

# WHAT IT MEANS TO BE HUMAN BIO CAMP: HUMAN EVOLUTION

***What does it mean to be human? That was the question at the heart of Bio Camp 2022 when St Patrick's College students headed to Wairarapa and stripped life back to its simplest form: making stone tools, fire-making, foraging and sitting around a campfire long after the sun had set. Science communicator Ceana Priest chats with biology teacher and camp organiser Kate McClintock about the benefits of taking students into nature to learn about human evolution.***

The camp took place at St Patrick's College's Wairarapa campsite near Greytown, with the goal of bringing the Human Evolution unit to life—to let students experience, not just learn about, what it means to be human. But just as important, Kate says, was creating space for connection: with the environment, with each other, and maybe even with a slower, more straightforward way of being. If they left wanting to spend more time outdoors—camping, hiking, sitting around a fire—Kate says that felt like success to her.

Another motivation for the camp was to allow busy, high-achieving Y13 students to pause and take a moment to simply be kids.

"In their final year of school I think this is something that can be lost," Kate says. "But it is something I do not ever want them to lose. Being in nature is a great way to bring us back to our playful, carefree selves."

ABOVE: *Le Moustier Neanderthals* Credit: By Charles Robert Knight - [www.digitalcollections.amnh](http://www.digitalcollections.amnh)

## MAKING IT HAPPEN

While she acknowledges St Patrick's College is fortunate to have a simple camp based in Wairarapa, any camp with an outdoor space would be suitable. Access to a river makes finding suitable rocks for stone tools easier, and areas for



ABOVE: Students making fire by rubbing sticks together.



collecting wood are helpful for fire building. It's also worth bringing extra logs and sticks for burning and whittling, particularly during wetter winter months.

Having hands-on support was invaluable during the camp. "My school is also fortunate enough to have a relationship with an outdoor instructor who is highly knowledgeable in all areas related to this camp, so he did most of the direct teaching. That being said, I think anyone who is willing to give [a bio] camp a go will have success.

"The key thing here is to see who in the community can support you. When my colleague Lesley ran a class about kai and umu, a parent of one of her students supported her cooking kai in an umu with the class. Ask the questions and adjust the camp to work with the support and skills you can access."

## DURING

In terms of preparation, Kate considered the camp a teaching opportunity for fire, then added stone tools learnings. Around the campfire, they discussed an article on how fire makes us human and the impact of cooking food and brain development. Also, there were print-outs available about the different types of tools and the different strikes needed to create them along with laminated hunting printouts and articles for students to read.

Despite being held in winter, engagement was never an issue, as students chose their activities rather than being forced to participate. "We created space for people to do activities that felt right for them. Later, we considered how this is a reflection of how humans work in a group, playing to their interests and strengths, collectively meeting the group's needs."

Popular activities were building fires for cooking: "They organised their meals in groups and brought their food, so they had full agency on this." Making stone tools and whittling were a close second Kate says.



ABOVE: Collecting river rocks to make stone tools.



ABOVE: Bashing open bones to get to the marrow. The bones were also put on the fire until they cracked, then the marrow was eaten.



For Kate and the students, the camp showed them how little humans need to have a good time and a meaningful experience.

“On night one, rain limited us a little, so we sent the boys into the forest to collect wood for the fire.

“Then, we handed each of them a knife to flake off pieces to start their fire. A stick and a knife occupied them for hours.”

Keeping it simple was key.

“I feel confident that my students would have been happy with simply trying to make fire from wood and then lighting it a more traditional way afterwards—to be fair, they were very lucky to make a fire so quickly—and the same applies to other activities: two stones beside a river (making stone tools), bashing bones open with a stone, or chatting by the fire.

“Primal materials and primal entertainment were all we needed.”

## BIO CAMP: TOP TIPS

Don't be afraid to bring in people knowledgeable in areas outside your expertise.

Keep it simple—camping doesn't need to be fancy.

Give kids autonomy with activities on offer.

Campfires often break down barriers and foster meaningful connections.

Look for ways to turn camping into real-life curriculum learning.

## CORE TAKEAWAYS

“I was especially pleased at the end of the camp, when even the most reluctant students commented that they didn't miss their phones. They also hoped nature would play a greater role in their lives going forward, rather than always being in the city.”



