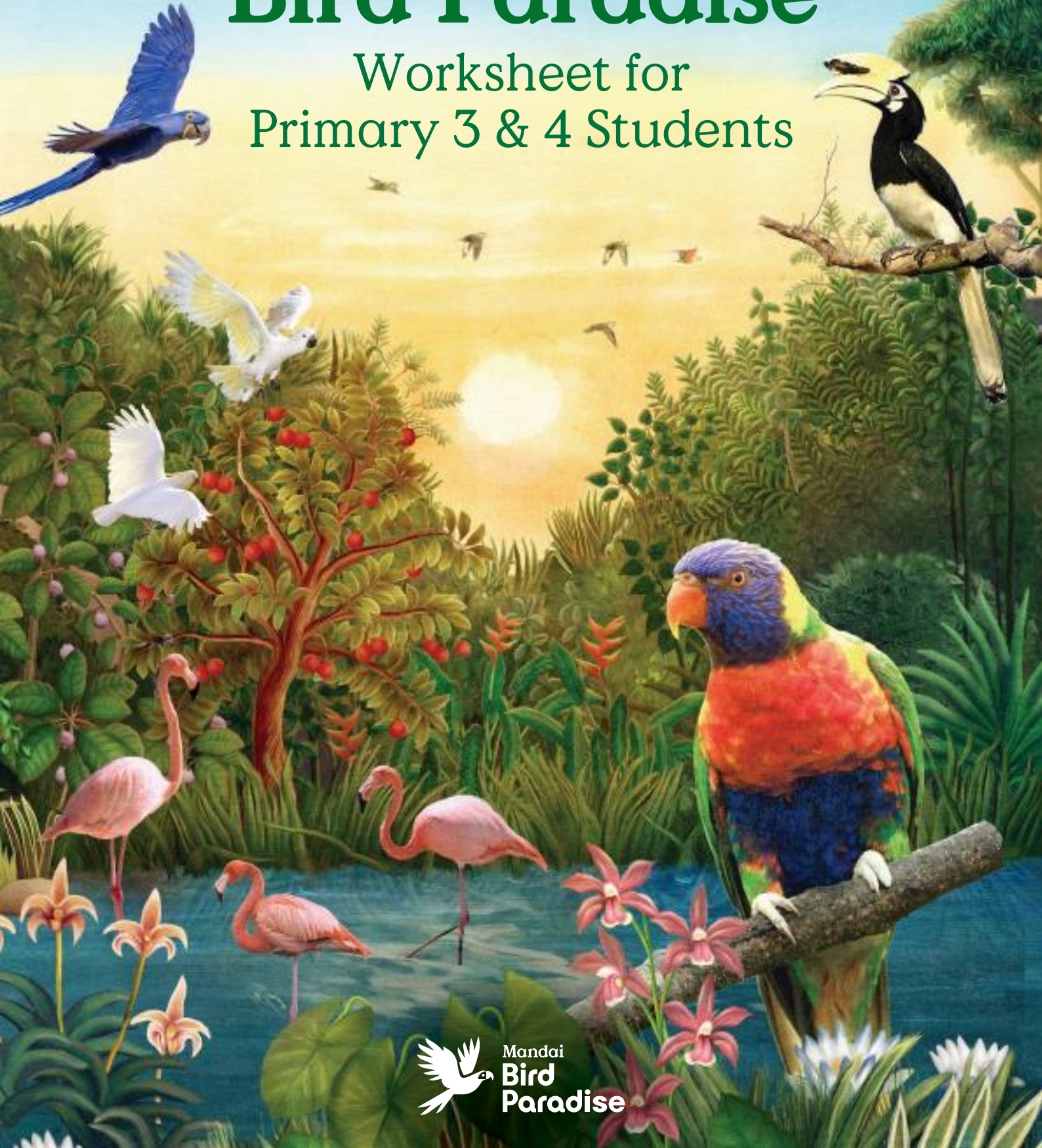


An Educators' Guide to Bird Paradise

Worksheet for
Primary 3 & 4 Students



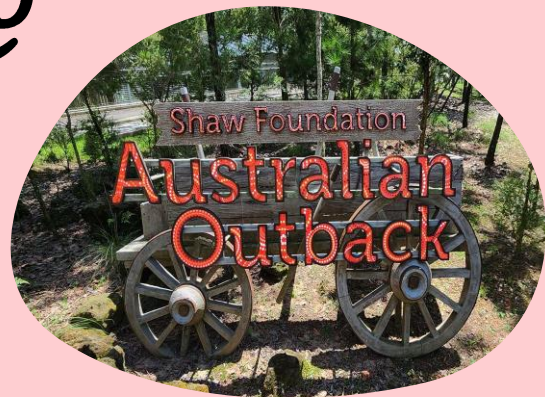
Mandai
**Bird
Paradise**

Everybirdy, Let's Have Fun!

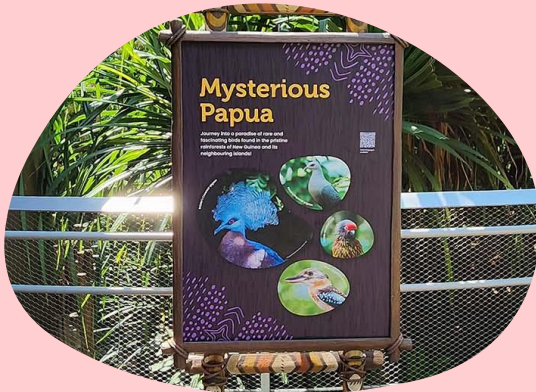
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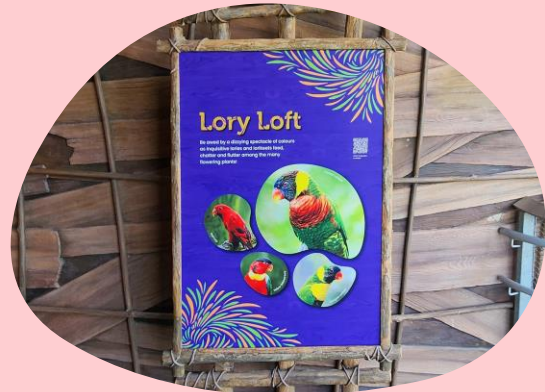
Penguin Cove



Australian Outback



Mysterious Papua

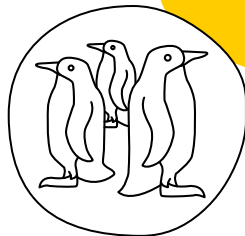


Lory Loft

What's Inside?

Bird Paradise is a huge place.
We recommend that you focus on a section of Bird Paradise
for learning journeys. This guide features:

Worksheets*
focusing on
**science syllabus of diversity
and cycles** through 3 topics:



Penguins



Courtship



Feet & Flight

* with answer sheets

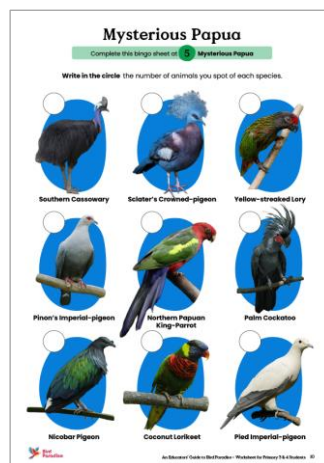
4 bingo sheets
for bird spotting at:



Penguin Cove



Australian Outback



Mysterious Papua



Lory Loft

Suggested Itinerary

- 1 Start from entrance
- 2 Penguin Cove (Level 1 & 2)
- 3 Penguin Cove (Level 3)
- 4 Australian Outback
- 5 Mysterious Papua
- 6 Courtship Discovery Hub
- 7 Lory Loft
- 8 Feet & Flight Discovery Hub
- 9 Shuttle back to entrance



Suggested
Duration:
120 mins



Entrance



Penguin Cove
(Level 1 & 2)



Penguin Cove
(Level 3)



