

ADELAIDE
ZOO



Desert Animals



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Acknowledgements

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For the Teacher

General Information

Welcome to Adelaide Zoo!

The Zoo is a great place for learning. Adelaide Zoo Education aims to support student learning by providing resources to assist classes to have educational and enjoyable experiences at the Zoo.

This booklet will provide a range of activities which may be undertaken by your students during their visit to the Zoo. A map and suggested order of activities is provided to give a logical circuit to travel during the visit.

Animal species change from time to time, and sometimes animals are “off limits” or out of sight during visits, so a flexible approach to completion of activities is recommended.

In planning, please consider whether

- ◆ you would like your class to regroup for lunch, animal feeds, the Discovery Zone or at the Entrance at the end of the visit. If so, relay the times and meeting places to students or supervisors (in writing if possible.)
- ◆ you would like to see the Pandas or use the Nocturnal House: if so, book a time when making the Zoo booking so your students are not disturbed by other school groups.
- ◆ you would like a session with a Zoo Education Officer to support your study theme. Lesson requests are met wherever possible, though at busy times of the year you may need to have a few options with dates to enable a time to be negotiated. Again, this time is arranged at the time of booking your class visit.

If your class is not booked in to a program involving an Education Officer, we will attempt to meet your class at the Entrance on arrival at the Zoo. At this meeting the group will be welcomed and given some information about the Zoo to assist their visit. General behaviour expectations will also be outlined.

Specific information relating to this Zoo Trail will follow for the teachers and for adult supervisors. Please ensure that supervisors have a copy of the relevant pages **before they come to the Zoo** so they can also be mentally prepared to maximise the learning for the students in their care.

Desert Animals Trail - Primary

TEACHER INFORMATION

This Trail is reasonably comprehensive and teachers should feel free to make up a selection of activities from it to suit the abilities of their students and the time available on the day of the visit.

Pre-visit ideas

- ◆ The 'background information' at the front of this Trail discusses features of Desert habitats. Share the relevant information with your students. If information about other habitats is required, you and/or the students will need to do further research or see the 'Habitats Trail' for Rainforests, Grasslands, Wetlands and Coastal habitat information.
- ◆ Help students to understand that animals that live in a particular habitat possess adaptations that help them to survive in that environment. Identify some, eg colour for camouflage, limbs for running and digging, methods of keeping cool, etc, etc.
- ◆ Research to find out where all of the world's Deserts are located. Mark these on a map of the world.
- ◆ Introduce the term 'Food Web' to the children and have them research a desert animal so they can create and draw a Food Web for it, including all of the relevant prey and predatory animals and the plants.

Post-visit ideas

- ◆ Students each choose a desert animal and research to find out various aspects about it. They should then find out about special features of the animal (adaptations) that help it to survive in the desert.
- ◆ Students research the desert habitat and build a diorama or model of it with appropriate animals.
- ◆ Students list all of the 'things' that animals need to obtain from their habitat, ie relationships within an ecosystem.
- ◆ Students have a debate on the topic of "Clearing a desert area for a resort development." Students could argue from the points of view of
 - Animals
 - Land developers
 - Neighbouring graziers
 - Government
 - Public
- ◆ Students draw a desert habitat, showing various animals in their individual 'niches', eg. in burrows, under rocks, ledges, etc.
- ◆ Students draw a desert habitat and associated animals and highlight each animal's special features (adaptations) that enable it to survive in such harsh conditions.

Links to SACSA Framework

Science- Earth and space

- 3.1 Describes the characteristics that sustain life on Earth and changes to the characteristics and their impact over time

Science- Life systems

- 2.5 Explores the relationships between living things by posing investigable questions about features and functions.
- 3.5 Explains the interrelationships between systems within living things and between living things in ecological systems. They relate these ideas to the health of individuals and to threats to the sustainability of ecological systems.

Society and Environment- Place, space and environment

- 2.4 Shows and reports on understanding of the interrelationships between natural and built environments, resources and systems.
- 3.4 Identifies and describes significant resources, explains the threats which endanger them and suggests strategies to combat threats.
- 3.5 Identifies factors affecting an environmental issue and reports on ways to act for sustainable futures

Essential Learnings:

Futures,
Interdependence,
Thinking,
Identity

Key competencies:

KC1 – collecting, analysing and organising information
KC2 – communicating ideas and information
KC6 - solving problems

Background notes for teachers and supervisors on the day.

