

GROW NORTH TOPICS

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Planning your garden

Whether you made a New Year's resolution to cut your carbon footprint, or you are feeling some pressure on your food budget, now is the perfect time to try growing some of your own vegetables. You don't need a lot of space, or expensive kit to get started – and it doesn't need to take up a lot of your time.

Finding a space

First of all you'll need to find some space for your vegetable patch. Most vegetables and fruits need a sunny spot, so think about which areas of your garden get the most light during the spring and summer (the peak growing times). Perhaps there's a section of lawn that you could dig over, or room on the patio for a raised bed or some containers. Maybe you could grow some vegetables in your flower beds instead of splashing out on bedding plants – there are some varieties that look very ornamental. Remember to look at your vertical spaces, for example runner beans would look lovely clambering up a pergola, and you can train fruit bushes against walls and fences. Try starting off with a small space, and think about expansion plans next year once you've got the hang of it.

What tools to buy

You will need a set of tools to start off with. It is worth considering second hand tools (e.g. try car boot sales or the Freecycle network). There are cheap tools available at many DIY shops or gardening centres, but you may find that they are heavier, not as good, or that they break more easily than higher quality tools. You will need a spade, a fork, a rake, a hand fork and a trowel; a hoe is very useful but not totally essential. It is also worth thinking about getting some gardening gloves. You will also have to consider watering your plants. You will need a watering can, and perhaps also a hose, depending on where your source of water and plants are in relation to each other. A wheel barrow is particularly useful if you have a lot of soil, manure, gravel to move around. If you opt for fruit bushes, some secateurs could be handy, or a good sharp knife would do. If you have fruit trees, you may need to invest in some loppers for pruning.

Choosing crops

There are two golden rules when you're starting a new kitchen garden. The first is that you should only grow things that you're going to eat. It doesn't matter what the latest trend in vegetables is, or what exciting new varieties are listed in the seed catalogues – if no one in your family likes turnips, sprouts, or even carrots, then you're wasting valuable space by growing them. Make a start by listing what you and your family like to eat.

The second rule is not to try to grow everything at once. You need to be realistic about how much space you have. Being self-sufficient in potatoes may be a pipe dream unless you have a very large garden, but it's easy to grow enough herbs and salads to last you all summer. A handful of home grown strawberries or raspberries will be a treat on summer days, cherry tomatoes do well indoors on window ledges, or outside in containers and hanging baskets (if you choose suitable outdoor varieties, such as Red Alert) and if you've got a sunny spot or a greenhouse then red hot chilli peppers are fun and very attractive.

If you keep grocery receipts, or just have a good memory, you can use this as a guide for how much of a given item your family eats in a week or month. Then, extrapolate to the year. For example, if you buy a 5-pound bag of onions every couple of weeks, then this would be 10 pounds a month, which gives you a total of 120 pounds a year. Then you need to calculate how many to plant to give a yield of 120 pounds.

Remember that during the summer it is easy to have a great variety of crops available, but at other times of the year, you might not have so much coming in from your garden. Plan to preserve some of your crops, to last you throughout the year. Tomatoes, for example, can be made into sauce, salsa, dehydrated - or all three! Freezing is also an option for preserving your produce, and it is easy and safe. You can freeze berries, tomatoes, and basically any vegetable (blanching first, usually). For more information see the topics on Preserving your Produce.

Courgettes are easy to grow and can provide huge harvests even when grown in a container. Don't grow more than two or three plants unless you're planning on feeding the whole street!

Potatoes are a wonderful crop for a new grower and much loved by many vegetable gardeners. If it is your first year growing food, then it is a good idea to grow a few potato plants. They help to break up the soil, ready for growing other crops and are relatively easy to grow.



Round courgette

Runner beans are also a great vegetable to make a start with. They are easy to grow supported by a wig-wam of canes. They will give you a continual crop through the summer until the frost starts in the autumn time, and their nitrogen fixing nodules will help improve your soil.

Finally, consider the timing of harvest - late summer crops like peppers, aubergines, courgettes and tomatoes are deservedly popular, but will need polytunnel / greenhouse space. Remember you can reuse the space for a succession of crops through the year, so aim for spring, summer, autumn and winter crops.

With some careful planning you can intercrop (growing another crop in the space between the rows) and catch crop (a fast-growing crop that is grown simultaneously with, or between successive plantings of a main-crop. Planning on graph paper can help avoid overcrowding later.



