

## Unit 2.2: What makes up that plant?

### Purpose and scope

Expanding from the students' prior knowledge of what a plant is, students are encouraged to observe and look for details: the shapes and habits of the plants, the colours and texture of the bark, the arrangements, shapes and scents of the leaves, the purposeful designs of flowers, fruits and seeds... The emphasis is to take a closer look at our local native species and use them to illustrate basic plant structures and reproductive mechanisms. Through their own observations, students will begin to appreciate the science of taxonomy, reproduction and ecology.

### Assessment Strategy for Core learning Outcomes in Science

3.2: Students present information which illustrates stages in different types of life cycles of familiar living things. Students may:

- demonstrate how pollination takes place;
- demonstrate how a plant reproduces asexually

4.2: Students identify and analyse similarities and differences in the ways that different living things reproduce. Students may:

- discuss and describe methods of pollen transfer and seed dispersal in various plants;
- identify differences between sexual and asexual reproduction

### Key Activities / Resources

Lesson plans and activities focusing on different parts of the plants, notably reproductive structures, are available from various sources. Rather than re-inventing the wheels, this unit collates and presents these resources in four lessons. Teachers and students will find the following publications relevant to most of the lessons:

For a simple animation on the parts of plants and their functions, go to:

[www.bgfl.org/bgfl/custom/resources\\_ftp/client\\_ftp/ks2/science/s\\_plants/plant.swf](http://www.bgfl.org/bgfl/custom/resources_ftp/client_ftp/ks2/science/s_plants/plant.swf)  
(accessed Dec 08)

Stephanie Haslam, 2004. *Noosa's Native Plants*, Published by Noosa Integrated Catchment Association. This book has a glossary of botanical terms and simple illustrations of the types of inflorescence, leaves, flower and fruit.

Michael Lavelle, 2008. *Wild Flowers of Australia and Oceania*. Anness Publishing. This book has detailed pictorial descriptions of the parts of plants, leaf and flower shapes, parts and arrangements, and growing habits.

VPlants: A Virtual Herbarium of the Chicago Region. This has detailed illustrations of plant parts and arrangements. [www.vplants.org/plants/glossary/plate\\_all.html](http://www.vplants.org/plants/glossary/plate_all.html) (accessed Jan 09)

### Lesson 2.2.1: Trees and bark

Worksheet 8 – Trees, Unit: Endangered Species. Parks Victoria education.  
[www.parkweb.vic.gov.au/education/endangered\\_species/bd12-btm.cfm](http://www.parkweb.vic.gov.au/education/endangered_species/bd12-btm.cfm)

Bark Imaging / Scans, by Lessonplans.com.au, suitable for Science and Computer subjects, grade 5 to 8.

[www.lessonplanspage.com/CIScienceBarkScanDigitalCameraIdea58.htm](http://www.lessonplanspage.com/CIScienceBarkScanDigitalCameraIdea58.htm)

### Lesson 2.2.2: Leaves

Get students to collect leaves of different shapes from nearby parks or bushland. At class, sort them into different shapes. For junior primary years, use Parks Victoria's worksheet 1 on leaf shapes and work individually. For middle to upper primary years, work in groups of 4 to 6 and make posters illustrating the different leaf shapes and arrangements. Label these with the correct descriptive terms, using glossaries in Lavelle (2008) or VPlants.

Worksheet 1 – Leaf Shapes, Unit: Park Natives. Parks Victoria education.  
[www.parkweb.vic.gov.au/education/park\\_natives/ad2-btm.cfm](http://www.parkweb.vic.gov.au/education/park_natives/ad2-btm.cfm) (accessed Jan 09)

### Lesson 2.2.3: Flowers, fruits and seeds

*Activity: Parts of a flower*, in QLD School Curriculum Council, 1999. *Living things reproduce*<sup>37</sup>. Years 1 to10 Source book module for science in Upper Primary, Level 3–5. p.8–9. Also Resource Sheet 1 on p. 25.