- ◆ This Trail involves students visiting a selection of enclosures depicting different animals in Desert Habitats.
- ◆ Students will be using their observations skills, reading signs and will perhaps have the opportunity to speak with a Keeper to answer questions about the Habitat Enclosures they visit. Your guidance and suggestions will also assist the students in your group.
- ◆ Each student does not have to do the whole Trail. However, by allocating different parts to each group, the whole Trail can still be completed as a class.
- ◆ The activities have been laid out in a logical order for walking around the Zoo. However, the activities are independent of each other so groups can start at different points on the trail or vary the order they follow.

Key:



Observe carefully



Discuss and share ideas with your group



Write down your thoughts



Did you know?

DESERT ANIMALS – Background Information.

What is a Desert?

Deserts are usually very, very dry and even the wettest deserts receive extremely low rainfall.

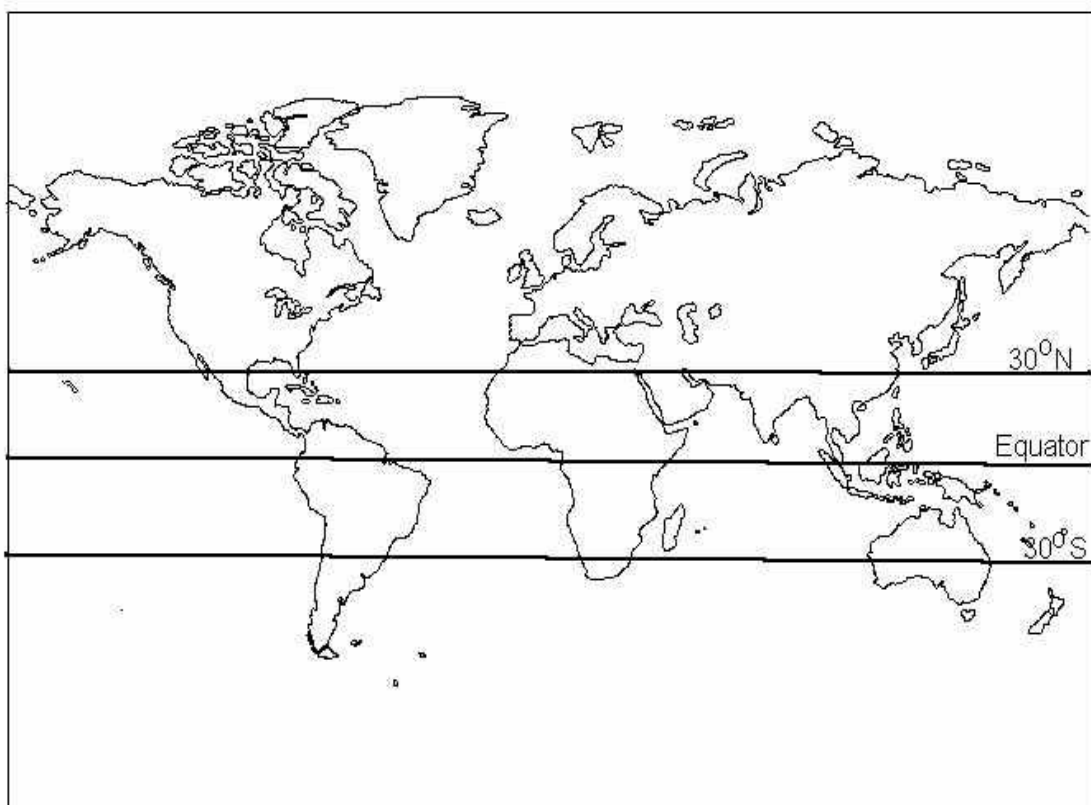
Most deserts are habitats that experience extremes of heat or cold and dryness, sudden flash floods and cold nights. Due to the harsh conditions, some deserts are named accordingly, eg “Death Valley”, “the Empty Quarter” and “the place from where there is no return”.

