

2005 Year 8 Aussie Biodiversity Test (1)



Class size 31 students, representing 20 different schools around Sydney.

What is biodiversity ?

A – Variability among living organisms and the ecological environment of which they are a part. 14 Correct, 17 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. 12 Correct, 19 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.

Tree - Can identify a Eucalypt ? (<i>Eucalyptus molucanna</i>)	12 Yes	19 No
Tree - Can identify a Eucalypt ? (<i>Eucalyptus amplifolia</i>)	9 Yes	22 No
Tree - Can identify an Angophera ? (<i>Angophora floribunda</i>)	11 Yes	20 No
Tree - Can identify a Turpentine Tree ? (<i>Syncarpia glomulifera</i>)	0 Yes	31 No
Tree - Can identify a Wattle ? (<i>Acacia longifolia</i>)	0 Yes	31 No
Tree - Can identify a Wattle ? (<i>Acacia decurrens</i>)	0 Yes	31 No
Tree - Can identify a Paperbark ? (<i>Melaleuca linearifolia</i>)	0 Yes	31 No
Tree - Can identify a Paperbark ? (<i>Melaleuca styphelioides</i>)	0 Yes	31 No
Tree - Can identify a She-Oak ? (<i>Allocasuarina torulosa</i>)	0 Yes	31 No
Tree - Can identify a Grevillea ? (<i>Grevillea longifolia</i>)	0 Yes	31 No
Tree - Can identify a Bottle-brush ? (<i>Callistemon rigidus</i>)	10 Yes	21 No
Bush - Can identify a Dodonea ? (<i>Dodonea triquetra</i>)	0 Yes	31 No
Bush - Can identify Blackthorn ? (<i>Bursaria spinosa</i>)	0 Yes	31 No
Bush - Can identify Paper Daisy (<i>Ozothamnus diosmifolium</i>)	0 Yes	31 No
Shrub - Can identify Hop Goodenia (<i>Goodenia ovata</i>)	0 Yes	31 No
Creeper/Flower - Can identify Apple-berry (<i>Billarderia scandens</i>)	0 Yes	31 No
Herb/Flower - Can identify Brachycome (<i>Brachycome angustifolia</i>)	0 Yes	31 No
Herb/Flower - Can identify Salt-bush (<i>Einadia hastata</i>)	0 Yes	31 No
Grass - Can identify Kangaroo Grass ? (<i>Themeda australis</i>)	6 Yes	25 No
Grass - Can identify Blady Grass ? (<i>Imperata cylindrica</i>)	0 Yes	31 No

Score 48 / 620

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

A – Acacias, Dodonea, Billarderia, Kangaroo & Blady Grasses 0 Correct 31 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. 3 Correct 28 Incorrect

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

A – Clay, Wianamatta Shale (soft rock formed by clays), and sandstone outcrops 2 Correct 29 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. 6 Correct 25 Incorrect



2005 Year 8 Aussie Biodiversity Test (2)

How does cutting down trees affect the climate ? - If you go outside on a hot day, you will notice that it is much cooler when you are standing in the shade of a tree. The tree is absorbing or reflecting the sunlight. But the tree not only cools you, it provides an air-conditioning effect for the grass, and earth beneath you. If all the trees are cut down over a large area, then the ground becomes hotter. Try measuring this difference yourself on a hot day.

As the ground heats up, it heats the air above it. This hot (high pressure) air, over a large area, prevents cold fronts (low pressure) from bringing rain, and the rainfall for the area is reduced. When the rain does come, it generally causes massive erosion, due to lack of tree cover, and the trees holding the soil together with their roots. The lack of trees, may also cause salinity, with a rising water table. Land-clearing and removal of trees for pasture (grasses) around Australia, has been recorded as resulting in a 30% drop in average annual rainfall in some areas, over the past 20 years.

What are the names of your favourite plants ?

INDIGENOUS :

2x Wattle
1x Eucalypts

FOREIGN :

1x Tulips
2x Cherry blossom
1x Daffodil
4x Franji-Panni
1x Lavender

FOREIGN

3x Roses
1x Tiger Lillies
2x Four-leaf Clover
1x Daisy
1x Sunflower

9 No answer
2 Don't like plants

Score 3 / 31

Results :

Bio-diversity x Local plant x Enthusiasm for => Future Aussie
Understanding knowledge local plants Bio-diversity

$$\cdot \frac{14}{31} \quad \times \quad \frac{48}{620} \quad \times \quad \frac{3}{31} \quad \Rightarrow$$



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 ! But this was only farmed after Americans successfully cultivated it overseas ! Even our foreign species livestock (cows, sheep, pigs, chickens) are mostly bred on foreign species grasses grown here !

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 ?

For example, in the middle of spring, when most of Australia's acacias have such beautiful yellow flowers, why are they not available in florist shops ?

