

Teacher Notes	<h1>Bird Beaks and Feet</h1>
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This worksheet is based on a visit to the **Inquiry Centre** at Queensland Museum South Bank. These activities focus on the topic of animal adaptations. The aim relates to Year 5 of the **Australian Science Curriculum**. However, the worksheet could be adapted and used with a middle primary to Middle School audience.

**Aim:**

- To investigate the structural features and adaptations of living things that help them to survive in their environment

**Pre-visit Activities:**

Examine the table. Students can predict and draw the types of **feet** that would fulfil the functions below.

TYPE OF FEET	ADAPTATION
Grasping	Large curved claws are used to snatch fish from the water or small mammals from the ground. e.g. raptors such as owls, eagles, and ospreys
Scratching	Claws with nail-like toes are used to scratch the soil for food. e.g. brush turkeys, pheasants
Swimming	Swimming birds use their webbed feet like paddles. e.g. ducks
Wading	Long wide toes spread the weight of a bird over shallow water plants. e.g. herons, stork
Perching	A long back toe allows some birds to grab onto a branch tightly. e.g. robins
Running	Many fast-running birds have three toes rather than four. e.g. Emu and ostrich
Climbing	The hind toes and hooked claws allow birds to climb without falling backward. e.g. woodpeckers

Examine the table. Students can predict and draw the types of **beaks** that would fulfil the functions below.

TYPE OF BEAK	ADAPTATION
Cracker	Seed eaters have short, thick conical bills for cracking seeds. e.g. parrots, cockatoos
Shredder	Birds of prey have sharp, curved bills for tearing meat. e.g. eagles, hawks, owls
Chisel	Long chisel-like bills are good for boring into wood to find insects. e.g. woodpeckers
Probe	Bills that are long and slender can probe flowers for nectar or muddy water for small animals. e.g. hummingbird, ibis
Strainer	Long, flat bills can strain small plants and animals from the water. e.g. ducks
Spear	Spear-like bills can pierce and stab fish. e.g. herons, kingfishers
Fishhook	A long beak with a sharp hook can catch and hold on to fish. e.g. cormorant, shearwater
Spoon	A long flat bill can sweep muddy water to locate prey. e.g. spoonbill
Dip net	A long bill with expandable crop section is good for scooping up fish. e.g. pelican
Tweezer	Thin, pointed bills are good for insect catching. e.g. Willy wagtails
Generalist	A long and wide, gently sloping triangular beak is multi-purpose. This allows birds to eat fruit, seeds, insects, fish, and other animals. e.g. crows, galahs

Younger students can create a bird with matching beak and feet for a specific niche. e.g. bird of prey; seed-eating bird; nectar-feeder; insect-eating bird; etcetera. Internet research can be used to validate the students' predictions.

**Post-Visit Activity:**

With further research students can add to their data tables. They can list any links between the beaks and feet of the birds and their diet and /or habitat. Students can investigate possible food chains in specific habitats. Allow students to select one bird studied during their museum visit. Write a report listing the adaptations possessed by the species and how they enable the bird to live in its particular habitat. This will require an investigation into the food source, predators, habitat and niche of the bird. Students can present their reports to others in the class.

Student Notes	<h2 style="margin: 0;"><i><b>Bird Beaks and Feet</b></i></h2>
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1. The feet of birds are adapted to perform specific functions: swimming and paddling in water; spreading their weight over a large surface area; or grabbing and hooking onto prey. Examine the following birds and write down what you think their feet are best adapted to do. List any links to the bird's diet and/or habitat.

Specimen	Image	Function its feet perform
Swamp Harrier		
Freckled Duck		
Osprey		
White-faced Heron		
Regent Parrot		
White-throated Treecreeper		

(All images A. Bauer, QM)

2. Bird beaks are used for many functions. These include: grooming, collecting food, self-defence and making nests. Some beaks are better than others at certain jobs. Some can be used like a spear; some as tweezers; and others like a hook. The shape of the beak helps birds collect and process different food. Some beaks are better at cracking seeds; others at spearing fish; some at scooping up food; some act like a spade and churn up the mud; some are long and thin and can suck up nectar from flowers; while others can grab and hook on to their prey. Examine the beaks displayed in the Inquiry Centre and write down how you think they work and what the birds might eat.

Specimen	How the beak works to collect food	Food it eats
Freckled Duck		
Osprey		
Pied Currawong		
Royal Spoonbill		
Wedge-tailed Shearwater		
Sacred Kingfisher		
White Goshawk		
Sulphur-crested Cockatoo		
White Ibis		



Freckled Duck



Royal Spoonbill



Blue-winged Kookaburra



Pied Currawong



Sulphur-crested Cockatoo



Wedge-tailed Shearwater

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