



B3.1 Gardening safely



Children have enquiring minds and are always exploring and investigating everything around them. Risk potential in relation to hazards change with the age and experience of the child and from child to child.

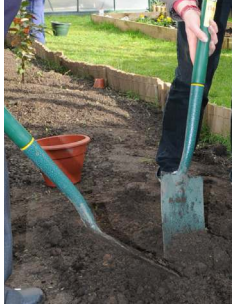
Whether child or adult, it's impossible to avoid all potential hazards, so it's important to learn as much as you can about your garden environment and take a commonsense approach. This section gives you advice on possible hazards and risks in the school garden and how to overcome or reduce them. There is also guidance for specific gardening activities throughout the manual and activities.

For B3.2 and B3.3 there is an Activity suitable for pupils and the community (A3 to 5). See the DVD.

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B3.2 Using garden tools



You don't need many tools to start gardening, or have to spend much money. Just buy good quality tools starting with those most often used. Cheap tools tend to bend and break but good quality, well designed ones are a joy to use and will give years of faithful service. The following shows how to use the main tools and what to look for when buying.

The basic line-up

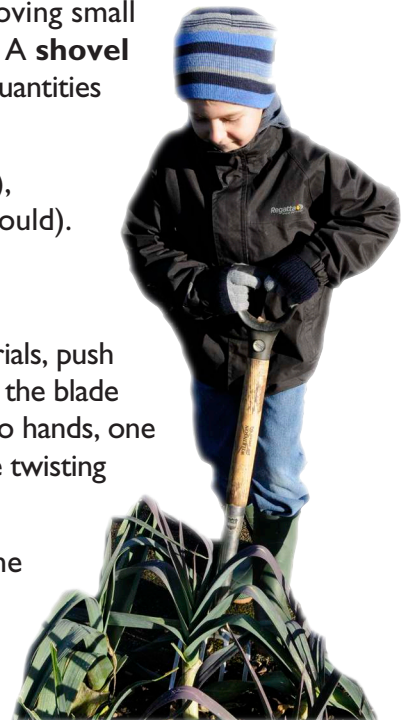
Spade and fork

Spades are used for digging (especially sandy and loam soils), moving small amounts of loose materials (eg compost), and stripping off turf. A **shovel** with upturned blade edges is more useful when moving larger quantities of material.

Forks are used for digging (especially stony and sticky clay soils), breaking up the soil and lifting bulky organic materials (eg leafmould). Also useful for harvesting larger plants (eg leeks) and removing bigger weeds.

Technique: For digging techniques, see A26. When moving materials, push the spade or fork into the heap, pressing down on the shoulder of the blade with your foot for added pressure. Hold the handle firmly with two hands, one hand nearer the blade. Only lift a comfortable weight and minimise twisting when moving loads.

Buying: Buy tools with long or short handles appropriate for the user. The depth of the blade is called a 'spit' and is available in larger or (more useful) smaller 'border' sizes. Lightweight models are available. Flat edges at the top of the blade are easier to push down on.



Turning over soil and adding 'organic matter', eg compost (A26)



Moving bulky organic materials with a fork, eg leafmould (A9)



Using a spade for stripping turf, eg for a new vegetable bed (A14)

Trowel and hand fork

For planting, making seed drills, and removing small weeds. Also useful for mixing potting compost and harvesting small vegetables.

Technique: When planting, hold the handle so that the end sits in the palm of your hand. Dig a hole by pushing the trowel or fork into the soil and pulling towards you. Grip the handle lengthways for scooping and breaking up the soil.

Buying: Choose models with comfortable handles and sturdy joins with blade or prongs. These tools are available in different sizes and with long handles. Brightly coloured (or painted) tools are harder to lose!

