



**Year 5**

**Wild Transformations: Life Cycles**

**Lesson 1 – Form and Behaviour Features of Birds?**

# Hobart Zoo and Aquarium

Stuart Webster has been enchanted by animals and zoos since a young age. Growing up with limited means, he found immense joy wandering Melbourne Zoo alone, promising himself that one day he would own one. That promise became his lifelong mission — pursuing the dream through keeping animals and travelling the world to study hundreds of zoos.

His journey was far from simple. After leaving school early and facing addiction and personal hardship, he rebuilt his life, found stability, and created the financial footing that eventually allowed him to buy the dream.



In 2024, Webster purchased Zoodoo Zoo in Tasmania and rebranded it as Hobart Zoo & Aquarium. He has since launched major upgrades, from new exhibits and an aquarium with future plans for accommodation beside the lion habitat and plans for future species including red pandas, otters, cheetahs and eventually gorillas.

Stuart reinvests everything into creating a world-class, welcoming zoo with a team that share his fierce passion for animal conservation and education. He is finally living the dream he held onto for 50 years!

# HZAA Owner Stuart Webster





# Six Pillars of Conservation at Hobart Zoo and Aquarium



## Pillar One

Supporting ex-situ animal populations



## Pillar Two

Educate and inspiring positive change for wildlife



## Pillar Three

Protecting wild species and habitats



## Pillar Four

Enhancing the value of zoos for nature and society



## Pillar Five

Sustaining and caring for our local ecosystems



## Pillar Six

Maintaining environmental sustainability



# Form and Behaviour Feature of Birds

## Learning Intention

We are learning to identify form and behaviour features that help animals survive in their habitats.

## Success Criteria

We will be successful when we describe how form and behaviour features help birds survive.



# What birds live at Hobart Zoo and Aquarium?

## Birds of Hobart Zoo and Aquarium



# Birds of Hobart Zoo and Aquarium



# What features do these birds have?



Princess Parrot



Swift Parrot



Female Red-tailed Black Cockatoo



Male Red-tailed Black Cockatoo



Bar-shouldered Dove



Macaw



Tawny Frogmouth



Budgerigar



Green Rosella



Eclectus Parrots



Kookaburra



Cockatiel



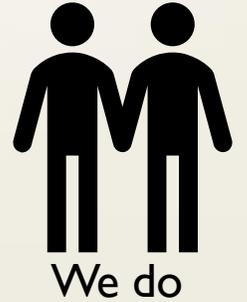
# How do they help them survive?

wings

feathers

beak

claws



# Reading

## Year 5 – Form and Behaviour of Birds

**Form (noun)** what something *looks like*. The form of a bird includes a light skeleton and wings.

**(adjective)** to *make, produce or construct*. Birds form a beak and a lightweight skeleton when they are growing in the egg.

**Behaviour (noun)** what something *does*. Its actions and the way it responds to the world around it.

Birds have many special physical features that help them survive in their environment.



Figure 1 - Macaws have a hook beak.

Their feathers form a protective outer covering that keeps them warm, helps them fly, and can even be used for display. vital for survival.

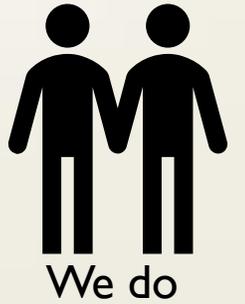
A bird's beak is another important feature. The shape of a beak can form a specialised tool that helps a bird eat certain types of food—for example, kookaburras have strong, pointed beaks that form an effective shape for catching live prey, while parrots have curved beaks that form powerful seed-cracking tools.

Birds also show behaviours that match their physical features. Many birds migrate, flying long distances to find food or warmer weather. Others build nests using materials like sticks, grass, or even spiderwebs, which can form strong structures depending on what their bodies and habitats allow. Some birds use calls and songs to communicate, warn others of danger, or attract a mate.

Together, these physical and behavioural features form the structures and systems birds need to survive, find food, protect themselves, and raise their young.



Figure 2 - Tasmanian Wedge-Tailed Eagle in its nest.



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# Summary

Design an infographic to summarise the key features of birds in the text.



