Home Learning TV: Junior Science

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| **Segment lesson planning details** |  | | | | |
| Title for segment: | Helping our worms | | | | |
| Year levels *(e.g. Yrs1 – 3)*: | 1-3 | | | | |
| NZC learning areas/ KCs: | Living world and nature of science  KCs - thinking; using language, symbols and text | | | | |
| Purpose of lesson:  (What learners will learn based on the above) | A habitat is the natural home of an organism  Earthworms generally live in dark, moist habitats  Aotearoa has native and introduced earthworms  Native earthworms die if we change their habitat | | | | |
| Success Criteria – students will be able to:  (how they will know when they have learnt it) | * talk about a habitat as the natural place for something to live - animals, plants, and humans too * talk about 2 or 3 things that earthworms require for their habitat * give one example of how we can help our earthworms and their habitats | | | | |
| **Segment content/context details *(describe)*** | | | | | |
| Māori content/context: | Traditional uses for noke, kaitiakitanga | | Pasifika content/context: |  | |
| Learning Support content/context: | Use of images to aid visualisation/understanding of concepts, connecting the concept of habitat with everyday experiences | | Other (specify): |  | |
| Equipment requirements: |  | | | | |
| **Segment links and attachments *(list all links to recordings or attachments, the source and confirm that copyright permissions are granted)*** | | | | | |
| Links to recordings /resources |  | | | | |
| Attachments |  | | | | |
| **Segment plan content** | | | | | |
| Stage | Teaching strategies linked to purpose | Learning tasks and activities | | | High level script (key points/questions for presenter) |
| **Beginning of lesson:**  Activating prior learning and relationships | Connecting with the audience and making connections with previous episodes/topics. |  | | | Kia ora - [greeting in languages of your choice]  [Touch base with audience if they’ve sent in texts or emails.] While I’m showing you the cool messages I’ve received, check that you’ve got your science journal, or some paper and something to write with.  Remember - if you want to share your ideas or learning with me, text 5811 or email [info@hltv.co.nz](mailto:info@hltv.co.nz). The keyword for this episode is noke or worm.  [on screen: text 5811 or email [info@hltv.co.nz](mailto:info@hltv.co.nz)  keyword: noke or earthworm]  [*Please check maoridictionary.co.nz for pronunciation support.*] |
|  | Introducing the context for the episode  Living organisms are suited to their particular habitats | Making connections between key science vocabulary and prior knowledge | | | Our big science idea today is habitat - nōhanga. Scientists say that a habitat is a place in which an organism lives.  Organism - that’s another science word - it refers to something that is alive. So, I’m an organism, and so are you. Take a look around you - what does your habitat look like? Tell one of the organisms in your habitat what you see.  Hmm, I think I like the word kaiao  better than organism!  Humans like to live in a house, with blankets to keep us cozy and a roof to keep us dry. Our pets like this, too. But what about other living organisms? |
| **Main part of lesson (a)** | Nature of science, ways in which scientists work. If/when they make predictions, they need to find evidence to see if they are right or wrong. The evidence can come from an investigation or reading an article or talking to someone else.  [Suzy, we’re not sure whether you are able to edit this video - if you are, there’s a typo at 8:13 - ‘invertebrates’; also at 8:19 it should technically be ‘Earthworms are also called annelids’ - there are lots of different non-segmented worms, that are not annelids.] | Engaging with video to think about different ideas for where earthworms might live.    Filename: **Svx Suzy's World Habitats.mov**  Vimeo link:<https://vimeo.com/414994188>    <https://www.youtube.com/watch?v=gWqgbaF3Uc8&feature=youtu.be> | | | Today we’ll explore what habitat earthworms - noke - prefer.  Let’s start by writing the word ‘noke’ in our books. If you have another name for earthworm in your language, write that instead.  Let’s think like scientists and make some predictions. Where do you predict that noke live? Write or draw an idea in your book.  After scientists make predictions, they look for evidence to see if their predictions are correct. Let’s watch this video and see if our predictions are correct.  [watch habitats video - about 8 minutes] |
