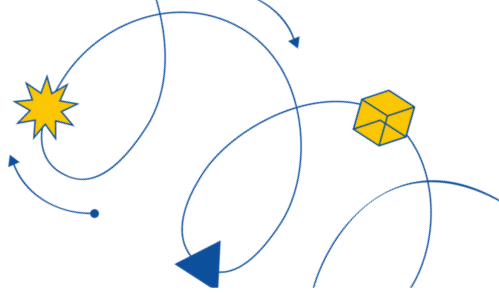


Mini Select: The Beak Files



**SCIENCE
ALIVE**

Every bird has a beak — but have you ever looked closely at how different they all are? From long and slender to short and sharp, each beak is shaped to match what a bird eats and how it lives. This mini is perfect for sparking curiosity about scientific ideas like adaptation, survival, and the amazing ways living creatures are built for their world.

OBSERVE:

1. Āta titiro (look carefully) at the four beak images.
2. Encourage ākonga to whakaaro (think) about what they can see. Consider the following pātai (questions):
 - What do you notice first in each image?
 - What details can you see when you look more closely?
 - What do you notice about the shape or size of each beak?
 - Do any of the beaks have unusual features?
3. Encourage ākonga to use precise language to describe what they observe, rather than inferences or opinions, and use questioning to help them focus on the details.
4. Ākonga share their observations (you might choose to write these down).

SELECT:

1. Using their observations, encourage ākonga to find similarities and differences between the different beaks.
2. Ākonga āta kōwhiri (carefully select) the image they think might be different from the others.
3. Ask learners to give reasoning with 'I think this beak is different because...'
4. Reflect on thinking:
 - Could there be more than one answer? Why or why not?
 - What new ideas or questions do you have now?

Science Alive Learning Portal

This printable supports an online resource found on the Science Alive learning portal.

Explore hundreds of interactive resources across a range of topics, all completely free.

Scan the QR code to visit the lesson library:



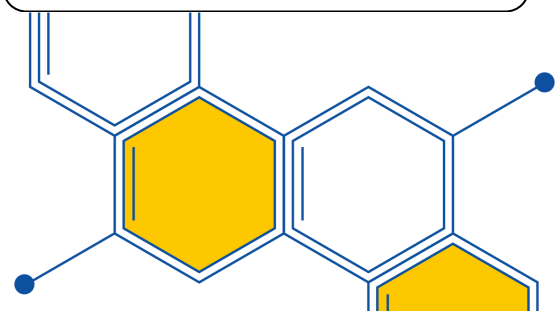
www.sciencealive.co.nz

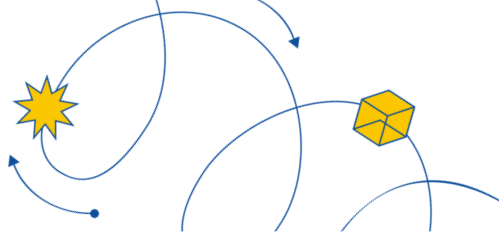
DISCUSS:

- Why do you think birds have different shaped beaks?
- What might the beak shape tell us about how the bird uses it?
- What might this bird eat based on its beak shape?
- How are bird beaks like tools we use? Can you give some examples?

This lesson was developed with generous support from NEX and NZASE.

www.nzase.org.nz



**DISCOVER THE SCIENCE:**

Aotearoa is home to **many special manu** (birds), each with **unique features or adaptations** that help them **survive** in their natural habitats. An adaptation is a **physical trait** (like their beak shape) or a **behavioural trait** (such as being nocturnal) that develops over a **long period of time** and helps an organism **survive and reproduce in its environment**. These traits help living species find **food and water, avoid predators, reproduce**, and cope with **challenging environmental conditions**. Over time, such traits **evolve** through natural selection, making the organism **better suited** to its surroundings.

Some important adaptations in birds include their **feathers, how they move, and the shape of their beaks or bills**. The shape of a bird's beak is closely linked to its **diet and lifestyle**. Different beak **shapes and sizes** allow birds to access specific **food sources**—for example, the **hooked bills** of falcons are perfect for tearing flesh, **cone-shaped beaks** help finches crack seeds, and the **long, slender beaks** of tūī are ideal for reaching deep into flowers to feed on nectar. Some bills, like that of the whio (blue duck), are adapted for **filtering food** from fast-flowing water and **scraping bugs off rocks**. By observing a bird's bill, we can learn a great deal about **how it survives** and **fits into its environment**.

COMMON MISCONCEPTIONS:

Students' prior knowledge can help them connect with new ideas, but it can also lead to misconceptions if their earlier understanding is inaccurate. Below are some possible misconceptions that may arise from the images used in this mini:

"Birds only use their beaks for eating."

The Science: While birds do use their beaks for eating, they also use them for many other important tasks. Beaks can be used for building nests, grooming feathers, defending themselves, feeding chicks, and navigating obstacles in their environment.

"All birds have the same type of beak."

The Science: Birds have a wide variety of beak shapes and sizes, each adapted to suit their specific diet and environment. From the long, curved beak of a tūī to the strong, hooked beak of a kākā, beaks have evolved to help birds survive in different ways.

"The size of the beak always matches the size of the bird."

The Science: A bird's beak size and shape is not determined by its body size, but by its feeding needs. Some small birds have relatively large beaks for cracking seeds, while some larger birds may have slender beaks for picking up insects or sipping nectar.



Connect: The Beak Files

SCIENCE
ALIVE

MATHEMATICS



Younger learners could use the bird ID poster to take part in a bird count, heading outside to record the number of different bird species they see on a tally chart.

Senior learners could collect data on the beak sizes or shapes of various New Zealand bird species. Ākonga could then complete the following ARBs activity on graph suitability before choosing a suitable graph for their own data and reflecting on what it shows.

TECHNOLOGY



Younger ākonga could explore beak adaptations by using different eating tools (like spoons or chopsticks) to test which beak shapes work best for picking up different foods. Check out page 7 of this booklet for activity instructions.

Older ākonga could watch this video on biomimicry, then research examples inspired by bird beaks (e.g., pliers, tweezers). Learners could then design a new tool inspired by a bird beak, present the design with a prototype or sketch and an explanation of what the tool would be used for.

LITERACY



Younger ākonga might want to learn more about the purpose of beaks. Learners can read this Beaks explanation on epic! then create a poster showing three different bird beaks, writing simple sentences to explain the shape or purpose of each.

Senior ākonga could research bird adaptations and beak shapes of birds found in Aotearoa or Australia. Using what they've learned, they can write a detailed report explaining how different beak shapes are adapted to specific environments and diets, with clear examples.

FUTURE FOCUS



The skills and knowledge developed in this mini could inspire learners to explore pathways beyond the classroom! If your ākonga were engaged in this activity, it could be a great opportunity to connect with experts or someone from your local community to learn more. You could also explore the skills and school subjects involved in some of the related careers listed below:

- Ornithologist
- Wildlife Biologist
- Wildlife Photographer
- Ecologist
- Ranger