Home Learning TV: Junior Science  


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| **Segment lesson planning details** |  | |
| Title for segment: | Ngā manu - Birds | |
| Year levels *(e.g. Yrs1 – 3)*: | Years 1-3 | |
| NZC learning areas: | Nature of science: Investigating in science - Extend their experiences and personal explanations of the natural world through exploration, play, asking questions, and discussing simple models.  Living world: Ecology - Recognise that living things are suited to their particular habitat. | |
| Purpose of lesson:  (What learners will learn) | Introduce the following ideas:   * Observation is an important skill for kaipūtaiao and scientists * Different birds have different features * Birds’ beaks have specific shapes for specific purposes * The design of human machines can be inspired by designs we see in the natural world | |
| Success Criteria – students will be able to:  (how they will know when they have learnt it) | Students will be able to:   * Give examples of different birds * Describe some key features of birds * Explain why birds have different beak shapes | |
| **Segment production details** | | |
| Equipment requirements: | Pencil, paper, PPT | |
| Copyright requirements:  Please be specific: Source: (*Seven Sizzling Sausages* by Sam Smith –url link to the source), intended use (to demonstrate alliteration), Length (timings for video clips) | All images and video provided in the media zip folder below have been cleared for use | |
| **Segment links and attachments *(list all links to recordings or attachments, the source and confirm that copyright permissions are granted)*** | | |
| Links to recordings /resources | Filename: JS\_02\_NgaManu-birds\_MEDIA.zip | |
| Attachments |  | |
| **Segment plan content** | | |
|  | Teaching and learning activities linked to purpose | High level script (key points/questions) |
| **Activate**: Activating prior learning, knowledge of contexts and relationships | Welcome and connecting with viewers  Hook  SLIDE 2: *Birdsong audio*  *Filename: JS\_02\_NgaManuBirds\_Birdsong.mp3*  Activating prior learning/linking with previous episodes  Introducing today’s topic: Ngā manu, birds    Activating prior knowledge  SLIDE 3: JS\_02\_NgaManu\_StudentOnHerFavBird.mp4  VIMEO LINK: <https://vimeo.com/596982553>  SLIDE 4: Tui  Filename: JS\_03\_NgaManu\_tui.png | Kia ora! Kei te pēhea koe?  [Touch base with the audience.]  Can you hear that? (bird song playing) - that’s a clue to what we will be learning about today.  What can you hear?  Listening carefully is an important part of making observations - something kaipūtaiao and scientists need to be really good at.  Do you remember that in our last episode we also did some listening? We talked about how sound travels from a source - maybe a bird - to a receiver - our ears.  [Hold up the image from the previous episode, with the bird, the music notes, and the ear.]  Have you got some paper and something to draw with? Do you need to go and get them?  *More birdsong playing - allow time for collecting equipment*  So, what do you think we are learning about? … That’s it - Manu - Birds!  I’ve called this episode Ngā manu, Birds.  [Words on screen: Ngā manu - birds]  Can you write this title and date in your book or on your paper?  Now, I wonder what birds you already know about?  Why don’t you name all the birds that you can think of out loud, while I spend some time writing down the names of some of the birds that I can think of?  If someone is watching with you, you could talk about this together - or you can take turns, and see who runs out of birds’ names first.  The birds you know about might depend on where you live. If you live by the moana, the sea, you might know some seabirds, or if you live in a city - maybe you're thinking about birds like blackbirds and sparrows?  I wonder if the birds are the same or different in places like the Pacific Islands? You might have lived in or visited another country before and know about birds that I’ve never heard of!  So, how many birds did you get?  I wonder if you have a favourite bird? Here are some people’s favourites...  *Recording of tamariki sharing favourite birds (30 secs?)*  That’s 5-year-old Eva. And this is a picture of a tūī - pretty gorgeous, huh? |
| **Learn**: Introducing learning  Reinforce routines, provide multiple exposure to concepts, and strategies. Scaffolding learning | Introducing the topic - birds  Practicing listening carefully  SLIDE 5: Audio files x of bird calls  **Tarāpunga (red billed seagull)** - JS\_02\_NgaManuBirds\_Red-billed\_gulls\_calling.ogg.mp3  **Kereru** - JS\_02\_NgaManuBirds-Kereru.mp3  **Piwakawaka** - JS\_02\_NgaManuBirds\_Piwakawaka-MP3.mp3  **Ruru** - JS\_02\_NgaManuBirds\_Ruru-MP3.mp3  **Tui** - JS\_02\_NgaManuBirds\_Tui.mp3  **Kea** - JS\_02\_NgaManuBirds\_Kea.mp3  SLIDE 6: Bird collage  [Note there is one with names and one without for presenter options]  Filenames: JS\_02\_NgaManu\_BirdCollage.png and a version with the bird names JS\_02\_NgaManu\_BirdCollageNamed.png | In Aotearoa New Zealand, we have lots of really special birds - special because they’re found nowhere else in the world!  