Australian
Outback



Mysterious Papua



Courtship
Discovery Hub



Lory Loft



Feet & Flight
Discovery Hub

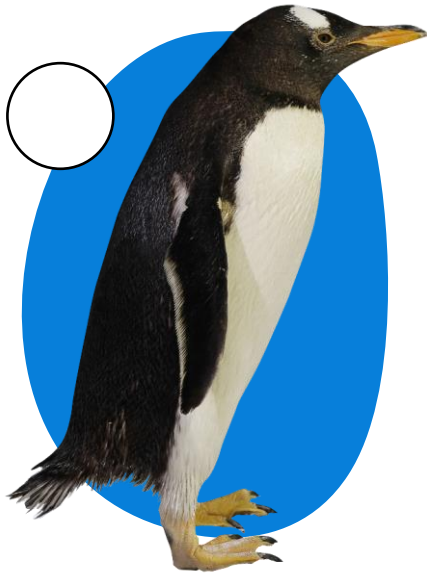


Shuttle back to
Entrance

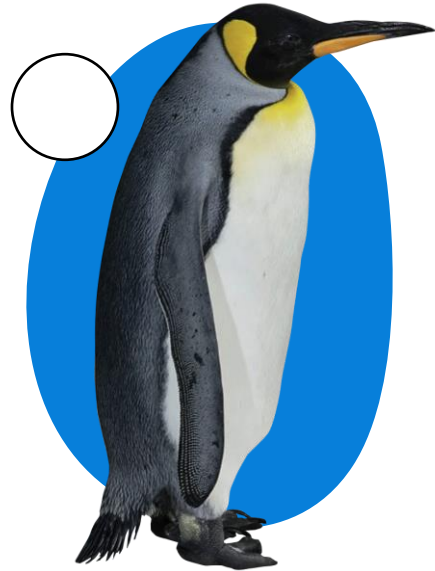
Penguin Cove

Complete this Bingo Sheet at **2** Penguin Cove (Level 1 & 2)

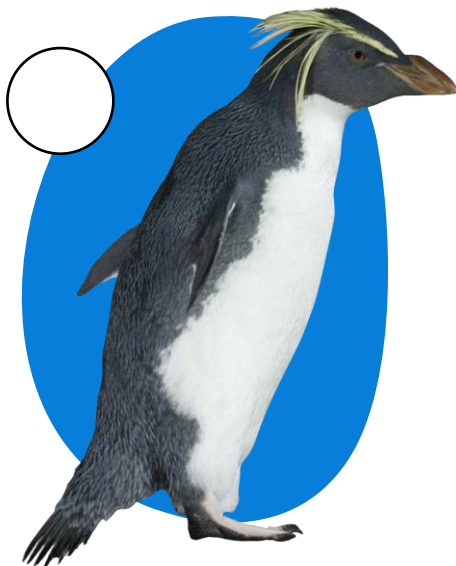
Write in the circle the number of animals you spot of each species.
Can you complete the names?



G_nt__ Penguin



K___ Penguin



Northern R__kh_p__r Penguin



Hu_b__d_ Penguin



Other than penguins, look out for the **Inca terns**! Found in the cold waters of South America, you can recognize the Inca terns by their nice white moustache and bright red feet. They hunt for fish on water surfaces and also by plunge diving.

Penguins

Complete these activities at **2** Penguin Cove (Level 1 & 2)

Penguins are living things

Hint: Find the signages for each penguin!

Qn 1. Learn more about one of the penguin species found in Penguin Cove and fill in the details below.

Penguin Species: _____

Diet: _____

Habitat: _____

One fact I learnt about penguins:

Who is that penguin?

Qn 2. Observe a penguin for 30 seconds.

Draw this penguin.

Identify and label the body parts.

Helping Words:

beak

flipper

webbed feet

feather

crest

Penguins

Complete these activities at **2** Penguin Cove (Level 1 & 2)

Flightless Birds

Qn 3. Penguins are flightless birds. Circle 3 characteristics of a bird:

has scales

breathes through gills

has wings

lays eggs

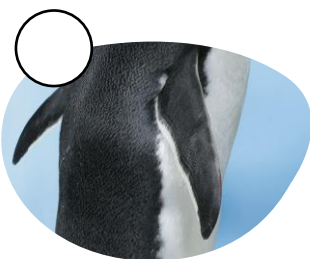
gives birth to live young

has feathers

has 3 pairs of legs

has hair

Qn 4. These wings and feet belong to different birds. Discuss their similarities and differences with a buddy. In the circle, tick the body parts that belong to a penguin. How do you think these features help the penguin survive in its habitat? Discuss.