During the day many deserts are very hot. Temperatures near 40°C are not uncommon. However the same deserts can have temperatures falling dramatically during the nights with heat radiating from the land through the clear skies into space.

NB There are also ‘cold deserts’, eg Antarctica, Gobi and Turkestan.

Where are Deserts found?

Many deserts are found between the latitudes of 30° North and 30° South.



How are Deserts formed?

Some deserts that are located near mountains are caused by the ‘rainshadow’ effect. As air moves up and over a mountain range, it gets colder and is only able to hold a certain amount of moisture, so it rains or snows. When the air moves down the other side, it warms and can hold more moisture, therefore it doesn’t rain as much and a desert is formed.

Desert Animals

Animals in the desert must survive intense heat (and cold), searing sun and lack of water, among other things.

Animals that live in the 'hot desert' have many adaptations or features and behaviours that give them a better chance of survival.

- Some animals never drink, obtaining their water from the food they eat, eg seeds and plants.
- Many animals are Nocturnal, sleeping during the hot day and eating and hunting during the cooler evenings and nights.
- Many desert animals have light or shiny body coverings to reflect much of the sunlight falling on them.
- Some animals rarely spend any time above the ground, but rather burrow down underground where they can escape the severe temperatures, eg Spadefoot toads spend 9 months every year underground and Water holding frogs spend long periods underground encapsulated in a 'cocoon'.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

- M3 Leopard
- K4 Lion
- L11 Lyrebird
- M7 Malayan Tapir
- P6 Mandrill
- G7, Q9 Meerkat
- E12, G6 Otter
- P5 Orangutan
- M13 Peccary
- J8 Pelican
- U13 Penguin
- H5 Pheasant
- L12 Quokka
- S9 Sealion
- K3 Serval
- K7 Squirrel Monkey
- L6 Sun Bear
- I6 Tamarin
- H9 Tasmanian Devil
- P3, M5 Tiger
- N9 White-cheeked Gibbon
- D10 Wallaby
- R9 Water Dragon
- P10 Westpac Envirodome
- G8 Wombat

- Q7 African Wild Dog
- C14 Aldabra Tortoise
- P8 Baboon
- C11 Barbary Sheep
- Q9 Binturong
- E8 Brazilian Tapir
- L9 Cassowary
- I3 Colobus
- M7 Dusky Langur
- G9 Emu
- L3 Fennec Fox
- M9 Flamingo
- I10 Giant Panda
- F7 Giraffe
- E14 Hippopotamus
- E10 Kangaroo
- H8 Koala
- F4 Lemur

