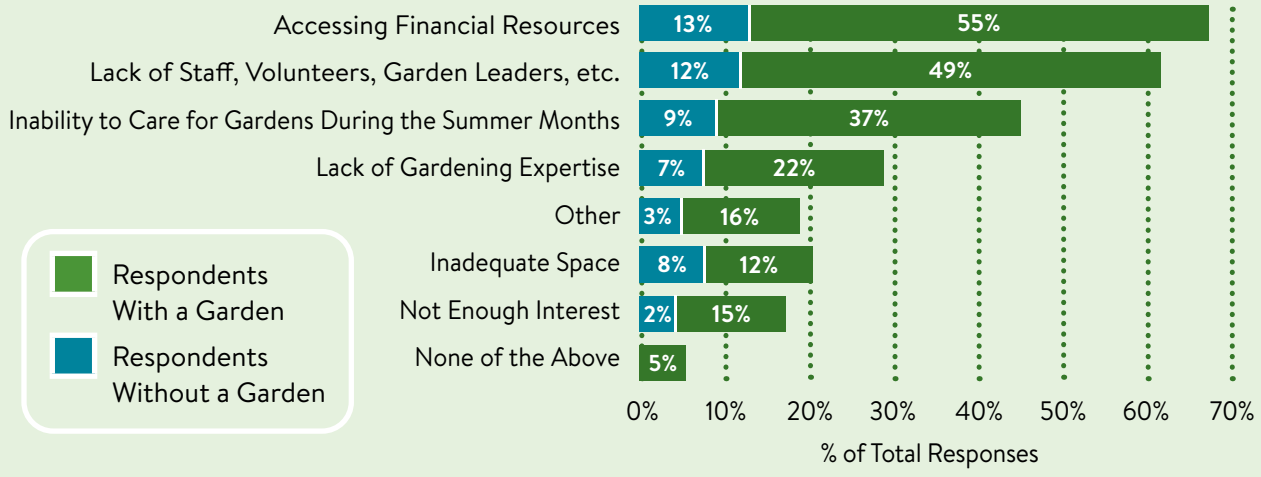
Respondents were asked to select all applicable barriers they perceived or experienced to start or maintain a school garden program. Of 20 respondents without a garden, 70% identified accessing financial resources as a significant barrier, 60% listed lack of staff, 45% listed an inability to care for gardens over the summer months, 40% listed inadequate garden space, 35% identified a lack of gardening expertise, and 10% listed lack of interest in a garden program. Of respondents without a garden, 15% listed barriers outside of those provided, such as pest issues or poorly constructed garden infrastructure.

Of 84 respondents with a garden, 68% listed accessing financial resources as a significant barrier. Additional barriers included lack of staff (61%), inability to care for gardens over the summer (45%), lack of gardening expertise (27%), inadequate space (14%), and lack of interest in the garden program (19%). Of respondents with a garden, 20% listed barriers outside of those provided, such as lack of time to manage the garden, conflicts with grounds crews or school administration, or a lack of disability adapted garden tools. Six percent of respondents indicated they did not experience any significant barriers to their garden program.

Of our 104 total respondents, the most common barriers were accessing financial resources (68%), lack of staff (61%), and difficulty caring for the garden over the summer (45%). Lack of gardening expertise was more common among respondents without a garden (35%), compared to those with a garden (27%), potentially due to the former having fewer opportunities to gain hands-on experience through their own garden programs.