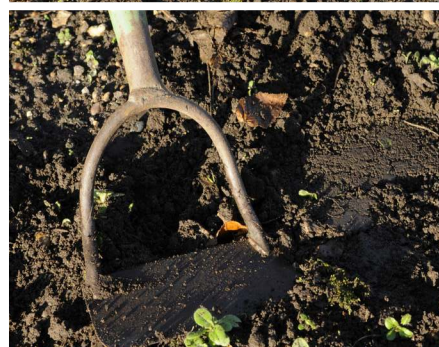
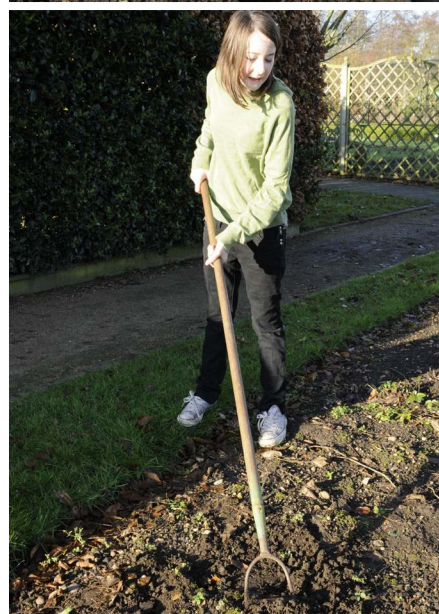


Hoes

For removing weed between plants.

Technique: The long handle lets you keep your back straight while using the blade to uproot or sever weeds from their roots. Best used when the soil is dry (for easier skimming) and in sunny weather so the weeds dry out before they can root again. Keep the blade clean and sharpen regularly (eg with sharpening stone. See B7.6 for suppliers).

Buying: 'Dutch' or 'push' hoes glide over (or just under) the soil surface; push them away from you to use. 'Draw' hoes have blades at a right angle to the handle, better for hacking down larger weeds (and earthing-up potatoes). To use, pull them towards you. Walk backwards when hoeing to avoid standing on weeds and pressing them into the soil.



Garden rake

With short parallel teeth for levelling the soil to a fine 'tilth' (crumbly surface) ready for planting or sowing.

Technique: Hold a rake with hands positioned apart on the handle, pushing and pulling it over the soil to level it, collecting plant debris and large stones without moving lots of soil.

Buying: Choose sturdy models with appropriate handle lengths for user.

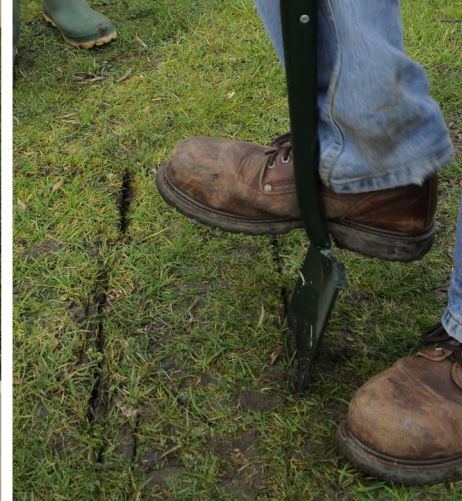




Gloves available in different sizes and materials



Boots and Wellingtons made from strong materials, ideally steel toe-capped for foot protection



Wheelbarrow For transporting all manner of materials and harvests.

Technique: Load weight evenly, but stack over the wheels first for easier lifting. Position your body straight on to the handles before lifting (to avoid twisting). Never push too much weight and go especially carefully in wet conditions. Take the barrow up slopes at gentle angles.

Buying: Choose strong, well-balanced designs; metal and plastic are available. Buy appropriate sizes, with one or two tyres.



