WATER RESEARCH COMMISSION
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Supporting Sustainable Water Futures
1971-2026

BASIC GUIDE TO

School Food Gardens

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Gezina
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Production editor: Lani van Vuuren
Design and layout: Anja van der Merwe
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Contents

Introduction

Hunger and stunted growth among children remain enormous challenges in South Africa, especially in rural areas. School food gardens are an important and practical solution and, along with feeding schemes, can help supplement children's diet by providing fresh, healthy vegetables.

Studies also show that food gardens have the potential to improve children's diets beyond what they produce at school – children exposed to food gardens also tend to eat more vegetables at home.

School food gardens also provide other benefits beyond busting hunger. By growing their own food, children learn, in a practical setting, where food comes from, how plants grow and why caring for the environment matters. Gardens support lessons in science, nutrition and life skills, while encouraging curiosity, teamwork and responsibility.

Another benefit often overlooked is the fact that school food gardens can strengthen links between schools, parents and local communities, as knowledge and produce are often shared. Overall, school food gardens help improve nutrition, support learning, build skills and contribute to healthier, more resilient learners and communities across South Africa.

This booklet provides some guidance when starting a school food garden. It is not comprehensive, but rather points to 'tips and tricks' that will make such a garden successful. The booklet ends with additional resources where more information can be found.

USAID/Flickr

Getting their hands dirty connect children with nature – by learning to care for a living, breathing ecosystem, children develop an understanding of nature's importance in their lives and the lives of other beings.

School food gardens are:

- A source of food for learners
- A source of healthy influences (physical activity, balanced school meals)
- An area of learning (about nature, agriculture and nutrition)
- A place of pleasure and recreation
- A lesson in respecting the environment and taking pride in one's school

Questions

to consider before starting a school food garden

Question 1. Who will be responsible for the garden?

Running a sustainable school food garden requires not only agricultural knowledge but also people skills and common sense. Commitment is the most important prerequisite for a successful and sustainable vegetable garden.

An important first step in establishing a school food garden is the formation of a **garden committee**. A garden committee makes decisions about how a school garden will look, and what it will be used for and how it will operate. Forming such a committee early in the process will give your garden longevity.

Typically, such a committee will comprise your school's administration, teaching staff, students, parents and community volunteers. The 'garden leader' can be the school principal, an experienced teacher, or a gardener from the community. This person should be assisted by a small team, for example, a deputy (to act when necessary), other teachers, parents or community members.

Together, the committee will assist with issues such as planning, fundraising, design and building, coordinating supplies and liaising with the community. Once the garden is established, the committee can assist with scheduling, maintenance, planting and weeding. An important task of the committee is to keep accurate records of materials and support from funders.

Remember to plan for someone to look after the garden during school holidays.

The most important prerequisite for a successful and sustainable vegetable garden is commitment!

How to keep partners involved

- Hold regular meetings
- Write a garden newsletter
- Involve everyone in decision-making
- Create visible signage around the school
- Have children do art for and at the garden
- Establish a clear, easy plan for ongoing maintenance
- Find ways to integrate the garden into the school curriculum




Question 2. What kind of school food garden will it be?

What will be the objective of your garden? This will determine what kind of food garden you establish, as well as its size. Schools build gardens for different reasons. Apart from providing learners with fresh vegetables, gardens can also be established to provide hands-on learning and a therapeutic space for learners, for example.

Once you have a sense of your garden's direction, consider the following questions to further hone your vision: Who will use the garden? Which grade levels will spend time in the garden and how will they use the space?

EXAMPLES OF LESSONS IN A SCHOOL FOOD GARDEN

These lessons can be integrated into regular classroom schedules, making the garden a central, interactive, and sustainable educational resource.

SCIENCE (STEM)

- **Plant lifecycles and biology:** Plant anatomy, germination, photosynthesis, and pollination.
- **Soil science and ecosystems:** Lessons on soil texture, composting, nutrient cycles, and decomposition using worm bins.
- **Environmental awareness:** Studying beneficial insects, pest management, and the impact of weather on plant growth.

NUTRITION & HEALTH

- **Healthy eating habits:** Teaching about balanced diets, vitamins, and minerals.
- **Food safety:** Lessons on harvesting produce, washing, and safely preparing snacks.

MATHEMATICS

- **Measurement and data handling:** Measuring plant growth, tracking rainfall, and graphing results.
- **Geometry and spatial planning:** Calculating garden area, creating to-scale maps, and designing bed layouts.
- **Arithmetic and finance:** Calculating seed spacing, fertilizer amounts, or the cost-per-unit of produce compared to a supermarket.

LANGUAGE, ARTS AND SOCIAL STUDIES

- **Garden journals:** Writing observational notes, drawing sketches of plants, and recording daily changes.
- **Cultural studies:** Researching traditional crops.

AGRICULTURAL & LIFE SKILLS

- **Gardening techniques:** Sowing seeds, transplanting seedlings, weeding, and building trellises.

