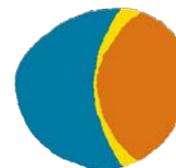


EON EDIBLE GARDENS KEY LEARNING AREAS

LESSON PLANS

EON EDIBLE GARDENS



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EON KEY LEARNING AREA:

How to fertilise your garden.

This PDF contains lesson plans for the EON Edible Gardens key learning area: “How to fertilise your garden”.

LESSON PLANS:

- Fertilising with animal manure
- Using bagged natural fertiliser
- Using liquid fertilisers
- Making manure tea
- Using granular synthetic fertilisers

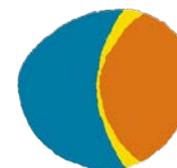


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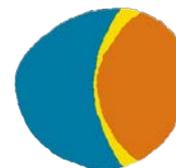
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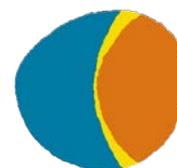
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| KEY MESSAGE: | How to fertilise your garden |
| BACKGROUND: | <p>To fertilise a garden means to enrich the soil and plants by adding ingredients. A fertiliser is made up of three essential nutrients: (N) nitrogen, (P) phosphorus and (K) potassium.</p> <p>Nitrogen encourages leaf growth (up), phosphorus is for root development (down), and potassium is for flowering and fruiting (all around).</p> <p>Fertilisers are created both with organic materials (by natural means) and synthetically (man-made) and create different outcomes for our veggie gardens. In this lesson we will look at different ways to fertilise with animal manures.</p> |
| LESSON FOCUS: | Fertilising your garden with animal manures. |
| RESOURCES /EQUIPMENT: | <p><i>This activity will require some preparation</i></p> <p>Fresh or bagged manure Wheelbarrow Gloves Face masks Shovels and forks Watering hose</p> |
| OUTLINE: | <p>Animal manure is a great, natural way to feed and fertilise vegetable gardens. Different animal manures have different benefits.</p> <p>Chicken, rooster and other poultry manure Both chicken and rooster manure are great for gardens but it needs to be used with caution as it can be very strong and burn plants. If you are using manure fresh from the coup, ensure it is composted first and then only used in small amounts. Store-bought bagged chicken manure is ready for direct use but ensure you read and follow the application instructions. Poultry manure is fantastic for nitrogen loving plants and is a perfect foundation to add to bare soil prior to planting out a new garden.</p> |



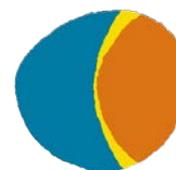
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| | <p>Cow, sheep, and goat manure Cows, sheep and goats are ruminant animals, meaning they have more than one stomach. The manure from these animals is a fantastic option for all gardens and plants. The rumination process ensures the seeds the animals digest in their feed are less likely to germinate in the garden beds. The manure is gentle and can be used fresh on the garden in large amounts without concern for burning the plants. Using any of these manures will help the soil to build structure and hold water.</p> <p>Horse manure Horse manure is a great way to build up soil. However, because horses have only one stomach, the manure can be full of weeds and seeds which may germinate in your garden. To prevent this be sure to add horse manure to the compost first. The heat in the compost will kill the weeds and seeds. Another way to use fresh horse manure is to create a manure tea (refer to the lesson plan on manure tea).</p> <p>*Tips Stay away from using manure from pets and carnivorous animals and pets as it can harbor harmful bacteria and parasites.</p> <p>Manure is not mulch, so be sure to add mulch on top of your manure to maximise moisture retention and the benefits to your garden.</p> |
| <p>REFLECTION ACTIVITY:</p> | <p>Use different manures in different beds and document their success and failures. Which plants benefited more from different manures?</p> <p>Are there any local farms or stations in your area that could supply your garden with manure?</p> |
| <p>CLEAN UP:</p> | <p>Be sure to water the manure into the garden, and compost thoroughly. Clean down both the area and tools with water Wash hands and under fingernails.</p> |
| <p>APPROPRIATENESS:</p> | <p><input checked="" type="checkbox"/> KK-Year 2 <input checked="" type="checkbox"/> Years 3-6 <input checked="" type="checkbox"/> Year 7 plus</p> |



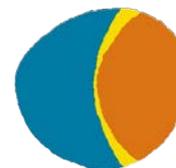
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| KEY MESSAGE: | How to fertilise your garden |
| BACKGROUND: | <p>Using bagged natural granular fertilisers are a great option for small gardens with limited access, and for people with limited budgets and time to spend in the garden or can't access fresh manures.</p> <p>There are two bagged options fit for this purpose: blood and bone and dynamic lifter.</p> |
| LESSON FOCUS: | Using natural bagged fertilisers for building soil and feeding plants. |
| RESOURCES /EQUIPMENT: | <p><i>This activity will require some preparation</i></p> <p>Bagged blood and bone Bagged dynamic lifter Gloves Face mask Garden shovel, fork, and rake Hose</p> |
| OUTLINE: | <p>Using bagged natural granular fertilisers is helpful in situations where using bulk manures may not be an option. Granular fertilisers are added to the soil and slowly absorbed by the plant via the roots. Both blood and bone and dynamic lifter are slow release fertilisers and are budget, space and time-friendly solutions. There are pros and cons to using both products for different scenarios and outcomes.</p> <p>Blood and bone is cooked and powdered bone from animals, commonly cows, and also from fish. It is a slow release fertiliser. Blood and bone is high in organic matter which helps to build up soil and encourage microorganism growth. It is also rich in nitrogen and phosphorus which promotes leaf and root growth in plants. Blood and bone can be used when building a new garden bed, at the base of new trees and when planting seeds for vegetables such as carrots, potatoes, beetroot, parsnip, onions and garlic. Blood and bone should only be used once per season.</p> |