You Do

## Include

- title
- facts about features
- how the features help birds survive
- photos/pictures

Keep it short! Less is more when it comes to writing on an infographic.

This example is our sign for the Red-Tailed Black Cockatoos at Hobart Zoo and Aquarium.



## Red-Tailed Black Cockatoo

CALYPTORHYNCHUS BANKSII

*Jackie*



*Jack*



According to Australian folklore, Red-Tailed Black Cockatoos are feathery weather forecasters! People say they fly ahead to warn of storms, and some even believe the number of birds tells you how many days it will rain.

### RANGE & HABITAT

Red-Tailed Black Cockatoos are found in forests and woodlands across Australia. They will also inhabit scrublands, grasslands, and wetlands, and prefer certain tree species, such as Eucalyptus. These large birds will move around each season to find food.

### DIET

Like other Cockatoos, Red-Tailed Black Cockatoos eat seeds, fruit, nectar, flowers and sometimes insects. Their strong beaks let them crack open hard seed cases, and dig insects out of tree branches.

### SOCIAL STRUCTURE

Red-Tailed Black Cockatoos nest in tree hollows in Eucalyptus trees. The female will incubate the eggs, while the male will feed her. In winter, large noisy groups of over 200 birds will flock together at a source of food.

EXTINCT - EXTINCT IN THE WILD - CRITICALLY ENDANGERED - ENDANGERED - VULNERABLE - NEAR THREATENED - **LEAST CONCERN**

# GALLERY WALK





## Lesson 2

**How does the shape of a bird's beak help it survive?**

Hobart Zoo and Aquarium - 2026

# Check for Understanding

Choose the best answer



You do

## Question 1

Feathers are formed to ...



- A** ...protect birds by keeping them warm and dry.
- B** ...protect birds by camouflaging them from predators.
- C** ...protect birds by keeping them warm, dry, camouflaged, to attract mates and for flexibility when flying.



# Check for Understanding

Choose the best answer



You do

## Question 1

Feathers are formed to ...



- A ...protect birds by keeping them warm and dry.
- B ...protect birds by camouflaging them from predators.
- C ...protect birds by keeping them warm, dry, camouflaged, to attract mates and for flexibility when flying.**



# Check for Understanding

## Choose the best answer



You do

### Question 2

### Why do parrots have curved beaks?



- A** To scoop water from rivers
- B** To crack open seeds and nuts
- C** To dig holes in tree trunks



# Check for Understanding

## Choose the best answer



You do

### Question 2

### Why do parrots have curved beaks?



**A** To scoop water from rivers

**B** To crack open seeds and nuts

**C** To dig holes in tree trunks

# Check for Understanding

## Choose the best answer



You do

### Question 3

Which behaviour helps some birds survive different seasons?



- A** Sleeping during the day
- B** Migrating to find food or warmer weather
- C** Sitting still to hide from predators



# Check for Understanding

## Choose the best answer



You do

### Question 3

Which behaviour helps some birds survive different seasons?



- A** Sleeping during the day
- B** Migrating to find food or warmer weather  
Swift Parrots migrate to Tasmania to breed and for food, the Blue Gum during warmer months.
- C** Sitting still to hide from predators



# Check for Understanding

## Choose the best answer



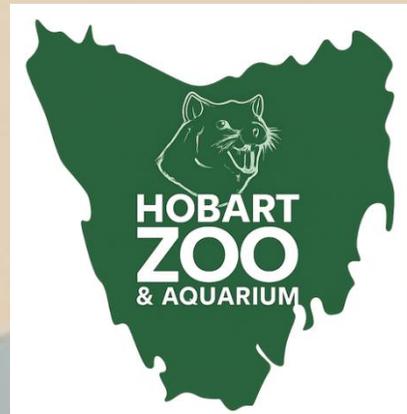
You do

### Question 4

How do birds use calls and songs?



- A** To help their feathers grow
- B** To communicate, warn of danger, or attract a mate
- C** To shape and sharpen their beaks



# Check for Understanding

## Choose the best answer



You do

### Question 4

How do birds use calls and songs?