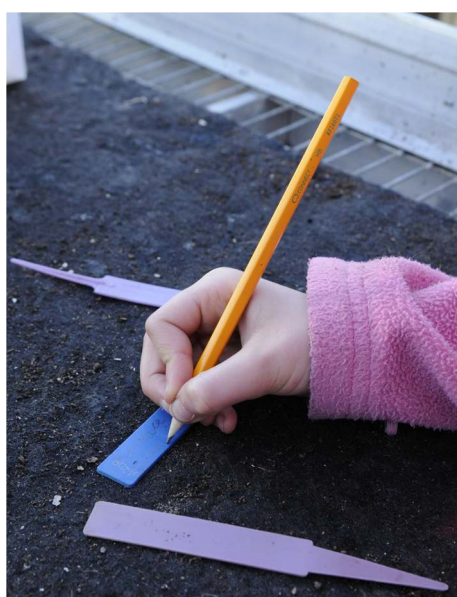
Secateurs For cutting plant stems, eg herbs and bushes.

Technique: Cut stems up to 1 cm thick. Position stems for cutting at the back of the blade for maximum leverage.

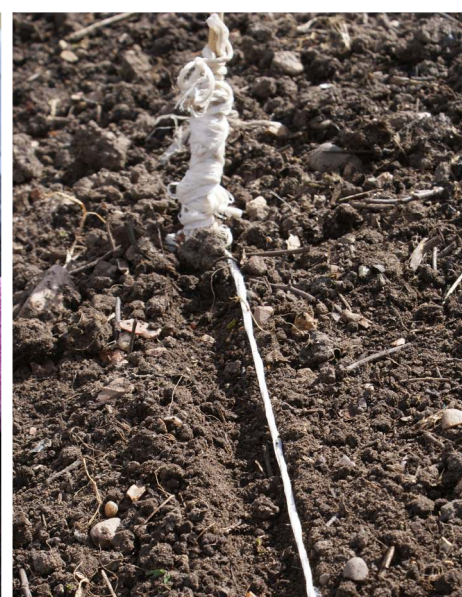
Buying: Choose good quality, preferably where blades can be removed for sharpening.



Watering can including a 'rose-ends' for trays and pots (B5.6)



Pencil and labels for keeping track of plant names and dates (A18)



Garden line for planting or sowing in straight rows (A18 and 22)

Further choices



Brush for washing muddy boots, tools and trays



Broom for brushing paths and working areas



Dibber for planting or sowing large seeds; finger or wooden



Tape measure for marking out new beds and borders



Spring tine rake for collecting leaves and levelling paths (eg bark)



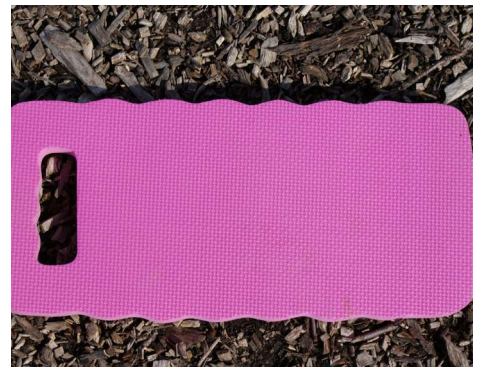
Pruning saw (pictured) and loppers for cutting larger branches



Potting bench for sowing seed and re-potting plants



Lawn mower for cutting grass around beds



Kneeling pad; some have handles to make standing easier



Different hand tools for weeding and surface cultivation, sometimes with long handles



Wooden boards to spread your weight on soil and when laying new turf (A16)



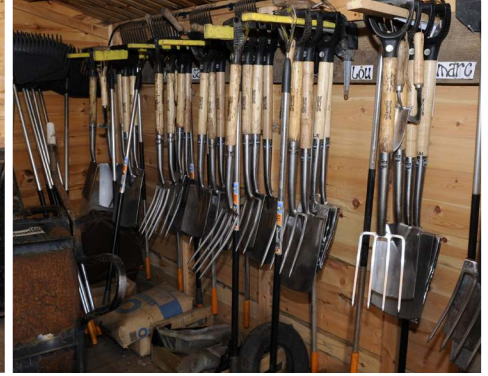
Long-handled tools (non-digging) should lean against a fence or shed for safety when not in use