Mātauranga Māori connects birds to the Atua Tane Mahuta.  There’s a saying that goes:  *Kia whakarongo tō taringa ki te waha o Tāne, e kō i te ata*  *Listen to the chorus of the birds, singing in the morning.*  The birds are the voice of Tane. What a beautiful voice!  Let’s listen carefully to some birdsong again, like kaipūtaiao/scientists. This time, see if you can recognise any of the birds.  [Play calls]   * Red billed seagull - Tarāpunga * Kererū * Piwakawaka/Tirairaka/ Tīwakawaka * Ruru * Tūī * Kea   How did you go? Did you recognise any of them?  *Show images of birds with songs.*  This time when we listen you could have a go making the call too!  (Play audio again with pictures - point to the bird making the sound)  [Wrap up chat] |
|  | SLIDE 7: Bird collage  [Note there is one with names and one without for presenter options0  Filenames: JS\_02\_NgaManu\_BirdCollage.png and a version with the bird names JS\_02\_NgaManu\_BirdCollageNamed.png    All birds have certain features in common, although the features may look different  SLIDE 8: Ruru  Filename: JS\_03\_NgaManu\_Ruru.jpg    SLIDE 9: Kaka - close up of eating puriri moth  Filename: JS\_02\_NgaManu\_KakaBeakDetail.jpeg    SLIDE 10: Whio beak  Filename: JS\_02\_NgaManu\_WhioBill.png    SLIDE 11: Whio beak adaptation video clip  VIMEO LINK:https://vimeo.com/598496894  FILE NAME: JS\_02\_Unique whio adaptations.mp4  SLIDE 12: whio audio  Filename: JS\_02\_NgaManuBirds\_whio.mp3  SLIDE 13: kingfisher, showing beak in profile  Filename: JS\_03\_NgaManu\_Kingfisher.jpeg    SLIDE 14: Shinkansen trains in Japan  Filename: JS\_03\_NgaManu\_shinkansen-bullet-train.jpeg    SLIDE 15: side by side to see the comparison - the bird beak and the bullet shape of the train nose  Filename: : JS\_03\_NgaManu\_shinkansen-bullet-train.jpeg and JS\_03\_NgaManu\_Kingfisher CloseUp.jpeg | Now, let’s use our eyes to observe, to look closely at these manu - what do you notice?  Even though they look quite different - can you see any features they all have in common?  Why don’t you talk about what you see if you’re watching with someone - or you could make a list of the things you see in your head, or draw some pictures of them.  You do that while I write down some of my ideas.  [Thinking time]  What ideas did you have?   * Eyes * Feathers * 2 Legs * A beak instead of a mouth with teeth * Wings - well, these birds all have wings, but we know that some birds - like the kiwi - only have very tiny wings that no longer work as wings.   Did you get these?  Did you get any others?  Now we've got some ideas you could now think about how these features might help the bird.  Scientists have a special name for the features that help living creatures to survive: they call these features **adaptations**.  There are different types of adaptations. Let’s take a look at some of them.  [Looking at the bird collage again]  Can you see that all these birds have eyes?  How do eyes help birds?  Imagine you are a bird and you need to do the sorts of things that a bird does - like finding food and not flying into things. Now close your eyes -  Imagine trying to do these things without eyes!  See the Ruru? I wonder if its big eyes help it to see in low light?  What else do all these birds have? The thing I’m noticing is their beaks -  What do birds do with their beaks?  That’s right - they use them for eating.  Have a look at the different beaks on some of these birds. I wonder if they have different beaks because they eat different types of food?  Kaka has a strong rounded beak to help them climb trees to collect their food, they also have a bristled tongue to help them to collect nectar from flowers!  What about this bird - do you know what it is?  It’s a whio - or blue duck.  Like the kea and the kiwi, it’s one of our special birds - it’s only found here in Aotearoa. It’s also really endangered - there aren’t many of them left.  They live in clean, fast-flowing rivers, where they eat insect larvae - baby insects - found on the rocks in their river.  The whio has rubbery soft flaps on the end of its bill to help scrape its food off the surfaces of rocks. Let’s have a look more closely  [Play video]  So that’s our special whio, or blue duck.  Hey - earlier we were listening to the sounds birds make. I wonder what sound the whio makes?  Let’s listen to them talking to each other -  Did you hear that the sound is a little like ‘whio, whio’?  Let’s listen again. Listen for the ‘whio, whio’. You can also listen for the sound of the river - remember, whio live in fresh, clean rivers.  [Optional:  I wonder if you can pick out that there are two different birds - this particular set of sounds is of a conversation between a male and a female bird. They’re also responding to tape-recorded calls.]  Let’s now go back to beaks, because there’s one last thing that I really want to share with you - and it’s about how humans can be inspired by nature.  