

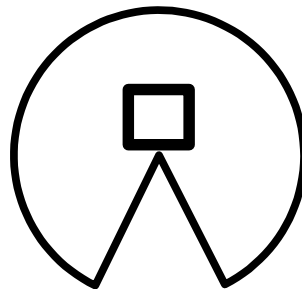
# Keyhole Gardens

Keyhole gardens were developed by C-SAFE Lesotho, drawing on a design used in Zimbabwe by CARE. Since their development, they have helped many families provide food for themselves and even crops to give away or sell when the weather is bad or money is scarce. You might have seen them in Mafeteng District, where they have been particularly popular and successful.



## What is a keyhole garden?

Keyhole gardens are given their name because each garden has a composting basket built into its center, giving the garden a keyhole shape when viewed from above.



The garden uses a number of layers to retain moisture and nourish the soil, making it more productive than a conventional garden. Also, it is made from materials that are all available at no cost.

## Benefits of the keyhole garden:

### 1. Soil nutrient enrichment

- The layers of organic materials break down over time, adding nutrients to the soil.
- The central composting basket continuously replenishes the garden's soil nutrients.

### 2. Moisture retention

- The layers of organic material soak up and retain moisture, meaning that the garden requires water less frequently and in smaller quantities.

### 3. Labor saving technology

- The soil re-nourishment and moisture retention properties of the garden reduce the amount of time and care required to maintain the garden.
- The elevated walls of the garden make the garden more accessible to sick or elderly gardeners.

### 4. Low-cost design

- A key success of the keyhole garden is that all of its construction materials should be readily available (at no cost) to gardeners. Gardeners might need to purchase seeds for planting, however.

### 5. Year-round vegetable production

- The stones of the keyhole garden wall absorb and retain heat from the sun, protecting crops from the cold winter temperatures in Lesotho.

## Maintenance of the garden:

### 1. Watering

- The garden should be watered regularly and often to ensure that the garden soil is moist. Even though keyhole gardens might need less water than conventional gardens, gardeners should still be careful to keep the topsoil moist.
- Clean water can be used directly on the topsoil just like a regular garden, but “grey water” from washing hands, laundry, or dishes can be poured into the central basket. The thatch and the composting in the basket will clean the water sufficiently for the plants to use it.

### 2. Basket

- Uncooked vegetable scraps should be dumped into the keyhole garden basket. Dry manure, eggshells, and compost can also be added. These will decompose over time, replenishing the soil nutrients as the plants grow.
- The basket will decompose over time, likely within 1 or 2 years, and should be replaced. The garden wall near the basket can be pulled away, allowing gardeners to remove the rotted basket and replace it with a new one.

### 3. Soil

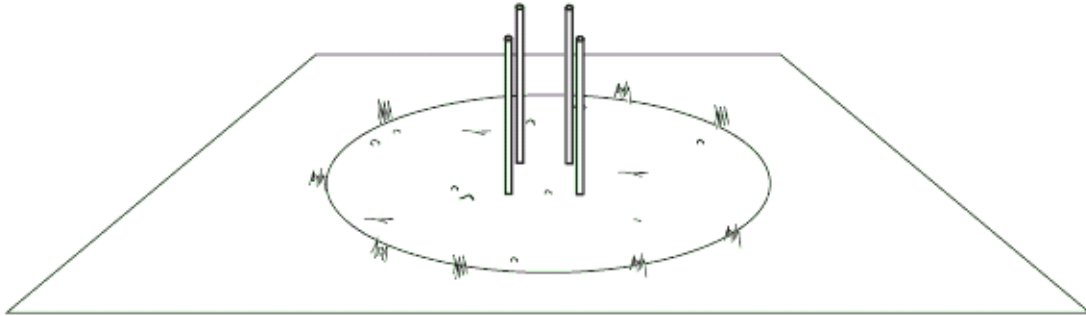
- As the layers of the keyhole garden decompose, dry manure and topsoil should be replenished in the garden so that it does not become sapped of its fertility. If the topsoil turns grey or sinks below the garden wall, it is time to add topsoil and dry manure.