Store clean pots and trays ready for sowing seed and potting plants (A18 and 22)



Store tools for safety and quick access. Try hanging tools with hooks or brackets, leaving the floor clear from trip hazards and tools easy to reach (B4.9)



Looking after tools

After using tools, clean off any soil, grass clippings and other plant material immediately. Wipe metal parts with an oily rag and store in a dry place (see B4.9 sheds and tool storage). Pruning and cutting tools benefit from regular sharpening and oiling of the moving parts. Clean off dried sap from blades with wire wool or emery paper.



Washing off soil and plant debris before storing

Health & Safety

Take care when using and handling tools, especially when the group is learning new techniques. Maintain a safe working distance between people using tools, eg for spades, keep a distance of at least one and half times the length of the tool's handle.

Choose appropriate tools for the height and strength of the user. Ensure supervision at all times and adult help where needed. Carry tools handle-end upwards, eg point fork prongs downwards. Don't carry tools over the shoulder and never run. Don't use broken tools. Check condition before use. Wear appropriate safety clothes and footwear.

When tools are not in use for short periods in the garden, store safely

- Close tools with blades, eg use locking mechanism on secateurs.
- Push digging tools like spades and forks upright into a piece of spare ground or facing downwards and out of the way of people.
- Lean long-handled tools (non-digging) upright against a fence or shed with the handle touching the ground, ie the head of the rake should touch the fence or shed. Otherwise the handle could flick back if trodden on and hit the user in the face.

See also Health and Safety Guidelines (Section B3.3)

Activities on DVD

A3 Tool and use matching game

Further information

B4.9 Sheds and tool storage

B5.8 Digging

B7.6 Tool suppliers list

Organic Gardening Catalogue www.organiccatalogue.com



B3.3 Health and Safety Guidelines



When working outside or inside with plants and soil, a commonsense approach needs to be taken with respect to health and safety. Always carry out a risk assessment before gardening activities take place (A5).

The following are guidelines only and Garden Organic does not take any responsibility for incidents that may occur.

General

Hand washing

Thorough hand washing is extremely important. Teach young people to wash their hands correctly and thoroughly. They will need reminding of this regularly. This is a basic method of reducing risk related to many of the items detailed including protection against tetanus and when composting. Cover cuts or grazes with waterproof sticking plasters before gardening or making compost.

Gloves

Schools should adopt their own approach as to whether or not pupils should wear gloves when carrying out certain activities such as handling soil and compost. This is not essential if good hygiene routines are taught. However, gloves should be available for use if necessary. Gloves may be required for people that have skin allergies such as eczema.

Tetanus bacteria

Don't let pupils eat soil; it can carry tetanus bacteria as well as other pathogens. Check that tetanus vaccinations are up to date and try to stop pupils sucking thumbs or fingers, or biting nails while in the garden. Wash fresh cuts well with cold running water or clean with an antiseptic wipe.

Footwear

Ensure that the pupils wear the correct footwear, eg sturdy boots/shoes or Wellingtons. As part of your school's risk assessment a decision will need to be made regarding circumstances when it may be advisable to wear steel toe-capped boots.

Work area

Help avoid accidents by making sure the working area is kept tidy.

Weather condition

In sunny or hot weather make sure that people wear hats and sunscreen to avoid sunstroke and burning. It is also important to have an adequate supply of fresh drinking water to avoid dehydration. If possible work in a more shady area of the garden.

It is still possible to garden in cold, wet weather when wearing appropriate warm, waterproof clothes, with possibly an extra pair of socks and Wellington boots. If the weather is too rough, there are indoor activities that can be done instead, eg cleaning pots or making labels.



Using tools safely



Knowing what to compost



Wash hands regularly

Land contamination

There are very few areas in the UK where this is a concern. If you suspect a problem, contact your Local Authority who are responsible for this. If land is contaminated, this does not prevent a school from having a garden as Garden Organic support schools to grow using containers as an alternative.