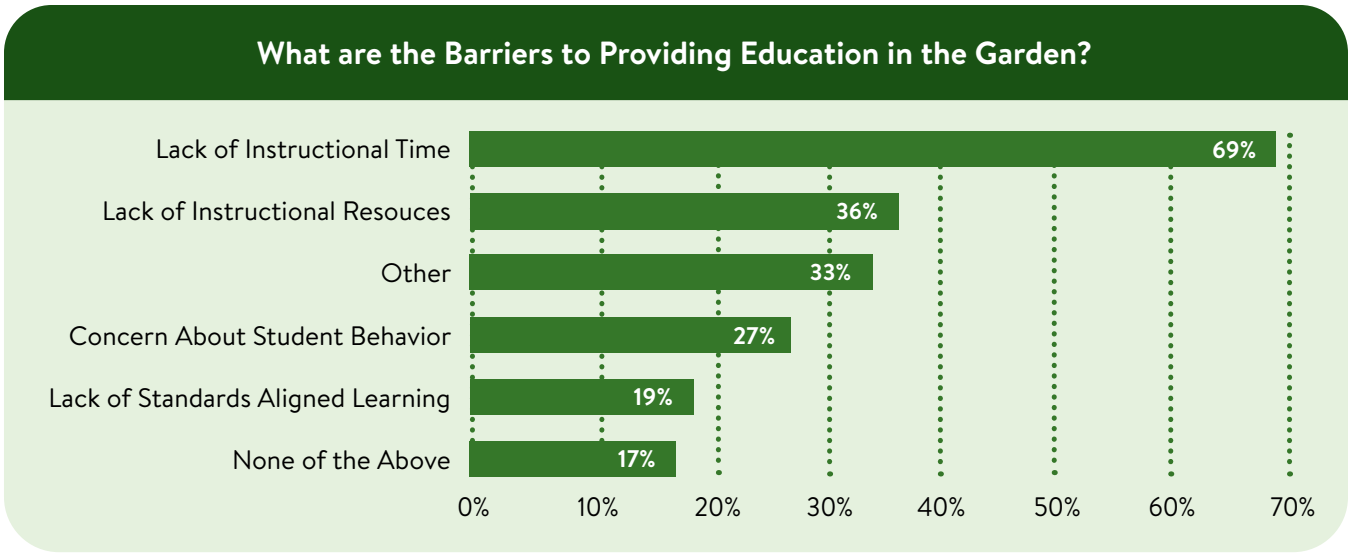
Space as a barrier was also notable, as 40% of respondents without a garden identified having an inadequate space as a challenge, compared to just 14% of respondents with a garden. This may reflect that many challenges to setting up a suitable garden space have been overcome by the time a garden program is established. Notably, "lack of interest" was more common among respondents with a garden (19%) than those without (10%). This may speak to the difficulty of keeping enthusiasm sustained over many years of a school garden program or may simply reflect the difficulty in measuring interest for programs that don't yet exist.

What are the Barriers to Your Garden Program?



Barriers to Providing Education in the Garden

Respondents were asked to select all barriers they perceived or experienced to providing education in the garden. Lack of instructional time was identified as the most common barrier, with 69% of 75 respondents listing it as a challenge. Other barriers included lack of instructional resources (36%), concerns about student behavior (27%), and lack of standards-aligned learning (19%). Some respondents (17%) indicated they did not face significant barriers to garden education. Defining specific barriers to successful garden education was highly unique to each school, as evidenced by 33% of respondents citing barriers outside the options provided. Examples of "other" barriers included difficulty finding culturally appropriate curriculum, lack of teacher confidence in the garden, lack of support from administration, lack of space for students, and lack of funding for garden education.



