



Stage 5 Agricultural Technology: Year 9

Unit 3: Fruit growing

Name of enterprise: Fruit growing

Duration: 5 weeks

Factors to consider: Availability of fruit varieties, best time for plant propagation.

Date started:

Date completed:

Outcome	Enterprise specific objectives At the end of this unit students should be able to:	Suggested teaching and learning strategies
5.1.1	<ul style="list-style-type: none"> Draw and label the parts of a plant and state function. Define a fruit. 	<ul style="list-style-type: none"> This is probably revision, so cover to appropriate depth as required. Numerous books have stylised plants if required. A fruit is a structure consisting of one or more ripened ovaries. They generally contain the seeds but this is not strictly the case. Relate this to student perception of a fruit. State that for this topic we are looking at so called sweet fruits not <i>vegetable fruits</i>.
5.1.1	<ul style="list-style-type: none"> Name an extensive range of fruits and classify them into broad types, e.g. pomes, stone etc. 	<ul style="list-style-type: none"> Brainstorm with headings on the board to <i>broadly</i> classify fruits. Categories could be stone, pome, nuts, tropical, vine, berries, citrus etc. Whilst not strictly botanical divisions it serves the purpose. Farm walk to see citrus plantings with emphasis on similarities of all citrus. Link to classification. Visit green grocer. Worksheet based on the labels on the trees at the orchard.
5.1.1 5.3.1 5.3.2 5.3.3 5.6.1 5.6.2	<ul style="list-style-type: none"> Recognise that each type can come in a number of varieties suited. List end uses of fruit, e.g. apples. 	<ul style="list-style-type: none"> Discussion. Walk and visit above. Worksheet based on the labels on the trees at the orchard. View samples. View various newspaper and magazine articles and posters etc. Each student to do a different fruit. Brainstorm or collage. Dry fruit using a household fruit drier. Compare costs to purchase the different products available.

Outcome	Enterprise specific objectives At the end of this unit students should be able to:	Suggested teaching and learning strategies
	<ul style="list-style-type: none"> State the importance of fruit in the diet 	<ul style="list-style-type: none"> Taste dried, canned, fresh and frozen fruits of one type and compare. Health food videos. Create brochure on benefits of fruit.
5.1.1 5.2.1 5.5.2 5.6.1 5.6.2	<ul style="list-style-type: none"> State why we have developed different varieties: <ul style="list-style-type: none"> – end use – climate or soil suitability – taste – personal preference of growers, buyers and consumers – developed in different areas – growing seasons. 	<ul style="list-style-type: none"> Comprehension using <i>Agfacts</i>, e.g. Apple varieties, H4.1.12, or from elsewhere. Fact finding worksheet based on table in <i>The Complete Book of Fruit Growing in Australia</i>, p. 15–18. See web site www.freshforkids.com.au/apples.htm Fruit assignment.
5.1.1 5.2.1 5.3.2 5.4.2	<ul style="list-style-type: none"> Taste a range of varieties of a fruit. 	<ul style="list-style-type: none"> Apple tasting with worksheet covering name, drawing, descriptive words etc. Three or four apples of as many varieties as are procurable are enough for a class of 15–20. There are usually 7 varieties at our shops but a visit to the fruit markets or some roadside stalls usually turn up a couple more unusual varieties. Relate availability to economic and market forces. Debate this issue including variety loss and its implications.
5.1.1 5.2.1	<ul style="list-style-type: none"> Describe reproduction in flowering plants. 	<ul style="list-style-type: none"> Various books including <i>Agriculture and You Book 1</i>. Make drawings/lifecycles.
5.1.1 5.2.1 5.3.3 5.5.2	<ul style="list-style-type: none"> Explain how we have developed different varieties. 	<ul style="list-style-type: none"> Illustrate the idea of genetics and inheritance and relate to fruit. Tell the story of Granny Smith. This is written in numerous places and emphasises the randomness of genetics. Internet sites are available including www.ryde.nsw.gov.au/ryde/msherwood.htm Investigate plant breeding and plant breeder's rights. Fruit assignment.
5.1.1 5.2.1 5.3.3	<ul style="list-style-type: none"> Draw/describe various methods of vegetative reproduction Propagate plants 	<ul style="list-style-type: none"> <i>Secondary Science 4</i>, pp. 44–47, <i>Agriculture and You Book 1</i> etc Various methods of propagation using cuttings, layering, tubers etc. Compare to seeds. Information in lots of books.