Using food grown in the school garden for school dinners

We recommend hand washing facilities are available. Separate facilities with running water are required for cleaning produce. There is no need to wash garden produce in any type of sterilisation fluid.

Composting food waste

Do not compost meat, dairy or cooked food as this can attract vermin. There is little evidence of risk to human health by exposure to bioaerosols (see B7.2 for definition) from domestic composting. However, if someone is susceptible (eg suffers from asthma), make sure they are not close by when turning or disturbing a compost heap.

Vermin

Good housekeeping should help to prevent this problem. Keep growing and composting areas tidy and don't leave rubbish lying about. If you suspect that rats are present contact your Local Authority Environment office. Ensure that compost bins are maintained correctly. Rats, dogs and foxes may visit a compost heap if they are already in the area but composting does not generally attract vermin in the first place. If rats or mice are nesting in your compost heap, this may be a sign that the heap is too dry. Add water until it has the consistency of a wrung-out sponge. You may still find instances where they nest and rummage in wet heaps but this is not common.

Weil's Disease, also known as *Leptospirosis*, is a rare, but serious, disease carried by rats. It can be contracted by exposure to water or wet surfaces that are contaminated by rats' urine. It is highly unlikely that pupils would come into contact with such contaminated environments whilst going about their normal gardening activities. Young people should be reminded regularly to wash their hands thoroughly and not to put their fingers in or near their mouth. The incubation period is usually 7-12 days. Symptoms include fever, chills, muscular aches and pains, loss of appetite and nausea. In the later stages there may be bruising of the skin, sore eyes, anaemia, nose bleeds and jaundice. If symptoms appear, contact a doctor.

Use of hand tools

Young people should be taught the correct way to use tools and basic health and safety aspects. It is perfectly acceptable for young people to use a normal set of hand tools but make sure that the equipment is not too large or heavy for them to use safely. See section B3.2 about using tools.

Using tyres as growing containers

Garden Organic does not recommend using tyres as containers in the garden. Tyres are made for road use and have been tested for that purpose. They are not manufactured as plant containers and so no thorough trials have been done on safety in this context. Research from the USA and Australia has shown that there is the possibility of zinc contaminating the soil as tyres degrade. Experiments have also been conducted using ground rubber as part of potting media and this has resulted in plant death.

The only firm conclusion we can draw at this time is that zinc in tyres can be toxic to plants. How much zinc or other contaminants leach from tyres and at what stage of decomposition they become a hazard to plants we do not know. We also have no research to show what levels of contaminants are hazardous to humans. Our advice is that it is better to use a different material known to be safe such as untreated wood, plastic or terracotta.

Poisonous plants

Many plants in the garden may be toxic in some way and it's important not to become overly cautious about this but take a practical view. Teach pupils not to put any plants or berries in their mouths and always check with an adult before eating any produce. Make pupils aware of any plants that could cause discomfort or injury such as stinging nettles, plants with thorns or hooks (eg roses, brambles) or sharp leaves (eg pampas grass).

Water

Never let pupils out of sight near water, whether a lake or pond. Wherever possible, fence off the area or install a steel mesh across a pond.

Top tip



Tell everyone the following

- The need for good behaviour for safety reasons
- Hazards associated with ponds, eg falling into the water, slippery rocks, blue/green algae, Weil's Disease
- Any cuts or grazes to hands should be covered with waterproof plaster before pond-dipping
- Keep hands away from face and wash hands after contact with pond water
- First aid and emergency procedures

Information Disclaimer

Whilst Garden Organic/Food for Life Partnership has made every effort to keep the information in this publication accurate, the Health and Safety advice and guidance notes are included on the basis that the content is to the best of its knowledge accurate at the time of publication. The advice and guidance offered is intended for general information purposes only and is not intended to be a substitute for professional health and safety advice guidance or training. Garden Organic/Food for Life Partnership disclaim any warranty or representation, expressed or implied about the accuracy, completeness or appropriateness of such Health and Safety advice and guidance for any particular purpose.