### 4. Garden construction

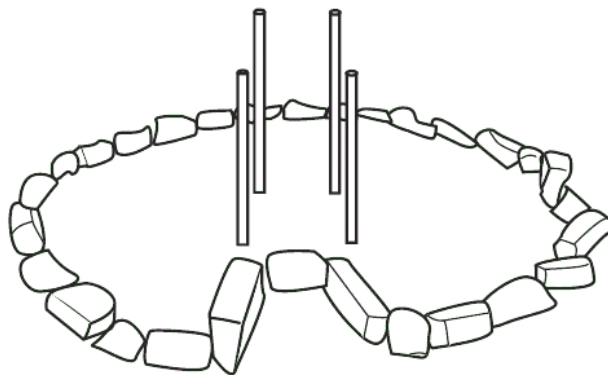
Over time, the garden may lose its nutrients and start to become less effective. If vegetables stop growing well in the garden, and there are no pests or diseases that you can find, you may need to pull all the stones away, sweep away the old garden layers, and rebuild each layer of the garden. This is usually done every 4–5 years.

### Steps in construction

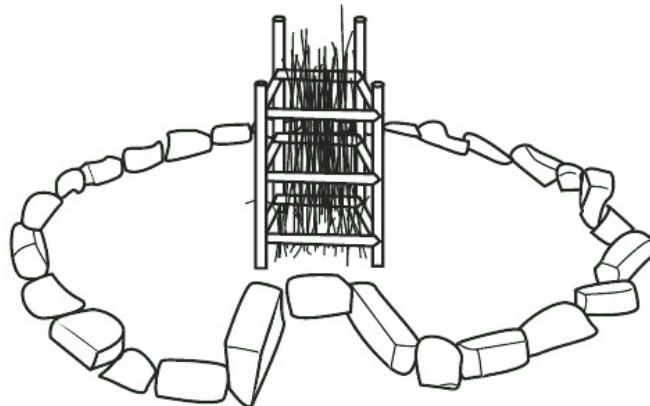
1. First, a circle 2 metres across is cleared of grass and plants, and the four corner posts of the basket are pounded into the ground.



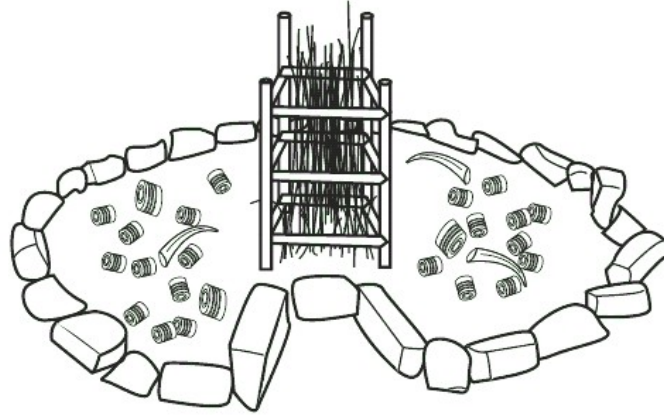
2. Next, the outline of the garden is marked with stones. The garden dips inward toward the center in one place so that gardeners can reach the basket more easily. (If stones are unavailable, the garden walls can be made of any sturdy, permanent material, such as old tires.)



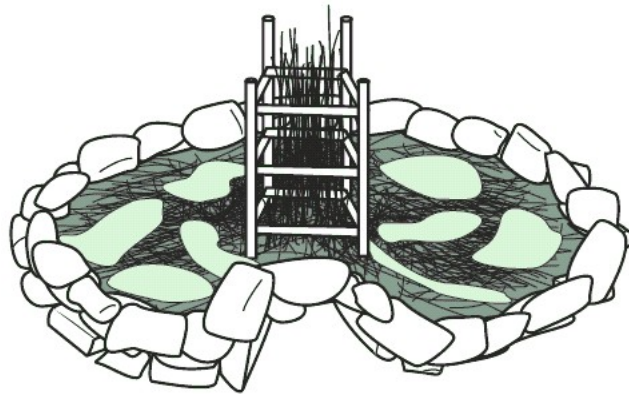
3. The basket is then finished by encircling the corner posts with either sticks or rope. The basket is lined with thatching grass so that compost materials and water will flow from the basket into the garden soil (once the soil has been added).