Complete these activities at **3** Penguin Cove (Level 3)

Body Covering of a Penguin

Qn 5. Different groups of animals have different body coverings. Mammals, like

humans, have _____, while birds like penguins have _____.

Qn 6. List 2 functions of a penguin's body covering:

1. _____

2. _____

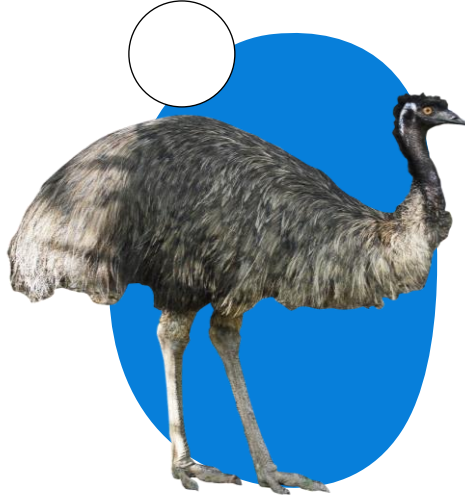
Australian Outback

Complete this bingo sheet at **4** Australian Outback

Write in the circle the number of animals you spot of each species.



Tawny Frogmouth



Common Emu



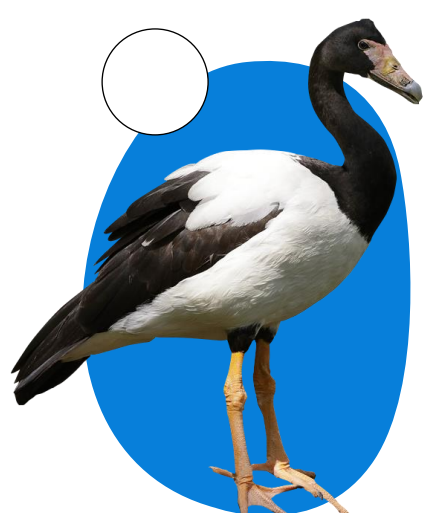
Red-necked Wallaby



Major Mitchell's Cockatoo



Laughing Kookaburra



Magpie Goose



Masked Lapwing



Red-tailed Black-cockatoo



Scaly-breasted Lorikeet

Australian Outback

Complete these activities at

4

Australian Outback

1. Let's Draw!

Pick one animal and observe it for five seconds. Draw it out.

Get your buddy to find the animal you have drawn.

2. How many of this species can you spot?

3. Which part of the habitat can you find them?

(e.g. on trees, rocky cliffs, in ponds)

4. Classify these animals

Try to separate the animals you just saw into groups according to one of the features they have in common (e.g. type of body covering). List three different ways that you can group them:

1.

2.

3.

Mysterious Papua

Complete this bingo sheet at **5** **Mysterious Papua**

Write in the circle the number of animals you spot of each species.