- **Water management:** Learning about irrigation, water conservation, and greywater recycling.
- **Business skills:** Planning a market garden, calculating yield, and selling produce to raise funds.

- **Environmental stewardship:** Promoting organic practices, recycling, and understanding the impact of agriculture on the environment.

Types of school food gardens to consider

Not every school has the space to accommodate a conventional, large outdoor school food garden with traditional beds. However, there is no harm in starting small. A simple windowsill can hold a few containers with herbs or salad greens.

TOP TIP

Indoor growing can be a great way to get pupils interested in growing. There is no need to spend money on expensive pots. Recycle waterproof materials, such as milk cartons, old boots or small baskets lined with plastic bags. The best indoor edible plants are salad plants, herbs and micro greens. Be mindful that plants grown in containers require more regular watering.

Leafy vegetables such as kale, mustard spinach, Swiss chard, beetroot, spinach and lettuce can be planted successfully using grow bags.

If you want to grow food and get learners outdoors, but don't necessarily have the space, consider **grow bags** or easily movable containers. Grow bags, in particular, are a good way to start growing food outdoors. If you can't buy them from supermarkets or garden centres, you can make them from strong plastic bags.

In addition, **raised beds** are commonly used in school gardens because they make weed control easy and are accessible for all ages and abilities. They also come in a variety of heights, widths and lengths. It is important to not make the beds too wide as children should still be able to reach the centre of the bed without standing on the soil.

Benefits of raised beds

- Raised bed gardens give you control over soil composition, allowing for better drainage and the opportunity to amend the soil as needed for optimum growth of plantings.
- They offer flexibility in location and can be installed over soil or paved surfaces.
- Generally, it is easier to control weeds and plant new seeds and seedlings in raised beds.
- The soil in raised beds warms faster in spring, allowing for earlier planting dates and harvesting before the end of the school year.
- The elevated location of raised beds helps prevent soil compaction by decreasing foot traffic.

Many schools opt for raised food beds that are easier to manage.

Old car tyres can be repurposed to create child-sized gardens. Just be sure to line the tyre with a waterproof lining to keep the soil safely separated from the ingredients of the tyre.

Question 3. Where will the school food garden be?

Should you decide on a traditional outside food garden site selection becomes important. The four most important considerations for selecting a site to establish an outside food garden are:

- Is there enough sun?
- Is there access to water?
- Does the site have good quality soil available?
- Is the site secure?

Other aspects to consider include the distance from the classrooms, availability of storage and funds for equipment, fertiliser and pesticides, compost, access to toilets and external sources of advice and support.

The best soil structure is fluffy, lightly textured, and full of organic matter that's continually breaking down. It provides enough air pockets for roots to infiltrate and water to travel.

TOP TIP

Secrets to school food gardening success:

- Start small and expand later
- Establish and maintain a good water supply and fencing
- Use organic approaches to improve and conserve soil
- Choose crops adapted to local conditions and are easy to cultivate
- Involve trained and experienced teachers and helpers to share their knowledge and skills

Starting
your garden

Level ground is the most suitable choice for a vegetable garden. The first step in starting your school food garden is to clear the site of weeds and rubbish and to prepare the soil for planting . Try to involve the children as much as possible in the garden build, as this helps them form a feeling of ownership and care towards it. An important consideration, however, is that children should not be the sole labour force. They must enjoy their time in the garden and learn from it.

The second step is **preparing the soil**. Healthy vegetables need fertile soil. Soil acts as the mechanical support for plants and serves as a reservoir for nutrients, water and beneficial organisms. Preparing the soil involves loosening the soil and making sure that all the weeds are taken out. Apply fertiliser when necessary. Break up any clods, and even out and moisten the soil.

Consider access to **sunlight**. Vegetables need at least eight hours of sunlight, but in hot climates, some shade in the afternoon is helpful. In windy areas, crops can be protected by windbreakers, planted across the direction in which the wind blows, to reduce the damage caused by strong winds.

Water supply is extremely important, as water is the most basic plant growth requirement. Vegetables take a lot of water and will grow and produce less if water is limited. When you irrigate, make sure the water soaks the soil well below the surface into the zone where the roots are growing.

When seeds are first planted and when seedlings are young, watering must be frequent and does not need to go deep. When plants have passed the seeding stage, they can be watered more thoroughly and less often.

It is important to avoid walking on the beds as this compacts the soil. Beds should be kept flat to prevent water from running away from the plants. Plants should be grouped according to their water needs to conserve water.

Once the garden is established, it will have to be **maintained** through regular activities such as watering, weeding, fertilising, mulching, composting and monitoring for pests. Remember to monitor and evaluate your garden. Keep records at each stage of the development – especially photographic ones. You may need these later to apply for funding.

What equipment do I need for my school food garden?

