

Title: "Food for thought..."

Topic	Home School Gardens		
Standard	3 - 4		
Stages	7 – 12		
Year level/s	7 - 10		
Curriculum area/s	Mathematics	Financial Literacy	Science
Strand/s	Measurement Number (Finance)	Knowledge and Understanding (KU) Competence (C) Enterprise (E) Responsibility (R)	Science as a human endeavour (SHE) Scientific inquiry (SI) Scientific communication (SC) Energy and force (EF) Matter (M) Living things (LT) Earth and space (ES)
Understanding goals		<ol style="list-style-type: none"> 1. Understand how to keep personal financial records (KU, Yr 9) 2. Prepare simple personal and family budgets and records (C, Yr 7, 9) 3. Use ICTs to keep appropriate records (C, Yr 9) 4. Make sophisticated choices when 	<ol style="list-style-type: none"> 1. Understand some of the costs associated with the farming and transport of food (SHE) 2. Understand how to conduct a scientific inquiry into the propagation of plants (SI) 3. Understand how to collect and

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	<p>comparative shopping (C, Yr 9)</p> <p>5. Make business related decisions (E, Yr 9)</p> <p>6. Develop ethical behaviours (R, Yr 7, 9)</p>	<p>communicate information about how the food they eat is sourced (SC)</p> <p>4. Understand some of the impacts of their choice of materials and resources for organic food production (M, EF, ES, LT)</p> <p>5. Understand some of the ways in which the features of living things influence their role in food production (LT)</p> <p>6. Understand some of the cycles that are important in food production (ES, M)</p>
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Financial Literacy Descriptions of Learning

(Source: http://www.mceecdya.edu.au/mceecdya/national_financial_literacy_framework_homepage,14429.html)

Descriptions of Learning: Year 7

Students understand the need to plan for the future and have a more detailed understanding of the use of income. They apply critical literacy and numeracy skills to a wide range of commercial advertising and consumer situations, and analyse the potential effects of these on personal finances.

Knowledge and Understanding

Students:

- Understand consumer rights and responsibilities.
For example, know about basic elements of a contract (verbal and written), consequences of a breach of contract, requirements to provide accurate information to consumers, and understand the issues and risks involved in purchasing and selling on the internet.
- Understand that a range of factors affect choice.
For example, recognise that factors affecting choice may include advertising, peer pressure, income and purchasing history.
- Understand the value of setting personal financial goals.
For example, distinguish between short and long term planning, and understand issues related to impulse buying and the benefits of a budget.
- Understand that governments provide goods and services to meet consumers' and taxpayers' needs and wants.
For example, understand that essential services such as schools and hospitals are substantially funded by governments.

Competence

Students:

- Justify selection of a range of goods and services.
For example, examine comparative costs when purchasing goods and services, evaluate and recommend value for money purchases, use critical literacy and numeracy skills to assess the accuracy and appropriateness of advertising.
- Resolve consumer disputes.
For example, apply a process of consumer redress such as completing a consumer complaint form, seek help from other consumer agencies; apply assertive behaviours in everyday transactions based on an understanding of consumer rights.
- Develop simple budgets and financial records.
For example, develop budgets that take account of particular needs and wants and established priorities, compile a budget for a family meal or outing.

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Enterprise

Students:

- Make decisions to increase income and wealth.
For example, develop a plan to increase household income and/ or reduce household expenditure such as buying energy efficient products; use income and resources that involve investing in assets that generate income such as purchasing a bicycle to use for deliveries.
- Take informed risks associated with earning income.
For example, undertake a fundraising activity or small business enterprise and develop a flexible plan, including an advertising/marketing strategy, to increase sales and profits.

Responsibility

Students:

- Develop ethical behaviours.
For example, practise being aware of the needs and wants of other groups, determine which goods and services are environmentally friendly, and consider socially responsible ways of spending and saving money.
- Evaluate the relationship between spending and using credit responsibly.
For example, recognise impulse buying behaviour might limit future choices; factors such as debt levels and essential expenses should be considered when deciding a reasonable credit limit.
- Demonstrate informed and assertive buying behaviours.
For example, develop buyer resistance strategies, and examine the terms of sales including contracts.

Year 9

Descriptions of Learning: Year 9

Students are able to distinguish between wealth and income and are aware of the different sources of income and wealth creation. They are able to keep simple personal financial records and establish short and long term financial goals. They make appropriate choices in relation to the variety of financial services and are also aware of the financial advice available within the community to assist decision making.