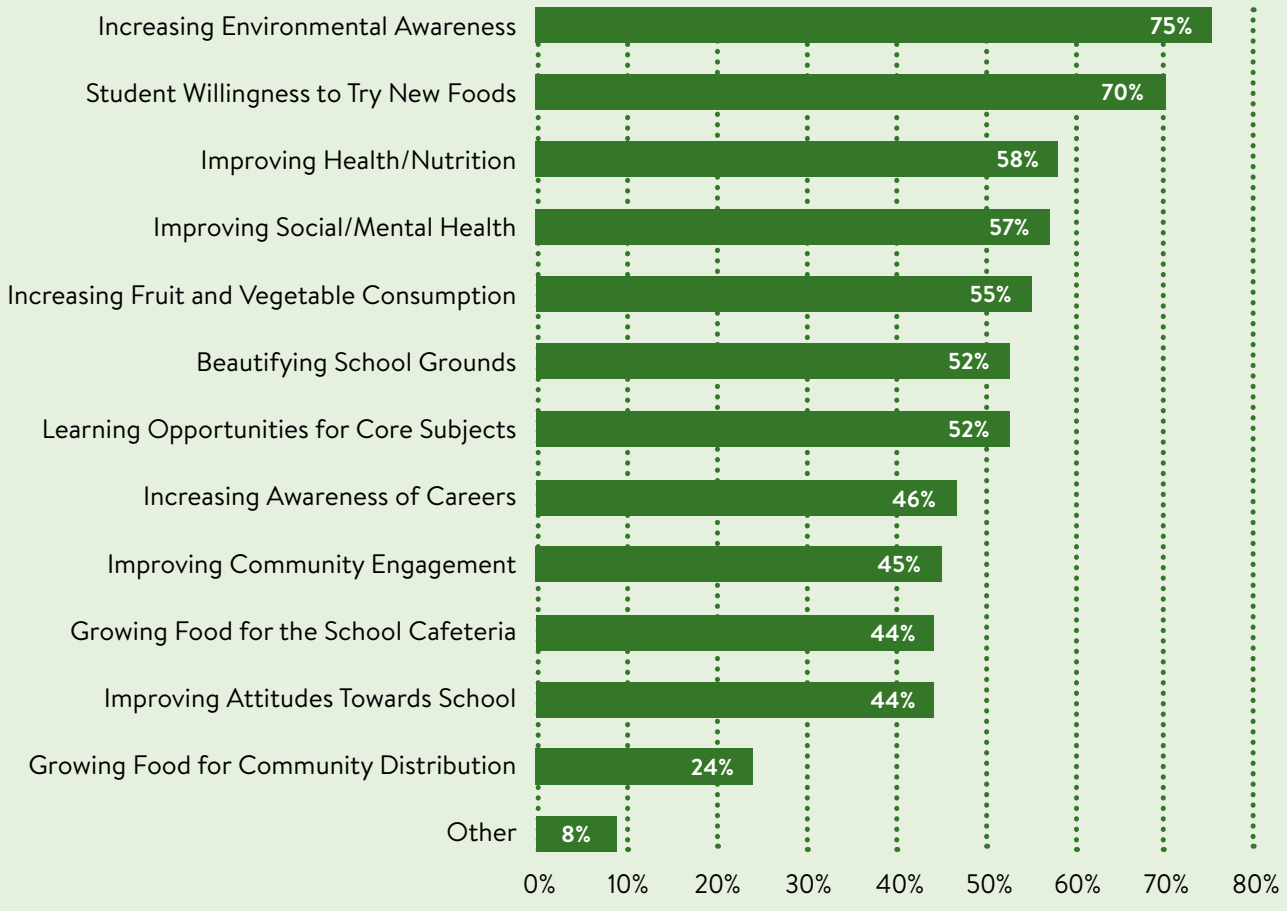
Benefits

What are the Observed Benefits of Your Garden Program?

Respondents were asked to select all that applied to describe benefits observed from their school garden. Of 84 responses, the five most common benefits included increasing environmental awareness (75%), increasing student willingness to try new foods (70%), improving student health and nutrition (58%), improving student social and mental health (57%), and increasing fruit and vegetable consumption (55%). Additional benefits included beautifying school grounds (52%), offering learning opportunities for core subjects (52%), increasing awareness of careers (46%), improving community engagement (45%), growing food for the cafeteria (44%), improving student attitudes towards school (44%), and growing food for community distribution (24%). Additionally, 8% of respondents mentioned other benefits not covered in the survey options, such as getting students outdoors, creating pollinator/wildlife habitats, and offering activities for school clubs and extracurriculars.

The five most common benefits demonstrate the significant value of school gardens in supporting various aspects of student health. Notably, three of the top five benefits are directly related to students' diets (increased willingness to try new foods, improving nutrition, and increasing fruit and vegetable intake). The wide range of garden benefits and the frequency that respondents resonated with them speaks to the widespread, positive impacts school gardens can have on students and communities.

What are the Observed Benefits of Your Garden Program?