**A** To help their feathers grow

**B** To communicate, warn of danger, or attract a mate

**C** To shape and sharpen their beaks

# Check for Understanding

Choose the best answer



You do

**Question 5** How does the shape of a bird's beak help it survive?

- A** The larger it is the scary it looks to predators so will warn them off.
- B** It acts as a specialised tool for eating certain foods
- C** It helps it eat anything in the environment



# Check for Understanding

Choose the best answer



You do

**Question 5** How does the shape of a bird's beak help it survive?

**A** The larger it is the scary it looks to predators so will warn them off.

**B** It acts as a specialised tool for eating certain foods

**C** It helps it eat anything in the environment



# How does the shape of a bird's beak help it survive?

## Learning Intention

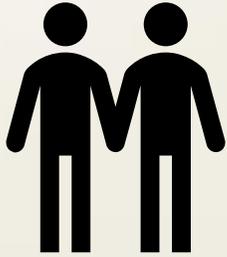
We are learning to explain how the form and shape of a bird's beak help it to survive.

## Success Criteria

We will be successful when we record, describe and predict how the form of a bird's beak helps it.



# What type of beak structures do the birds at Hobart Zoo and Aquarium have?

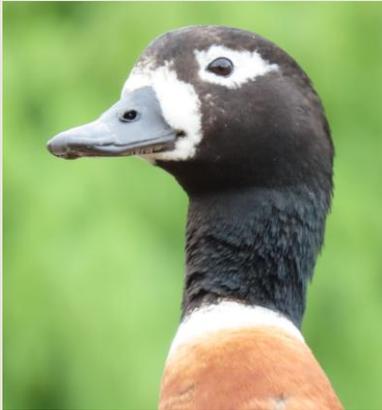


We do

long spear like beak



hook beaks



spatula filtration beak



wide hooked gape



# What type of beak structures do the birds at Hobart Zoo and Aquarium have?



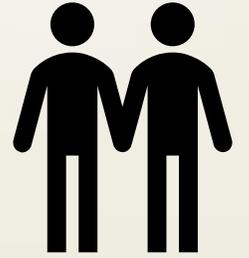
narrow,  
slender beak



small generalist beak



# How do you think they help them?

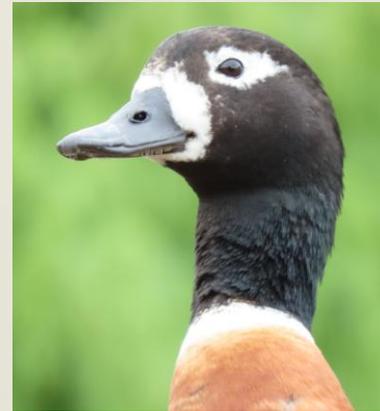


We do

long chisel  
like beak



hook beaks



spatula filtration  
beak



wide  
hooked  
gape



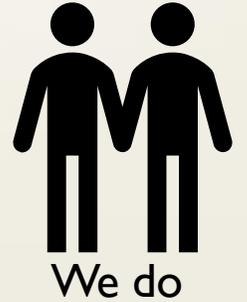
# Review Reading



A bird's beak is another important feature. The shape of a beak can form a specialised tool that helps a bird eat certain types of food—for example, kookaburras have strong, pointed beaks that form an effective shape for catching live prey, while parrots have curved beaks that form powerful seed-cracking tools.



# Review Reading



A bird's beak is another important feature. The **shape** of a **beak** can **form** a **specialised tool** that **helps** a bird **eat** **certain types** of food—for example, kookaburras have strong, pointed beaks that form an effective shape for catching live prey, while parrots have curved beaks that form powerful seed-cracking tools.



# How does the shape of a bird's beak help it survive?

- 1) In your Science Book, write to explain how the shape of a bird's beak can help it survive:
- 2) Predict and Reason – On your excursion to Hobart Zoo and Aquarium, you will see the following birds. Predict how the shape of their beak helps them in the table below.

Bird	Describe the Beak Shape Use adjectives	Predict how it helps them to survive. Justify your ideas.	After Excursion Was your prediction correct? Why? Or <u>Why</u> not?
<b>Kookaburra</b> 			
<b>Blue Macaw</b> 			
<b>Bleeding Heart Dove</b> 			
<b>Finch</b> 			



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# How does the shape of a bird's beak help it survive?

