# ANSWER GUIDE:
# Desert dwellers


## Term 3, 2019

# Part 1: Life in the desert

## PAGE 1

| Activity title | Answers |
|---|---|
| Defining a desert | Australia's deserts are subtropical.<br><br>Antarctica is the driest continent and is a polar desert. |

## PAGE 2

| Activity title | Answers |
|---|---|
| Desert country | 3 - Gibson Desert<br>4 - Great Sandy Desert<br>5 - Tanami Desert<br>2 - Great Victoria Desert<br>1 - Little Sandy Desert |
| What's in a name? | All of them are correct. |
| Where's the water? | Possible answers: Morrissey Creek, Lake Disappointment, Lake Dora, Rudall River, Nullagine River, Lake Mackay, Lake Gregory, Jubilee Lake and more. |
| Duck's in a desert?! | Oasis - a fertile spot in a desert where water is found. |

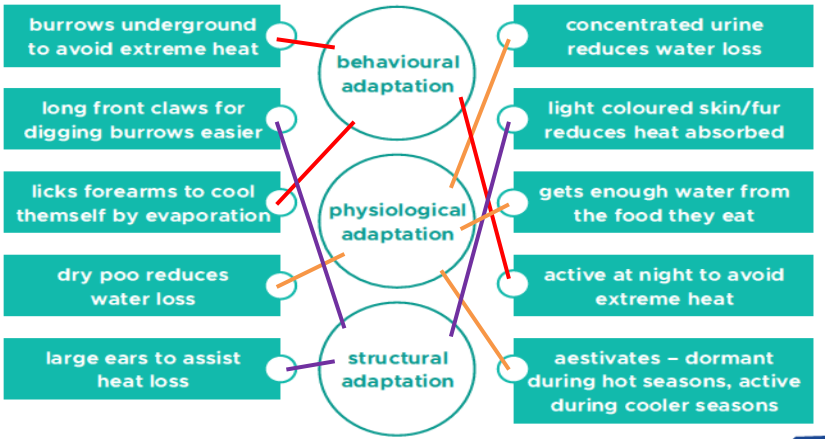
## PAGE 3

| Activity title | Answers |
|---|---|
| Focus on flora | leaves hang vertically – F<br>plant drops its leaves in dry spells – C<br>waxy coating on leaves – E<br>leaves are tough, spiky and indigestible – B<br>shallow root system – D<br>grow far apart – G<br>live for one season, produce seeds, then die – A |
| True or False | during their first dry season, the leaves curl inwards creating a hollow tube shape – True – this reduces water loss as water inside the tube takes longer to evaporate<br>each shoot has its own water supply – True<br>leaves are very bendy in the wind – False - they are covered in silica to prevent bending in the wind<br>termites are the only animal that eat it – True<br>their roots hold the soil/sand together and prevent it from blowing around – True |

| | |
|---|---|
| Short and sweet | |

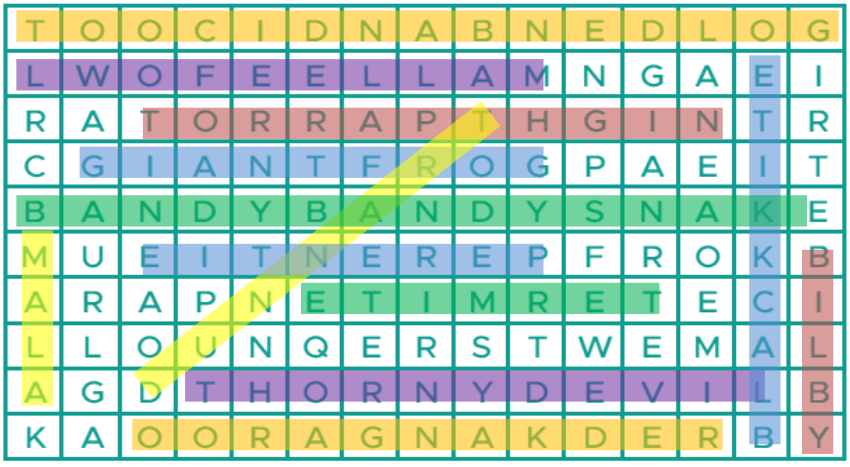
| | |
|---|---|
| a long tap root | Yes – tap root is able to reach water deep in the soil |
| seeds have a protective coating | Yes - retain moisture and make them tough to eat |
| seeds can grow after years of dry conditions | Yes – long after the original plant has died, once conditions are good, the seeds are able to start growing a new plant thus continuing the species |
| red colour of flower | No – not all Sturt's Desert Peas are red |
| leaflets (small leaves) | Yes - lose less moisture by having a smaller surface area |
| downy hairs on stem | Yes - hairs protect plant from frost, wind and sun |
| named after explorer Captain Charles Sturt who found them in 1844 | No |