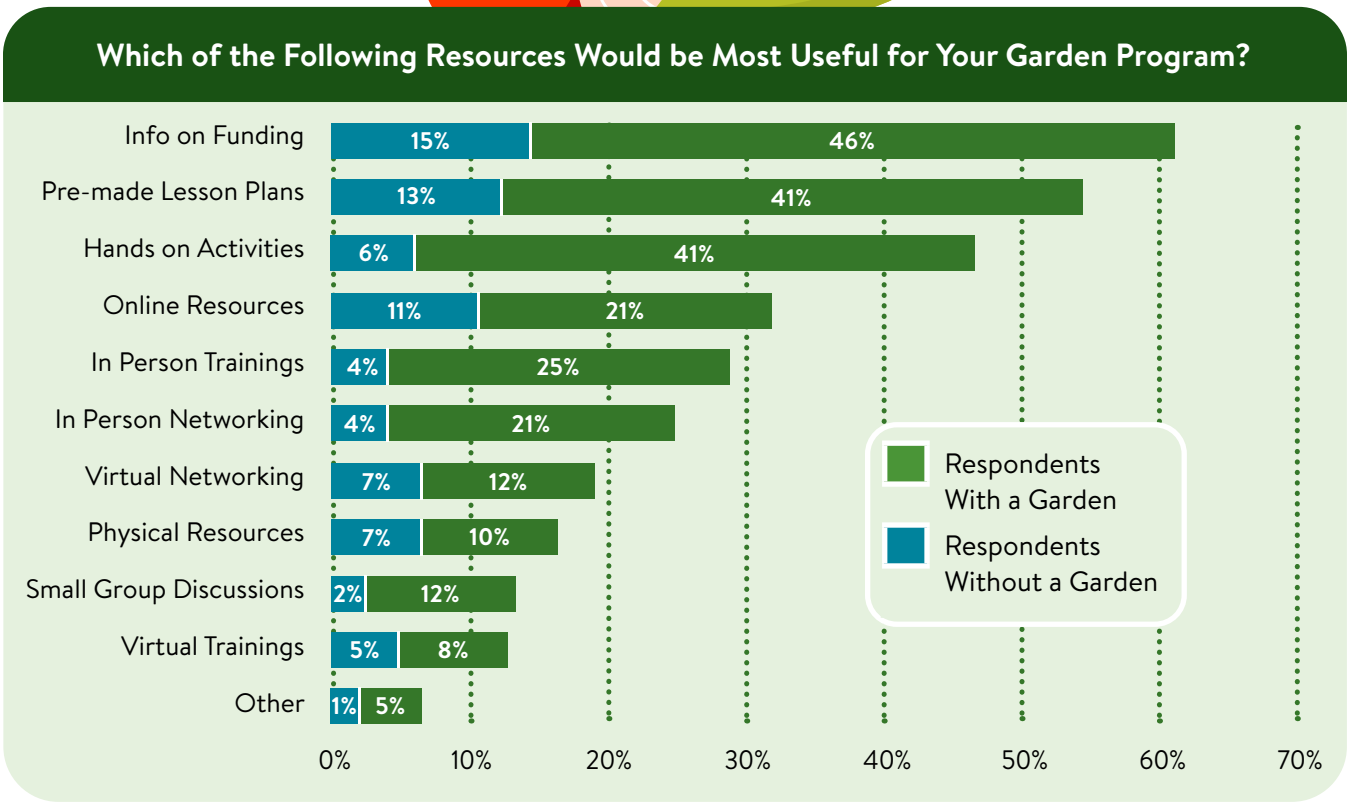


Resources of Interest

Respondents were asked to select three resources that would be most beneficial to start or support their garden programs. Of 102 total responses (18 respondents without a garden and 84 respondents with a garden), information on funding sources was the most popular choice, with 61% of survey respondents indicating their interest. Other resources of interest included pre-made lesson plans (54%), hands on learning activities (47%), online/digital resources (31%), in-person trainings (29%), in-person networking (25%), virtual networking (19%), physical/printed resources (17%), small group discussions (14%), and virtual trainings (13%). Of 102 total responses, 6% listed resources outside of those provided such as tours of existing school gardens, "train the trainer" programs to expand the garden volunteer base, and suggestions of how to get teachers more involved in garden spaces.

Across the two survey groups, there was consensus on the value of info on funding as a resource, with both having it as their most common resource of interest (83% of respondents without a garden and 56% of respondents with a garden). There was similar consensus regarding premade lesson plans with them being the second most common resource of interest amongst respondents without a garden (72%) and with a garden (50%).

Amongst our 102 total respondents, in-person activities (hands on activities, in-person trainings, in-person networking) tended to be more popular than virtual options (virtual networking, virtual trainings), but there were some disparities between respondents who had or did not have a garden. While only 14% of respondents with a garden expressed interest in virtual networking, 39% of respondents without a garden listed it as a top resource of interest. Similarly, virtual trainings were of interest to a greater proportion of respondents without a garden (28%) compared to those with a garden (10%). This may reflect how respondents just getting started in the garden world may favor resources that offer more flexibility, while respondents with established gardens may value more face-to-face opportunities to build out their support networks.