ABOVE: Making fire before cooking dinner over it.



ABOVE: Whittling and making an atlatl.





*ABOVE: Student autonomy meant they could spend time connecting and learning from instructors.*

*BELOW: Students eating and bonding with music around the campfire.*

After the camp, former students contacted Kate, who thanked her for their camp experience, sharing photos from around the campfire.

“The camp taught them the sense of community we feel sitting and chatting around a fire, so they arranged to meet and do it again. With this in mind, fire safety lessons are imperative!”

Through place-based learning, with time to connect to nature and each other in simple ways, Kate felt the camp provided an “opportunity to feel what it means to be human.” While their Level 3 Biology exams will come and go, “I hope, at least for some of them, that the value of these experiences will last far longer.”

While the learnings could be condensed into a day-long field trip, Kate believes: “A great deal of the meaning would be lost. It takes time to drop into the space of feeling calm and ready to be vulnerable enough for meaningful connection and to have time for reflection.

“And participating on the hands-on activities and physically being present at the campfires at night was a big part of the experience.”







ABOVE: Oldowan tool from Dmanisi paleontological site (right, 1.8 mya, replica), compared with the more recent Acheulean technology (left) Credit: Gerbil. CC BY-SA 3.0



ABOVE: Suggested imagery of Neanderthals using fire inside caves. Credit: De Lumley, M. CNS. Tel Aviv University.

## CURRICULUM LEARNINGS

### STONE TOOLS

At camp, the students got hands-on with some of the earliest technology humans ever invented—stone tools. Using river stones, they learned how resourceful early humans were. Starting with the simplest tools, like the Oldowan—basically, just a rock smashed against another to chip off sharp flakes. It was rough, chunky, and perfect for chopping or scraping.

Then, the students tried making Acheulean tools—shaped on both sides, with a classic handaxe look. These took patience and planning, and the students quickly realised it wasn't about smashing harder—it was about control, precision, and using the right grip.

What really struck the students was how the tools changed what early humans could eat and do. Suddenly, cracking bones for marrow, butchering meat, or processing nuts became possible—meaning more food, more energy, and better survival chances.

Making the tools also gave them a real appreciation for the skill involved—especially the way different grips (power versus precision)

developed over time. What started as just bashing river rocks turned into an opportunity to connect with the challenges, creativity and cleverness of early human life.

