

2007 Year 8 Aussie Biodiversity Test (1)



Class size 28 students, representing 17 different schools around Sydney.

What is biodiversity ?

A – Variability among living organisms and the ecological environment of which they are a part. 8 Correct, 20 Incorrect

How can bio-diversity be preserved ?

A – Conserve, or maintain the environment which sustains the original variability of living organisms. Keeping indigenous plants is the basis for sustaining indigenous animals. 10 Correct, 18 Incorrect

Students were then asked to identify indigenous plants from representative samples of bark, leaves, fruit, flowers, seed, or photographs. Actual species are noted in *italics*. These plant families are (or were) significant species in the Homebush-Strathfield area, prior to white settlement in 1788. These 20 species chosen are samples of our 2,000 indigenous Sydney plant species.

Grass - Can identify Kangaroo Grass ? (<i>Themeda australis</i>)	12 Yes	16 No
Grass - Can identify Hedgehog Grass ? (<i>Echinopogon caespitosus</i>)	0 Yes	28 No
Grass - Can identify Plume Grass ? (<i>Dichelachne micrantha</i>)	0 Yes	28 No
Herb/Flower - Can identify Salt-bush (<i>Einadia hastata</i>)	0 Yes	28 No
Herb/Flower - Can identify Warrigul Spinach ? (<i>Tetragonia Tetragonioides</i>)	13 Yes	15 No
Creeper - Can identify Wonga-wonga vine ? (<i>Pandorea pandorana</i>)	0 Yes	28 No
Rush - Can identify Mat Rush ? (<i>Lomandra longifolia</i>)	4 Yes	24 No
Shrub - Can identify Hop Goodenia ? (<i>Goodenia ovata</i>)	0 Yes	28 No
Bush - Can identify a Dodonea ? (<i>Dodonea triquetra</i>)	4 Yes	24 No
Bush - Can identify Blackthorn ? (<i>Bursaria spinosa</i>)	0 Yes	28 No
Tree - Can identify a Wattle ? (<i>Acacia falcata</i>)	0 Yes	28 No
Tree - Can identify a Wattle ? (<i>Acacia longifolia</i>)	2 Yes	26 No
Tree - Can identify a Wattle ? (<i>Acacia decurrens</i>)	0 Yes	28 No
Tree - Can identify a Grevillea ? (<i>Grevillea longifolia</i>)	0 Yes	28 No
Tree - Can identify a Bottle-brush ? (<i>Callistemon rigidus</i>)	19 Yes	9 No
Tree - Can identify a Paperbark ? (<i>Melaleuca decora</i>)	13 Yes	15 No
Tree - Can identify a Casuarina - She-Oak ? (<i>Allocasuarina torulosa</i>)	0 Yes	28 No
Tree - Can identify an Angophera ? (<i>Angophora floribunda</i>)	5 Yes	23 No
Tree - Can identify a Eucalypt ? (<i>Eucalyptus Sideroxylon</i>)	18 Yes	10 No
Tree - Can identify a Eucalypt - Grey Box ? (<i>Eucalyptus moluccana</i>)	0 Yes	28 No
Score	90	/ 560

Food - How many plants mentioned above can provide food for humans ?

A – Kangaroo Grass, Einadia hastata, Warrigul Spinach, Lomandra, Dodonea, Acacia, Grevillea, Bottlebrush. 0 Correct 28 Incorrect

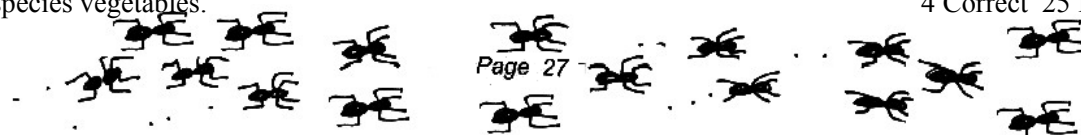
Water - What is the annual rainfall of the Homebush – Lidcombe area and its wettest season ?

A – About 900mm, wettest season is autumn, driest is winter. 2 Correct 26 Incorrect

Soils - What is the soil type of the Homebush - Lidcombe area ?

A – Clay, Wianamatta Shale (soft rock formed by clays), and sandstone outcrops 5 Correct 24 Incorrect

Worms or Ants ? - Which animal helps propagate and promote native plant growth more, and is also indicative of a healthy native plant environment ? A – Ants ! Ants help pollinate Australian plants, and take seeds from many plants into their underground nests. After a bushfire, these underground seeds will sprout. Worms are more common in the wetter Northern Hemisphere soils, but have been cultivated here to help grow our important foreign species vegetables. 4 Correct 25 Incorrect




2007 Year 8 Aussie Biodiversity Test (2)

What are the names of your favourite plants ?

INDIGENOUS :	AUSTRALIAN	FOREIGN
9 Kangaroo Grass	1 Kangaroo paw (WA)	1 Venus fly trap (USA)
4 Eucalypts		1 Rose (Europe/China)
3 Paperbarks (<i>Melaleuca</i>)		1 Sunflower (USA)
3 Dianella careula		7 Cherry blossom (Turkey)
2 Bottlebrush		
1 Lomandra longifolia		
1 Wattles (<i>Acacia</i>)		
1 Isolepis Nodosa		
1 No answer		
1 Don't like plants		

Score 18 / 28

Results :

Bio-diversity Understanding	x	Local plant knowledge	x	Enthusiasm for local plants	=>	Future Aussie Bio-diversity
.		.		.	=>	
$\frac{9}{28}$		$\frac{90}{560}$		$\frac{18}{28}$		

In the country, foreign plants have been essential for Australia's food and livestock production. But we have been missed investigating and cultivating, our many valuable, edible, and useful indigenous plants. Of the estimated 16,000 vascular indigenous plant species in a continent of almost 8 million square kilometers, we (non-aboriginal) Australians only regularly eat and export 1 species – the Macadamia Nut ! Few people appreciate that we have about 2,000 plant species in the greater Sydney basin, while the whole of the United Kingdom has only 1,600 species. What business opportunities might abound for those students that might investigate and research our native species that grow so well here, without the need for any fertilizers or additional watering ?

What five worthwhile actions can students do, to reduce Global Warming ?

1. Educate your parents and others, about the causes of Global Warming, and how it is resulting in rising temperatures, adversely affecting our rainfall distribution, and agricultural production.
2. If your hot water service is powered by coal-generated electricity, minimize your time having a hot water shower ! Suggest to your parents (or strata) that a solar hot water heater be installed.
3. If your house has coal-generated electricity, minimize your use of air-conditioning. Use fans rather than energy intensive air-conditioners. Better still, plant appropriate indigenous trees near your house or unit. The shade of a tree can provide in excess of 12⁰ C cooling factor in the hot summer months ! Suggest your parents buy electricity from a renewable energy supplier rather than coal.
4. Need to go somewhere ? Tell your parents you can walk, cycle, or take public transport. Suggest your parents get a smaller car, or a hybrid car that doesn't create so much carbon dioxide.
5. Want to improve the house, garden, nature strip, or farm ? Retain, maintain, and plant appropriate indigenous trees wherever possible, that do not require extra watering. Trees create oxygen for us, while absorbing carbon dioxide from the atmosphere. Encourage your parents (or strata) to install rainwater tanks for garden, toilet, and washing machine use. Local water tanks may be needed to supplement all house water in future years, just as they did from about 1870 to the 1970s.

58 Correct 82 Incorrect