Topics of Interest

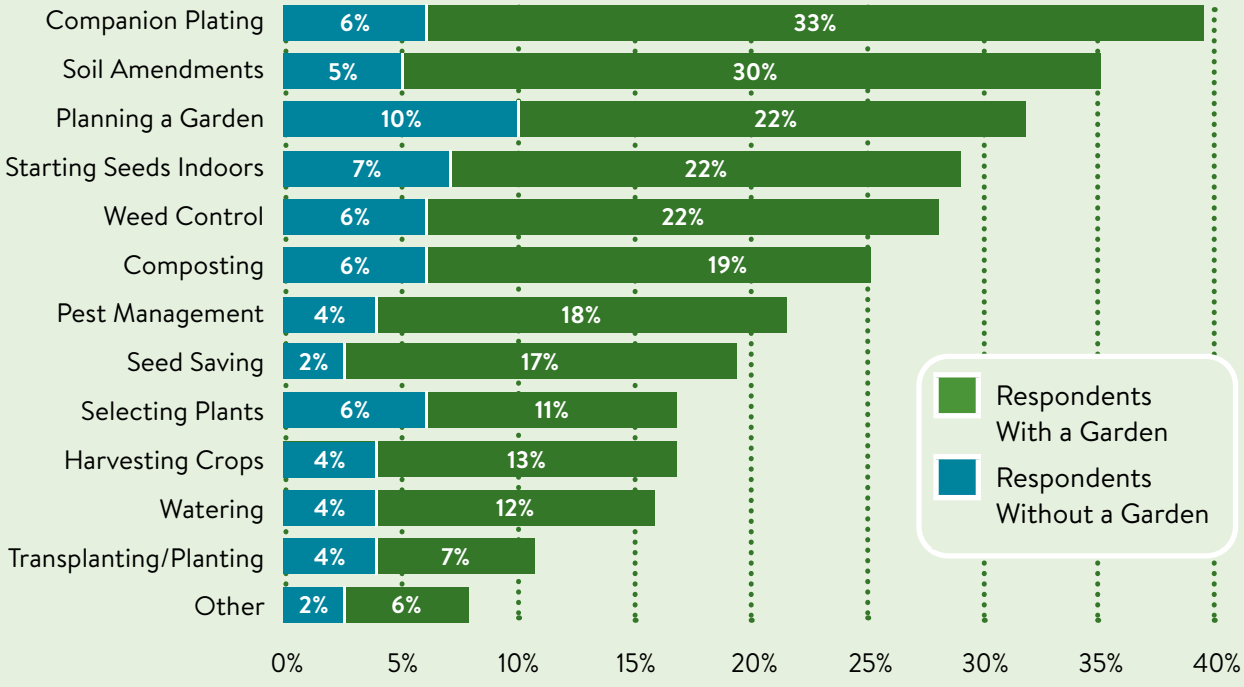
Respondents were asked to select the three garden related topics that they were most interested in learning more about. Of our 103 total respondents (19 without a garden and 84 with a garden), 39% were interested in companion planting, 35% percent were interested in soil amendments, 32% were interested in planning and designing a garden, 29% were interested in starting seeds indoors, 28% were interested in weed control, 25% were interested in composting, 22% were interested in pest management, 19% were interested in seed saving, 17% were interested in plant selection, 17% were interested in harvesting crops, 16% were interested in watering, and 11% were interested in planting and transplanting. Of our total respondents, 8% were interested in topics outside of those provided, such as indigenous agriculture, succession planting, hydroponics and greenhouse systems, and cultural connections of foods.

There were some notable differences between our two survey groups regarding which topics were of most interest. Planning and designing a garden was a more popular choice among respondents without a garden (53% of 19 respondents) compared to those with a garden (27% of 84 respondents). A similar pattern was observed for selecting plants, with 32% of respondents without a garden expressing interest, compared to only 13% of respondents with a garden. These garden topics tend to reflect an earlier stage of garden knowledge, so it feels intuitive that these topics were of greater interest to respondents who did not currently have a garden.

