



Raised beds have become very popular recently and you will need to decide whether you go for this option. If you have good soil in your school grounds and a limited budget, then you may wish to plant directly into the ground and just edge each bed. The advantages of raised beds are:-

- They avoid people kneeling on the ground and bending their backs.
- If you get them at the right height, the children find them easier to use.
- They avoid the garden getting trampled.
- Children don't get their clothes as dirty (particularly a consideration for lunchtime clubs).
- Once the bed is established it often involves less digging.
- They help to keep weeds and pests at bay.
- If you are gardening with wheelchair users, they can also reach the raised bed.

In our experience, quite narrow raised beds (approx 1m wide) work better in schools as they allow children to reach into the middle and reduce the need to stand on the bed, so avoiding compacting the soil.

Kits and Wood

There are many kits on the market and when buying the following points may be helpful.

- **Should they be treated?** There was concern in the past regarding using treated wood for raised beds as it was treated with arsenic but these treatments have since been banned.
- **Type of wood** – We mainly use gravel boards or decking timber, but kits come in all types including cedar which is very durable but may be more expensive. Gravel boards are cheaper and more 'rustic' while decking boards are longer lasting but more expensive.
- **Sourcing of timber** - It is worth asking what wood the raised beds are made from and whether it is Forestry Stewardship Council (FSC) certified i.e. from plantations that are sustainably managed and where replanting occurs when trees are chopped down. Wood from B&Q is FSC assured as are those from the Recycleworks (www.recycleworks.co.uk).
- **Self watering raised beds** – This option can help cope with the issue of watering over the holidays, with some systems using water from rainwater butts. The rainwater butt needs to be higher than the raised bed and you can also fit timers so that the beds are watered at certain times. (See the separate section on water butts p7).

How We make Raised Beds

You will need:-

Tools

Electric drill

Sledge hammer for hammering the posts in

Strong Philips head screw driver/screwdriver bit for electric drill

Materials

Gravel boards/decking boards (15cm deep) cut to preferred length (we usually build 1mx2m beds). For deeper beds you can add two or three layers of timber. We usually opt for a two board depth.

4 x pointed wooden corner posts (4cm x 4cm or 2" x 2"). If your raised bed is bigger than 1m x 1m you will need an additional post in the middle of each extra metre.

Resin coated decking screws - these are sharp and rust resistant. A box of 100 will be plenty.

Method

1. Clear the ground you are using by digging it over and removing any weeds. If the ground is full of weeds you may need to put down a weed suppressing membrane over the top of the whole area. This can be purchased from garden centres/builder's merchants/DIY stores by the metre. The stronger, woven fabric is a better long term investment than the flimsier type.



Clearing the ground



Weed suppressing fabric

2. Make the frame of the beds. If you are building the beds more than one board high, build each layer as a separate layer and then put one on top of the other.



Making the frame off site

3. Place the frames in their final position.
4. Hammer in the posts into the ground at the corners of the frame (through the weed suppressing fabric, if using).
5. Drill and screw the frame onto the corner posts at right angles. If your frames are longer, add extra posts every metre.
6. Fill beds with a mixture of topsoil and compost. If cost is an issue, consider looking for topsoil on Freecycle, adverts in local newspapers etc and using compost from any compost bins on the school site. But it is **very** important to ensure that any growing material is free from perennial weed roots e.g. bindweed.



Filling the beds

7. Put bark chippings on the paths around the beds as it will make access easier in wet periods and will keep down any weeds. A more permanent option is to pave the paths.



The finished beds!



How to Make Compost

Everything natural returns to the earth through decomposition and having a compost heap is a good way of speeding up the process. It is also a great way of getting rid of garden waste and the finished compost can be used as a natural, safe, free fertiliser. For a more comprehensive guide see our composting booklet.

There are many types of compost bins on the market or you can make your own. Normally more than one compost bin is recommended so that the compost can be turned into the next bin each autumn (also another bin for well rotted manure works well). The more the compost is turned, the quicker it will decompose and the process can be speeded up further by using a garden shredder or a compost tumbler. A compost tumbler is a compost bin that spins on a stand, so allowing the compost to be aerated more regularly and easily.

Choosing the Right Compost Bin

There are so many compost bins and designs on the market it is well worth shopping around to see what is good value and what best suits your needs. Also try contacting your local County Council waste team or look at the www.getcomposting.com website.