Raspberries in summer

To help decide how many plants, or how large an area to sow for particular plants, here are two US web-based resources which may be helpful. You will need to scroll down to "How Much to Plant" on the second link.

- <http://www.humeseeds.com/seedneed.htm>
- <http://pubs.ext.vt.edu/426/426-331/426-331.pdf>

Water and compost

The last couple of years have been very wet during the summer months, but the weather is unpredictable and it's always worth installing a water butt or two in the garden. Fixed to the down pipe from the guttering, they collect water when it rains that is great for watering thirsty plants and washing cars. It's something to think about in the spring, before the weather really warms up.

When you start your new vegetable patch you might need to buy in some top soil or some potting compost, but if you start a compost heap at the same time then next year you will have your own compost – completely free. The Waste Aware Scotland Home Composting Campaign has now ended, so your best option is to look for a compost bin at your local garden centre or DIY shop. If you're handy then you can build your own out of wood.

Add garden waste, vegetable kitchen waste, cardboard and newspaper as and when you have them – and they'll turn into compost over several months. If you only have a patio then investigate wormeries, which turn kitchen waste into compost and don't take up much space.

Starting a new vegetable garden might seem like a daunting task. Even planning an established garden every year might seem like a hit-or-miss proposition. What should you consider in choosing a site for a new garden? How can you create a yearly plan for your garden that will increase your chances of success?

Choosing a Site

If you're planning a vegetable garden your first question is probably: "Where is the best site for my garden?"

To pick a good location, consider:

- **Sun** - Choose a site that gets at least 6 hours of sunshine a day. Check how sunny your proposed vegetable plot will be at different times of day. Remember that the angle of the sun is lower in the spring and autumn and may effect how the garden is shaded by nearby trees.
- **Water** – Your garden will need at least 2.5 cm (1 inch) of water per week. You should also consider how far from a water supply your patch will be to avoid having to carry water further than is necessary. If you are going to use a hose, make sure it will reach your intended site. Too much water isn't good, however: avoid a site with poor drainage.
- **Air Circulation** – Your site should have good air circulation, especially important for wind-pollinated crops such as tomatoes and sweet corn. Too much wind is a detriment, however: it can reduce yields, cause erosion, result in moisture loss and topple tall crops like sweet corn. In this case, consider wind breaks.

- **Slope** – A flat site is best. Soil erosion is a problem with sloping land. A slope can be used to advantage, however, if it's kept planted. On a south-facing slope, soil warms up faster in the spring: a boon for early crops. Also, the site could be terraced.
- **Convenience** – Try to situate the garden close to the house. Kitchen gardens – just outside the back door – are handy. When you need an ingredient for dinner, it's just steps away.
- **Drainage** - The patch should be as level as possible. This not only allows easier maintenance but avoids drainage problems. The bottom of slopes can become very wet and boggy. Frost pockets can also develop at the base of slopes.

How Large Should the Garden Be?

If you plan to plant a garden that will provide you with all of your vegetables, ideally you should plan on 5 square meters (50 square feet) per person. But don't despair if you have a small property (or none at all!). Even a small plot can produce big yields with a little planning, and vegetables can even be grown in pots on a sunny balcony or patio. Unless you have a lot of time to garden, don't plant a larger garden than you can realistically care for. A smaller, well-tended garden will be more productive and more satisfying.

Planning and Organisation

A good garden begins with a plan. Make a fruit and vegetable plot plan of your garden using graph paper and a pencil. Using removable Post-it notes with crop names on them makes it easy to try out plans before committing them to paper. Save your plot plans from year to year. This helps keep track of what was planted where so that you can rotate your crops appropriately. Keep a diary so you can learn from year to year and improve your garden. Keep information about what soil

amendments you've used, what the weather was like (in particular how much rainfall), planting dates, days to harvest, disease and pest problems and the solutions you've tried and how well they've worked. Also keep track of how much you watered and fertilized (what and when). You may want to keep a garden log for planting dates and varieties, as well as your successes and failures. A good garden journal can help you improve your garden with each successive year.

An online vegetable plot planning tool is available from www.Growveg.com. It costs £25 per year. You can set up the plan for the garden. If you use GrowVeg.com's Garden Planning Tool then each vegetable has a coloured circle around it indicating the plant family it belongs to. It also remembers what you planted in previous years and shows you which areas to avoid, making crop rotation simple and intuitive. Toni at Loch Na Mhoid had tried this tool, and has been pleased with it.