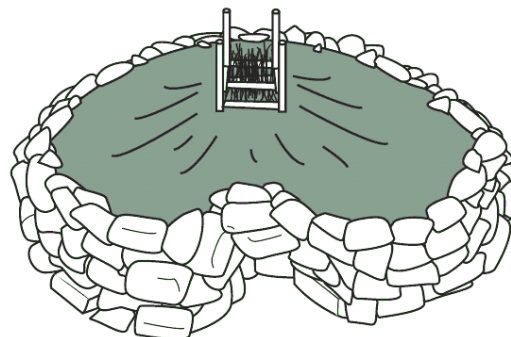
- The first layer in the garden is composed of small iron scraps and iron cans (from food or beverages), aloe leaves, dry animal bones (not fresh animal bones), or broken clay pots. The iron, aloe and bones can provide minerals to the soil as they decompose, and the broken clay aids in drainage of the garden so that it will not become flooded after storms. Fist-sized stones can be substituted for the broken pots. If bones are not available, they can be left out.



- Next, the cans are covered with soil, thatching grass, and a thin layer of wood ash. The wood ash provides the garden with potassium, while the thatching grass helps to retain moisture. The soil helps to decompose the iron, bones, aloe, and ash, freeing the nutrients those materials contain so that the plants will be able to use them. Each layer slopes down from the center basket to the edges of the garden so that water will flow from the basket into the soil of the garden.



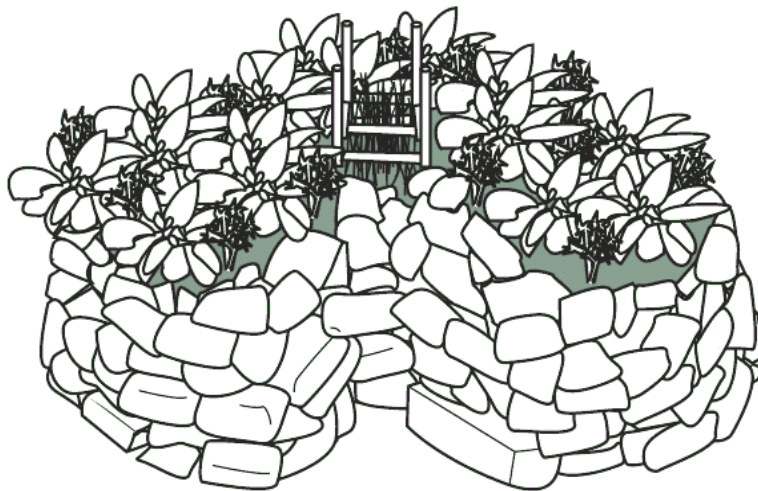
- A layer of soil is added on top of the wood ash. Then, a thick layer of soil and dry manure mixed is added on top. (If wet manure is used, it can kill the young seedlings that are planted later.) As the garden grows taller, stones are added around the edges. The stones should always rise a bit higher than the soil.



7. Seeds are planted according to the season. In order to preserve the quality of the soil and repel pests, root plants such as carrots or beetroots should be planted next to leafy plants such as spinach or chard. Onions and garlic can also help repel pests. A minimum of four plant varieties should be planted to ensure that the garden will not fall victim to one particular pest or strain on soil nutrients. Plant rows should be spaced about 50 cm apart from each other.

In the winter, the top of the garden should be covered at night with thatch or old carpet to protect the soil from the cold. Once the seeds have germinated into plants, they should be uncovered. Also, gardens should be uncovered during the day so they can absorb sunlight for warmth and energy.

Congratulations! Your keyhole garden will now grow delicious, healthy vegetables all year round.



<b>Preferred Crops For Keyhole Gardens</b>	
<b>Root Crops</b>	<b>Leafy Crops</b>
Carrot	Spinach
Onion	Swiss chard
Beetroot	Lettuce
Radish	Rape
Turnips	Mustard spinach
Garlic	Herbs
<b>Crops NOT Recommended For Keyhole Gardens</b>	
<b>Root Crops</b>	<b>Leafy Crops</b>
Tomatoes	Cabbage
Peppers	Eggplant
Chilies	Maize
Peas	Beans
Potatoes	Squash