Hamadryas baboon

Fennec Fox

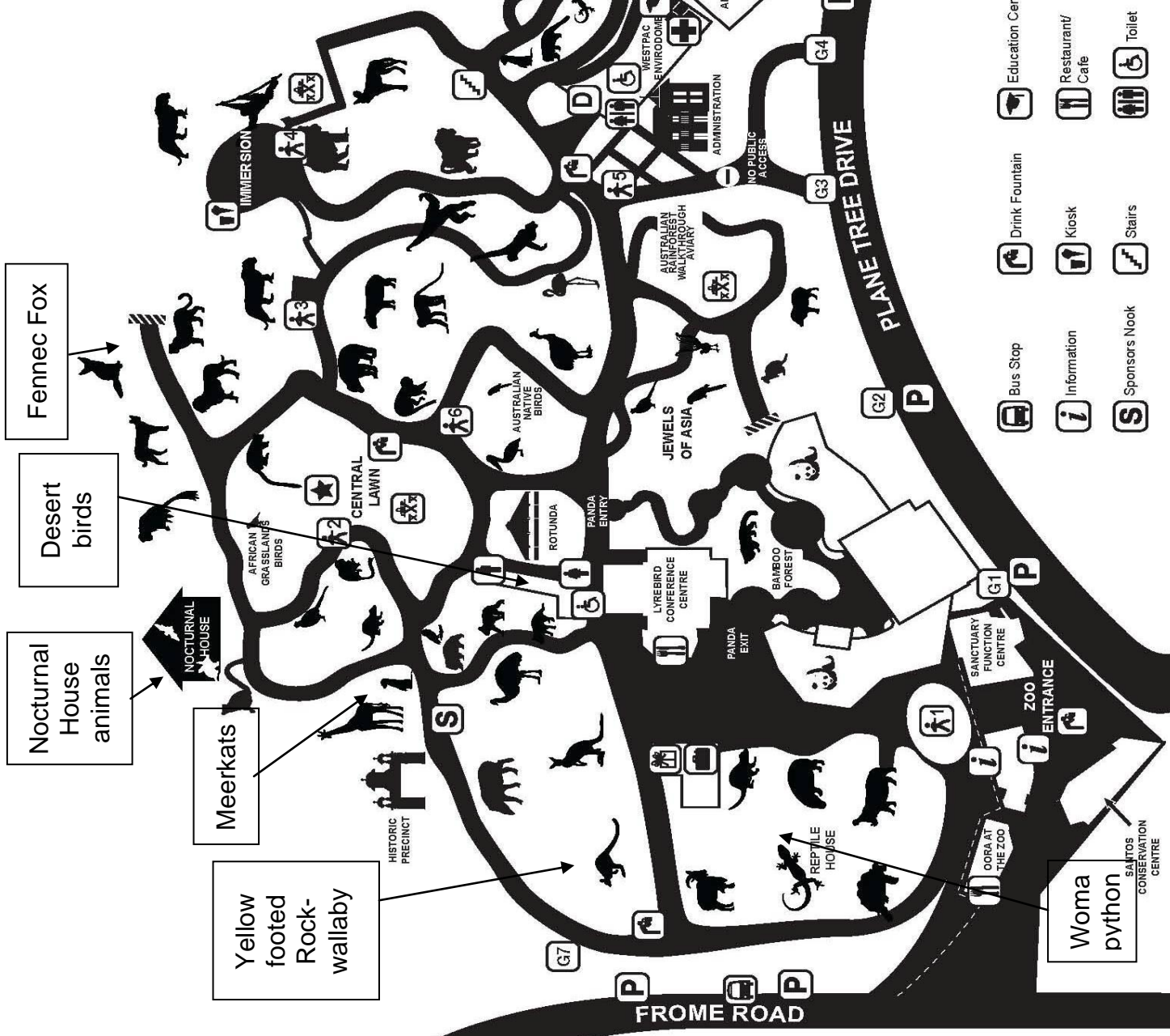
Desert birds

Nocturnal House animals

Meerkats

Yellow footed Rock-wallaby

Woma python



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- Gift shop
- Emergency Assembly Area
- Education Centre
- Drink Fountain
- Bus Stop
- Information
- Sponsors Nook
- Toilet
- Stairs
- Restaurant/Cafe
- Kiosk
- Photo experience
- Walkabout Tour Stop 1-6
- Picnic Area
- Westpac Envirodome Discovery Zone

DESERT ANIMALS TRAIL - PRIMARY

Desert Animals at Adelaide Zoo

?

Although deserts can include those found in extremely cold parts of the World, the desert animals at the Zoo are from 'hot deserts'. These animals are able to survive very hot temperatures, the searing sun and lack of water due to a number of 'adaptations' or special features they possess and behaviours they use.

FENNEC FOX

If the Fennec foxes are not moving around in the enclosure, look for them on the ledge at the back, left hand side of the enclosure.

Compared to the size of its body, the Fennec fox has quite large ears.



- Explain what you think the advantages of this are.



