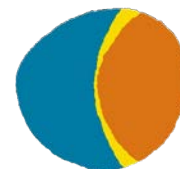


EON EDIBLE GARDENS KEY LEARNING AREA

LESSON PLANS

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EON KEY LEARNING AREA:	Saving seeds.
This PDF contains lesson plans for the EON Edible Gardens key learning area: "Saving seeds".	
LESSON PLANS:	<ul style="list-style-type: none">• Seed saving 101• Wet and dry seed collection methods• Saving pumpkin seeds• Seed storage and other tips



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LESSON GUIDE

Seed saving 101

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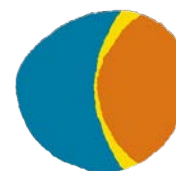


KEY LEARNING AREA:	Saving seeds
BACKGROUND:	Seed saving is an ancient practice that ensures the survival of particular fruit and vegetable species.
LESSON FOCUS:	Identifying which veggies grow from different types of seed, and selecting the best seeds to save.
RESOURCES/ EQUIPMENT:	<i>This activity will require some preparation</i> Secateurs Paper bag Clean jar or container Pen Observant eyes
OUTLINE:	<p>The veggies in our gardens generally grow from one of two types of seed – open pollinated seeds or hybrid seeds.</p> <p>Open pollination occurs through natural causes- such as wind, water, insects, birds or even humans. Open pollinated plants are more genetically diverse. Open pollination allows plants to adapt to local growing conditions over time. Heirloom seeds are open pollinated seeds that have been saved from generation to generations to preserve particular characteristics of the parent plant - such as flavor, growth habits and seasonal hardenings.</p> <p>Hybrid seeds come from cross-pollinated plants. Cross-pollination can occur naturally but it generally involves humans cross breeding two varieties of plants for their best qualities. For example a drought tolerant form of tomato plant might be cross-pollinated with a tomato plant with a vigorous growth habit. Hybrid seeds produce good plants in the first generation, but are often unreliable after that. If you are growing veggies from hybrid seeds, it is best to obtain new seeds each growing season to ensure quality plants.</p>

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Seed saving 101

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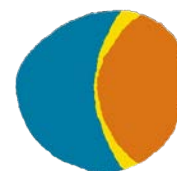
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	<p>Annual, biennial and perennial plants all have different fruiting and seeding habits.</p> <p>Annual plants live for just one growing season – they flower, fruit and seed all in this one time period. These are the most common plants in the veggie patch including lettuce, tomatoes, beans, peas, chilies, capsicum, melons, pumpkins and many more, plus herbs and flowers. Collect the dormant seeds at the end of the growing cycle, and store them ready to plant in the next cycle. Collecting seeds from annual plants is the best way to develop your seed-saving skills.</p> <p>Biennial plants and veggies have a two-year growing cycle. It is in the second year that they flower and produce seed. Once the seed is produced the plant will die. Biennials will often need a cool period to stimulate their growth from the first growing season to the second. Biennial veggies include carrots, onions, beetroot, cabbage, leek, kale and turnip.</p> <p>Perennial plants are those that live longer than two years. Some plants in the veggie patch that fall into this category are artichokes, rhubarb, asparagus, gooseberry, passionfruit, and most fruit trees. Seeds can be harvested by cutting off the flowers or berries, drying them, then collecting the seed.</p> <p>Share some, save some and eat some! This is a gardening principle to live by; share some veggies when you have abundance, save some seeds for future seasons and enjoy eating your harvest.</p>
REFLECTION ACTIVITY:	<p>Can you think of other annual, biennial, and perennial plants?</p> <p>Do some research on hybrid seeds that have been changed over the years to suit large scale farming.</p>
CLEAN UP:	
APPROPRIATENESS:	<input checked="" type="checkbox"/> KK-Year 2 <input checked="" type="checkbox"/> Years 3-6 <input checked="" type="checkbox"/> Year 7 plus

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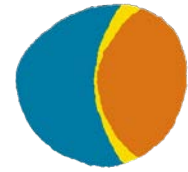
Wet and dry seed collection methods

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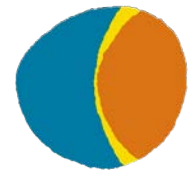


