

Martin Toland is a school teacher and a member of the Wellington Beekeepers Association. He has made Top Bar hives in the Kalahari Desert, several dozen Langstroth's scattered over the capital, and a W B Carr hive that sits in his front garden. His master plan is to cover the city's parks, gardens, schools, and public building rooftops with beehives. He writes here about the benefits of schools keeping bees.

We have to catch them when they're young

WELLINGTON Mayor Celia Wade-Brown recently visited Te Aro junior school, the first Wellington primary school to keep beehives. As an ex school teacher herself Ms Wade-Brown was most at home among the children of the city centre school, where bee hives have been a feature for the last season.

The Mayor spent time suited up with the children amongst the bees, before talking with school staff about the importance of nature based education. "If you miss out as a child it's actually quite difficult to catch up," said Ms Wade-Brown, who went into the classroom following the hive inspection to chat with the children and sample some of the honey they had recently extracted.

Two hives, a Top-Bar and a Langstroth, were installed at the school last year. In October two swarms were introduced, with one producing a harvest of 16 kg earlier this year. During the mayoral visit Principal Sue Clement commented that after learning about the crisis around bee numbers, the children wrote to the school's Board of Trustees and parents about the possibility of bringing bees into the school. After positive feedback they then fund-raised to buy a Top-Bar hive to go with the Langstroth hive loaned to the school by the Wellington Beekeepers Association (WBA).

Teacher Claire Tocher, whose classroom students care for the bees and maintain the hives, told Ms Wade-Brown "The children were keen to build two hives because they wanted to compare and contrast the quantity of honey they produced, and whether there was a taste difference in the honey." Claire and her students carry out a weekly check of the hives, situated next to community gardens that are part of the school grounds. These hive inspections have become a highpoint of the week for many in Claire's class. My own role has been that of mentor to Claire and the children, so that both the school and the bees gain maximum benefit from the arrangement.

How did all this come about? My involvement with the Te Aro school community in helping them to establish an apiary stems from the school's initial approach to the Wellington Beekeepers Association, to express their interest and ask for advice and assistance. The WBA realised that the school had thought carefully about introducing bees and were prepared to make a serious commitment to establishing an apiary at the school. Principal Sue Clement, teacher Claire Tocher and other staff, parents, students, the local community, were all supportive of the idea of making beehives part of the school. One of the roles for the WBA and myself has been to assist in developing a risk assessment strategy with regard to keeping bees in the school. This is necessary to assist in clarifying any legal requirements of interested parties, and to establish any school, WBA, or individual responsibilities. A standard police check of is another obvious pre-requisite for anybody working with children, which all teachers go through as a matter of course anyway.

Apart from the loan of the Langstroth and bringing in a couple of swarms to help get established, the WBA agreed to loan the school two adult and ten junior (suitable for 7-10 year olds) bee-suits, and a

few bits of bee gear to get them started. The WBA committee was aware that I had been running a beekeeping group for the last five years at Wellington's Onslow College, and being that I was recently semi-retired from teaching there, the committee asked me if I would be interested in mentoring Te Aro School in the arcane and archaic craft of beekeeping. Subsequently, for the last six months, I have been spending an afternoon a week at Te Aro School, with the kids and the bees. It is huge fun – I enjoy it immensely.

Beekeeping and education: they go together, right? As someone who is both a beekeeper and a teacher I have never found any difficulty in combining the two. If students are learning about beekeeping then they are learning a set of skills that can be applied across the curriculum. There are the obvious science learning opportunities that come from nurturing a hive full of bees, such as bee metamorphosis and biology, their role as pollinators in the city's parks and gardens, indicators of local environmental health and well-being, and how honey and a range of other hive-products can be manufactured and harvested.

Not so immediately obvious is the cross-curricula learning that Te Aro students get from this: they write about their beekeeping experiences, make models and paint pictures. They apply the design process by looking at a range of packaging and labelling options for the honey, before coming up with original designs of their own that reflect their unique locality and personal involvement with the school apiary. There are opportunities for marketing that first require investigation into pricing and quality of similar products in local shops. Learning opportunities abound.

Te Aro teacher Claire Tocher has even involved her charges in making a film about their beekeeping experiences. The children were involved in scripting and editing the film, which was then used to supplement a school entry for a competition initiated by the Genesis energy company to supply and install solar panels that would provide for a school's entire energy needs. The huge amount of work that Claire put in to the school's competition entry eventually paid off when, despite a lot of stiff competition, the school won! Genesis have recently been to measure up the roofs and the panels which will be installed soon. No doubt, the children's film of their beekeeping activities played a part in gaining what will be a significant upgrade to the Te Aro school infrastructure.

At a secondary school/college level I have found further abundant opportunities to bring beekeeping into student learning. Five years ago, as a teacher of Design Technology at Onslow College where students learn in a multi-disciplinary workshop, I initiated a new course aimed at students who were more interested in acquiring practical skills than learning design theory. I called this course "Pre-Apprenticeship Construction". The students could learn building and manufacturing skills and gain a qualification recognised by the Building and Construction Industry Training Organisation. Manufacturing several two-brood and two-super Langstroth hives was one of the first projects I wrote into the course programme.

I broke the students into groups of 3 or 4 – each group was asked to make a complete hive that would eventually make up the school apiary (my long term strategy becoming apparent here!) The hives would have a double floorboard – the top one with 5mm steel mesh, the lower one with a pull-out varroa-count inspection board. Each of the four boxes would have 10 wired frames. A transparent acrylic inner cover would allow for inspection of the top super without the need for personal protection, and a telescopic hive lid would be covered with galvanised thin sheet steel. The boxes would be wax-paraffin dipped before being primed and painted (the school colours, naturally).

The students used a wide range of hand and machine tools in the marking-out, cutting, shaping, and joining of components, which were checked against tolerances. Frame component cutting, assembly and wiring made use of batch-production techniques, such as jig construction and quality control checks. We even made our own hive tools, utilising the cutting iron's from old and broken woodworker's planes, which were cut and shaped using a hack saw and an angle grinder, then filed smooth. In my opinion the tools are ergonomically perfect; more suitable than the bought ones.

I still work as a relief teacher at Onslow College, and run the school apiary and weekly "Bee Club", with hives made by the students. I also occasionally bring a display hive into classes and talk about bee biology, honey and other hive products and, more recently, bee pathogens and CCD.

As beekeepers we have a responsibility to educate and to promote sound and sustainable beekeeping practices to those that come after us. As Frank Lindsay once said to me, "We have to catch them when they're young". You made a deep and lasting impression on me Frank. Additionally, as Caspar Henderson writes in his wonderful "Book of Barely Imagined Beings" – "We are only fully human when we act as if the life beyond us matters".

It matters for the bees. And for all of us.

Martin Toland