For a photo and diagram of *Platylobium formosum* (Handsome flat pea), go to:

<http://asgap.org.au/p-for.html>

For a diagram of *Banksia serrata* flowers and fruits, go to: [www.anbg.gov.au/banksia/](http://www.anbg.gov.au/banksia/)

For a diagram of *Callistemon* (Bottlebrush) flowers and fruits, go to:

[www.anbg.gov.au/callistemon/index.html](http://www.anbg.gov.au/callistemon/index.html)

For descriptions and diagrams of the distinctive features of *Acacia*, go to:

<http://asgap.org.au/aca-feat.html>

*The Seeds of native Plants*, in Teaching Resources: Native Vegetation. Waterwatch Adelaide & Mount Lofty Ranges<sup>38</sup>.

For a diagram of the male and female cones of *Araucaria bidwillii* (Bunya pine), go to:

<http://asgap.org.au/a-bid.html>

*Activity: Seed dispersal and germination*, in QLD School Curriculum Council, 1999. *Living things reproduce*. Years 1 to10 Source book module for science in Upper Primary, Level 3–5. p.12–14.

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<sup>37</sup> QLD School Curriculum Council, *Living things reproduce*. Years 1 to10 Source book module for Science in Upper Primary, Level 3–5. [www.qsa.qld.edu.au/downloads/syllabus/kla\\_sci\\_sbm\\_II\\_401.pdf](http://www.qsa.qld.edu.au/downloads/syllabus/kla_sci_sbm_II_401.pdf) (accessed Dec 08)

<sup>38</sup> [www.waterwatchadelaide.net.au/index.php?page=education-materials-9](http://www.waterwatchadelaide.net.au/index.php?page=education-materials-9) (accessed Jan 09)

### Lesson 2.2.4: Bulb, rhizome, stolon, runner, sucker and tuber

*Activity: Asexual (vegetative) reproduction*, in QLD School Curriculum Council, 1999. *Living things reproduce*. Years 1 to 10 Source book module for science in Upper Primary, Level 3–5. p.15–16. Also Resource Sheet 3 on p. 28.

Prior to the above activity, check with Landcare directly or through NICA for expert advice and provision of native species that may be planted asexually. Examples may include *Dianella*, *Lomandra* or *Pteridium* with rhizome, *Viola* with stolon, *Crinum* with bulb, *Dampiera* or *Scaveola* with suckers, native grasses with runner and Kangaroo paw with tuber.

Fact Sheet 17: Propagation using Division. This gives examples of native plants.  
[www.australianplants.org/fsqseven.htm](http://www.australianplants.org/fsqseven.htm) (accessed Jan 09)

#### **Related Activities / Resources**

Curriculum resources Stage 2 / Life and Living / *Plants in action: Incorporating Indigenous perspectives*. Primary Connections: Linking science with literacy, Australian Government Department of Education, Employment and Workplace Relations<sup>39</sup>.

Lesson Plan: *The Science of Forest and Trees*, EarthWatch Institute. This is suitable for lower to middle secondary years.  
[www.earthwatch.org/images/Pdfs/AboutUs/Education/Teachers/by\\_Joella\\_Zocher.pdf](http://www.earthwatch.org/images/Pdfs/AboutUs/Education/Teachers/by_Joella_Zocher.pdf)  
(accessed Jan 09)

Barry Kemp, 1997. *A Beginner's Botany* (2nd Edition), Coffs Harbour Group, Australian Plants Society

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<sup>39</sup> Department of Education, Employment and Workplace Relations with Australian Academy of Science, Curriculum resources Stage 2 / Life and Living / *Plants in action: Incorporating Indigenous perspectives*. Primary Connections: Linking science with literacy. [www.science.org.au/primaryconnections/plantsinaction.htm](http://www.science.org.au/primaryconnections/plantsinaction.htm) (accessed in Dec 08)