Students use basic financial information to assess risk and returns in a local, national and global context. They apply critical literacy and numeracy skills to consider different forms of investments, and the advantages and disadvantages of fundraising activities or business ventures.

Knowledge and Understanding

Students:

- **Understand the rights and responsibilities of consumers.**
For example, understand that Australian consumers are protected by legislation, the legal basis of simple contracts, the obligations associated with borrowing money, and that there are alternative ways of settling consumer disputes.
- Understand how to keep personal financial records.
For example, know that records of income, expenses are necessary for income tax purposes; understand the consequences of poor financial management.
- Understand the use of credit.
For example, understand that using credit may involve paying interest, interest free days, reward schemes and fees and charges; evaluating mobile phone contracts.
- Understand that income is derived from a range of sources, including wealth, with different levels of reliability.
For example, understand income is derived from employment, investments and gifts, and the relationship between risk and return on investing.
- Understand that a range of consumer and financial advice of varying accuracy and impartiality is available within the community.
For example, understand that consumers are able to check for professional accreditation and access government and consumer agencies.
- Understand that financial scams exist.
For example, recognise illegal and misleading promotion and selling methods.

Competence

Students:

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- Prepare simple personal and family budgets and records.
For example, identify fixed and variable expenses, calculate interest and repayments, and use spreadsheets.
- Use information and communication technologies (ICTs) to keep appropriate financial records.
For example, use spreadsheets and simple internet tools.
- Use critical thinking and problem solving skills to make informed consumer and financial decisions.
For example, consider options to address personal financial problems, seek assistance from community and government organisations and access financial information to assess risk and returns.
- Make sophisticated choices when comparative shopping.
For example, develop personal spending criteria based on income and needs, access information from a variety of sources (including the internet), about goods and services and apply criteria.
- Evaluate different methods of payment.
For example, assess the risks, advantages and disadvantages of new applications of technology.

Enterprise

Students:

- Take initiatives to build wealth.
For example, develop a long term plan for savings, investment, insurance and superannuation.
- Make business related decisions.
For example, present the decisions and strategies used to maximise returns through a fundraising initiative or a business.
- Recognise opportunities to generate income and wealth and the risk management of those opportunities.
For example, assess the advantages and disadvantages of financial ventures, and develop personal financial plans that show initiative and manage risk.

Responsibility

Students:

- Develop ethical behaviours.
For example recycle products in the home and at school; make appropriate payments for goods such as copyright music downloaded from the internet
- Accept responsibility and evaluate the consequences for self and others of spending decisions and using credit responsibly
for example, selecting a mobile phone contract and recognising impulse buying behaviour.
- Demonstrate informed and assertive buying behaviours.
For example, develop buyer resistance strategies, evaluate sales marketing techniques, including interest free contracts, and understand that life style decisions may affect the environment.

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Unit at a glance

ASPECT 1 (currently under development)

Where do you purchase your fruit and vegetables?



How does this compare with other suppliers?



Where is the food sourced from?



What quantities do you consume (individual/ household)?



What is the weekly cost (individual/ household)?



Is it seasonal?

Period of implementation (trial period)

Reflection: were there benefits to where you sourced your food, social/ financial capital?

ASPECT 2

What area do you have available in your home/ school for growing produce?



What growing area do various plant species require?



What conditions do particular plant species require?



What infrastructure is required?



What resources are required?



What costs are associated with these resources?

Reflection: was it economically feasible to have a vegetable garden; are there benefits beyond the financial context?

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Detailed unit overview 'Aspect 2'

Activity concepts/main ideas	Financial literacy links	Learning opportunities	Assessment and Teacher Notes	Length
<p>Are you a space cadet?</p> <ul style="list-style-type: none"> To look at space utilisation (home/school) 	<ul style="list-style-type: none"> Year 9 Competence 	<p>Students think about the different forms of space that can be utilised within the home/ school for food production.</p> <ul style="list-style-type: none"> Ask students the following questions: <ul style="list-style-type: none"> Are there parts of the garden that aren't utilised? Can you use space wisely? E.g. hanging pots, gardens built on cement, changing lawn to garden, raised garden beds v traditional v no-dig, vertical v horizontal planting. What costs are associated with the space choices? 	<ul style="list-style-type: none"> Measurement Stage 10-12 Space (3D spatial relations) Possible mapping task, measurement task or 3D spatial relations. Potential research task looking at other examples of gardens. 	
<p>The haves and the have-nots</p> <ul style="list-style-type: none"> Identify the existing infrastructure and determine what might be lacking 		<p>Students need to assess the identified area in terms of access to all of the inputs required for the garden.</p> <ul style="list-style-type: none"> Ask students the following questions: <ul style="list-style-type: none"> What sources of water, and their collection, storage and application, are able to be utilised on the chosen site? What additional infrastructure might be required? What modifications might need to be made to the existing infrastructure? 	<ul style="list-style-type: none"> Earth & Space Stage 10 Matter 10 (rusting etc) Research task of modern water storage options, council/federal rebates, costs etc. 	
<p>Scavenger Hunt</p> <ul style="list-style-type: none"> Identify the 	<ul style="list-style-type: none"> Year 7 	<p>Students are to think about the types of resources that have been identified in the previous activity and whether or not</p>	<ul style="list-style-type: none"> Energy and Force Stage 12 	