Southern Cassowary



Sclater's Crowned-pigeon



Yellow-streaked Lory



Pinon's Imperial-pigeon



**Northern Papuan
King-Parrot**



Palm Cockatoo



Nicobar Pigeon



Coconut Lorieet

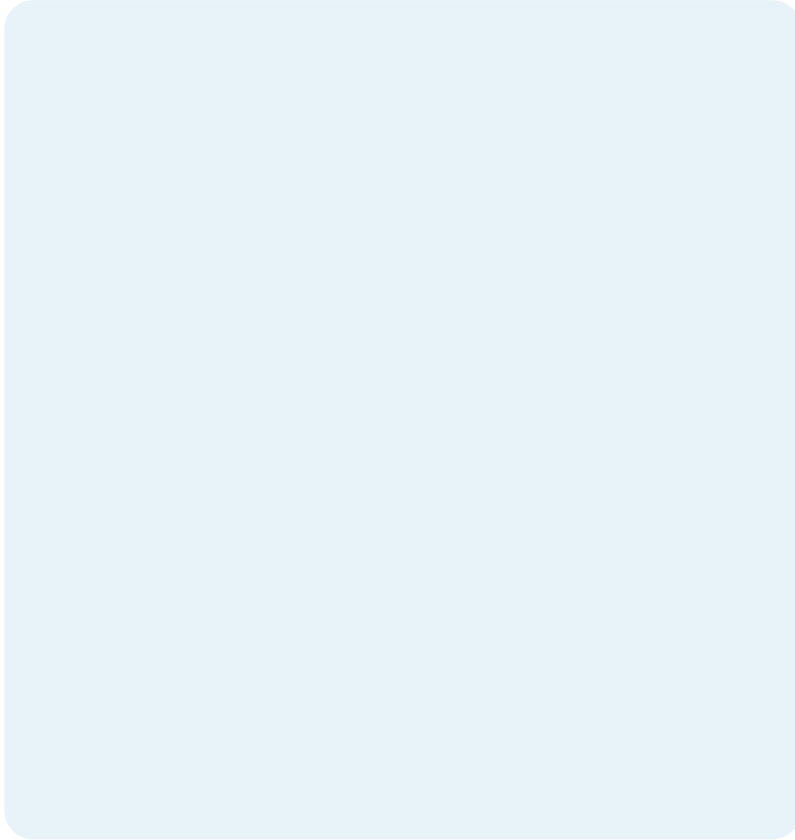


Pied Imperial-pigeon

Mysterious Papua

Complete these activities at **5** Mysterious Papua

1. Let's Draw!



Landsaped to look like the coastal forests of lowland Papua, this aviary showcases the stilt roots of various pandan species. Their special roots bind soil and prevent erosion*.

Spot the **pandanus palm** or **pandan ikan**. Draw it out.

Hint: Find the signage for the Pandans

Label the **different parts** of the plant on the left. Is this a **flowering** plant? _____

** Erosion: Soil/stones being gradually damaged and removed by the waves*

2. Flightless bird

Hint: Find the signage for this bird

What is the name of the flightless bird found in this aviary? _____

a) Compare its legs and feet to those of a bird that can fly. Write down one **similarity** and one **difference**. What might this flightless bird use its legs and feet for?

b) Observe the casque on the top of its head. What do you think they use it for?