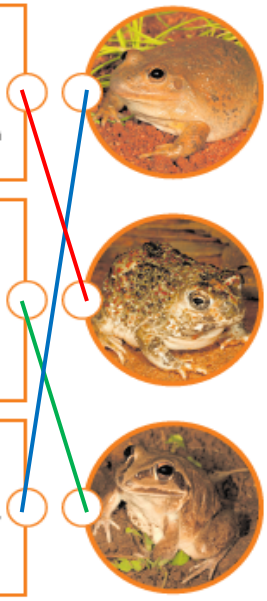
Match the adaptation type




PAGE 4

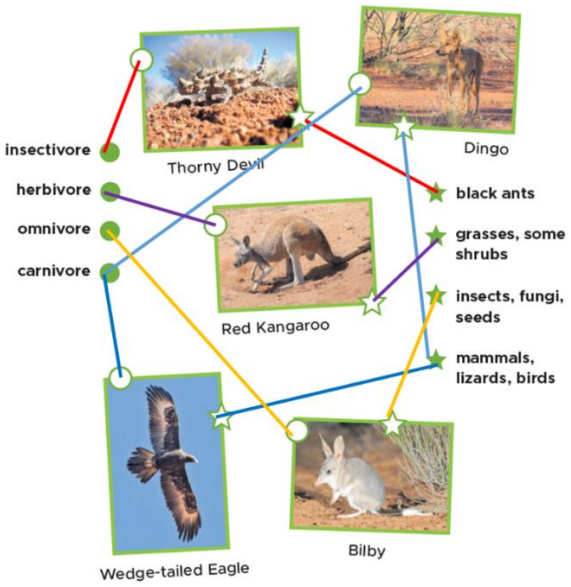
| Activity title | Answers |
|---|---|
| Desert species word-find | |



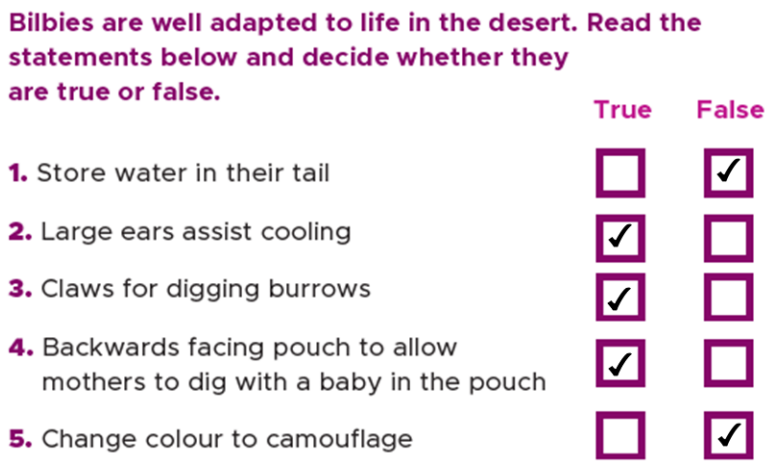
| | |
|---|---|
| Finding frogs | **Desert Spadefoot**<br>Large frog with very short legs. Can be dull orange, olive-grey or brown, with raised black dots. Shelter in burrows over one metre deep during the day but are active on the surface at night.<br><br>**Giant Frog**<br>Large frog with a triangular head and long limbs. Adults tend to be brown with stripes on each side of their head. Can be confused with the invasive Cane Toad. Burrow about 10cm into the ground for shelter during the day, active on the surface at night.<br><br>**Western Water-holding Frog**<br>Large frog with a flattened appearance. Can be pale grey to dark brown. Likely to be a predator to other frog species. Can 'cocoon' itself by shedding its skin while in its burrow and then aestivate until rain comes.<br><br>  |
| Meaning of aestivate | A state of dormancy, similar to hibernation, but takes place in summer rather than winter. |
| Xerocole | xēros means 'dry'<br>col(ere) means 'to inhabit' |

# Part 2: Night and day

**PAGE 2**

<table>
<tr><th>Activity title</th><th>Answers</th></tr>
<tr><td>When is bedtime?</td><td>
<table>
<tr><td>Nocturnal</td><td>Active by night</td></tr>
<tr><td>Diurnal</td><td>Active by day</td></tr>
<tr><td>Crepuscular</td><td>Active at dawn and dusk</td></tr>
</table>
<br>Black Kite – diurnal<br>Red Kangaroo – crepuscular<br>Bilby – nocturnal
</td></tr>
<tr><td>Nature’s balancing act</td><td> 
</td></tr>
<tr><td>Underground mansions</td><td>Possible answers: Bilby, Spinifex Hopping Mouse, Thorny Devil, Perentie, various desert frog species…</td></tr>
<tr><td>Mighty Mice</td><td>  </td></tr>
</table>