Features to look for include:

- The compost bin should be easy to use and easy to add material.
- Easy access to the compost at the bottom of the bin as this will be the most rotted.
- It should have no gaps; if you have one made of wood with slats in the side you can insulate it with cardboard or straw.
- Your compost bin should have a lid or a cover.
- Some compost containers have sides that you can raise as the compost heap gets bigger and this is useful when working with children.

Locating your Compost Bin

You should locate your compost bin in a sunny or semi shaded position. Place the bin directly on the soil so that worms and other useful organisms can get into the compost bin and help to break the material down. Air is essential in allowing your compost to rot.

The Compost Recipe

When teaching young children about compost and how to make it, it is useful to think of the composter as an animal. The composter needs to be fed the right things, just as an animal would. Too much of one food, or some of the wrong food will all make the compost animal sick.

It is important not to make the mixture too wet or too dry. If it is too wet it will be smelly and soggy. If it is too dry it will not rot as quickly. It is not an exact science but in general, if it is too wet, there is too much green waste and if it is too dry, there is too much brown waste (for examples of green & brown waste see table on the next page). If the mix is too dry, add some water. If it is too wet, add some more, dry, brown material e.g. ripped up cardboard.

Avoid putting too much of one product into the compost. In schools there is a temptation to compost too much of one thing, especially orange peel if the children have oranges for snacks, or paper towels (as there are usually plenty of these around!) If children are involved in putting things into the compost we would recommend that you avoid composting paper towels unless all the children wear gloves when they are putting them into the compost or an adult does it for them. Card board toilet roll inners & egg boxes can also be put in (Consortium of Local Education Authorities for the Provision of Science Services).& HSE (Health & Safety Executive) state that, 'as long as egg boxes and toilet roll centres look clean, there is no reason why they should not be used (by children).'

Below is a list of guidance for what can and can't go into a compost bin.

PUT IN	KEEP OUT
<p>Green waste</p> <ul style="list-style-type: none"> • Vegetable peelings • Old flowers • Fruit waste • Spent bedding plants • Rhubarb leaves • Tea bags • Plant prunings • Grass cuttings (in moderation and mixed with other things) <p>Brown waste</p> <ul style="list-style-type: none"> • Small twigs • Crushed egg shells • Egg and cereal boxes • Corrugated cardboard and paper • Toilet roll and kitchen roll tubes • General garden prunings • Straw and hay • Bedding from vegetarian pets (in moderation) • Ashes from wood, paper, lump wood and charcoal (in moderation) • Sawdust and wood chippings • Wool • Cotton threads 	<ul style="list-style-type: none"> • Cooked food • Cooked meat • Dairy products • Diseased plants • Dog or cat faeces • Disposable nappies or their contents (these attract unwanted pests and can cause odour) • Perennial or invasive weeds such as dandelions or thistles (as these will grow again in the compost when added to the garden) <div style="display: flex; align-items: center; margin-top: 20px;"> <div style="margin-right: 10px;"> <p>Plastics Glass Metals</p> </div> <div style="font-size: 2em; margin-right: 10px;">}</div> <div style="margin-right: 10px;">  </div> <div> <p>These should be recycled, where possible</p> </div> </div>

The amount of time you leave the compost will depend on how much it has been aerated. The more the compost is turned, the faster it will rot. Turning the compost and starting a new heap is a good autumn gardening club task! Once the compost is ready, it should be dark brown, smell earthy and have a crumbly texture (if the top layers are not well-rotted, it can be added to the bottom of the new compost). Then the rotted compost can be sieved and put it into bags or it can be used it as it is and dug in well to the beds.

How to Install a Water Butt

A water butt is an essential piece of equipment for the garden and avoids using mains water. If there isn't a water supply near your school garden, try installing a water butt onto the downpipe on a nearby shed/building. The following is taken from the B&Q guide to installing a water butt.