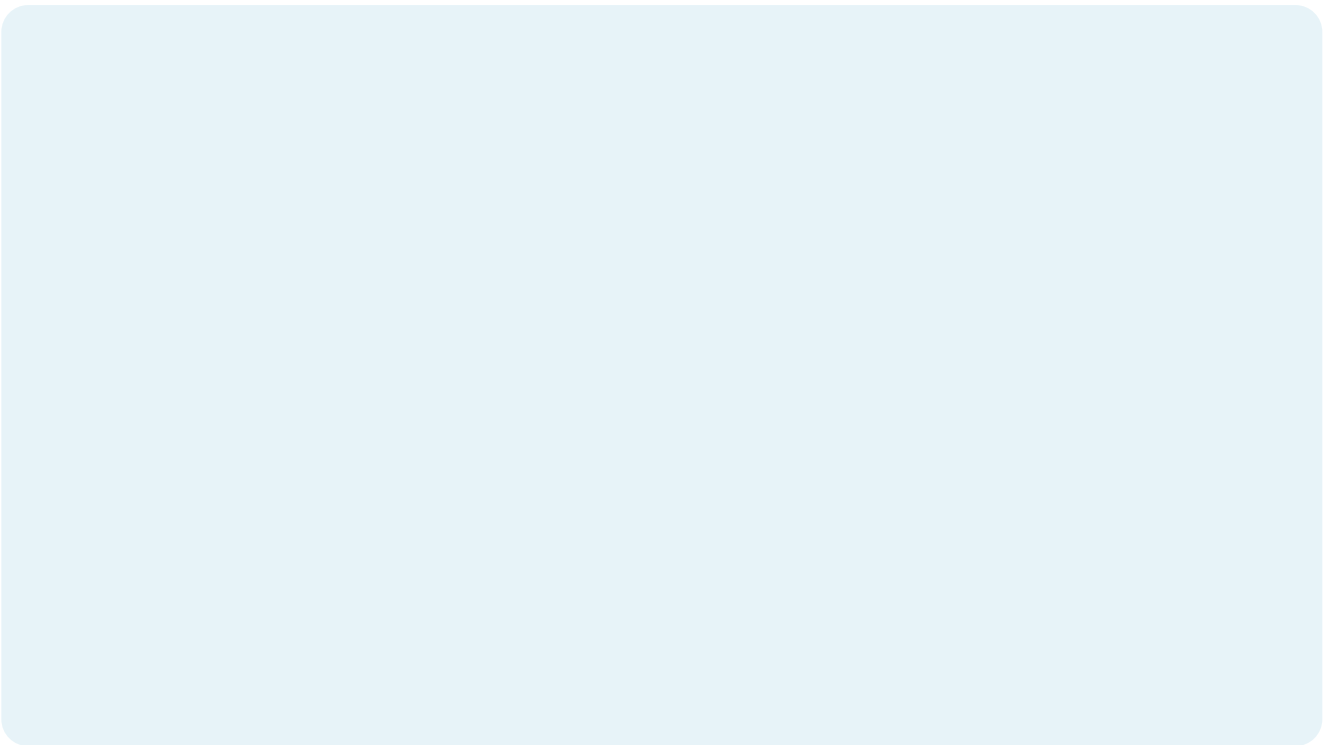
Courtship Discovery Hub

Complete these activities at **6** Courtship Discovery Hub

About Life Cycles and Courtship Displays

Living things reproduce to have young. Male birds put up courtship displays to advertise their stamina and good health. These displays help female birds select a mate with the best genes to produce healthy young.

1. Draw the life cycle of a bird in the space below and label the different stages. At which stage of the life cycle do birds put up courtship displays? **Circle** that stage.



Watch the videos or explore the signages around to find out more about the wide variety of courtship methods used by male birds to attract females.

2. List two different types of courtship displays used by the male birds.

1. _____
2. _____

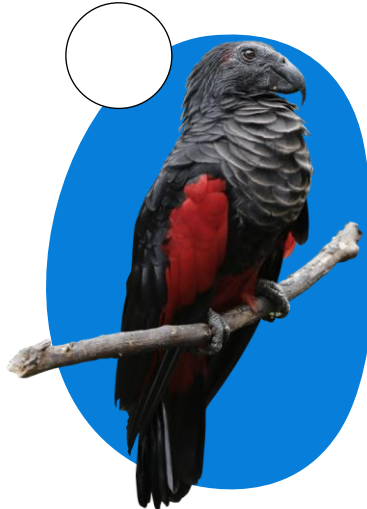
Lory Loft

Complete this bingo sheet at **7** Lory Loft

Write in the circle the number of animals you spot of each species.



Northern Cassowary



Pesquet's Parrot



Victoria Crowned-pigeon



Red Lory



Yellow-bibbed Lory



Marigold Lorikeet



Red-billed Blue Magpie



Blue-eyed Cockatoo



Chattering Lory

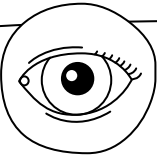
Lory Loft

Complete these activities at **7** Lory Loft

Mindfulness Activity: Sensing Nature

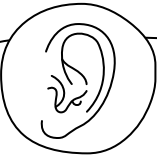
Find a comfortable spot. Now, try to name:

5 things you can see, **4** things you can hear, **3** things you can smell, **2** things you can touch and **1** thing you can taste.



Classify the five things you see. Draw a table in the space below to show your classification. What are they classified based on?

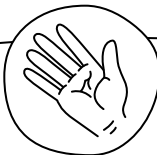
Bonus: Try to identify the birds that you have spotted using the signages around.



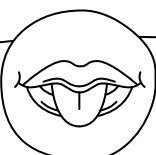
Can you draw a pattern to represent the sounds you hear?