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<b>Bleeding Heart Dove</b> 			
<b>Finch</b> 			



You Do



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# Plenary – Think/Pair/Share

If a bird broke it's beak, how could it affect it's wellbeing?



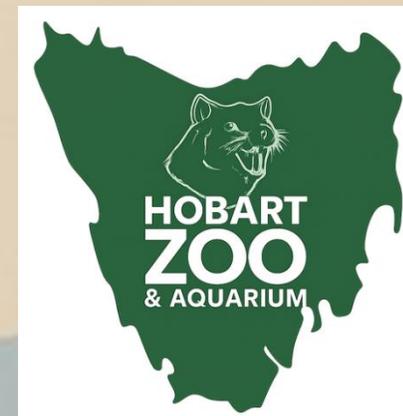
Hobart Zoo and Aquarium - 2026





Now, it's time to get ready  
for your excursion to  
Hobart Zoo and Aquarium!

See you soon!





# **Lesson 4**

## **Bird Beak Experiment**

# What birds did we see at Hobart Zoo and Aquarium?



# Birds of Hobart Zoo and Aquarium



# What beaks do the birds at Hobart Zoo and Aquarium have?



Princess Parrot



Swift Parrot



Female Red-tailed Black Cockatoo



Male Red-tailed Black Cockatoo



Bar-shouldered Dove



Macaw



Tawny Frogmouth



Budgerigar



Green Rosella



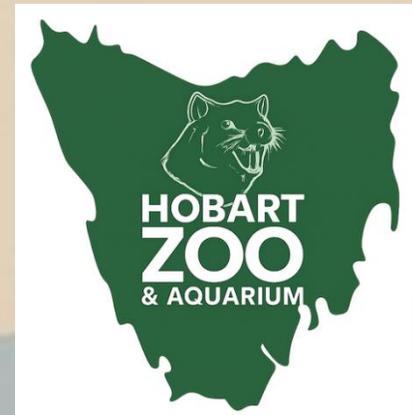
Eclectus Parrots



Kookaburra



Cockatiel



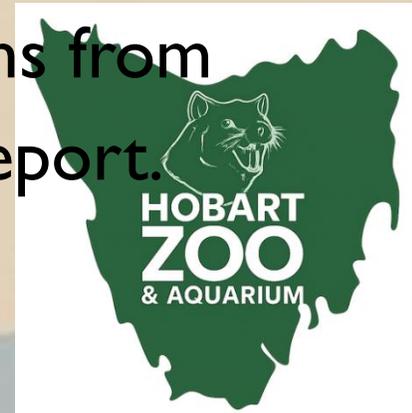
# How is a bird's beak formed to help it survive?

## Learning Intention

We are conducting an experiment to investigate the structural features and adaptations that help birds to survive in their environment.

## Success Criteria

We will be successful when we have safely conduct a fair test, followed the steps, recorded observations and data, and synthesised our results with our predictions from last lesson to produce a report.



# Experiment Set-up

Birds have different beak shapes that act like tools. These shapes help birds eat certain foods and survive in their habitats. In this investigation, we will test different “beak tools” to model how well they pick up different types of food. Beak types we will model:

- Large hook beak (e.g., macaws): powerful, curved hook
- Long, slender spear beak (e.g., kookaburras): sharp and straight
- Small generalist curved beak (e.g., budgies/rosellas)
- Narrows, slender curved beak for nectar (e.g., swift parrot)
- Tawny frogmouth (wide hooked gape): a broad, trap-like mouth for catching insects



# Experiment - Aim and Product

**Aim:** We are investigating which beak shape works best for different types of food.

## **Product:**

At the end of this experiment, you will be given a few lessons to produce a visual report to explain your findings.



**Prediction:** Use your ideas from last lesson and what you learnt during your excursion to Hobart Zoo and Aquarium to form predictions using the questions below.

Which beak shape will be most effective for each food type?  
Why?



# Fair Test Conditions

*Independent variable:* The beak type/tool used to mimic wild behaviour.

*Dependent variable (measure):* Amount of food collected in the set time.

