

Teaching kia hika ahi - traditional fire-making

As well as a practical activity for juniors, traditional means of making fire can be useful when teaching human evolution. NZASE Science Communicator Mike Stone talks with Dick Pirie in another of our series about mātauranga Māori in the science classroom.

Dick Pirie, a senior biology teacher at Logan Park High School, has been exploring a traditional method Māori used to make fire. Kia hika ahi involves using a technique called a fire plough.

A stick of hardwood is cut to a dull point. A flattish piece of softwood has a groove cut down its length. The point of the stick is rubbed quickly to and fro against the groove of the softwood in a 'ploughing' motion, to produce hot dust that then becomes an ember.

Māori called the hardwood stick te hika or ure and the best wood for this was kaikōmako, although totara or matai could be used. The flat softwood was called kauahi or kahunaki and for this māhoe (whiteywood) or sometimes patē was used.

Māhoe was the best for this purpose because with friction it quickly forms flammable dust. The process is helped by fine, dry tinder and for this Māori used puku tawai, a bracket fungus found on beech trees.

Dick was inspired by Ray Mears, a specialist in outdoor survival. Mears filmed an episode where he showed how to make fire using traditional methods in Samoa, then in New Zealand on a marae (only available on CD).

"Kia hika ahi has been a long journey for me, the knowledge is not easy to find, and kaikōmako is hard to source in the south too!"

In the end Dick went with the wife of a colleague to prune some kaikōmako branches



Upper left: He kauahi.
Photo: Norman Heke, Te Papa.
Left: He hika, a hardwood fire-making stick.
Photo: D. Austin, Te Papa.



Left: Māhoe tree, *Melicytus ramiflorus*, from Tangata-whenua, CC BY-NC.
Right: Kaikōmako, *Pennentia corymbosa*, by Rudolph89, Wikimedia Commons.

in the Botanic Gardens where she worked.

Dick created a lesson around this for Human Evolution in year 13 Biology. Students watch the Ray Mears video to see the basic principles, then Dick gives them the bits of wood and tells them to figure out how to make it work and have a go, outside on the concrete on a sunny day.

"It's hard work; you need to be really fit and have strong shoulders and lots of endurance. It works best with team work and fast changes. As they work, the wood scorches and gives the smell of smoke which encourages

them. I have a bag of marshmallows which we can cook if they get a fire going, but it's only happened once."

"The students loved it, the Māori teacher was curious, but my biology colleagues, while interested, have yet to try it themselves," he said.

Classroom activities

As well as making the fire students could -

- Discuss the different uses for fire traditionally and today.
- Discuss the energy changes taking place, from the students themselves working the ahi to the final marshmallow being cooked.
- Watch the video of a [Samoa method of making fire](#) and compare with Māori methods.
- Rangahau what makes the kaikōmako wood the better wood to use – and perhaps design a NoS experiment to test this.
- Whakatewhatewha (explore/investigate) different natural materials that could be used as te hika and kauahi.
- Rangahau other methods of starting fires with materials found in the bush.
- Find out how in te ao Māori, different hapū used this method of fire making, and how Māori carried fire from place to place.
- Sit and talk, kanohi ki te kanohi, with a kaumātua, e.g. about local tikanga (kawa) and pūrakau about fire making.

Ngā Kupu

Ahi – Fire, burn.

Hika (ia) – To kindle fire

Mahi ngatahi – Working together

Rama – Torch

Rangahau – Research, study

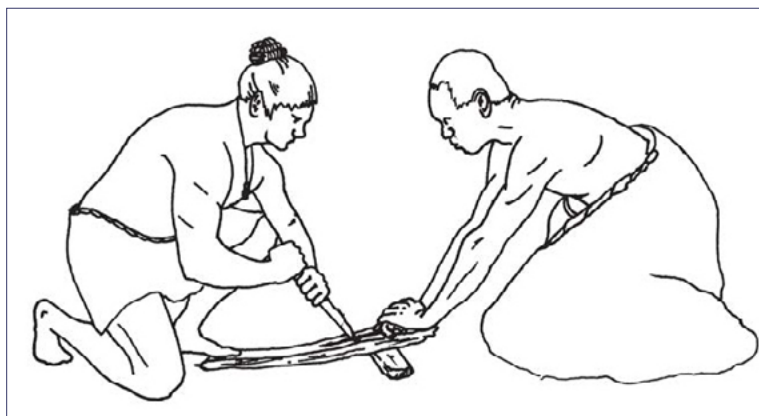
Tamou – Re-igniting embers

Wera – Burn, hot

Whakatewhatewha – To investigate.

Te Aka Maori Dictionary

Thanks to Mere Manning for her contributions to this resource.



Te hika ahi, using a long kauahi. From [Te Māori ki te Wao Nui a Tāne - Māori and the Forest](#), p21.



LPHS students using te hika and he kauahi to try to make a fire. Photo: Dick Pirie.

References

- Sandy Bell, 2012, [Te Māori ki te Wao Nui a Tāne - Māori and the Forest](#). (Teaching programme)
- Wikipedia, 2021, [Fire plough](#).
- Landcare Research/Manaaki Whenua. 2021. [Ngā Tipu Whakaoranga/Maori plant use database](#).
- Te Ara. 2015. [Shrubs and small trees of the forest: Lookalike subcanopy trees](#). [Ray Mears' CD was not traceable online.]



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