You will need:-

Tools

A hacksaw
 Power drill fitted with a hole saw the same diameter as the water butt connector pipe.
 Tape measure
 Pencil
 A spirit level

Materials

A rainwater butt and stand
 A rainwater connection kit
 A rainwater diverter kit

1. Choose a suitable down pipe for the water butt and place the stand beneath it. It needs to be on level ground to avoid leaning or sinking and raised high enough off the ground to enable your watering can to fit underneath. Check that the stand is level with a spirit level - the bubble should sit between the two lines on the level.
2. Place the water butt on the stand and mark its height on the downpipe. Cut the downpipe 3cm below this point with a hacksaw. Cut it slowly and gently so that it doesn't go 'wonky' and you keep a straight cut across the down pipe
3. Attach the rain diverter fitting to the downpipe (the cut section of the downpipe fits onto the bottom of the diverter).
4. Measure 8cm down from the top of the water butt and drill a hole through which the water butt connector is fitted. You will need to ensure that the hole sawn is the same diameter as the fitting. It is better to use a hole saw bit that is too small than too big, as you can always make the hole larger!
5. Attach the water butt connector to the water butt by pushing through the drilled hole and screwing the fittings into place.
6. Attach the water butt connector to the rainwater diverter with the supplied fitting. Place the lid on the water butt and lock it into place.

Safety Notes

- It is important to have a childproof lid so that children cannot open it and to ensure that animals can't get in and drown.
- Rainwater stored in a water butt is suitable for garden use but not for paddling pools, water tools or for drinking. Consider putting a pictorial sign on the water butt to show this. The children might like to design and colour one which you can then laminate. This is a good a good wet weather activity for the gardening club and teaches the children not to drink the water at the same time.



<http://www.waterwise.org.uk/images/site/Documents/water%20butt%20-.pdf>

<http://www.greenhousesensation.co.uk/product-range/irrigation-and-water-butts/auto-click-and-drip.html>

The above website has details of a timed water butt system.



Polytunnels and Greenhouses



Why use a greenhouse or a polytunnel in the first place?

- Both extend the growing season but greenhouses may need to be heated in winter.
- They will protect crops from adverse weather conditions.
- Less hardy, more exotic plants can be grown.
- Four or five crops can be grown at once and conditions can be tailored to the crop.
- Productivity is greatly increased and seed germination is usually higher.
- They allow the sun in and prevent the heat from escaping.
- They provide cover for the children in bad weather.

GREENHOUSE

Pros

- A greenhouse looks good and lasts a long time.
- It is more easily ventilated than a polytunnel
- A water butt can be installed to collect rain water.

Cons

- The site needs to be level. It can have a concrete base or it can be placed on the ground and sunk into various points around the growing area.
- Safety glass is necessary when working with children and this can be more expensive.
- The soil will need to be replaced periodically to prevent diseases building up.

POLYTUNNEL

A polytunnel is constructed from a metal framed semi-circular tunnel covered in hard wearing polythene with Ultra Violet light inhibitors to maximise its lifetime. Over 90% of light is transmitted through the polythene, and the light is diffused which prevents plants from shading one another. They are used extensively in the fruit growing industry and their use has enabled British soft fruit to be successfully grown from May to mid/late autumn, dramatically reducing the amount of soft fruit imported into the UK.

Pros

- A polytunnel is less expensive and the larger tunnel, the more economical it becomes.
- It is cheaper than a greenhouse in the short term but the covers will need replacing every 5 years and these cost 15-20% of the original tunnel price.
- It will tolerate a sloping site.
- They can be relocated when new soil is needed rather than allowing disease to build up.
- The air stays warmer much longer and temperatures fluctuate less than in a greenhouse.

Cons

- A polytunnel has a short life span and is more prone to damage.
- It is less straightforward to collect water from than a greenhouse (but not impossible).
- It is harder to ventilate and this means that plants may be more prone to fungal infections. (www.firsttunnels.co.uk/faqs & www.liveforgardening.com)

Which is Easier to Build?

- 60% of people choosing a greenhouse will opt to have it installed whereas 95% of people choosing a polytunnel will build it themselves (www.liveforgardening.com.)
- A 6ft x 20ft polytunnel can be constructed in a day by knowledgeable constructors but it would be prudent to pencil in two days for a first time constructor (www.firsttunnels.co.uk/faqs)

Cost

For a new 8ft x 10ft (2.4m x3m) structure, prices start from £690 for a greenhouse and £380 for a polytunnel and can go up to £3,000 for a 12ft x 18ft greenhouse or £600 for a polytunnel (www.liveforgardening.com.) Look into grants that may help with the cost e.g. Awards for All www.biglotteryfund.org.uk/funding/Awards-For-All.