*Controlled variables (keep the same):*

- Same time limit per trial (e.g., 30 seconds)
- Same number/size of food items in each tray
- Same container depth and layout



# Equipment

## Beak tools:

- Pliers or strong nutcracker = large hook beak (macaw)
- Pair of chopsticks = long slender spear beak (heron/kingfisher/kookaburra)
- 2 small spoons = small generalist curved beak (budgie/rosella)
- Pipette = nectar feeder beak
- Wide-mouth tongs + cup = tawny frogmouth (wide gape)

## Other:

- 6 shallow trays (one per food type)
- Measuring cups or graduated cylinder (for nectar volume)
- Timer (30–45 seconds per trial)
- Paper towels, cleaning wipes, buckets for spills

## Food models:

- Hard seeds/nuts → dried chickpeas/pebbles/beads
- Soft fruit pieces → soft sponge cubes or marshmallows
- Insects/worms → rubber bands/paperclips/foam “bugs”
- Fish/prey → paperclips in water or small floating beads in a tub
- Nectar → coloured water in narrow cups/test tubes/sippy-lid bottles
- Flower models → cardboard tubes/egg cartons with deep wells



## Method:

1. Keep it a fair test — only change the beak (tool), keep everything else the same.
2. Set up 5 stations: seeds, soft fruit, insects, prey in water, nectar.
3. Place the same number of items (e.g., 30) or fixed volume (50ml for nectar) at each station.
4. Choose a beak tool. Read the rules for that station (e.g., no scooping with hands).
5. On GO, collect as many items (or mL of nectar) as possible into a cup within 30 seconds.
6. Record the result in your table.
7. Reset the station (put items back / refill nectar to the line).
8. Rotate and repeat with each beak tool for each food type.
9. Complete at least two trials per combination and calculate an average.



## Conduct Experiment and Record Results: Tally results (per 30 seconds)

<b>Trial I</b>	Seeds (count)	Soft fruit (count)	Insects (count)	Prey in water (count)	Nectar (mL)
Beak type / Food type					
Large hook (macaw model)					
Long slender spear (heron/kookaburra)					
Small generalist curved (budgie/rosella)					
Narrow, slender curved beak for nectar (nectar feeder)					
Tawny frogmouth (wide gape)					



# Communicate Your Results

Write a short report to answer the question and address the accuracy of your prediction and to answer the investigation question *how is a bird's beak formed to help it survive?* Include a prediction using your learning to explain how a broken beak could affect the survival of a bird, use examples. Explain the benefits of the excursion to Hobart Zoo and Aquarium in learning about bird beak formation.

Explain the different beak types with examples of what they eat and a real life bird species.

These can be produced in your own way as long as you have a written speech or report to share your ideas. You may choose:

- Infographic
- Presentation
- 3D model
- video recording
- artwork
- or in any other form that you have agreed upon with your teacher.





3D  
Model

# Examples of Presentations

**3D and Art will need a short speech or report to explain learning.**

Artwork



## Red-Tailed Black Cockatoo

CALYPTORHYNCHUS BANKSII

*Jackie*   *Jack*

**DID YOU KNOW?**

According to Australian folklore, Red-Tailed Black Cockatoos are feathery weather forecasters! People say they fly ahead to warn of storms, and some even believe the number of birds tells you how many days it will rain.

**RANGE & HABITAT**

Red-Tailed Black Cockatoos are found in forests and woodlands across Australia. They will also inhabit scrublands, grasslands, and wetlands, and prefer certain tree species, such as Eucalyptus. These large birds will move around each season to find food.

**DIET**

Like other Cockatoos, Red-Tailed Black Cockatoos eat seeds, fruit, nectar, flowers and sometimes insects. Their strong beaks let them crack open hard seed cases, and dig insects out of tree branches.

**SOCIAL STRUCTURE**

Red-Tailed Black Cockatoos nest in tree hollows in Eucalyptus trees. The female will incubate the eggs, while the male will feed her. In winter, large noisy groups of over 200 birds will flock together at a source of food.

EXTINCT - EXTINCT IN THE WILD - CRITICALLY ENDANGERED - ENDANGERED - VULNERABLE - NEAR THREATENED - **LEAST CONCERN**

Infographic

