



# EDUCATION PROGRAM



MERLIN  
education

# Wild Teens

## Biota Worksheet

STAGE 6 - YEAR 11

CURRICULUM LINKS: BIO11-10, BIO11-10



### SECTION 1

#### Butterfly tropics

1. Within the butterfly tropics find an example of an animal that reproduces through external fertilisation. Identify the species:
2. Within the butterfly tropics find an example of an animal that reproduces through internal fertilisation. Identify the species:
3. Complete the table to compare the costs and benefits of internal and external fertilisation.

Animal	Type of fertilisation	Number of offspring	Mode: Sexual / Asexual	Chance of fertilisation: high / low
Saltwater Crocodile				
Spiny Leaf Stick Insect				
Giant Centipede				



### SECTION 2

#### Devil's Den

1. Have Tasmanian devils always been isolated in Tasmania? ☐ YES ☐ NO
2. The Tasmanian devil is thought to be the closest living relative to which extinct species?



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### SECTION 3

#### Wallaby Cliffs & Gumtree Valley

1. Wallaby Cliffs is home to yellow footed rock wallabies. What family do these organisms belong to?
2. Compare the morphological features of a yellow footed rock wallaby to that of an Eastern Grey Kangaroo

Adaptation	Description of its use



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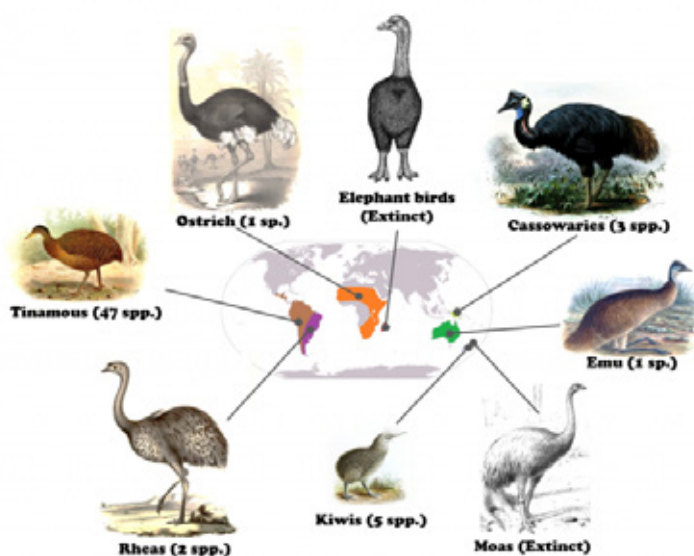
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### SECTION 4