Can you identify where/who the smell is coming from?



What types of materials are the items made of?



What might you want to taste?

Feet & Flight Discovery Hub

Complete these activities at **8** Feet (Level 1) & Flight (Level 2) Discovery Hub

1. Airborne Inspiration

Hint: Find the signages along walls of Flight Hub (Level 2)

Humans have always looked up to birds, with many great inventions being inspired from the observation of birds. Write down one such invention and explain how it was inspired by birds.

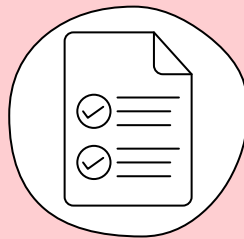
2. Amazing feet

Bird toes can come in different shapes, adapted to help birds survive well in their environment. Visit Feet Hub (Level 1) and fill in the space below with the appropriate toe shapes. Describe the toe shape and explain how it helps the bird.

Birds that **live in trees**

Birds that **live near water**

Answer Sheet



Answer Sheet

Penguin Cove [Page 5]

Clockwise from top left:

Gentoo Penguin, King Penguin, Norther Rockhopper Penguin, Humbolt Penguin

[Page 6]

Q1:

Species: Refer to P5

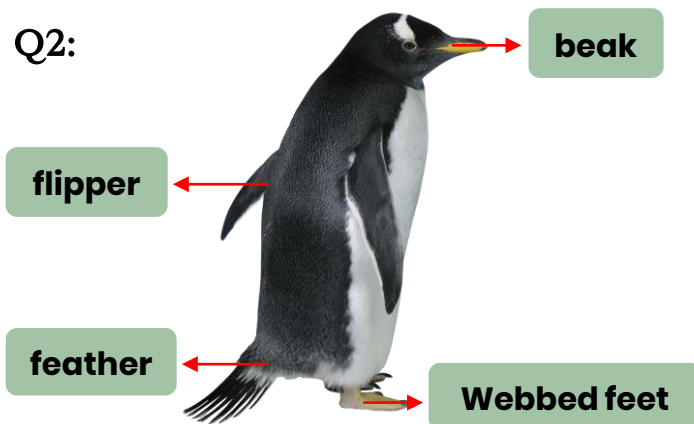
Diet: crustacean, fish, squid, krill

Habitat: rocky coasts, oceans, intertidal, coastal areas

One fact: [suggested answer]

- Penguins have 3rd eyelids
- Kind penguin is the 2nd tallest penguin
- Any facts that can be found on the signages around

Q2:



[Page 7]

Q3: Has feathers, has wings, lays eggs

Q4:



feet



flipper

Suggested Answers

Penguins' webbed feet and flippers help them swim fast and steer (change direction) effectively in water

Q5: Mammals: Hair, Birds: Feathers

Q6: (a) Waterproof (b) Keep warm

Australian Outback [Page 7]

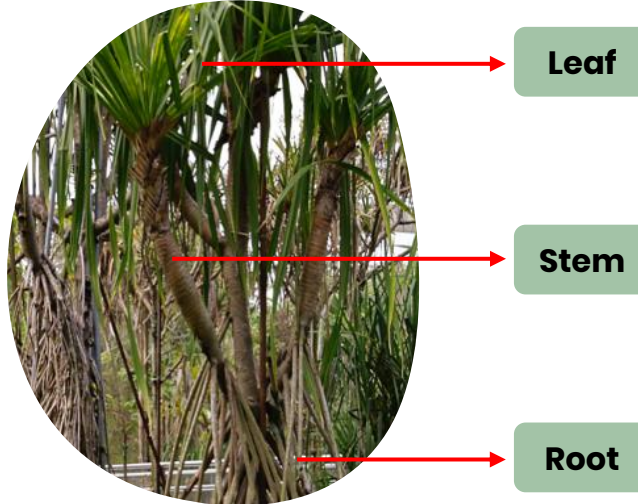
Q4: Suggested Answers

Shape of beaks (curved, straight), colours, bird sizes, diet (carnivore, omnivore, herbivore), IUCN status (least concerned, vulnerable, endangered), which part of the environment they are found in (on the trees, on the floor, in the water)

Answer Sheet

Mysterious Papua [Page 12]

Q1: Yes, this is a flowering plant.