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<p>resources available and determine any inputs</p>	<p><u>Enterprise</u></p> <ul style="list-style-type: none"> • <u>Year 9 Knowledge and Understanding</u> • <u>Year 9 Competence</u> • <u>Year 9 Competence</u> • <u>Year 9 Responsibility</u> 	<p>these can be sourced from inside/ outside the home/ school environment.</p> <ul style="list-style-type: none"> • Ask students the following questions: <ul style="list-style-type: none"> ○ What resources do I need? ○ Where can I get them? ○ How much do I need? ○ Are they sustainable? e.g. recycled v new, ○ What type of watering systems could be used? town v rain water, drip v bottle + spike v spray v root spikes ○ Can you use recycled water on your garden? Explain. 	<ul style="list-style-type: none"> • Group work and share info to stimulate 'idea generation'. • Research which plants if any can have recycled (grey water) water used on them and which detergents are suitable. • Data collection survey of staff students etc with prizes (detergent) of effective enviro brands. 	
<p>Plant PI</p> <ul style="list-style-type: none"> • Research the space requirements for various plant species 		<p>Students are to imagine that they are a Private Investigator, with the task of finding the perfect combination of plants.</p> <ul style="list-style-type: none"> • The end-goal of this activity is to create a 'collectors card' for a chosen species as part of a class series. The card will (gradually) include information relating to the following activities: <ul style="list-style-type: none"> ○ General name + scientific name ○ What part of the plant is consumed? e.g. root, leaves, reproductive organs, fruits ○ Companion plants ○ Features e.g. space required between rows/ plants, planting depth, height/ width, ground cover 	<ul style="list-style-type: none"> • Living Things Stage 12 • Living Things Stage 9/10 • Living Things Stage 10 • Templates for cards provided as appendix • Researching plant organs, habitats, species and companion planting. What is it and how does it 	

		BLANK CARD	work?	
		EXAMPLE		
<p>It's not all about passing wind ...</p> <ul style="list-style-type: none"> Research the physical conditions for various plant species 		<p>Students are to investigate the physical conditions favourable to the chosen species.</p> <ul style="list-style-type: none"> The collectors card will/could have additional information, including: <ul style="list-style-type: none"> Aspect e.g. north-facing Sun/ shade Soil e.g. type, well-drained, preserving soil, mulching Wind-sensitivity Nutrients e.g. composting, worm farms 	<ul style="list-style-type: none"> Earth and Space Stage 10/11/12 Matter Stage 10 Energy and Force 10/11 Living Things 10/11 Continuation of above 	
Growing Plants		<p>Plant growth, species used, propagations methods, seed sources,</p> <ul style="list-style-type: none"> Business sponsorship for planting trees along the creek or railway path etc. Seedling for home/school gardens or parents to purchase/ be given? Sell worms and worm casting (set up compost/worm farm) Joint project with 'Understory Network' or a nursing home Seed shelf life – how long before the seeds are not viable 	<ul style="list-style-type: none"> Living Things 10/11 	
Natural born killers	<ul style="list-style-type: none"> Year 7 Responsibility Year 9 	<p>Students are to investigate the benefits of using natural methods for pest control</p> <ul style="list-style-type: none"> Ask the students the following questions: 	<ul style="list-style-type: none"> Matter 12 Living Things 10 	