Do you remember in our last episode, we talked about how bird sound might inspire us when we think about music?  Well, look at this bird’s beak.  This is a kingfisher, kōtare. Have you seen one of these before? It’s pretty small, with a creamy chest but its back and wings are a bright greenish blue. And look at that beak - it’s great for catching crabs, koura, tadpoles, and small fish, as well as insects like wētā and cicadas, and even small lizards and mice!  It’s also the inspiration for the Japanese bullet train, the Shinkansen. [show image.] That’s pretty amazing, huh?  You see, when the trains were first designed, they made a huge noise when they whizzed out of tunnels.  A Japanese train engineer, Eiji Nakatsu, also studied birds as a hobby, and experimented with different shapes, inspired by bird beaks.  Can you see the similarities? *(Looking at the combined image)*. |
| **Respond**: Providing opportunities to use and practice | SLIDE 16 - image of bird collage  Note there is one with names and one without for presenter options  Filenames: JS\_02\_NgaManu\_BirdCollage.png and a version with the bird names JS\_02\_NgaManu\_BirdCollageNamed.png    SLIDE 17 - repeat image of ruru    SLIDE 18 -repeat image of whio  Opportunity for students to be creative, using their knowledge of birds  SLIDE 19: Kahikatea forest  Filename: JS\_02\_NgaManu\_kahikateaForest.jpeg | Wow - we’ve covered a lot -  We’ve talked about different birds and the sounds they make  *(Show image of bird collage)*  And we’ve looked at some of their key features - their eyes - remember the ruru? - and their beaks - remember meeting this whio? *(Show images again)*  Now - time to get creative!  You will need some paper and something to draw with.  I need you to think of a habitat - a place where birds live.  You can use this picture here if you like.  Your job is to create a bird that could live in the place you have chosen.  What ideas do you have? Are you going to design a bird that lives in the repo/wetland? Or perhaps in the ngahere, the bush?  (Keep picture up while tamariki draw.)  Think of all the features that would help a bird living here. Will your bird live up high in the trees, or wade around in the repo/wetland?  Now I want you to think about what features or adaptations would be good for a bird to have that lives here - remember - all birds need to have… (pause, thinking time) - 2 legs, wings and a beak.  You could start with the body - is it big like a moa? Or tiny like a piwakawaka?  What about its neck and head? Does your bird have a long or a short neck?  Now check if your bird has it got 2 legs, wings and a beak? Ka pai.  If you have someone who can write - they might help you to record the name of the part and why you have chosen different features.  For example - maybe you chose a long beak so your bird can find insects living in the mud?  Scientists often add labels and notes to their drawings to provide more detailed information.  Now, you might not have had time to finish your drawing, that’s ok, you might want to finish it later. |
|  | SLIDE 20: Tui poem  Filename: JS\_02\_NgaManu\_TuiPoem.png | Optional - depending on time  If you’re not so keen on drawing, maybe you like writing? Poetry can be a great way to describe something special.  I’ll read this poem to you to finish. It’s called Tūī and it was written by Kelly Joseph.  *The forest is a great green whare.*  *The tūī sings within its walls.*  *His waiata can be heard afar,*  *the trickiest of calls.*    *Head upturned, throat bobbing,*  *he opens up his beak.*  *Out pours his clever sounds,*  *craaack-craw, click, creak, tweet, tweet.*  *Whakarongo to this manu,*  *the master of mimicry.*  *Was that a bell, cellphone, or bird*  *high in the pūriri tree?*  Kelly Joseph |
| **Share**: Learner and parent reflection on learning and engagement and what they can do next | Opportunities to review the lesson, and to do some follow-up learning.  SLIDE 21: SLH Logo | We’ve almost finished our lesson. I’d love to be able to see your drawings. [If possible, provide a way for sharing these with you.]  Maybe you could share it with someone in your bubble? Or your teacher?  [OR: modify script if the poem is used]  I hope you've enjoyed our lesson today, and that next time you’re outside you’ll listen out for our manu, our birds.  If you want to learn more about manu you could ask your whānau if they know any stories.  [Optional]  Maybe you could write a poem together about your favourite bird?  Or you could practise your observation skills and find somewhere where you can sit quietly outside   * What birds do you notice? * Do you know the names of any of the birds that you can see? If you’re not sure of one of them, look carefully and notice the colour of the eyes, beak and feathers - just like we did today. * What size is it? * Does it have any unusual markings or colours?   I wonder how many different birds you can spot? Did you see any birds that you have not noticed before?  Happy observing,  Ka kite ano!  [Shout out to the Science Learning Hub for support planning this episode]  [Sign off] |