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| | <p>Read the instructions on the bag as application rates will vary. The general 'rule of thumb' is to use approximately 1 handful per square meter. Sprinkle over the garden area and then gently work into soil, watering in well afterwards.</p> <p>This product can be smelly so be sure to wear gloves and a mask. It is best to apply late in the day.</p> <p>Dynamic lifter is an organic product that has the benefits of blood and bone with added manures and seaweed. It is a slow release, pelletised fertiliser. Dynamic lifter is gentler than blood and bone and can be used for many purposes in the veggie garden - building up soil, regular feeding and fertilising of plants and fruit trees.</p> <p>The application rate for dynamic lifter is similar to blood and bone. Again a general rate is approximately 1 handful per square meter of soil, or you can simply throw it around the veggie patch throughout the growing season. It can be used every six to eight weeks for best results. Be sure to water it in well.</p> |
| <p>REFLECTION ACTIVITY:</p> | <p>Try products in different locations or with different plants. Compare the outcomes from both products – e.g. which seedlings germinate quicker with which product?</p> <p>Compare the NPK scale on both products.</p> |
| <p>CLEAN UP:</p> | <p>Be sure to water the product well into the garden and compost thoroughly.</p> <p>Clean down the area and your tools with water.</p> <p>Wash hands and under fingernails.</p> |
| <p>APPROPRIATENESS:</p> | <p><input checked="" type="checkbox"/> KK-Year 2 <input checked="" type="checkbox"/> Years 3-6 <input checked="" type="checkbox"/> Year 7 plus</p> |

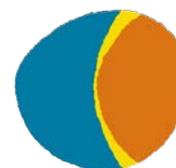


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| KEY MESSAGE: | How to fertilise your garden. |
| BACKGROUND: | Using a liquid fertiliser is a fast-acting way to feed and nurture your plants. |
| LESSON FOCUS: | Using different liquid fertilisers. |
| RESOURCES /EQUIPMENT: | <i>This activity will require some preparation</i> Liquid fertiliser of your choice Measuring jug Watering can Hose and water source |
| OUTLINE: | <p>Liquid fertilisers are a fast way to feed and care for your plants. Unlike granular fertilisers which slowly break down in the soil, liquid fertilisers are absorbed through the plants leaves making the nutrients more readily available.</p> <p>Most liquid fertilisers are concentrated so it is important to read directions for any store-bought products, and to dilute any homemade solutions.</p> <p>Seaweed solutions (seasol, kelp feeds) Seaweed fertiliser is the most common liquid fertiliser on the market. It is incredibly good at nurturing stressed plants. It is also a great kickstart for young seeds and seedlings and for transplanting trees. It can help to nourish root development and increase microbial activity in the soil.</p> <p>As per instructions on bottle, add one capful to a watering can full of water, and use often for best results.</p> <p>Manure tea Manure tea is a homemade animal manure solution that is great for feeding plants. It is made by letting manure seep in water. Using this on your gardens will help plants to grow and thrive. Refer to the section on 'Making Manure Tea' further on in this lesson plan.</p> |



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| | <p>Worm juice Worm juice is the liquid component of worm castings or droppings. It is a highly valuable liquid fertiliser full of billions of good bacteria for your plants and garden. See ‘How to create a worm farm’ in the garden recycling lesson to learn how to build your own worm juice factory!</p> <p>Liquid fertilisers – a variety There are many liquid fertilisers on the market which are used for different uses. Indoor plants, potted plants and plants in a shade or greenhouse benefit from regular feeds of liquid fertilisers. Fertilizers that are high in nitrogen are great for growing leafy greens like lettuce, silver beet and bok choy.</p> |
| REFLECTION ACTIVITY: | Assess which liquid fertiliser would be best suited for your garden? Consider location, season, and desired outcomes of your veggie garden. |
| CLEAN UP: | <p>Store liquid fertiliser somewhere dark and cool, preferably locked away from children.</p> <p>Wash out your watering can.</p> <p>Pack up hose and tools.</p> <p>Wash hands.</p> |
| APPROPRIATENESS: | <input checked="" type="checkbox"/> KK-Year 2 <input checked="" type="checkbox"/> Years 3-6 <input checked="" type="checkbox"/> Year 7 plus |