Other topics, such as companion planting, were slightly more common among respondents with a garden (40%) compared to those without a garden (32%). Interest in seed saving showed a similar pattern with 21% of respondents with a garden expressing interest compared to 11% of respondents without a garden. These topic areas can sometimes reflect a more advanced grasp of garden operations or a desire to "level up" gardening practices, which may explain why they were slightly more popular choices amongst respondents currently operating a garden.

Across our two survey groups, there is clear interest in a variety of garden topics at both beginner and advanced levels.

Which Topic Areas Are You Most Interested In?



Short Answer Summaries

Respondents had the opportunity to share stories, comments, or narratives they had regarding their school garden experience. Thirty-two respondents submitted short answer responses, which are summarized into the key themes below:

1. **Gardens are beneficial for students, academically, socially, and emotionally.**

   Whether through hands-on learning or by providing a space for students to thrive, the positive impact on students' learning, health, and overall happiness was widely acknowledged by survey respondents. Many quotes mentioned how students engage with the garden not just in an academic sense, but also socially and emotionally, which supports the idea that gardens are beneficial for overall well-being.

2. **Space and funding constraints remain a persistent issue.**

   While many respondents expressed gratitude for their garden programs, the challenges of finding space or securing funding for garden-related projects (including infrastructure like greenhouses or hydroponic systems) were mentioned frequently.

3. **Almost all gardens could benefit from a paid garden staff position.**

   Many respondents mentioned that while gardens are valuable, maintaining them—especially over the summer or during periods of transition—is challenging without dedicated paid garden staff. Schools that struggled with garden maintenance often pointed to high staff turnover or an over reliance on a small group of leaders as significant barriers. The absence of paid staff was often tied to a lack of funding, which was also a recurring theme.

4. **Most school garden programs would not exist without community buy in and volunteer support.**

   School garden programs often thrive due to the active involvement of community members, students' family members, and volunteers. Having an engaged garden community was identified as a significant strength for respondents with established, sustainable initiatives. Given the challenges of securing paid staff, many respondents emphasized the critical role volunteers play in their garden's success. By fostering strong, collaborative relationships, school gardens can benefit both students and the surrounding community.

5. **Innovative indoor growing solutions like hydroponics and greenhouses are valuable for extending the gardening experience.**

   There were several mentions of hydroponic systems and greenhouses as solutions for extending the gardening season in Minnesota. Hydroponics and greenhouses were highlighted as promising ways to keep students engaged in gardening year-round. These systems can help make the gardening experience more consistent and integrate gardening into the classroom even during the winter or off-season.



Key Findings

1. Garden management relies on teachers and other paid staff.

Teachers were the most common managers of school gardens during the academic year (73%) and during the summer months (59%). Notably, just over half of the schools surveyed (52%) relied on some form of paid labor to manage the garden during the summer months (compensated teachers, paid school staff, or paid non-school staff), suggesting that financial resources are a key factor in garden sustainability outside of the academic year.

2. External partnerships are essential.

A strong majority (91%) of schools utilized partnerships with external organizations, highlighting the importance of community collaboration and external expertise in supporting garden programs. These partnerships are critical for providing the resources, knowledge, and labor necessary to sustain garden programs.

3. There is typically limited funding for garden programs.

A substantial proportion of gardens (24%) had no allocated budget, and about 70% operated with less than $500 per year. The most frequently cited barrier to garden programs was accessing financial resources (68%), and the most common resource of interest was information on funding (61%).

4. Gardens offer diverse educational and health benefits.

Gardens were used to teach a variety of grade levels and subjects including science (76%), nutrition (61%), math (39%), and language arts (36%). The most frequently noted garden benefits were increased environmental awareness (75%), student willingness to try new foods (70%), and improvements to student health (58%). These positive impacts to student well-being and the ability of gardens to integrate into multiple curricula are key strengths of these programs.

5. There are varying interests across different stages of garden development.

Respondents who had gardens were slightly more interested in advanced topics like companion planting and seed saving, while those without gardens tended to prioritize beginner topics, such as garden planning and plant selection. This division of interests highlights the need for resources tailored to different stages of garden development.

6. There are differing preferences for resource formats.

Respondents with gardens expressed a preference for hands-on, in-person resources, while respondents without gardens were slightly more interested in virtual, online resources. This indicates that schools at different stages of implementation may require different types of support to meet their needs.