Outcome	Enterprise specific objectives At the end of this unit students should be able to:	Suggested teaching and learning strategies
5.1.1 5.2.1 5.3.3	<ul style="list-style-type: none"> Explain the importance of vegetative reproduction to fruit production. 	<ul style="list-style-type: none"> Relate methods to outcomes. Describe grafting and budding in detail. Define scion and rootstock. Tour streetscapes and farm to observe grafted plants. Explain advantages of grafting/budding.
5.1.1 5.1.2 5.3.1 5.3.3 5.6.1 5.6.2	<ul style="list-style-type: none"> Graft or bud fruit trees. 	<ul style="list-style-type: none"> Rootstock can be purchased through some nurseries. Citrus work quite well. Budding is easier. Many books have techniques. One is <i>Practical Hints for Budding and Grafting Fruit and Nut Trees</i> (CSIRO). <i>Propagating Citrus in Containers</i> from Qld Dept of Primary Industries is very good. View/describe multi-grafted trees, recognising need for compatibility. Raise idea of mixed varietal pollination.
5.1.1 5.1.2 5.3.2 5.3.3	<ul style="list-style-type: none"> Explain growing seasons and fruit availability. 	<ul style="list-style-type: none"> Make a chart to show what varieties of a fruit would be available each month. www.freshforkids.com.au would be useful along with books such as <i>The Complete Book of Fruit Growing in Australia</i>. Fruit assignment.
5.1.1 5.1.2 5.5.2	<ul style="list-style-type: none"> State where various fruits are grown in Australia. 	<ul style="list-style-type: none"> Mapping. Relate to climate.
5.1.2 5.3.3 5.6.1 5.6.2	<ul style="list-style-type: none"> Care for fruit trees. Prune plants. 	<ul style="list-style-type: none"> Use school orchard – fertilise, weed, water, plant new trees if needed, care for newly propagated plants etc. Worksheet based on the labels on the trees at the orchard. Fruit trees at farm or (and this is better) prune the school roses. Demonstration and active participation.

Outcome	Enterprise specific objectives At the end of this unit students should be able to:	Suggested teaching and learning strategies
		<ul style="list-style-type: none"> • Video: Pruning fruit trees. • Various texts and <i>Agfacts</i>.
5.1.2 5.2.1 5.4.2	<ul style="list-style-type: none"> • State importance of various fruits to the economy. • Name our competitors and state impact of government decisions on farmers. 	<ul style="list-style-type: none"> • Graphing exercises on tonnes grown, exports etc. Reference: ABARE, Australian Agriculture (NFF), etc. • Research/discussion etc on impact of disease, e.g. Fire Blight, cheap imports etc.
5.1.1 5.1.2 5.2.1 5.3.1 5.3.3	<ul style="list-style-type: none"> • Develop a detailed knowledge of a fruit type. 	<ul style="list-style-type: none"> • Fruit assignment covering such things as: <ul style="list-style-type: none"> – country of origin – flag of that country – scientific name – what it looks like – a description of the plant it grows on – the history of its development – uses – name 8 Australian varieties – where it is grown in Australia – what is the best variety to grow in our area if possible – the season in which it grows – pruning, fertilising and pest control program in the home garden.



Resources:

Books:

Alexander, D. (CSIRO) *Practical Hints for Budding and Grafting Fruit and Nut Trees*

Australian Agriculture (NFF)

Bannerman et al, *Enterprising Agriculture*

Brown et al, *Dynamic Agriculture 1–4*

Brown et al, *Dynamic Agriculture Blackline masters*

Clarke, *Senior Australian Agriculture*

Francis et al, *Agriculture and You 1*

Glowinski, L. *The Complete Book of Fruit Growing in Australia*, Lothian Books.

This is the best book you could possibly find on the subject of fruit

NSW Dept of Agriculture, *Agfacts*

Owen-Turner, J. and Shaw, B., *Propagating Citrus in Containers*

South Australian Education Dept (1977) *Agriculture Studies Book 1*

Sutherland, *Understanding Agriculture*

Victorian Dept of Agriculture, *Agnotes*

Wilkinson, J. *Secondary Science 4*

Web sites:

Granny Smith and her apple

The story of the Granny Smith apple.

www.ryde.nsw.gov.au/ryde/msherwood.htm

Fresh for kids

Fresh for kids web site is sponsored by Sydney and Brisbane markets and features quizzes and games.

www.freshforkids.com.au

Australian Bureau of Agricultural and Resource Economics (ABARE)

An Australian government economic research agency.

www.abare.gov.au

NSW Agriculture

Information about animals by category.

<http://www.agric.nsw.gov.au/reader/12>

And other government web sites, e.g. Qld DPI etc.

Ways of assessing student progress:

- Research assignment on fruit growing.
- Brochure for healthy eating
- Notes for debate/performance in debate.

Skills achieved in this topic:

- Weighing fertiliser for home garden use.
- Pruning.
- Plant propagating including taking cuttings and budding/grafting.
- Care for plants.
- Graphing.