

Smart Food Pack Lesson 2

Smart ways to grow fantastic food

How to build a plastic bottle fence garden



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Introduction

This hands-on lesson describes how to convert plastic bottles – which would otherwise be recycled or discarded – into an easy-to-build **fence garden** that not only enables food to be grown on walls, but also recycles plastic waste and helps the environment.



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Lesson preparation

This is a time-consuming project that is best carried out with assistance. After deciding how many 2L plastic bottles to use (ensure they are clean and have caps on), select an appropriate site – either a sunlit fence or wall, then:

In days leading up to lesson:

- Practice making a plastic bottle planter (see *How to Make a Plastic Bottle Planter* (p4) for instructions) and hook it to a fence or wall. **It is advisable to wear gloves when using sharp tools.**
- Measure the length of string you used, then cut additional lengths – 1 per bottle – and pre-tie one end into a loop to place around the neck of each bottle.

At lesson site:

- Lay out a tarpaulin close up against the fence/wall to act as a drop cloth. Put weights on it to secure it if necessary.
- Lay out all equipment.
- Fill up watering cans.
- Gardening gloves.

Documents required

- Fence bottle farm photo, [here](#)
- Image/photo of plastic water tank, [here](#)
- Image/photo of water butt, [here](#)
- How to Make a Plastic Bottle Planter (p4)

If teaching children

Engage them as much as possible by:

- Asking lots of questions – make them think.
- Ask them to review key steps.
- Do and show everything, then ask them to repeat the steps themselves.

Lesson outline

The following is a general suggested outline if this lesson is to be taught to children:

- **Explain** what the goal is and what you are going to do today. (“If you have any questions, just ask.”)
- **Ask:** Why are we doing this? To grow your lunch, produce healthy, great-tasting food, learn about vertical gardening, etc.
- **Show** the hooked up plastic planter bottle.
- **Do a demonstration** – make one plastic bottle planter.
- **Ask children** to make planters themselves.
- **Hang planters** on wall or fence one above the other in a vertical column-like arrangement.
- **Review the instructions/how-to** guide.

LESSON NOTES

START:

This lesson teaches one of the basic skills of gardening – Do you know what we can do with these? [Ask simple questions about them – what do we usually do with bottles like these?, etc.] How do you think we could grow food using these bottles? [Take suggestions.] Maybe we could do something with them... use them to grow food or make a garden or something....



I know what we can do! Today, you are going to help me set up a garden. The great thing is, we can recycle and use rubbish – like this – to create a garden.....like that [point to the sample bottle on the fence/wall and take children over to look at it + show the fence bottle farm photo.]

Today we are going to make a **plastic bottle fence garden** using these bottles [point to/hold up bottles] and some seeds [hold up packets.]

Like most things to do with gardening, it's easy!

What things do we need to make a plastic bottle fence garden? [Introduce all the other equipment (that should be laid out neatly.)]

Q: How can we make a plastic bottle fence garden? [Put gloves on and demonstrate how to prepare and sow seeds in one bottle, then get the children to try doing it. Emphasize safety when using sharp tools.]
 >> See [How to Make a Plastic Bottle Planter](#) (p4.)

[Get at least 5-10 planters made and clipped/hooked one above the other in a vertical column-like arrangement on the fence.]

Q: What vegetables can we grow in a plastic bottle fence garden? Almost any baby leaf or green leaf vegetable with the exception of larger varieties.

[AT END, pour water into a higher bottle and show how it drains down to lower bottles. Emphasize that seeds and plants should be watered daily.]

If teaching children

Congratulate them on what they have done, review main points, discuss handout.