<table>
<tr><th>Activity title</th><th>Answers</th></tr>
<tr><td>Night vision</td><td>
<table>
<tr><td>Hearing</td><td>Can hear movements of predators and prey, even if they can’t see them.</td></tr>
<tr><td>Smell</td><td>Can sniff out food in low light.</td></tr>
<tr><td>Touch</td><td>Can feel for things they can’t see.</td></tr>
<tr><td>Moonlight</td><td>Provides a light source to assist with vision.</td></tr>
</table>
</td></tr>
<tr><td>Remote reptiles</td><td>
Read the list below and tick the methods different desert reptiles might use to keep their cool.<br>
☑ move to shady areas<br>
☑ change their scales to a lighter colour<br>
☐ pant and/or sweat<br>
☑ burrow underground, or use other animals’ burrows<br>
☑ move so they have less body parts touching the hot ground<br>
☐ lick themselves to cool by evaporation<br>
☑ can tolerate quite high body temperatures
</td></tr>
<tr><td>Who’s who?</td><td>Woma Python<br>Smooth Knob-tailed Gecko<br>Desert Death Adder<br>Perentie</td></tr>
<tr><td>What the devil?!</td><td>
<table>
<tr><th>Adaptation</th><th>How it helps</th></tr>
<tr><td>Has a system of grooves between its spikes that allow it draw water on its back into its mouth</td><td>Allows it to drink more water as it can drink any water droplets that land on its back.</td></tr>
<tr><td>Can tuck its head down and expose a ‘false head’, a spiky lump of soft tissue between its shoulders</td><td>Protects its head by confusing predators into biting the false head.</td></tr>
<tr><td>Covered in spikes</td><td>Discourages predators from trying to eat it as it is painful to bite and difficult to swallow. The texture assists camouflage so it can hide better.</td></tr>
<tr><td>Can change its shade to a lighter/darker colour</td><td>Being dark coloured increases heat absorption. Once it has warmed up enough it can reduce heat absorption by turning a lighter shade.</td></tr>
</table>
</td></tr>
</table>