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Activities on DVD

- A4 Health and Safety Audit
- A5 Sample Risk Assessment
- T3 Health and Safety Audit
- T4 Garden Risk Assessment

Further information

- Royal Society for the Prevention of Accidents (RoSPA) www.rosipa.com
- Health and Safety Executive www.hse.gov.uk
- Royal Horticultural Society www.rhs.org.uk
- Food for Life Partnership www.foodforlife.org.uk/resources



B3.4 Manual Handling and back care



Gardening is an enjoyable and rewarding activity, but can also be physically demanding. Years of bending and lifting can take their toll if you don't take care of yourself. Fortunately, there are some basic rules you can follow to help avoid damaging your back and manage any back pain you may already have. Once practised, these become second nature and will help keep you healthy.

Handling and Lifting technique

Lifting – Make sure:

- The area and route are clear of obstacles
- You have a good grip on the load
- Your hands, the load and any handles are not slippery
- Be careful if there are any sharp edges
- Get someone to help you if the load is too heavy
- Use the appropriate equipment to help move the load if necessary eg a wheelbarrow or sack truck



Bad Practice: Single stage lift with bent back



Good Practice: Two stage lift
1 bend knees and grasp load



2 Push up with legs keeping back straight

Manual Handling

Do

- Place your feet evenly either side of the load, with your body as close as possible to the load
- Bend at the knees
- Grasp the load firmly
- Use your leg muscles to push upward into a standing position
- Keep your back straight
- Pull the load as close as possible to your body

Do not

- Twist or bend your back
- Bend at the waist
- Try to lift items that are too heavy on your own
- Rush when lifting heavy loads
- Grab heavy loads with one hand, such as half-full bags of compost

Repetitive Strain Injury

Repetitive Strain Injury (RSI) and Cumulative Trauma Disorder (CTD) are painful conditions that are caused by the same movement being repeated continuously. CTD is also caused by vibration, force and cold.

Try to keep the use of power tools to short periods. Where possible, alternate between working with vibrating power tools and other hand tools as the constant use of vibrating tools can increase the risk of wrist injuries and 'vibration white finger'.



Take care when leaf raking

Back Care

General gardening tasks

- Use a kneeling pad. The ones with handles at the side will help you in standing up.
- Make raised beds at a height and width that makes it comfortable for whoever is using them.

Gardening at ground level

- When working at ground level to plant, do not bend your spine. Use knee-pads which will reduce the impact on your back and knees.

Wheelbarrows

- Don't lift and push too much weight. If the load starts tip over, let it go, rather than putting excess twisting pressure on your back to stop it.

Long-handled tools

- Where possible, use tools that have an appropriate handle length for your body height, ie not too short to avoid excessive bending and not too long to make using the tool difficult or dangerous.

Work bench

- Potting and glasshouse benches should be at elbow height to avoid stooping or reaching.

Mowing

- If you already suffer from problems with your back, consider changing to a mower with electric ignition or an electric mower. Trying to start a stubborn lawn mower can put a strain on your back. The same goes for any other petrol powered equipment.

Digging

- Do a few warm up exercises before you start digging. This prepares your muscles for the work to come.
- Work only for short periods, taking a break from digging at least every half an hour. This gives the muscles in your back time to relax.
- If you feel a twinge in your back, stop. This is your body's way of saying it's time for a rest.

Some general points

- Take regular exercise between gardening sessions to keep fit.
- Use a stepladder if working with trees or bushes that are above head height.
- Vary your gardening with different tasks. This will reduce the risk of repetitive strain injuries.
- Make sure anyone you're working with is familiar with these techniques.

Further information

Health and Safety Executive www.hse.gov.uk

BackCare www.backcare.org.uk