

THE GIANT WETA

– A NEW ZEALAND TAONGA

SCIENCE BASED CROSS-CURRICULUM ACTIVITIES

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ARE WETA INSECTS?

- What insects have students seen in their home gardens and at school? How many insects can the students name? Have groups brainstorm and present their list to the class.
- Can they say what makes an insect an insect? Challenge students to define an insect. Record definitions for future reference.
- Have students conduct book, dictionary and web research to find out 'what is an insect'. A helpful visual insect pdf is at: www.landcareresearch.co.nz/__data/assets/pdf_file/0020/42059/Insect_Poster.pdf
- Data project the website below for further student study. http://nhguide.dbs.umt.edu/index.php?c=insects&m=what_is_an_insect
- Did students know that our native weta is an insect? Have students list all they know about the weta, and in particular one giant weta – often known by its Māori name 'wetapunga' named after the Māori God of Ugly Things. Can they say why Māori would give it this name? Do they think it is appropriate.

MEET THE WETA – VIEWING AND RESEARCH

- Introduce the students to the look of the giant weta at: <http://vimeo.com/45868864>
Have students describe the physical appearance/colour of the weta. What did they observe that confirms the weta is an insect? Did it appear to be dangerous or was it quite passive?
- Google 'Giant Weta' and click on *images* and choose *large* size. Select some of the close-up images and data project so students can closely examine and identify their unique features.
- **Weta Websites for Research**
www.terrature.org/weta.htm www.kcc.org.nz/weta
<http://christchurchcitylibraries.com/Kids/NZBirdsAnimals/GiantWeta>
<http://www.teara.govt.nz/en/weta/1>
www.doc.govt.nz/conservation/native-animals/invertebrates/weta/
- Divide students into groups and have them conduct detailed giant weta research at the above websites and focus on the following questions/statements/discussion points.
 - The number of years it has survived almost unchanged and how primitive is it in comparison with the tuatara.

Science Curriculum Indications:

- Understanding the physical features of the giant weta, their preferred diet and habitats.
- Understanding that weta have survived for so long and the threats they face for continued existence.
- Understanding how human induced changes affect flora and fauna.
- Finding out about the efforts that are currently being taken in an effort to ensure that the giant weta survives.
- Understanding why scientists and conservationists believe the outlook for the giant weta is positive.

Yrs 6–10. Links to Social Sciences, Technology and English

- Describe the preferred habitat and diet of the giant weta.
- The group (genus) of insects the giant weta belongs to and why they are often described as *nocturnal* or *demon grasshoppers* and the *dinosaur of the insect world*.
- The number of species of all weta found in New Zealand and their names and the number of species of the giant weta (11).
- Identify the threats to the giant weta – both from man and other predators and why they survive today mainly on offshore islands. Why are they easy prey for predators?
- Find where colonies of giant weta have been established and been discovered on the mainland.
- Why was the 1962 discovery of the Mahoenui Giant Weta in the King Country very exciting?
- Compared with the tree or bush weta, how aggressive is the giant weta and does it pose a threat to people when being handled? Is *gentle giant* a good description?
- The possible size and weight of a giant weta and how this compares with other insects, birds and small animals.
- How has being nocturnal helped the giant weta survive?
- How adaptable are giant weta to different habitats and can they be bred successfully in captivity and what is the potential for their survival as a species?
- What is the exoskeleton and why does the weta shed this skeleton?
- Differences between male and female giant weta, both in physical appearance and size.
- How old will a female giant weta be when it lays its eggs, how many will it lay and when will both parents die?
- How long does it take for a giant weta to reach maturity and how long will it live?

THE MAHOENUI GIANT WETA SCENIC RESERVE

- Play the TVNZ *meet-the-locals* weta video and have students focus on the following ideas developed in the video. <http://tvnz.co.nz/meet-the-locals/meet-locals-2007-episode-85-video-1895395>
 - How long ago was this new species of giant weta discovered?
 - What would have been the normal dangers it would face on farmland and what had enabled it to survive?