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KEY LEARNING AREA:	Saving seeds
BACKGROUND:	<p>Vegetables generally produce either wet seeds or dry seeds.</p> <p>'Wet' seed crops produce their seed in a fleshy substance inside the fruit or vegetable. Examples include zucchini, tomatoes, cucumbers, squash, pumpkins and melons.</p> <p>'Dry' seed crops produce their seed in a visible pod, capsule or seed head. Examples include beans, peas, lettuce, broccoli, rocket, corn and dill.</p> <p>Both wet and dry seeds must be allowed to fully mature before saving.</p>
LESSON FOCUS:	In this lesson we will look at both wet and dry seeds and the best methods for seed collection and preservation.
RESOURCES/ EQUIPMENT:	<p><i>This activity will require some preparation</i></p> <p>Ripe tomatoes</p> <p>Seed pods from veggies in the garden (e.g. peas or lettuce)</p> <p>A small and a big spoon</p> <p>A bucket or glass jar</p> <p>Paper towel</p> <p>Clean dry glass jars or airtight containers</p> <p>Secateurs</p> <p>A sieve</p> <p>2 bowls</p>
OUTLINE:	<p>Saving wet seeds</p> <p>We will use tomatoes to learn about saving wet seeds, but this method can be used for other fleshy fruit or vegetable such as cucumber, zucchini, melons and pumpkins. It is important that the seeds are mature. This generally means allowing the vegetable to ripen beyond its optimum eating time. Chose a ripe tomato from a healthy plant that produces tasty tomatoes.</p>



1. Select your tomato plant and pick a handful of the best and ripest fruit on the plant.
2. Scoop out the seeds and the surrounding pulp from the tomato. Put the seeds and pulp in a bucket and cover with water. Leave the mix to ferment. This part of the process can at times become smelly so leave the bucket out of the way. Fermentation will remove the outer casing and germination inhibitors of the seed. Once the mixture has a sour smell, this means fermentation has occurred and the mixture is ready. This could take around 1-2 days, and maybe sooner if the weather is warmer.
3. Add more water to the bucket and mixture to dilute the seed mix. The heavier seeds will sink to the bottom. Generally, the heavier the seed the more viable it is for germination. The emptier and less viable seeds will rise to the top with pulp and flesh.
4. Carefully spoon off the top floating seeds, fruit flesh and what liquid you can without disturbing the seeds at the bottom. Put the empty seed and pulp into your compost bin or worm far.
5. Thoroughly rinse the remaining heavy seeds with water until they are clean and smooth. Lay the seeds in a thin layer on paper towel.
6. Leave seeds in a safe place until they are completely dry. Turn them occasionally to ensure all parts of the seed are dry. This could take a couple of days so make sure to protect them from weather and pests like hungry mice.
7. Once the seeds are dry, store them in a clean, airtight glass jar.
8. Put a sticker on the jar listing the seed variety and date. You may like to add some descriptive information about the 'parent' plant.



9. Store the seeds somewhere dark and cool until they are ready to be planted in the next growing season.

Another very easy tomato seed saving method

1. Spoon tomato seed and pulp directly onto paper towel and allow to dry.
2. Save the paper towel with seeds and plant directly into ground when ready. Be sure to use a piece that has around 5 tomato seeds on it.

[Please refer to the lesson guide for 'Saving pumpkin seeds' for another wet seed saving method.]

*When collecting cucurbits seeds such as zucchini, cucumber, pumpkins, squash, melons and gourds, its important to allow the seeds to reach full maturity before collection. We often eat these types of veggies when they are immature as they tend to be softer, more flavorsome, and less seedy. However, when collecting seeds for saving, allowing a fruit to set much longer will ensure the seed is packed full of the best characteristics of the parent fruit. Look for very large, thick skinned and woody fruits as the seeds within will be larger.

Saving dry seeds.

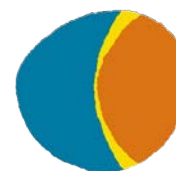
Dry seed collection is generally easier than wet seed collection! It is visibly easier to locate a seed pod that is ripe and ready for collection and storage. The plant will have already grown to its full potential, produced flowers and then its seeds!

Seed pods should look brown and plump and when touched or opened manually. And the seeds should fall out easily. This is a natural reaction for the plant, indicating it is in its most reproductive stage and ready to share its seed around for future seasons. So this is also the best time for us to intervene for collection.

LESSON GUIDE

Wet and dry seed collection methods

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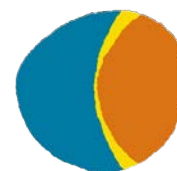
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	<ol style="list-style-type: none">1. Use your secateurs to snip off the seed pod or casing and collect into a big bowl. Separate seeds from the pod manually with nimble fingers or by using the sieve.2. Store the seeds in an airtight jar or container with a label showing the variety of plant and the collection date. <p>*Be sure to only collect seed pods when there is no moisture on the plants or pods. Moisture can cause the seeds to rot. If you are unsure, allow the harvested seed pods to dry completely prior to extraction and storage.</p> <p>Seeds can last anywhere from 1 to 5 years if harvested and stored correctly.</p>
REFLECTION ACTIVITY:	<p>Have an inspection of your garden. What plants in there have seed pods to collect from?</p> <p>What about in the bush around you, can you see the different seeds of native plants?</p> <p>Create a seed library and swap with other classes.</p>
CLEAN UP:	<p>Wash hands well after handling seeds as some can be toxic.</p>
APPROPRIATENESS:	<input checked="" type="checkbox"/> KK-Year 2 <input checked="" type="checkbox"/> Years 3-6 <input checked="" type="checkbox"/> Year 7 plus