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	<ul style="list-style-type: none"> Competence Year 9 Responsibility 	<ul style="list-style-type: none"> What options are there for pest control? e.g. bugs v chemicals v companion plants What are the benefits of mulching and pre-planting treatments? <p>Research natural pest control and microbes in soils used in major cropping. No till farming.</p> <p>Student could grow plants and model mulching under lights, fertilisers, worm casting, worms themselves. Pine bark Vs Eucalypt</p>		
<p>Less ker-ching, more for your bling</p> <ul style="list-style-type: none"> What expenses are involved in the food production 	<ul style="list-style-type: none"> Year 7 Competence Year 9 Knowledge and Understanding Year 7 Responsibility Year 9 Competence 	<p>Students research the costs associated with growing plants and compare this to the costs associated with growing your own garden.</p> <ul style="list-style-type: none"> 'Concrete' /immediate costs associated with this Travel miles and packaging costs Local organic vs imported or interstate foods produce. Supermarket brands packaging – market loose Long term costs as well as short term to compare garden costs over time. Packaged seed versus harvesting from food produce – capsicum. 	<ul style="list-style-type: none"> Number Stage 12 	
<p>Reflection activity</p>		<p>Was it economically feasible to have a vegetable garden; are there benefits beyond the financial context?</p> <p>Concept maps linking major ideas studied.</p> <p>What have they learnt – have their practices changed?</p> <p>Evaluation document – SWOT analysis (Strengths, Weaknesses, Opportunities, Threats)</p> <p>Has this made learning more enjoyable?</p>		

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		Where to now, how will these continue at home or the school, could they help teach students in a program next year?		
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Appendices

Main idea	Stage ten	Stage eleven	Stage twelve
Science as a human endeavour (Huonville natural honey grower)	<ul style="list-style-type: none"> examine how and why people engage in science as a worthwhile and exciting career, including examining the work of Australian scientists Apiarist (bee people) Scientific research in organic foods and farming, Nitrogen – billion \$ industry. 	<ul style="list-style-type: none"> consider what is characteristic of the way that scientists work, and why this is important e.g. integrity, rigour, regard for evidence 	<ul style="list-style-type: none"> identify some things that limit or control scientific work or understanding e.g. ethics, code of practice, government regulation, exclusion of certain groups—such as women or ethnic groups Ethics of Guan farming; bee farming, what is 'organic certified food)
	<ul style="list-style-type: none"> recognise that different cultures may have different views in relation to science e.g. traditional medicine herbs grown in garden, honey, natural antibiotic describe how the use of science and technology has changed the way people live 	<ul style="list-style-type: none"> analyse how and why some products and processes used in work and leisure have changed over time / vary across cultures e.g. food preservation methods 	<ul style="list-style-type: none"> analyse how and why some products and processes have changed over time / vary across cultures, and the impact that this has on people e.g. contraception, IVF
Scientific inquiry	<ul style="list-style-type: none"> examine issues of sustainability of the natural, built or social environments extending from local to global perspectives Nitrogen farming- mining consider and respond to appropriate ethical and social issues in science-related contexts relevant to them, showing an awareness of several different perspectives that exist Ethics of Guan farming; bee farming, what is 'organic certified food) 	<ul style="list-style-type: none"> identify system relationships when investigating local or global issues, including sustainability, and consider some of the reasons that different people make their decisions e.g. construct a <i>Futures Wheel</i> to consider the impact of a new development Using food miles idea for nitrogen and food from garden, Social capital of community involvement 	<ul style="list-style-type: none"> discuss some of the system relationships identified when investigating local and global issues, including sustainability Possible exploitation of 'majority world countries'
	<ul style="list-style-type: none"> formulate, clarify and refine questions and predictions suitable for testing, including refocusing ill-defined questions plan and conduct investigations demonstrating that they understand the requirements of fair testing – undertake systematic observation and data collection, taking steps to minimise error, and explaining the purpose of a control and repeat trials 	<ul style="list-style-type: none"> recognise some questions that cannot, or should not, be investigated scientifically and discuss why that is the case consider alternative approaches that might be used to answer a particular question and justify their choice trial different methods of plant cultivation, propagation, fertilisation – small scale before large scale 	<ul style="list-style-type: none"> modify questions to hypotheses, showing an awareness that scientific hypotheses must be testable and written in a particular form plan and conduct their own investigations taking into account the principles of fair testing, and using appropriate techniques to improve reliability