| **Main part of lesson (b)** | Aotearoa has native and endemic plants and animals that have evolved to live in very specific habitats.  [Additional background info can be found at <https://www.sciencelearn.org.nz/resources/7-niches-within-earthworms-habitat>]  Introducing different noke to showcase diversity  [For background info, see <https://www.sciencelearn.org.nz/resources/20-native-and-introduced-earthworms> and  <https://www.sciencelearn.org.nz/resources/21-octochaetus-multiporus>]  Living organisms have adaptations that make them suited to living in their habitat. | Learning science vocabulary.  Using a fun fact to think about why noke are valuable to their ecosystem/habitat.  Fun facts to increase engagement and think about earthworm size and diversity  Filename: **Spenceriella-gigantea\_TiPointReptilePark.jpg**    <https://www.sciencelearn.org.nz/images/25-spenceriella-gigantea>  Filename: **OmultiporusOnSoil\_O-MultiP-cRossGray.jpeg**    <https://www.sciencelearn.org.nz/images/3634-octochaetus-multiporus>  Filename: **Bioluminescent-fluid\_RossGray.jpg**    <https://www.sciencelearn.org.nz/images/23-bioluminescent-fluid>  Filename: **Tiger-worms-Eisenia-fetida\_RossGray.jpg**    <https://www.sciencelearn.org.nz/images/26-tiger-worms-eisenia-fetida> | | | So, were your predictions correct?    Do you know that Aotearoa has **native** and **introduced** noke? Native means that the noke live here naturally. Actually, most of our native noke only live in Aotearoa and nowhere else in the world. They’ve evolved over millions of years to live in Aotearoa’s special habitats - especially our ngahere - native forests.    Did you know that native noke are so common in native bush that they weigh more than all of the insects, birds, rats and possums combined?  That’s a lot of noke!  Noke are really important because they recycle the dead leaves and other dead things into nutrients that help plants in the ngahere - and our gardens! - to grow.    Native noke also find unusual places to live - their habitats can be quite different to what we often think as an earthworm habitat. Some noke live under the bark of dead trees while others live in the crooks of tree branches. Think back to what worms need to live - moisture and a dark space - our ngahere, our native forests, can be pretty wet and dark.    When we chop down their forest homes, these noke die. They can’t live in the soil under pastures or cities, because it’s not their normal habitat. Our native noke are just one reason we need to protect Aotearoa’s ngahere.    Our native noke are pretty cool. The smallest noke are tiny little things that live in leaf mould - rotting leaves. They are less than 2 cm long. Draw a line in your book that you think is 2 cm long. If I use my ruler, I can see that the tip of my index finger is about 2 cm. How does this compare with your drawing?    Aotearoa's largest native noke is called the North Auckland worm. Check out this photo! This worm is 75 cm long! How tall are you?                        Here’s another native noke. Introducing … well, I’m going to call them O-M. That’s because their scientific name is *Octochaetus multiporus*.  This noke grows to about 30 cm - the length of my ruler.  Let’s look at it more closely - what do you see?   * pale skin * pinkish head * purple streak along the top of its body     This noke lives really deep in the soil - about 3-5 metres down under the ground! That’s nearly two stories down!  Noke that live this deep often have pale, whitish skin because they aren’t often in the light.    Another reason why O-M are worth a mention is they have an unusual way to defend themselves. They squirt out glow-in-the dark liquid!  This bright orange-yellow light is useful when out fishing. Māori traditionally used O-Mas bait and lures. One type of lure is called a herehere tuna. It’s a bunch of noke wrapped in harakeke fibre and used to catch tuna - eels. The noke attract the tuna and the tuna’s teeth get caught in the harakeke. Clever, eh.    Remember how I mentioned O-M has pale skin because it lives deep down? Let’s compare it with another earthworm that lives near the surface and is often exposed to light. These are tiger worms. They are an introduced species - humans brought them into Aotearoa.    If you have a compost bin, these are the noke you’ll most often see. If we look closely, I think you’ll see why we call them tiger worms. Their darker colour helps to protect them from the Sun - kind of like sunscreen. It also acts as camouflage to help them hide from birds. |
| **End of lesson:**  Learner and parent reflection on learning and engagement and what they can do next | Summary of lesson; opportunities for further learning about noke and their habitats. | Ways to help our noke.  Creating a habitat to replicate the conditions noke need to survive.  Being kaitiaki. | | | Isn’t it good that our habitat allows us to duck inside when the Sun is too bright - and that we don’t have to worry about camouflage and predators?    If you want to help the noke that live in your garden, how about putting unwanted bits of kai - like peelings - into a compost bin instead of the rubbish? You can also rake up the Autumn leaves and pile them onto your veggie garden. The leaves keep the weeds down and give the worms something to eat.    Or, you can make a worm habitat like I did in the video. Remember what they need to live?   * soil or compost, depending on where you found the noke * food * moisture * fresh air every now and then * darkness - wrap a bit of newspaper around the container to keep it dark.     Once you and your whānau have had a chance to observe your noke, don’t forget to put them back in their natural habitat.    Remember to send me a photo, or to share it with your teacher or kaiako.    [on screen: text 5811 or email [info@hltv.co.nz](mailto:info@hltv.co.nz)  keyword: noke or worm]    [Sign off] |