NAMED WETAPUNGA IN MAORI - AFTER 'THE GOD OF THE UGLY THINGS'



Picture courtesy of: anamanum.blogspot.com

- What is considered the main danger to it surviving and what has DOC done to help?
- What predators has the gorse been helpful in protecting the giant weta from and what would make it helpful?
- Where have new colonies of this giant weta been established?
- Compared to the tree weta, how dangerous to humans is the giant weta?
- What did the discovery of this colony tell us about the ability of the giant weta to adapt to new habitats?
- How are we able to tell the male and female weta apart?
- What are the problem weta predators on this reserve?
- For further detailed research and discussion on the Mahoenui Giant Weta Reserve, print out or data project the pdf at: [http://waitomoeducationservice.wikispaces.com/file/view/Mahoenui+Giant+Weta+\(Deinacrida+mahoenui\).pdf](http://waitomoeducationservice.wikispaces.com/file/view/Mahoenui+Giant+Weta+(Deinacrida+mahoenui).pdf)
Focus on the following points:
 - The unlikely combination of cattle, goats and gorse bushes to create a safe habitat for the giant weta.
 - The unique characteristics of the Mahoenui Giant Weta.
 - The shorter life cycle of the Mahoenui Giant Weta.
 - The ability to grow back a broken appendage.
 - Why the adult females can be susceptible to predators and what they use to lay their eggs.
 - The eating behaviour of the young nymphs.
 - Reasons why the Mahoenui Giant Weta are generally a solitary insect and how they keep intruders away.
 - Reasons why the Mahoenui Giant Weta have been relocated in other areas and where these areas are.

HELPING LONG-TERM SURVIVAL OF THE GIANT WETA

- Do the students think that sufficient work is being done to ensure that the giant weta does not become extinct? How would they rate its chances of survival? Debate both sides of the following statement. 'Because weta have been around for 190 million years, they will survive forever'. Are there any factors that have tipped the certainty of survival against the giant weta?
- Did the students know that there is a captive giant weta breeding programme at Auckland Zoo? Play the following TVNZ News clip to the class: <http://tvnz.co.nz/national-news/auckland-zoo-breed-giant-weta-4897340/video>
- Discussion points include:
 - Reasons scientists are searching Little Barrier for wetapunga for a captive breeding programme.
 - The actions that have been taken to allow the population of wetapunga to increase on the island.
 - What will happen to the weta bred at the zoo and how long before they are released onto other predator-free islands?
 - How optimistic are scientists about the future of the wetapunga.
- Do the students think it would be possible to establish giant weta populations on the mainland rather than predator-free islands? What would have to be done before this was possible?
- Did the students know that a new population of Mahoenui Giant Weta have been established on the mainland? Find out how this was done by playing this TV3 News clip to the class. <http://www.3news.co.nz/Giant-weta-shifted-to-safe-environment/tabid/1216/articleID/250481/Default.aspx>
- How optimistic are the keepers of the park about the future of this giant weta in their new environment?

CONCLUDING STUDENT ACTIVITIES

- Have students revisit the concept of taonga – Māori for a prized possession or a treasure. Why do students think that our unique giant weta should be thought of as a New Zealand taonga? Introduce the idea that many people will see giant weta as a scary creepy crawly insect. Challenge students to write a short report or give a short speech that will convince people about the special nature of these insects and why we should all support the efforts being made to save them from extinction.
- Introduce the idea of a **bio-boxes** as a way to quickly profile almost any person, place or animal. Tell students that they're tightly written, giving background information at a glance and they answer essential questions like:
 - weight? - length? - food? - habitat? - threats?
 A bio-box should also include pictures. Have your students design a bio-box for the giant weta.
- To raise awareness of the giant weta among other classes, have students design a multi-choice giant weta quiz using all the facts they have discovered during their giant weta study. Discuss how the questions could differ for different age levels. Have them test their family members as a homework task.
- Have students plan a giant weta fact sheet for the class/school website. Make sure they include links to valuable websites and videos that help tell and illustrate the giant weta story.
- Invite a representative from your local DOC office to talk to the class about weta in general and what species of weta can be found in the local area and where they would find them. Have students prepare questions to ask including finding out about weta predators that exist in the area and any local efforts to eradicate predators.
- Involve the class, parents and caretaker in designing and building 5 star weta motels at school/home. Full instructions at: www.doc.govt.nz/getting-involved/home-and-garden/build-a-weta-motel
- Challenge students to design a wall chart that identifies threats to weta. Include predators introduced by humans that eat them, habitat and food supply destruction and changes humans have made to land use in New Zealand.