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	<ul style="list-style-type: none"> design and conduct investigations, using a range of equipment and materials appropriately, and taking steps to reduce error and obtain reliable evidence 		
	<ul style="list-style-type: none"> offer explanations for patterns in their data and draw conclusions from that data make general suggestions for improving investigations, after considering their own and their peers' findings, reviewing their understandings in light of new information 	<ul style="list-style-type: none"> consider anomalies in observations or measurements and try to explain them make links between their investigations and relevant science concepts / contexts e.g. comment that they can determine a biscuit's energy content by burning it 	<ul style="list-style-type: none"> interpret results in situations where more than one set of data has been collected identify further investigations that would allow them to collect additional information about their hypotheses
	<ul style="list-style-type: none"> independently select information sources that will provide the required background to their science investigations 	<ul style="list-style-type: none"> identify and use more challenging information sources (e.g. specialised textbooks, current affairs programs) and comment on their investigations in light of these sources 	<ul style="list-style-type: none"> access information from a variety of texts, identifying the scientific concepts relevant to their investigation, and become selective about the texts that they use, realising that the source may provide limited detail or be selectively biased
Scientific communication	<ul style="list-style-type: none"> present scientific ideas and understandings in a variety of ways using appropriate representations, (e.g. graphs, models, spreadsheets) and reflect on the effectiveness of their presentation in terms of clarity and/or ease of analysis 	<ul style="list-style-type: none"> communicate the results of their science investigations, showing an increasing use of relevant terminology, and beginning to represent data in more sophisticated ways, including line graphs, models, diagrams, chemical symbols, circuit diagrams 	<ul style="list-style-type: none"> present coherent reports, supported by relevant data, in ways and forms appropriate to nominated audiences
	<ul style="list-style-type: none"> investigate the effects of forces supporting or opposing each other e.g. floating and sinking, simple machines, speeding up and slowing down 	<ul style="list-style-type: none"> investigate some ways that properties of objects affect the forces that act on them e.g. which type of bridge is strongest? How do you need to hold your body for different dives or gymnastic moves? 	<ul style="list-style-type: none"> investigate and explain how the ways that forces act are important in a particular situation e.g. car design, biomechanics, space
	<ul style="list-style-type: none"> explore how forms of energy differ in the way they can be transferred or stored e.g. electric circuits, batteries, heat by radiation / convection / conduction 	<ul style="list-style-type: none"> investigate some of the ways in which energy is transferred between objects and transformed from one form to another e.g. gravitational to movement, chemical to electrical, electrical to heat / light / sound wind = movement of windmill = passive transport of water 	<ul style="list-style-type: none"> investigate and discuss the energy transfers and transformations that occur in some particular situations e.g. car crashes, houses, global warming, roller coasters planting trees as 'carbon stores'
Energy and force	<ul style="list-style-type: none"> compare how different renewable and non-renewable energy sources and systems are used wind energy - windmill 	<ul style="list-style-type: none"> describe how systems have been developed to obtain, transfer and use energy for particular purposes, and how these have changed over time e.g. development of an electricity grid windmill 	<ul style="list-style-type: none"> identify some of the issues that need to be considered in using non-renewable and renewable energy systems e.g. cost of production, transportation, environmental implications garden beds/ structure – choice of materials/ recycled