- Name some other animals that have BIG ears. _____

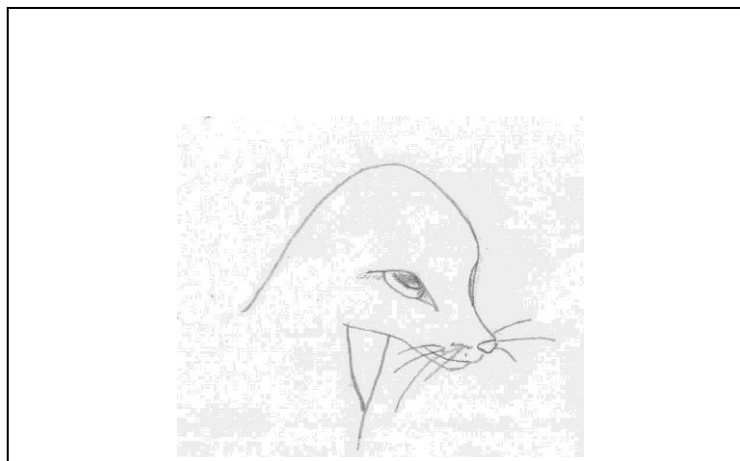


- Do they use them for the same reason? Explain





- Notice the size and shape of the ears and complete the drawing below:



- The Fennec fox has an interesting adaptation that helps it to walk on the loose, desert sand. Describe it.



• Discuss other animals that walk on sand and any adaptations they have to help them to do so! Write down your ideas.



- Draw the enclosure where the Fennec foxes live.



Notice the lack of plants in the enclosure, and take note of the type of **leaf** on the few plants in there.

- Explain how this type of leaf would benefit the plants in a desert.

NOCTURNAL HOUSE ANIMALS



Many of the animals in the Nocturnal House are desert dwelling animals.

- Discuss reasons why this might be the case!



The dark conditions in the Nocturnal House make it difficult to read or write, so for this part of the Trail you should observe and quietly discuss what you see. You can write down your ideas when you are outside again.

The desert animals in the Nocturnal House include the Bilby, Spinifex hopping mice, Fat-tailed dunnart and Mulgara.



Observe and take note of the following aspects of these desert-dwelling, nocturnal animals;

- how fast-moving some of the animals are and how this would be an advantage,
- the parts of Australia they are found, compared to the map below.
- their physical and behavioural adaptations, eg size, how they move, etc
- compare the desert-dwellers' enclosures with the features in the non-desert habitat enclosures.

- Write down what you have discovered from your observations and discussions.



Map of Australia's Desert area.





MEERKAT

- Make a list of words (adjectives) that describe what you think of the enclosure.





Do you think it represents a desert habitat well?



• Comment: _____



- Notice the plants in the enclosure and in the gardens in front. What type of plants are they? C _ _ _ _ _



Can you see the 'spikes'? These are the 'leaves'.



- How does this type of leaf help the plants to survive? _____

- Draw one of the plants with its special 'leaves'.



- Discuss ways that you think the Meerkats stay warm during the winter. Make note below,





Look at the large 'rock' at the end (right) of the large enclosure (there's another one of these in the smaller enclosure).



It's fake, it's hollow and it's heated – it works a bit like your electric blanket! When the alpha female meerkat has babies, they spend their first few weeks in this "den".

If necessary, Keepers can tend to the inside via a small door at the back – you should be able to see it if you look carefully!



- Look to see if any of the Meerkats are standing up or sitting on their haunches on a log or other high vantage point. What are they doing?



- Do some Research and then create a Food Web that includes the following; Meerkat, snake, grass, eagle, scorpion, lizard, grass eating insect, hyena, and maggots.

Do this back at School!

Draw the Food Web in the space below.

YELLOW-FOOTED ROCK-WALLABY



- How many wallabies can you see? _____



Be careful not to be tricked by their brilliant camouflage because their colour is very similar to their rocky habitat.

- These wallabies are **not** nocturnal, although you will see them resting during the day. So, what parts of the day would it be cooler and therefore good times to be feeding?



Dawn and dusk feeders are known as **Crepuscular!**

- Draw a wallaby amongst the rocks in the enclosure.



These wallabies are very agile as they move swiftly across the rocky terrain. They have a very special feature (adaptation) to help them do this easily. Yellow-footed Rock-wallabies have 'granulated' soles and stiff hairs on their feet for extra grip.....a bit like built-in runners !

Draw a picture of what you think the bottom of their feet would look like!





WOMA PYTHON

- To escape the heat of the day, the Woma python hunts at night. It is a



n _ _ _ _ _ animal.



- Suggest the kinds of animals it would hunt for food?