Making manure tea



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| KEY MESSAGE: | How to fertilise your garden |
| BACKGROUND: | Creating a liquid manure fertilizer, otherwise known as 'manure tea', is a great way to use surplus horse manure and to feed plants naturally. |
| LESSON FOCUS: | Creating your own manure tea |
| RESOURCES /EQUIPMENT: | <i>This activity will require some preparation</i> 1 x large rubbish bin with lid Animal manure - we suggest horse manure Hose Bucket Gloves |
| OUTLINE: | <p>Horses are non-ruminant animals meaning they only have one stomach. Horse manure can be full of weed seeds from the food the horse has eaten. When we use horse manure in our garden this can cause a host of weeds to grow in our garden too. Because of this it is better to compost horse manure for around six weeks before using on your garden, or create a manure tea that will kill any weed seeds and give your plants a liquid feed.</p> <ol style="list-style-type: none"> 1. Add manure to bin, any amount is fine but the more the better. 2. Fill with water. 3. Note the date. 4. Leave in a cool space with the lid on to keep mosquitos and other pests away. 5. In 30 days, sieve away any lumpy bits and then dilute liquid with water, add to watering can and use to feed all plants and gardens. 6. Compost anything remaining in bin. |
| REFLECTION ACTIVITY: | <p>What are some other ways to keep unwanted seeds from germinating from animal manures?</p> <p>Look at the seed germination life cycle</p> |

LESSON GUIDE

Making manure tea

EON EDIBLE GARDENS



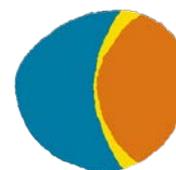
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| | Different seeds have different requirements to germinate, investigate further. |
| CLEAN UP: | Tidy all tools and pack hose away Wash hands well |
| APPROPRIATENESS: | <input checked="" type="checkbox"/> KK-Year 2 <input checked="" type="checkbox"/> Years 3-6 <input checked="" type="checkbox"/> Year 7 plus |

LESSON GUIDE

Using granular, synthetic (man-made) fertilisers

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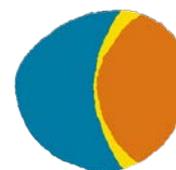
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| KEY MESSAGE: | How to fertilise your garden |
| BACKGROUND: | Man-made synthetic fertilisers are useful in specific circumstances or for specific plants. |
| LESSON FOCUS: | Fertilising your garden, or specific plants, with synthetic granular fertilizer. |
| RESOURCES /EQUIPMENT: | <i>This activity will require some preparation</i> Chosen fertiliser Measuring container Mask Gloves Hose |
| OUTLINE: | <p>Depending on your garden, plants and your desired growing outcomes, using a slow-release synthetic granular fertiliser can produce good results. Flowering fruit trees benefit from this type of fertilizer, as do other need-specific plants such as azaleas, camelias and blueberries (acid-loving), and orchids and roses.</p> <p>These fertilisers are full of added trace elements and minerals which can help stabilise plants with specific deficiencies. NEVER use this fertiliser for sick or stressed plants as over fertilising may kill rather than heal. For sick plants use liquid seaweed solution, or another mild liquid feed.</p> <p>This method of fertilisation is best used when trying to get big outcomes from specific plants and gardens, or if you are wanting to grow vegetables very quickly.</p> <p>Synthetic fertilisers are used in agriculture and farming to produce mass food quickly.</p> <p>For domestic garden use, most synthetic fertilisers are slow release, meaning they can work for up to a year, depending on the brand and the particular growing conditions. They should only be used on a seasonal basis or as per application instructions.</p> |



LESSON GUIDE

Using granular, synthetic (man-made) fertilisers

EON EDIBLE GARDENS



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| | <p>Using a synthetic fertilizer:</p> <ol style="list-style-type: none">1. Read the instructions on your chosen fertiliser.2. Find the square meterage of the garden area you are wanting to fertilise. This is done by measuring the length and the width and then multiplying the two figures, (e.g. 5 meters long x 2 meters wide = 10m²).3. Following the instructions on the fertiliser packaging, measure out amount suggested for application.4. Toss around the garden evenly, taking care to avoid the foliage of plants and the base of trees.5. Water in well. |
| REFLECTION ACTIVITY: | <p>Dedicate an area of garden for use with your chosen synthetic fertilizer, taking note of the difference in the growth of plants that have been fed and those that haven't.</p> <p>Are there any plants in your garden that could benefit from other need-specific fertilisers?</p> |
| CLEAN UP: | <p>Cover and store fertiliser in a cool, dark and locked room away from any other liquids and chemicals. Fertilisers can be flammable.</p> <p>Hose the fertilizer in gardens well.</p> <p>Wash hands and ensure no residue from the fertiliser is left on your skin.</p> |
| APPROPRIATENESS: | <input checked="" type="checkbox"/> KK-Year 2 <input checked="" type="checkbox"/> Years 3-6 <input checked="" type="checkbox"/> Year 7 plus |