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	<ul style="list-style-type: none"> investigate how the properties of materials can vary according to the proportions of the substances they are composed of, and how this may alter their suitability for a specific use e.g. strengths of mud bricks, rusting of iron alloys, bubble solution Construction of Garden beds and bee hives 	<ul style="list-style-type: none"> investigate the physical and chemical properties of some important types of substances (e.g. metals, acids and bases) and begin to use the language of chemistry e.g. symbol, formula, atom, molecule nitrogen, organic foods and chemical free chemical composition of chemicals/ organic chemistry 	<ul style="list-style-type: none"> investigate and explain the characteristic chemical and physical properties of one group of commonly used substances, relating the properties to their production and use e.g. foods, cosmetics, plastics, beverages, minerals Minerals/plants needing nutrients -
Matter (RTBG, Seed to Plate)	<ul style="list-style-type: none"> investigate physical and chemical changes and the reversibility of the change Nitrogen cycle? Nutrient use - 	<ul style="list-style-type: none"> observe and describe the ways that some important types of substances react and / or change in everyday situations e.g. metals, acids and bases chemical reactions in bacteria and soil chemistry allelopathic relationships of plants 	<ul style="list-style-type: none"> explore factors that affect chemical changes (e.g. temperature, concentration) and apply them to everyday situations e.g. food preservation organic vs. freezing technique (supermarket) seasonal fruits/ vegies (growing food at the right time of the year vs. buying non-seasonal)
	<ul style="list-style-type: none"> consider how some of the chemical procedures and processes they experience are used / occur in real life situations e.g. evaporation, decanting, sieving Nitrogen cycle/ water cycle carbon cycle 	<ul style="list-style-type: none"> consider how some important types of substances (e.g. metals, acids and bases) are used in the home and community and any environmental impact their use may have 	<ul style="list-style-type: none"> describe some uses and effects of chemicals / chemical processes in everyday situations e.g. corrosion, dyeing, fermentation, drugs, lead chemical use on many crops – broccoli
Living things	<ul style="list-style-type: none"> identify characteristics of plant and animal cells, including recognising the cell as the basic unit of all living things bacteria fixing nitrogen industrial use of bacteria for sewage treatment etc. biolytics waste management of sewage apply accepted systems of scientific classification to living things, based on their structures Plant names – veges and weeds and the surrounding trees Eucaflip and Tree flip Bee species construct and interpret food chains and 	<ul style="list-style-type: none"> investigate and describe some structural, physiological and / or behavioural adaptations that ensure the survival of living things in their environment e.g. the organ systems that animals use to locate, catch, eat, digest, transport and use food, photosynthesis digestion producing honey and digestive system for foods understand that different reproductive methods have different advantages for the survival of their species e.g. mammals nurture their young, buzzies are dispersed by animals pollen collection and the way a bees body is designed plant adaptations : compare 'garden plants' and weeds GM vs organic examine a particular ecosystem, identifying 	<ul style="list-style-type: none"> investigate and describe particular factors that may affect the functioning and survival of living things e.g. micro-organisms and disease, smoking / drugs nitrogen fixing, stomach bacteria for food digestion understand that reproduction can occur by both sexual and asexual means e.g. plant cuttings, cloning, seeds grow many f these form ins the garden – distinguish between cloning (cuttings), seed, GM, GM – no seeds produced. How to harvest through natural propagation – distribute through to the community Grow plants from understory or seed to plate and provide to businesses in the area discuss the impact that change has had on

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	<p>webs to model relationships between organisms within an ecosystem</p> <ul style="list-style-type: none"> • Pests and how to avoid to get organic garden – companion planting • Natural pesticides – garlic, pyrethrum 	<p>human impacts on trophic relationships and the non-living environment</p> <ul style="list-style-type: none"> • Bees community – study structure • Autotrophs, heterotrophs, composting – worm farms 	<p>particular ecosystems and identify measures required for ecological sustainability</p> <ul style="list-style-type: none"> • Bees community – study structure introduced European bees •
Earth and space	<ul style="list-style-type: none"> • model the orbits of the Earth, Moon and Sun in relation to each other and explore the effects observable from Earth e.g. model eclipses, seasons • Seasons, planting guides – daylight hours, temperature, rainfall 	<ul style="list-style-type: none"> • understand that gravity is the force that keeps the objects of the solar system in their orbits, and that gravitational attraction exists between all objects in the universe • gravity feed watering - windmill 	<ul style="list-style-type: none"> • investigate and describe a variety of significant features and processes on Earth and / or in space e.g. erosion, weathering, earthquakes, faulting, folding, volcanic eruptions, weather, meteor impact, constellations, ice ages, supernova • soil formation and soil erosion • Which geology supports which soils
	<ul style="list-style-type: none"> • compare some processes that occur over a shorter time scale (e.g. evaporation and precipitation in the water cycle) with some that take longer e.g. rock formation • Water cycle, nitrogen cycle – sustainable water practices, raised beds not as efficient water use. 	<ul style="list-style-type: none"> • use geological evidence to interpret some ways in which the Earth has changed since its formation, including through different geological periods • Soil types • 	<ul style="list-style-type: none"> • describe some important interactions that occur, or have occurred in the past, within and / or between Earth and / or space systems e.g. sea-level changes, temperature changes, appearance of land bridges, death of a star
	<ul style="list-style-type: none"> • investigate which of Earth's resources that they use are reusable or renewable and which are not • Nitrogen, recycle water tanks for garden bed, wind and solar power. Organic recycling – compost from food studies etc, worm farm. 	<ul style="list-style-type: none"> • describe some ways in which the properties of Earth's resources affect how organisms use them e.g. hardness of rocks, salinity of water, conductivity of metals • water quality/ availability – effect on growing 	<ul style="list-style-type: none"> • examine the long-term effects of humans on the Earth, and consider possible ways of modifying human behaviour to reduce deleterious effects e.g. pollution, loss of biodiversity • Food sources vs population and land area needed to produce food