Carefully planned growing area

Culbokie Community Garden use another site, <http://www.plangarden.com/share/#> which you can access the garden plan by entering the postcode IV7 8JH. This tool costs \$20US per year or \$36US for 3 years, and at present has a free trial for 45 days.

Another similar online vegetable growing planning tool is Harrod Horticultural's garden planner <http://gardenplanner.harrodhorticultural.com/> which is £15 per year.

Layout / Planting systems

- The traditional vegetable garden**

Growing crops on one large patch of soil is a system that still works well for those gardeners who have the time and the space to do it. This is the system that is used at the Culbokie Community Garden at Netherton Farm. You will need to dig over and clear the space of weeds, before incorporating as much compost and leaf mould as possible. It is a good idea to include paths through the centre of your plot that are wide enough for a wheelbarrow.

- Permaculture**

Permaculture focuses on the sustainable use of your land and working in harmony with nature. Permaculture methods are based on the adage: Reduce, Reuse, Recycle. Working with this system can cut down on your carbon footprint. The idea is to plan your garden for easy access and minimum labour, and to grow food without using chemicals. You should observe the **sunny** areas, the **sheltered** spots and the direction of the prevailing **wind**, and then decide on the growing methods that will work best for those conditions. Permaculture also involves minimising wastage, using systems such as water butts, compost bins and wormeries.

- No-dig**

It is easy to understand why people developed a no-dig method of gardening! The argument is that digging is hard work, can cause light soils to dry out rapidly and spreads weed seeds. However, the no-dig technique is really only suitable on soils that are already well aerated. For maximum success with this method it is advisable to create narrow beds, between boards at least 15cm high, held in place with pegs hammered into the ground. Several layers of newspaper are spread over the soil and a mulch of straw, sawdust and grass clippings added. This needs to be watered well before spreading a layer of compost, finished off with about 6cm of soil, which is the layer into which you plant your seeds. The soil level will drop as the layers of mulch rot down, but your beds can be topped up with compost, as required.

- Raised Beds**

Raised beds work on the same principle as the no-dig techniques, but tend to be deeper – they are basically large boxes of soil and compost. You can construct them from permanent materials such as bricks or railway sleepers, or from wooden crates or boards. Raised beds are filled with rich compost which is higher than the surrounding ground and therefore remains dryer. This avoids the problems of poor soil and bad drainage. Although more of your garden is taken up in paths between beds, these do allow easier access to plants and prevent soil becoming compacted by being walked on. The deeper soil can often compensate for the lost space. If you plan well in the initial

stages, you can incorporate systems for covering your beds with cloches, to provide warmth and protection in cold weather. Some commercially available raised-bed systems include holes into which hoops fit, allowing you to easily cover the whole bed with fleece or netting.

- **Square Foot Gardening**

This system is particularly effective where space is at a premium. You divide a specially prepared deep raised bed into one foot modules, planting each of your crops into this area. This method is particularly suited to salad crops and miniature varieties of vegetables. Close planting produces a micro-climate in which weed growth is suppressed. The crops are easy to reach from all sides, making it a very accessible way to grow produce directly outside your kitchen door.

- **Containers**

If you are short of space, most vegetables can be grown in pots and even fruit bushes and trees can grow in pots.

Lay out Summary

- Before choosing a planting method, consider the size of your plot and the quantities and varieties of vegetables you want to grow.
- Consider how to protect your crops from harsh weather and rotate vegetables each year to prevent build up of disease.
- Permaculture principles can help you work with the garden you already have, creating a sustainable productive garden.
- Raised beds solve the problems of poor drainage, waterlogged or poor soil and allow easy access to plants.
- Square foot gardens are ideal for easy-access crops raised near to your house.

Combine any of the above methods, to create a system that suits you best.

Other Considerations:

Wildlife / pets

If you have wildlife (or pets) in your area, consider how you plan to keep animals out of the garden. Fencing may be necessary.

Time and effort.

Consider how much time and effort you want to devote. Tomatoes, for example are popular plants, but they need staking and training,



Rabbit-proof fencing around outdoor vegetable beds

protecting from blight and only crop for a few weeks in late summer. Therefore just a few plants giving fruits of the best flavour might be enough. In contrast runner beans and courgettes crop abundantly over a long period.