A typical 20 m by 20 m plot requires tools such as:

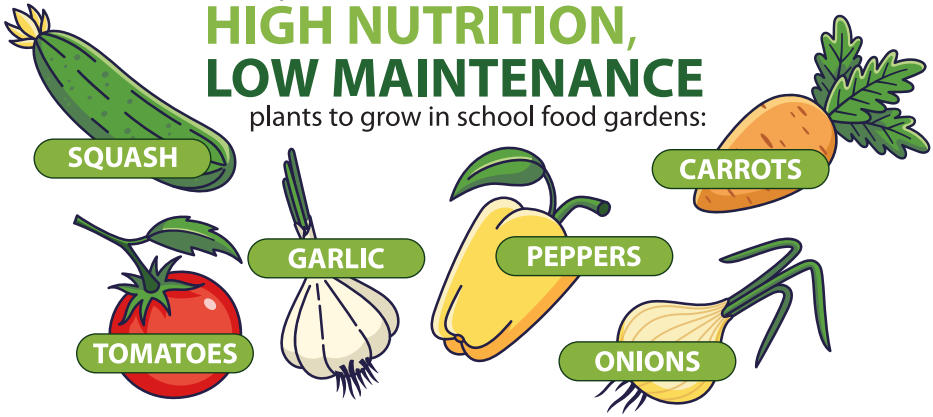
- A panga to clear away grass and bushes
- Wheel barrows
- Hoes
- Spades
- Watering cans/hose pipe
- Rakes
- Buckets
- Garden forks
- Hand shovels




Examples of

HIGH NUTRITION, LOW MAINTENANCE

plants to grow in school food gardens:



TOP TIP

For good compost, use a mix of 'green' garden waste, such as leaves and grass, and hedge trimmings. You can use kitchen waste, such as fruit and vegetable peelings, but don't use cooked food or meat, such as bones (as these attract vermin, such as rats). Cover, stir or turn occasionally, and leave.

Narrow beds (no more than 120 cm in width) are good for children as they can reach the middle for planting and weeding from both sides without compacting the soil. If the beds are only accessible from one side then they should be no more than 60 cm in width.

Watering
your garden

Different methods are used to water plants, depending on their situation and types.

Soak-up trays are generally used when sowing seeds. Use a shallow tray or trough larger than the seed tray or pot. Fill it with water until it is about 3 cm deep. Stand the seed tray in the larger tray until the compost darkens in colour and is wet to the touch. Do not stand plants or seeds in water for more than four hours.

The most widely used watering method in gardening is **watering cans**. It is an easy way to control water flow and is used to water established plants in pots and containers.

Hoses with lance or spray guns provide a rain-like effect for watering with a heavier flow than a watering can. More water can be delivered in a shorter time.

Trickle or **drip irrigation** can also be used in a food garden. Separate pipes originate from a single hose pipe, providing individual pots or plants with water over a period of time. This method is especially useful when growing crops of one type and size. These pipes are usually set up in a permanent position and can be controlled automatically using a tap and timer.

Sprinklers are unlikely to be used in a school garden; however, sprinklers may be used when watering a newly planted area.

Watering cans are most often used to water crops in school food gardens.

Golden rules for watering school food gardens:

- Always water plants well before planting. If the soil is dry, water the planting hole before planting or sowing.
- The best time of the day to water plants is early morning of in the evening. This reduces the amount of water evaporation.
- Always direct water at the bottom of the plant's stem rather than its leaves. This means the water will go direct to where the plant needs its most.
- When watering potted or containerised plants and hanging baskets keep watering until the water flows through the bottom of the pot – this means you have watered enough.




DIY MILK BOTTLE WATERING CAN

1. WASH THOROUGHLY

Make sure the milk bottle has been washed thoroughly with hot soapy water to get rid of any milk and the milky smell.

2. ADD HOLES TO THE LID

Place the lid onto a wooden board and use a hammer and nail to make holes into the lid. Smaller nails create finer spray.

(Teacher support may be required with younger pupils)

3. MAKE AN AIR VENT

Pop one small hole in the handle of the bottle to allow air to get in. This will help the water flow.

4. DECORATE YOUR BOTTLE

Make sure the outside of the bottle is completely dry, then decorate the bottle with permanent pens.

5. FILL AND USE!

Fill the bottle with water and replace the lid.

Stay safe
while gardening

- Use of chemicals should be kept at a minimum.
- Make sure there is a secure place to store tools, fertilisers, and garden chemicals out of reach of students when the garden area is unattended.
- Plan for adequate adult supervision at all times when students are in the garden area.
- Instruct students in the safe use and handling of all garden tools and equipment.
- Students should wear proper shoes to protect their feet from cuts and stings. Bare feet, sandals or flip flops should not be allowed.
- Students should wear hats and sunscreen while gardening.
- All students should wash their hands thoroughly before and after working in the garden.
- Students should not pick and eat unwashed fresh produce while working out in the garden.

All students should wash their hands thoroughly before and after working in the garden.

Resources

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