- Can you see the 'non-venomous' icon on the species sign? If the Woma python doesn't have any venom to kill its prey, how does it do it?





- Look at the 'A big appetite' sign and see how a snake's jaws work and why snakes can swallow relatively large prey. Discuss this ability in your group.
- Draw the plants you can see in the enclosure.



- Colour the boxes below that contain words that you think best describe how the Woma python would feel,



| | | | |
|----------|-------|--------|--------|
| SLIPPERY | HOT | SMOOTH | WET |
| DRY | SILKY | COLD | COARSE |
| HARD | WARM | SOFT | ROUGH |

HAMADRYAS BABOON

It states on the sign that these monkeys 'sleep on rocky outcrops for security'.

-  • Discuss how this behaviour would keep them safer. Write your ideas down here.



- You may see the baboons 'grooming' each other, ie picking through each other's hair. Why do they do this?



After discussing your own ideas, read the sign, 'We do not have fleas'.




Baboons are a social or group-living animal. Living in Africa, what predators do you think groups of baboons need to share their environment with?





- What is the 'group' name of baboons and other monkeys? t _ _ _ _
- With a scarcity of food in the desert and living in such large groups, what do you think the baboons do to make sure they have enough food to eat?



 Observe the baboons for a while. See if you can work out which one is the most dominant, or the leader!



- List the things you saw happen that made you come to this conclusion

- If you have time, quickly sketch the dominant baboon and complete your drawing later!

DESERT BIRDS

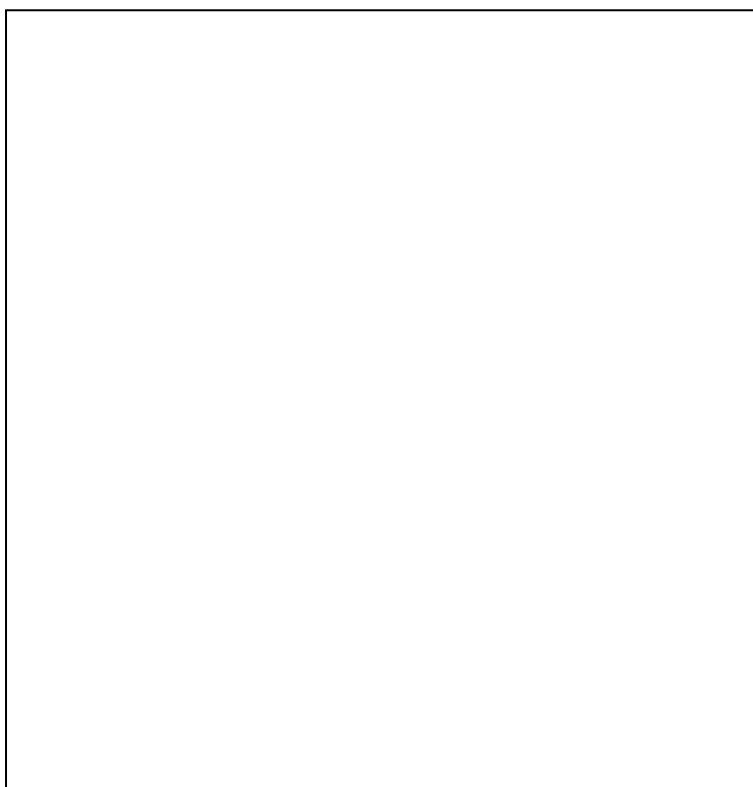
Visit the Arid Australia bird aviary next to the Rotunda to see and learn about desert birds, including the Cockatiel, Australian bustard, Blue-winged kookaburra, Princess parrot, Pink cockatoo and Flock pigeon.


Choose one of these birds to study in more detail.



- The name of the bird chosen is _____

Sketch this bird in the space below, and use labels to show parts of its body which help it to survive in its desert habitat. Pencil in the colours, and at school you could complete the drawing by adding the correct colours.



-  Do you think the colouring of your bird is an adaptation, which helps it to survive? Explain your answer.





Read about the breeding cycles and movements of desert birds – see the “Boom Bust” sign.

- Explain why desert birds don't always breed at the same time each year, like bird species from wetter climates in Australia?