

# TUATARA – NEW ZEALAND'S TAONGA

## SCIENCE BASED CROSS-CURRICULUM ACTIVITIES

Visit the Allan Wilson Centre at <http://www.allanwilsoncentre.ac.nz/>



ALLAN WILSON CENTRE  
FOR MOLECULAR ECOLOGY AND EVOLUTION



Picture courtesy of [animal-wildlife.blogspot.co.nz](http://animal-wildlife.blogspot.co.nz)

### TUNING IN TO OUR TAONGA

- Did the students know that a common meaning of the Māori word taonga is a prized possession or a treasure?
- Introduce the idea that we have many natural features in our country that we think of as taonga. Have students brainstorm a list of natural features of the New Zealand landscape that we regard as so special that they are regarded as taonga, eg Huka Falls, Fiordland, Tongariro National Park, Lake Taupo ...
- Did the students know that we have many birds, reptiles, fish, marine mammals, frogs, invertebrates and fresh water fish that are (unique) only found in New Zealand? Challenge students to list as many as possible. Data-project the following website and check how many taonga they have identified: [www.doc.govt.nz/conservation/native-animals](http://www.doc.govt.nz/conservation/native-animals)
- Did the students know that the tuatara is often regarded as our most precious taonga? Can they say why it is regarded so highly and why it is so special? Prior to the following research, motivate students by having them list:
  - All they know about tuatara.
  - What they would like to find out about tuatara.

### MEET THE TUATARA

- Google 'Tuatara pictures' and select images. Project on screen for visual study. Have students describe the unique physical features they see. Tell students that tuatara is a Māori name meaning 'peaks on the back'. Can they see these features?
- Play a short video footage explaining the evolution of tuatara which have hardly changed physically in 220 million years at: [www.teara.govt.nz/en/tuatara/1/2](http://www.teara.govt.nz/en/tuatara/1/2)
- Either in groups or as class shared reading have students conduct tuatara research at the following websites: [www.teara.govt.nz/en/tuatara/1](http://www.teara.govt.nz/en/tuatara/1), [www.doc.govt.nz](http://www.doc.govt.nz) > type tuatara into search box.
- Can the students discover the following ...
  - The species they belong to and their physical characteristics.
  - Why they are of great cultural significance to Māori?
  - Speculate on why they are called kaitiaki of knowledge.
  - How long have they existed and why they are often called living fossils?

### Science and Social Science Curriculum Indications:

- Understanding why the tuatara is regarded as a precious taonga and how it is unique in terms of evolutionary history.
- Identifying the reasons why the tuatara became extinct on the mainland of New Zealand and appreciating the extraordinary measures we have taken to ensure its survival as a species.
- Becoming familiar with the physical features of the tuatara, what it eats, how it breeds and its habitats.
- Understanding the effect that temperature has on the number of male and female tuatara that are hatched, what could happen if the earth warms and how the Victoria University incubation programme helps with this balance.

### Yrs 6-10+ Links to Technology, English, The Arts

- How long ago did the relatives of the tuatara die out?
- Where do they live and what do they eat?
- How long do they live and in what way have they become cultural icons?
- Why are tuatara now only found on offshore islands and in mainland sanctuaries?
- What caused the decline in tuatara numbers on the mainland of New Zealand and what steps were taken to make sure they survived as a species?
- Name the two species of tuatara we have and the approximate population size of our tuatara.

### MORE INTERESTING TUATARA FACTS

- As a class, visit the following website: [www.kcc.org.nz/tuatara](http://www.kcc.org.nz/tuatara) Focus and discuss the facts presented at the 'Having babies is a slow process' ... section. What interesting fact did the scientists at Victoria University find out when they incubated tuatara eggs?
- Introduce the idea that by knowing this they can keep the numbers of female and male tuatara in balance on the offshore islands. What do climate change scientists predict could happen if our earth warms? Why would this mean that temperature controlled incubation by scientists would become very important?
- As a class, discuss and comment on the weird and wonderful facts about tuatara. What do students think is the most amazing?