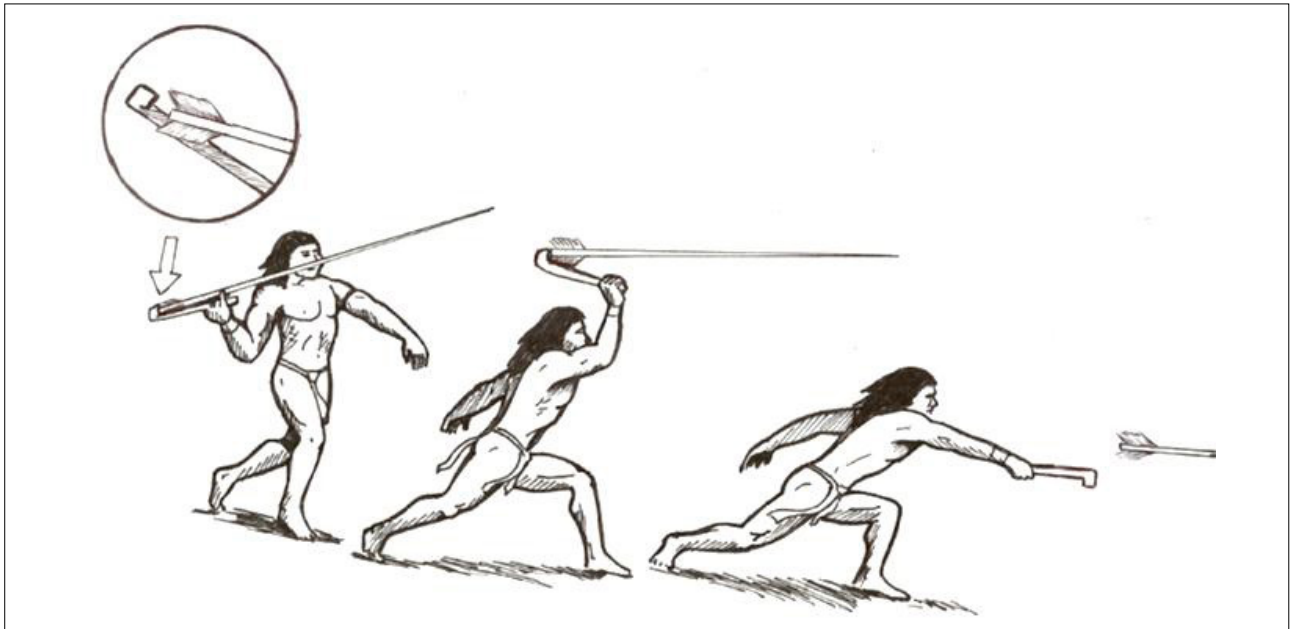
### CREATING FIRE

The discovery and use of fire was a turning point in human evolution, not just for survival but for brain development, culture and community.

The students cooked schnitzel, bone marrow, sausages, vegetables, oranges for dessert, heart and liver cooked in the bone marrow and burger patties—even an entire kumara on a stick—over the fire, while learning how cooking food made it easier to chew and digest, which freed up energy for growing bigger and smarter brains.

Around the fire, they discussed how it provides light, which extends the day and provided more time for early humans to share stories, discuss the day's activities, and form stronger social bonds—laying the foundations for language, creativity, and culture.

Historically, fire also kept predators away, allowing people to sleep longer and deeper, further supporting brain growth. It sparked creativity, too—bones from cooked meals



became tools and fishhooks, and the students enjoyed making jewellery, showing how fire doesn't just support the body but is also key to imagination.

## WEAPONS

Another highlight at camp was making and using an atlatl—ancient spear-throwers that gave early humans a significant advantage. The students realised how adding a simple stick could turn an ordinary spear into a long-range hunting weapon. It meant early hunters could stay further away from dangerous prey, hunt bigger animals and waste less energy chasing food. More successful hunts meant more calories, more survival and more time for other things like tool-making, art and storytelling. The atlatl was proof that early humans weren't just surviving—they were innovating.

## MĀTAURANGA MĀORI

Time was spent discussing maramataka—the Māori lunar calendar. Students learned how the moon's phases guide what's available in nature, making finding food at the right time easier. It wasn't just about gathering; understanding the deep connection between nature, time, and Māori knowledge.

The students were amazed at how traditional knowledge can offer endless ways to interact with the land, and while they didn't go eeling, they foraged for the tender tips of fern fronds.

ABOVE: An atlatl in use. Credit: Sebastião da Silva Vieira CC BY 3.0

## ART

There was plenty of whittling, creating atlatls and bullroarers at camp, which was a good reminder that survival wasn't just about hunting and tools—it was also about expression, communication and creativity.

Although they didn't have time to use the cave art materials supplied, students still discussed how early art might have been used to tell stories, mark territory, teach skills or connect with the spiritual world. It was a sign of brains turning ideas into images. Art wasn't just decoration for early humans, it was a connection, culture, and a new way of thinking.



ABOVE: Cueva de las Manos, Perito Moreno, Argentina. The art in the cave is dated between 7,300 BC and 700 AD and stencilled, mostly left hands are shown. Credit: By Mariano.





ABOVE: Early Māori stone tools at Auckland War Memorial Museum. Credit: Szilas - 49333694

## NGĀ KUPU

ahi - fire

hopuni - camp / temporary shelter, hut

kimi - to look for, seek, search, hunt for

ngahere/ngāherehere - forest

puni - camping place or camp

pūpahi- to pitch camp

tēneti - tent

## FURTHER INFORMATION

[Māori use of stone](#)

[An NZASE article with biology teachers about classroom activities on human evolution.](#)

[Tedx Talks: The human journey - a genetic odyssey - Spencer Wells](#)

[Science Learning Hub: Palaeogenomics and human evolution](#)

[Science Learning Hub: Evolutionary research - advancing our understanding of us.](#)

## CLASSROOM ACTIVITIES

[Instructions on making an atlatl and dart to practice throwing at a target.](#)

[Video: Making an adze. Leighton Hale from the Ngāti Hinewaka tribe is an expert in traditional stone tool technology. He demonstrates the main steps.](#)



ABOVE: Students got to test out their atlatls.