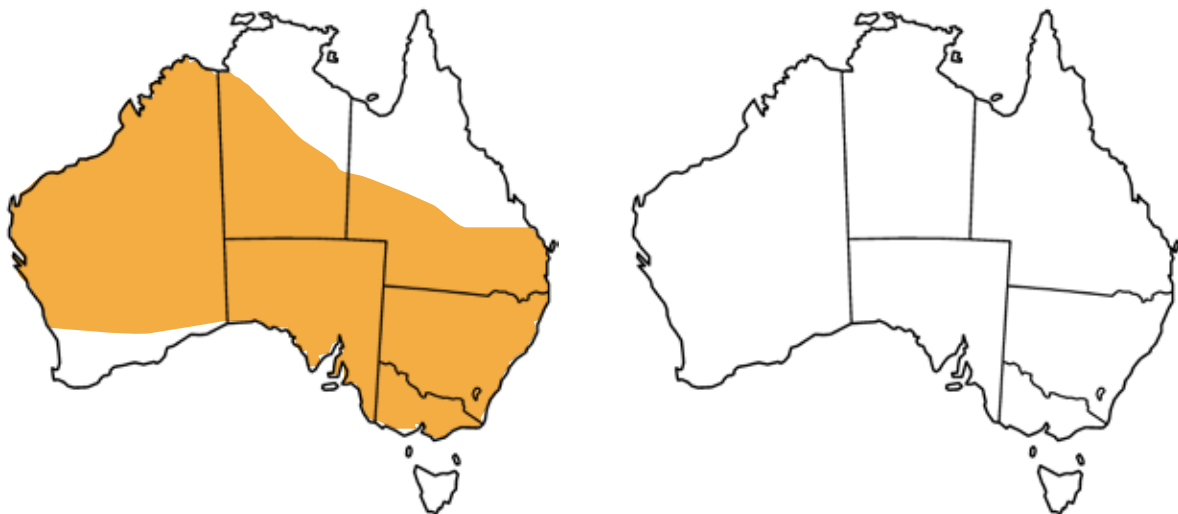
#### Daintree Rainforest

Have a look at the pattern of distribution of ratites (flightless birds) in the image below. The Emu and the Southern Cassowary live in Australia. If you were to go to Africa you would find the Ostrich, to South America the Rhea, in New Zealand the Kiwi and Papua New Guinea has the Northern Cassowary.



Extant ratites of the world (plus the extinct moas and elephant birds) assigned to their geographic regions, all of them part of the supercontinent Gondwana. Sizes not to scale.

Shade in the distribution of the cassowary, a rainforest ratite whose ancestors can be traced back to 30 million years ago when Gondwanan rainforest covered most of the Australian continent



Describe the change in distribution of rainforest habitat in Australia over the last few million years. Suggest the effects this may have had on the distribution of rainforest species in Australia.



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### SECTION 5

#### Kangaroo Walkabout

Can you outline the common features and adaptations of these modern Australian animals?

##### Kangaroo Island Kangaroo



Photo: JRTeams.com

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##### Eastern Grey Kangaroo



Photo: lling

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The largest of the leaf-eating kangaroos (200kg) could stand on tiptoe (2-3m), prop on its tail and reach leaves up to three metres from the ground. The skill is short and deep, an indication it had enough power in its jaws to grind up very tough leaves.

##### Procoptodon Goliath



i) Explain the process of Kangaroo reproduction including specialised adaptations to the Australian environment

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ii) How do these adaptations ensure reproductive success?

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iii) Compare and contrast the difference in breeding seasons of both species displayed in this exhibit.

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### SECTION 6

#### Kakadu Gorge - The living fossil

A living fossils (or relict species) are organisms of living species.

#### Quinkana



Quinkana is an extinct genus of mekosuchine crocodilians that lived in Australia from about 24 million to 40 000 years ago. By the Pleistocene Quinkana was the top predator of Australia. Possessing long legs and ziphodont teeth

#### Saltwater Crocodile



What features or behaviours do saltwater crocodiles have that helps to ensure fertilisation of their eggs?

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What features or behaviours do saltwater crocodiles have that help their young survive?

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### Platypus pools



© Anne Musser

### Quinkana

The ancestor: Steropodon – A monotreme similar to the platypus and echidna. Lived 100 million years ago found in Lightning Ridge. Fossil discoveries of platypus-like animals show that they are ancient but highly adapted to the unpredictable Australian environment.

Describe some unique features of the platypus?

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What sets platypus apart from other placental or marsupial mammals?

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How did our knowledge and classification of the platypus change over time?

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## SECTION 8

### More examples of Megafauna for your own interest!

- **Palorchestes azael**
- **Megalibgwilia ramsayi**
- **Simosthenurus occidentalis**
- **Wonambi naracoortensis**
- **Progyura naracoortensis**
- **Zygomaturus trilobus**
- **Phascogale stirtoni**
- **Sarcophilus laniarius**
- **Sthenurus andersoni** -- Browsing kangaroo
- **Simosthenurus baileyi** - Powerful, thickset browsing Kangaroo
- **Simosthenurus brownei** - Browsing kangaroos ranging in size from quite small (20 kg) to almost as large as Procoptodon
- **Simosthenurus gilli** - Browsing kangaroo
- **Simosthenurus maddock** - Browsing kangaroo
- **Simosthenurus newtonae** - Browsing kangaroo
- **Simosthenurus pales** - Browsing kangaroo
- **Protemnodon anak** - giant wallaby
- **Protemnodon brehms** - giant wallaby
- **Anthropornis nordenskjöldi**
- **Genyornis newtoni**
- **Propleopus oscillans**
- **Sthenurus tindalei**