### MEET THE LOCALS TUATARA VIDEOS

- Play the following three videos to the class:
  1. <http://tvnz.co.nz/meet-the-locals/meet-locals-2008-episode-97-video-1902092>
  2. <http://tvnz.co.nz/meet-the-locals/meet-locals-s2009-e22-tuatararelease-video-2806834>
  3. <http://tvnz.co.nz/meet-the-locals/meet-locals-2008-episode-129-video-2262983>

# AN AMAZING CREATURE WE MUST PROTECT



Stephens Island Tuatara,  
Picture courtesy of Susan Keall

## VIDEO 1 DISCUSSION POINTS

- Reasons why the tuatara had no chance of survival on the mainland of New Zealand.
- How the head start programme works and who incubates the eggs.
- The time taken between hatching and release to an island and why this is necessary.
- The food young tuatara eat and the reason why they eat less during the winter. Introduce the cold blooded concept.
- The purposes of the spines on the back of the male tuatara.
- How eggs are incubated in the wild.
- The advantages of scientists manipulating the temperature during incubation and how this improves the prospects for tuatara in the future.

## VIDEO 2 DISCUSSION POINTS

- Why we place so much importance and take so much care to return tuatara to their natural habitat.
- The age and physical size a tuatara must reach before being considered for release. The dangers and difficulties they face when returning to the wild.
- The conditions necessary to be established on the island before tuatara could be reestablished.
- The endangered status of tuatara on this island before clearing of predators was completed compared with the future they now have.

## VIDEO 3 DISCUSSION POINTS

- Identifying the members of the partnership and the special measures taken at Ngā Manu Nature Reserve to ensure tuatara get a good start.
- Young tuatara are quick learners.
- The reasons why such detailed health and physical development records of the tuatara are kept.
- The contribution Ngā Manu has made to Brothers Island Tuatara.
- Other conservation activities carried out at the Ngā Manu Nature Reserve at Waikanae.

## MORE DETAILED RESEARCH TOPICS AT:

<http://chickenoreggblog.wordpress.com/page/2/>

- Have groups carry out more detailed research at this informative blog site of respected research scientist Hilary Miller. Have each group report back their findings to the class (Scroll down the page to locate each topic).

### Research Topic One:

- Tuatara Tuesday – how cold is too cold for tuatara?

### Research Topic Two:

- Tuatara Tuesday – Stephens Island (Tuatara Central)

### Research Topic Three:

- Tuatara Tuesday – It's not a dinosaur. OK?
- Did the students know that it is commonly thought that we have two species of tuatara? Have students find out the names and differences between the two species and where they live at: [www.kcc.org.nz/tuatara](http://www.kcc.org.nz/tuatara) (*Sphenodon punctatus* on Stephens Island and *Sphenodon guntheri* on North Brother Island). Have students visit these islands using Google Earth, *eg - type in Stephens Island NZ; Brothers Islands, NZ*
- As a class, find out what the final post on the chicken or egg blog page says about how we should regard the two species. What is meant by *not as genetically distinctive as first thought?*

## CONCLUDING ACTIVITIES

- Have each student prepare an ID card (including a picture) that best describes a tuatara to a person overseas.
- Have each student make a personal contribution to a class 'The Amazing Tuatara' display including an explanation about why they believe the tuatara is a special New Zealand taonga and worthy of all the steps we are taking to protect it. Invite other classes and parents to enjoy the display. Play selected videos to the visitors to raise tuatara awareness.
- Challenge students to prepare an informative tuatara web page addition to the school or class website. Include links to tuatara pictures and videos.
- Have each student design and paint a personal tuatara mask using rolled up cardboard or thick paper. As a class, wear these masks to assembly and have each student in turn, step forward and make a statement about what they believe makes the tuatara so very special.
- Find out (from your local DOC office) where the closest tuatara can be found and seen. Do the students think it would be a good idea to raise funds for a class trip to experience tuatara?
- Remind students that saving the tuatara has only been possible by clearing all predators from offshore islands and creating onshore islands. Visit the following section of the DOC site: [www.doc.govt.nz/conservation/threats-and-impacts/animal-pests](http://www.doc.govt.nz/conservation/threats-and-impacts/animal-pests) to find out the threats posed by animal pests and what is being done to help protect our native species. Find out from DOC and the local council the work that is being carried out against predators in your local area. Have students find out what they can do to help protect our native taonga.