| Activity title | Answers |
|---|---|
| Desert icon |  |

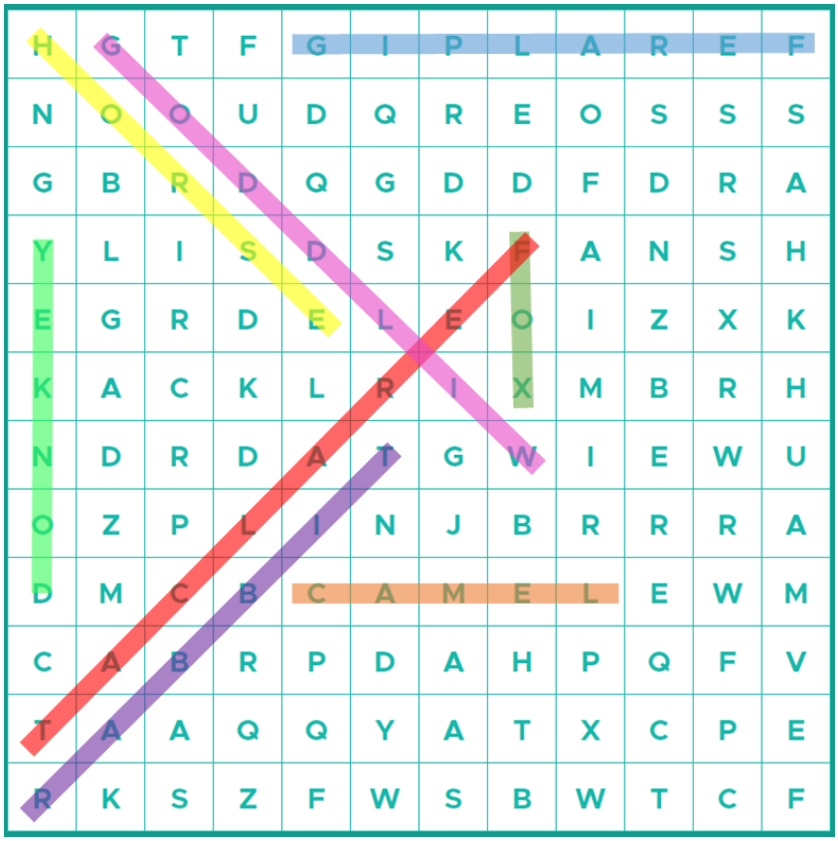
# Part 3: Challenges and champions

## PAGE 1

| Activity title | Answers |
|---|---|
| Rocky future | Possible answers: A national recovery plan has been produced for five species of rock wallaby. Recommended actions are: control feral predators, manage feral herbivores, manage habitat, captive breeding programs to supplement existing populations or establish new ones, survey and monitor populations.<br>There are also many organisations working to help, for example Australian Wildlife Conservancy has predator-free fenced areas, and the Department of Biodiversity, Conservation and Attractions has a Rock Wallaby Recovery Team. |

## PAGE 2

| Activity title | Answers |
|---|---|
| Feasting ferals | They will eat all except for the plants (Spinifex and Hairy Mulla Mulla). |
| Hard to find | The spots break up their outline in the moonlight so it is harder for predators to notice them as they move at night. |
| Feral cat research | Student's own response. |
| Remote cat removal | Explore: Search "Kiwirrkurra community" on Google maps.<br><br>Evaluate: By studying the stomach contents, ecologists can see what that feral cat had recently eaten. By recording the stomach contents of all cats caught in the area, they can collect data on which native species are being preyed on by feral cats. |
| Feral proof fencing | Some possible answers:<br>• Access to a reliable water source within the fenced area (while also ensuring there are other reliable water sources close by outside the fence for other wildlife).<br>• Make sure the right plant species grow there to be a food source for the animals inside the fence.<br>• Choose an area that is not regularly frequented by large herbivores who could easily damage the fence.<br>• Regularly check the fence structure and make repairs as needed to keep feral predators out.<br>• Consider how to prevent burrowing under the fence.<br>• Ensure both males and females of each species are brought inside the fence to allow breeding.<br>• Ensure the size of the fenced area is suitable for the species that will be inside. |

| Activity title | Answers |
|---|---|
| Fighting fire with fire | An intentional and controlled fire which is applied under specific environmental conditions to a predetermined area. The time, intensity, and rate of spread is planned and controlled to achieve a desired outcome. |
| Burning biodiversity | Golden Bandicoot<br>Central Rock-Rat<br>Chuditch<br>Night Parrot<br>Mala<br>Bilby<br>White-throated Grasswren |
| Malleefowl | All are true. |
| Non-native invaders |  |

<table>
<tr><th>Activity title</th><th>Answers</th></tr>
<tr><td>Camel calamity</td><td>
<table>
<tr><th>Fact</th><th>Problem for natives</th></tr>
<tr><td>A camel can drink up to 150L of water at one time. Although they can last long periods of time without water they will drink if it is available.</td><td>A group of camels can literally drink a small waterhole dry, removing a water source natives could have used.</td></tr>
<tr><td>Camels are unhygienic at waterholes, fouling the water with their waste and trampling.</td><td>The waterhole becomes unsuitable for native animals to use.</td></tr>
<tr><td>Camels will eat almost any vegetation. Their thick lips mean they can eat prickly plants that other animals might avoid and will eat all of their favourite plants until there are none left.</td><td>Being willing and able to eat any plant means camels can easily survive in any area. They will compete with natives for plant food sources and also reduce available habitat for natives who shelter in plants.<br><br>They eat plants which are usually safe from predators due to protection of prickles.<br><br>They have caused local extinction of plant species, meaning that type of plant will not naturally grow in that area again. Any animals who used those plants as a food source or for shelter are also impacted.</td></tr>
<tr><td>They are large animals with big feet and walk wherever they like.</td><td>They trample on plants and cause erosion which effects the ability of plants to grow.</td></tr>
<tr><td>In Australia, camels have no natural predators. Most die of old age (around 50 years) or after extended periods of drought. They often live in groups of up to 30 individuals.</td><td>Without human intervention their numbers will not reduce.<br><br>Moving in large groups also means that their impact is increased as groups will drink more water, eat more plants and cause more erosion than an individual camel.</td></tr>
</table>
</td></tr>
<tr><td>Plant pests</td><td>When introduced plants compete with native plants for areas to grow often this leads to native plants dying off. If nothing is done to stop the spread of invasive plants, more and more native plants will be unable to grow in their usual habitat and could face extinction.</td></tr>
<tr><td>Breeding bilbies</td><td>It takes time and money to research what different species needs are in order to successfully breed in captivity. Not all attempts at captive breeding work.</td></tr>
</table>