Q2: Southern Cassowary

Suggested Answers:

a) Similarities: Sharp claws, Two Feet

Differences: Long and thick vs short and thin, big claws vs small claws

Function: Powerful legs allow the cassowary to run quickly and jump high to get away from danger. The sharp claws are also adapted for defense.

a) Any of the following:

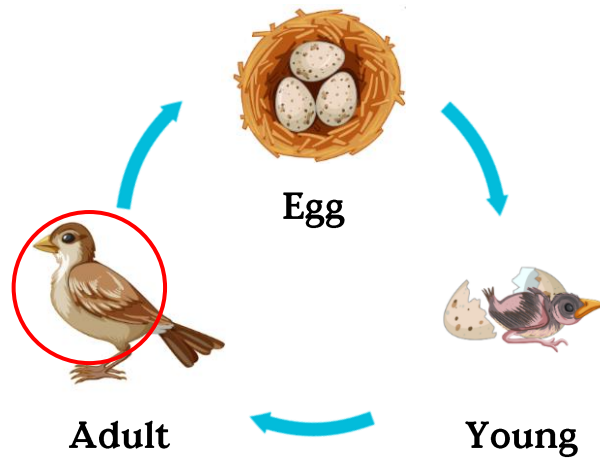
- The cassowary uses its casque like a helmet to push through forest undergrowth.
- Cassowaries use their casques to amplify their calls, especially in dense forests.
- The casque can be used to regulate its body temperature, radiating or conserving heat when needed.

Answer Sheet

Courtship Discovery Hub

[Page 12]

Q1:








Q2: Suggested Answers

- Shape shifters: Some birds have special feathers to transform their shapes to impress
- Builders: Some birds build impressive structures
- Performers: Some birds put up elaborate shows (movement, dance, call)

Lory Loft

[Page 14]

Suggested Answers:

-  Living vs Non-living things, or any other forms of classification
-  Drawing of bird calls, wind, voices etc
-  Smell of rain, soil, food, poop etc
-  Materials of metal railing, foot path, benches, signages, leaves etc
-  Imagine the taste of the fruits, nectar, leaves, water etc

Answer Sheet

Feet & Flight Discovery Hub [Page 15]

Q1: Suggested Answers

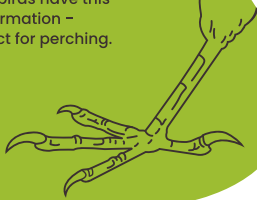
- Ornithopter; mimicked flapping wings
- Modern aircraft; imitation of the shape of gliding birds' wings
- Drones; inspired by hummingbirds' movement

Q2: Suggested Answers

Birds that live in trees

A GOOD GRASP

Most birds have this toe formation – perfect for perching.



BACKSTOP

The two backward-facing toes of a woodpecker help anchor it to a tree trunk as it chips away at the wood.



NIMBLE FEET

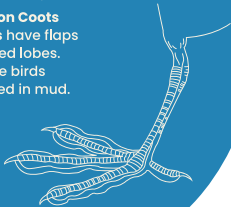
What do parrots have in common with footballers? They can be right or left-footed. Their toe arrangement allows them to hold objects or manipulate them with great dexterity.



Birds that live near water

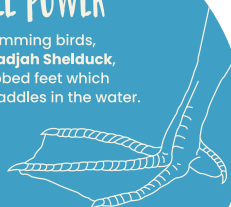
LIFT THE FLAPS

Birds like **Common Coots** and **Little Grebes** have flaps on their toes called lobes. Lobes prevent the birds from getting mired in mud.



PADDLE POWER

Many swimming birds, like the **Radjah Shelduck**, have webbed feet which act like paddles in the water.



MIRACLE FEET

African Jacanas appear to walk on water! Their long toes spread their body weight over a larger area, allowing them to walk on flimsy lily pads.



UNSINKABLE

Even though it is a large bird, the **Shoebill** has long toes to distribute its weight so it does not sink into muddy or swampy areas.