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Saving pumpkin seeds

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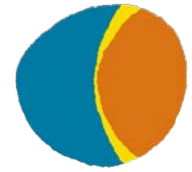
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KEY LEARNING AREA	Saving seeds
BACKGROUND:	Save money on buying seeds by collecting your own. Seeds need to be completely dried, then stored in a dry place until it is time to plant.
LESSON FOCUS:	Collecting seeds, choosing healthy seeds, drying seeds.
RESOURCES/ EQUIPMENT:	<i>This activity will require some preparation.</i> Pumpkins, paper, colander, water, envelopes, pens/pencils for labelling.
OUTLINE:	<ol style="list-style-type: none">1. Cut the top off your pumpkin and scoop out all the pulp. A large spoon works well for this task.2. Separate the seeds from the pulp with your fingers, then place the seeds in a colander and rinse under cool water. Try to remove as much pulp as possible from each seed.3. Inspect the clean seeds carefully and select the largest ones to save. Larger seeds will have a better chance of germinating and growing healthy vines.4. Spread the seeds on a layer of wax paper and allow to dry overnight. Pumpkin seeds are sticky, so wax paper works best for the initial drying period.5. Once the seeds are dry, line a baking sheet with paper towels. Spread the pumpkin seeds in a single layer.6. Place the tray in a cool, dark place for at least one month. This allows the seeds to become completely dry.7. After one month, sort through the seeds and discard any with mould or mildew. Place the good seeds in an envelope and label. The seeds can be stored in the envelope until next year's planting.
REFLECTION ACTIVITY:	Can you grow other veggies from seed? How long between planting the seeds and harvesting the pumpkins?

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Saving pumpkin seeds

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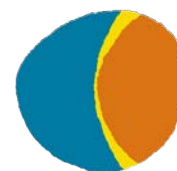
CLEAN UP:	Clean equipment as required. Discuss putting things away safely. (Correct storage) Wash hands, including cleaning nails using a nail brush.
APPROPRIATENESS:	<input checked="" type="checkbox"/> KK-Year 2 <input checked="" type="checkbox"/> Years 3-6 <input checked="" type="checkbox"/> Year 7 plus
EXTENSION IDEAS:	Save seeds from some other veggies at home. Make pumpkin soup or pumpkin pancakes.



LESSON GUIDE

Seed storage and other tips

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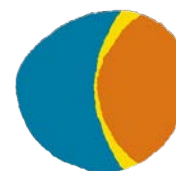
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KEY LEARNING AREA:	Saving seeds
BACKGROUND:	Storing your seeds correctly is important to ensure they remain as viable as possible over extended time periods.
LESSON FOCUS:	The best way to store your seeds for successful long-term results.
RESOURCES/ EQUIPMENT:	<i>This activity will require some preparation</i> Collected seeds Glass jars or airtight containers Pen and labels for marking Silica packets (if available)
OUTLINE:	<p>Seeds truly are a miracle. Within their tiny casings they hold the power to create life and grow into something magnificent. When seeds are stored, they are forced into dormancy. They are still alive but in a deep hibernation, lying in wait until we choose to introduce them back to the world.</p> <p>Seeds generally need only a few things to spring to life – light, water, soil and the right climate. When we store seeds, we starve the seeds of all of these elements.</p> <p>No Light – store your seeds in a dark spot, such as the bottom of a desk draw, a wooden box, in a pantry cupboard or any place that is away from natural light.</p> <p>No Water – storing your seeds in a dry space is incredibly important! Seeds start to germinate when exposed to water so be sure to avoid any moisture. Keep those little silica packets that you find in boxes of new shoes, electronics and sometimes food. You can add these to your jars of seeds as a way of ensuring there is no moisture! And always make sure your seeds are completely dry before storing.</p> <p>Cool Climate – for optimal seed storage conditions ensure seeds are housed within an airtight jar or container in a cool location. Heat or fluctuating temperatures can ‘wake’ seeds from dormancy. Some gardeners store seeds inside their fridge or</p>

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Seed storage and other tips

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	<p>freezer, but there can be risks to your seeds in doing this. Do a bit of research before choosing this option.</p> <p>Labelling -be sure your seed containers are well labelled. At a minimum include the name of the seed variety and the collection or storage date. Add any additional information about the parent plant, or about the best planting time, that you think may be useful.</p> <p>To summarise, seeds need to be kept in a dark, cool and dry location.</p>
REFLECTION ACTIVITY:	<p>Create a nifty seed storage space out of old items around the home – a filing cabinet, a small broken fridge - let your imagination run wild!</p> <p>Create a ‘seed library’ for easy access to your seeds. You could organize them according to the coming growing seasons.</p>
CLEAN UP:	Wash hands
APPROPRIATENESS:	<input checked="" type="checkbox"/> KK-Year 2 <input checked="" type="checkbox"/> Years 3-6 <input checked="" type="checkbox"/> Year 7 plus