Equipment shopping list

ITEM	HAVE / Y/N	NOTES
Plastic bottles – with caps on		
Spare plastic bottles		
Hooks/clips		1 per bottle
Light (かるい) soil		
Seeds		
Soil scoops		Aim for 1 scoop/2-3 child
Watering cans		Aim for 1 watering can/10 children
Strong scissors, spike or sharp screwdriver		
Strong cord or string		To save time, pre-tie a loop on one end of these strings
Hammer		Used to hammer drainage holes
Long nails		
Wooden plank (for piercing)		
Sharp screwdrivers		Used to punch holes in bottles
Tarpaulin		
Plant name tags and marker pens		
Tapered files		Used to enlarge holes
Rain collector sheet (plastic sheet)		
Weights to hold down tarpaulin		
Gardening gloves		For teachers and students
First aid kit		

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<p>DISCLAIMER</p> <p>The author has attempted to make the information in this document as accurate as possible, but it is provided as a general guide only and he accepts no responsibility for any loss, damages or inconvenience sustained by anyone resulting from use of this information.</p>	<p>INFORMATION BROCHURES</p> <ul style="list-style-type: none"> ● Urban Farming Consulting – Schools Find out how sustainability-focused food production can benefit your school >> Here ● School Sustainability Strategy – Fantastic food. For life >> Here ● School urban farming sustainability program in action >> Here
	<p>For more information, ideas and advice</p> <p>Jonathon Walsh, urban farming consultant</p> <ul style="list-style-type: none"> ● Garden design, consulting, installation & maintenance ● Gardening demonstrations, food growing kits ● Vertical garden setup and advice ● Business sustainability consulting. <p>E-mail: info@businessgrow.net URL: www.businessgrow.net/Green.htm</p>

How to make a ... Plastic Bottle Planter

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Introduction

This easy-to-make planter not only enables you to grow food on walls, it also recycles plastic waste and helps the environment.

What you need

- Plastic bottles – with caps on
- Hooks/clips
- Strong scissors
- Spike or sharp screwdriver
- Tapered file
- Strong cord or string
- Long nail (optional)
- Hammer (optional)
- Light (かるい) soil
- Seeds
- Soil scoop
- Plant name tags
- Watering can.

It is advisable to wear gloves when using sharp tools.

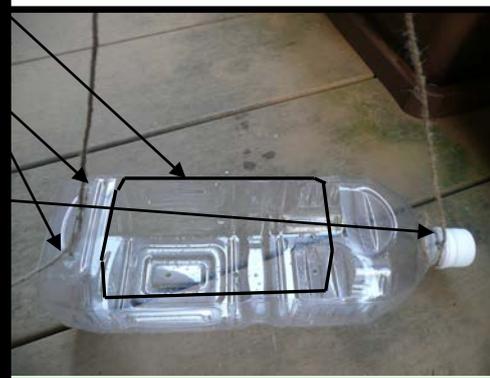


Where to buy

Most of the above equipment can be purchased at garden and flower shops, home stores, supermarkets and ¥100 stores.

Instructions

1. Cut the label off the bottle.
2. Use a knife or spike to make a hole in the middle of one large side of the bottle.
3. Use scissors to cut a rectangular 'window' off the same side.
4. Make 2 holes – parallel to the bottom – approx. 2-4 cm up from the bottom of the same side of the bottle. Use scissors or a tapered file to enlarge the holes.
Be very careful not to cut yourself.
5. Tie string securely around the bottle neck then loop (down through one hole, up through the other) and tie the string through the 2 holes near the base.
6. Hammer/punch 2-3 drainage holes along the bottom face of the bottle. Use scissors or a tapered file to enlarge the holes.
7. Add a thin layer of pot stones.
8. Half fill the bottle with soil.
9. Sprinkle seeds.
10. Add a thin top layer of soil (approx. 1cm).
11. If using multiple bottles, hook each bottle directly above each other on a sunlit wall, fence, etc. – with a 5-inch gap between them – so that water in each bottle drains into the one below.
12. Repeat the above steps as required.
13. Water all bottles regularly.



For more information and urban gardening advice:

Jonathon Walsh

E-mail: info@businessgrow.net

URL: www.businessgrow.net/Green.htm