Preparing the growing areas

The first task would be to use a spade or strimmer to skim off any top growth. Mark out the vegetable beds which will then need to be well dug over and as many weeds as possible removed. You should try to remove all roots of weeds such as docks, thistles, dandelions, buttercups, brambles, nettles etc. Gloves, long sleeved tops and long trousers should be worn when clearing the patch. Not only can some plants sting but the sap of many plants can irritate or burn skin especially when the sun is shining.

Depending on what the land had been used for previously you may need to remove rubble and any large stones.

Digging will improve the soil structure - if you dig in autumn or early winter the frost will help break down lumpy soil which can then be dug again in early spring. The first lot of digging could be heavy going. Don't rotovate weed infested soil as this will only chop up the roots and cause more weeds to grow - Once dug the patch should be levelled and the beds marked out.

The soil may benefit from an application of manure. If so make sure that you can obtain a load from a safe supply, as much damage can be done to your crops if manure is contaminated with weed killer. (For more information about this, please see the Grow North Topic on Soil Improvements.) Always wear gloves when handling manures. Alternatively you could use compost either bought or home-made. You can also add bone meal or fish blood and bone meal to feed the soil.

Growing in a Protected Environment.

You may wish to include a structure to provide a protected growing environment.

Greenhouse

This is usually the most expensive form of protected environment and care should be taken in the siting of any such structure, whether large or small. Greenhouses are normally of aluminium frame although those with wooden frames can be just as robust and are more aesthetically pleasing. A sheltered site is required in exposed areas and structures

should not be sited where there is a danger of wind-borne debris causing damage to the structure e.g. under large trees – panes of glass can be costly to replace. A small greenhouse can provide the ideal conditions for propagation of seeds whereas larger greenhouses are ideal for growing such crops as tomatoes, cucumbers etc. The environment inside a greenhouse can be very cold in winter but very hot in summer. You may control the environment to adjust for this with ventilation, and some people may choose to add a heat source during the winter.

Polytunnels

Polytunnels offer the opportunity to extend the traditional seasons as crops may be sown earlier and/or later to give an extended season. Outside temperature fluctuations

do not impact so greatly on production under polythene, except when there is severe frost. It is possible to produce crops under polythene throughout the growing year although light levels and temperature fluctuations can be a factor in more northerly locations.

The following illustration gives some idea of the beneficial effect of a polytunnel construction on temperature:-

Weather	Outside Temperature (°C)	Tunnel Temperature (°C)
Dull	13	19
Bright	21	33

This increased temperature is not the only benefit of polytunnels, as they also offer protection from wind and rain, increase in humidity (beneficial to some crops) and, with new plastic cover developments, up to 90% or more light transmission.

Siting a Polytunnel

As with a greenhouse, it is important to identify the right location for a polytunnel and, in exposed areas, consideration should be given to providing shelter for the structure itself to minimise wind damage. This could take the form of an earth bank, erection of suitable windbreak fencing which should have a porosity of approx. 50% to avoid the creation of damaging turbulence; tree shelter, especially of quick growing willow, has been proven to be effective but care should be taken against the possibility of twigs breaking off and perforating/damaging the skin. Any windbreak construction 2m high can provide useful protection to a polythene tunnel. When siting the polytunnel and any windbreak, consideration should be given to avoiding shade, especially if the tunnel is to be cropped in the winter. To avoid this situation, it is recommended that a windbreak should be four times its height away from the tunnel.

Tunnels should ideally be constructed to run up and down a slope to take advantage of air movement, but if this is not possible, a North–South line should be adopted to avoid uneven exposure of the plastic cover to the sun.

Size & Construction

There is an adage that whatever size you decide upon, you will afterwards always wish you had gone for a bigger tunnel!! However, with the limitations of site, climatic conditions and finance, you should consider what is best for your needs and location. Larger tunnels can be cheaper per area covered, but ventilation difficulties, especially in narrow structures, can cause problems. Narrow tunnels are cheaper but can be inconvenient with restricted inside working area and a large wasted area. Straight sided tunnels give more working area and ventilation can be achieved with louvres or doors/windows at both ends as well as a number of different side ventilation options e.g. wind up/roll up curtain sides, mesh sides etc

Installation or close proximity to a water supply is essential and there are a number of options available for irrigation systems i.e. overhead, under-soil etc.