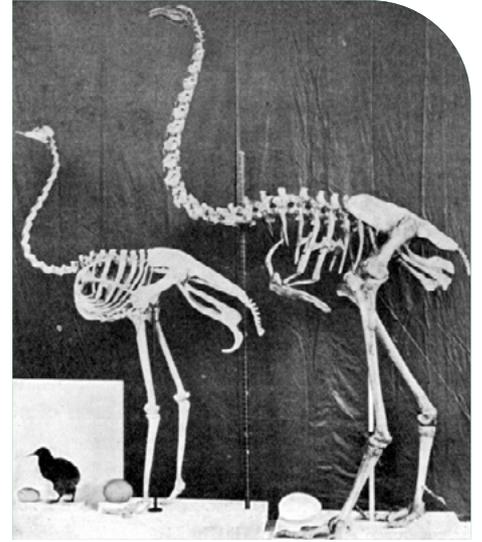


History & the future



A person pointing at layers of shells in a midden (human rubbish dump)



Comparison of a kiwi, ostrich, and Dinornis (giant moa), each with its egg

The image above right, compares the size of kiwi, ostrich and a dinornis moa. When Māori first arrived in Aotearoa, moa roamed across the country. The largest moa in Te Wai Pounamu was the South Island Giant moa that weighed up to 250kg. It's believed that the moa became extinct within 200 years of the first Māori arrival. Middens are old rubbish dumps and they can tell a story about the behaviour of the people at the time.

In groups, discuss these facts, then consider the questions.

Moa's only predator before humans arrived was the giant Haast eagle.

A South Island giant moa egg would have weighed around 4 kilos – 64 times the size of a large chicken egg! Moa would only lay one or two eggs per year. Lots of moa eggshells are found in middens

Moa bones are also found in middens.

DNA testing showed that the bones in the middens were twice as likely to be male moa than female. Males tended to be smaller, slower and looked after the eggs.

Older middens have more moa and seal bones. More recent middens have more fish, shellfish and small birds like weka.

A few middens near the coast had a range of moa bones such as the feet, skull and pelvis. Most middens just had leg bones.

Image source:

Midden – <http://www.learnz.org.nz>

Moa size comparison – Unknown author, PD US, via [Wikimedia Commons](https://commons.wikimedia.org/wiki/File:Moa_size_comparison.jpg)

Questions:

Why do you think more male bones are found than female bones?

Why do you think the older middens had different items than more recent ones?

Why do you think only leg bones were found in most middens? What do you think happened to the other bones?

What do you know about mātauranga Māori regarding kaitiakitanga, sustainability and conservation today? How do you think this current knowledge has changed from the knowledge of the humans who hunted moa?

Further reading:

<https://teara.govt.nz/en/moa/page-4>

<https://www.sciencelearn.org.nz/resources/2294-death-of-the-moa>

<https://www.sciencelearn.org.nz/resources/1460-middens>

https://www.aucklandmuseum.com/getmedia/2a59023d-3b5c-46a1-9196-efac8174f04c/ram_2020_gill_furey_ash

History & the future



What story does the waste in the Kate Valley landfill tell today?



Pile of waste at Kate Valley landfill (1)



Pile of waste at Kate Valley landfill (2)

Look carefully at these two images of piles of waste arriving at the Kate Valley landfill, and discuss these questions:

- What items can you see a lot of in the piles?
- What items can you only see some of in the piles?
- What items can you see that shouldn't have been thrown in the rubbish?
- What story does this rubbish tell about the behaviour of the people who threw it out? What did they do, think, feel, see?

Imagine that a class from your school is visiting the Kate Valley landfill in 400 years.

- What would be left from the things that are being thrown out now?
- What would they see?
- What would they think about the people who threw this waste into the landfill?
- Do you like the story they might tell about our waste?

In your groups, discuss what you think there needs to be more or less of in our landfill to improve the story the future children would tell about us. **Make a plan below for how you could do this.**

Our landfill should have more...

Our landfill should have less...

We could do this by...