SCHOOL GARDENING GUIDE
for the Greater Houston Area

Urban Harvest
About this Guide

The intent of the Urban Harvest School Garden Guide is to provide teachers and garden educators with resources to help teach children about organic vegetable gardening. It focuses on how to grow and teach about many “highly-likely-to-succeed” vegetables in the Greater Houston area and why these are important plants to us scientifically and culturally. The vegetables covered in this guide were included based on their proven ease of growing, as well as their ability to serve as educational tools.

This Guide is meant to be used in conjunction with basic gardening knowledge about soil, water, fertility and pest management. We strongly urge you and your school or organization to add some of the other suggested reference books to serve as basic gardening guides.

This is a revised edition of the original publication issued in 2004. We are pleased to also offer this document as an electronic download with the intention of making periodic updates. We welcome any feedback as to what new information might be included in future revisions so as to make this publication even more useful, and ultimately, make your garden more successful. It is our hope that you will also share both your planting and teaching experiences with us to include in future editions.

Urban Harvest offers a variety of free and low-cost classes year-round. Please check our website for a current class calendar, curriculum resources and general gardening advice. The Youth Education department also hosts periodic teacher training such as the summer workshop, Edible Academy.

For more information and additional resources, please visit: www.urbanharvest.org

Happy gardening!
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School vegetable gardening is one of the most rewarding learning activities that children and teachers can undertake. In some ways, however, it is a testament to the saying that “nothing worthwhile comes easy.” That being said, the purpose of this book is to empower school staff, students and parents with knowledge of how to make a school garden easy to maintain, productive, educational and a fun learning experience for all.

What are the rewards of a garden in your school? Recent research (see tables) shows that gardens provide educational benefits and promote equity by helping close the achievement gap between more- and less-privileged students.\(^1\),\(^2\) Students who participate in a garden program have shown: higher science test scores,\(^1\),\(^2\),\(^3\),\(^4\) improved concentration and memory,\(^5\) increased sense of ability and achievement,\(^6\),\(^7\) and positive attitudes about science.\(^1\),\(^8\)

Other studies show that the aesthetic improvements of gardens and the presence of community members participating in school garden programs lead to stronger communities.\(^6\),\(^9\),\(^10\),\(^11\),\(^12\) Gardens have been shown to significantly decrease bullying,\(^13\) reduce neighborhood crime,\(^13\),\(^14\) and increase both school pride\(^9\) and home values.\(^14\)

The healing benefits of gardens have been documented for centuries, with the first recorded use of horticulture therapy in ancient Egypt (social studies project). Recent research shows that gardens stimulate growth and healing by reducing stress and anxiety,\(^12\),\(^15\) increasing self-esteem and increasing happiness\(^15\) while providing a wide range of additional mental and social health benefits.\(^12\)

Generally speaking, students who participate in a school garden have higher nutrition knowledge and have been shown to increase consumption of fruits and vegetables in the lunchroom and at home.\(^16\),\(^17\)

Urban Harvest has been encouraging the use of gardens on school campuses since 2004, even before the benefits were fully documented. From our experience, we have found five excellent reasons for every school to consider a garden on their campus:

1. Children need the visual hands-on experience of a garden to learn about and appreciate the natural world.

2. A garden has the ability to serve as a stimulating environment for learning about virtually every subject taught in school, especially science, math and nutrition (see Chapter 6).

3. Gardens serve as a wonderful place to instill important values in children, including the value of hard work, planning, cooperation and appreciation of other cultures.

4. Parent-teacher-student involvement is encouraged by school gardens and home garden extension projects including food preparation.

5. Gardens can serve as a source of pride for the student gardeners and, if properly incorporated, will add to campus beautification.

Underlying each of these reasons is the fact that it is possible to obtain very good gardening results year-round in the Greater Houston area. This is well documented by our network of community gardeners with collective experience that amounts to hundreds of years.

What challenges will a school garden pose? To be sure, there are serious challenges involved in gardening with students in schools. Some are unique to gardening and others to our hot, humid semi-tropical climate. And not least, is the challenge of teaching youth who have grown up in a digital world and little knowledge of food sources.

We have found that there are three principal challenges that organizers of school gardens face:

1. Mobilizing consistent supervision of the garden throughout the school year, and especially, during vacation periods.
As the research showed in the previous chapter, there are many publications and studies that document the health benefits of growing your own food by gardening. While the benefits of physical exercise and nutrition are foremost, the goals of gardening in a school garden setting can be expanded to:

- Introduce students to successful planting and growing of vegetables that will serve as food.
- Help students understand the interrelationships of natural environment with themselves.
- Give students opportunities to taste and enjoy a wide variety of locally grown, nutritious produce.

With these goals in mind, it makes sense to use tried and proven gardening techniques that will give students the best success. Since 1994, Urban Harvest has promoted the same organic principles in school gardens that we teach in the greater community.

A. Organic Principles

Research has shown many health benefits to using an organic approach to gardening, not only for the gardener but for the plants and soil as well. This is especially true in school settings where the children may be more exposed to chemical pesticides and fertilizers during outdoors play.

The organic approach relies on natural laws and cycles — life, death and decay — that contribute to the health of garden soil, to the plants that we grow in that soil, and ultimately, to our bodies when we eat the plants. Or, as we like to teach students:

Healthy Soil = Healthy Bodies!

While building healthy organic soil can be achieved through natural additives such as minerals, adding organic compost is the easiest. Compost is nature’s way of recycling plants and plant components (“biomass”) to return nature’s nutrients back into the soil. Compost feeds plants through a gradual, naturally balanced process, similar to the way humans are nourished through healthy, balanced diets.

Healthy soil, along with the restoration of natural checks and balances, ultimately provides long-term pest and disease control that chemicals can’t mimic. There are many other benefits to using an organic approach in your school garden:

- First, organic gardening emphasizes natural systems that have existed long before humans and offers tremendous teaching opportunities.
- Second, gardening with chemicals/synthetics, particularly pesticides, can pose health concerns, whether or not children are involved in their application since residues can be easily tracked indoors on shoes, clothing and busy hands.
- Third, an organic approach increases biodiversity which offers a broader lesson in land stewardship that uses natural systems of balance.
- Finally, organic methods help students gain an appreciation of nature’s powerful and resilient cycles, i.e., natural recycling.

Since organic publications first became widely published for Texas gardeners in the 1990s, many new resources that discuss and detail organic plant care are now available at the stroke of your keyboard. One site maintained by Texas A&M University offers many resources on organic tips and practices:

https://aggie-horticulture.tamu.edu/earthkind/