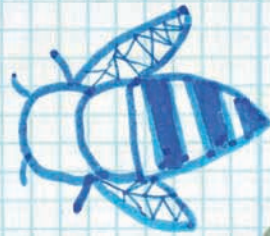




Bees in the Garden

The idea to keep bees came up in a roundabout way a few years ago, when Rūma Koromiko was planning a garden. While researching what a garden needs, the students learnt about bees. These busy insects are essential to help plants reproduce, but worldwide, their numbers are dropping. To attract bees to their garden, the students decided to have lots of bee-friendly plants (ones with yellow, blue, purple, or white flowers). But even with those plants, where would the bees come from? Bees fly up to 2 kilometres – were there any beehives within that range? Maybe it would be better if the school set up its own hives. That way, the bees would live right beside the school garden. This would be good for the plants *and* the bees.

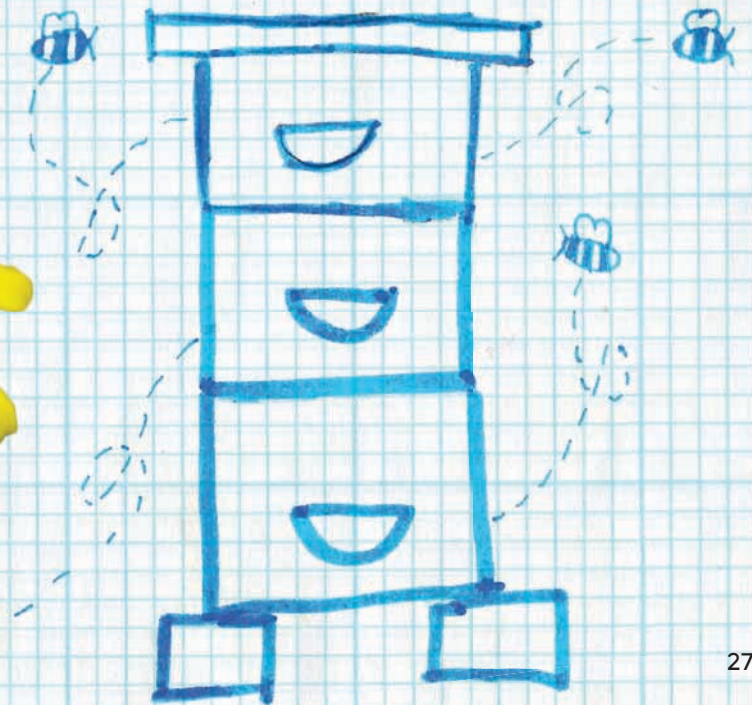
A Sweet Business



by Bronwen Wall



Imagine running a business that employs thousands of workers. The kids at Te Aro School in Wellington do just that. They're in the honey business, and their workers are honey bees.



The Bee Man

Martin has been a bee-keeper for many years, and he visited Te Aro School to share his knowledge. He thought it was a great idea for the students to keep their own hives. "You'll have bees in your garden *and* honey for your toast," he said.

Martin knew all about the equipment first-time bee-keepers need. He explained that it costs around five hundred dollars to set up a beehive. It seemed like a lot of money, but Martin was keen to help the students get started. He said the local bee-keepers association would donate a Langstroth hive and some bee suits, and he would help the students to get their first swarm. This would reduce **start-up costs** significantly. How could the class refuse?



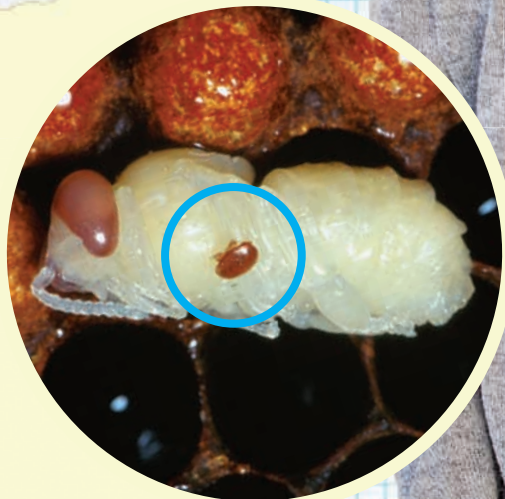
Martin was quick to remind the students that bee-keeping involves **ongoing costs**. Hives need protection from varroa mites, and during winter, bees need to be fed sugar syrup. Beehives also require maintenance, and eventually, the students would need to replace their swarm and their suits. They couldn't rely on donations.

"How will you pay for all this?" Martin wanted to know.



VARROA MITES

Varroa mites are tiny insects that feed on the blood of bees and bee larvae. This weakens the bees. The mites also leave behind small openings in a bee's skin, making it more likely for the bee to catch a virus. These viruses spread easily, and an entire hive of bees can die. Bee-keepers get rid of the mites using varroa treatment strips. These strips contain miticides – chemicals that kill mites.



It was a good question – with an obvious answer. The bees would have to pay for themselves!

Earning Their Keep

How do bees earn their keep? Through their honey, of course. If the students looked after their hive, they would have enough honey to sell and enough for their toast. It seemed so easy. There had to be a catch, and it didn't take much research to discover what it was.

Under New Zealand law, honey that's sold to the public must be processed in a commercial kitchen. Te Aro School doesn't have a commercial kitchen. The students could pay someone to process their honey, but this would be expensive. Besides, they wanted to do everything themselves. There seemed no way around the problem. If the students couldn't sell their honey, they couldn't cover their ongoing costs. They needed an **income**.

Then Claire, Rūma Koromiko's teacher, had a great idea. Rather than selling their honey, the students could give it to their parents and grandparents in exchange for a koha. But how much koha might they get? How much koha did they need? Things were starting to get complicated. It was time to get more help.



Budget Time

Lucia's father, Justin, is an accountant. He was the perfect person to provide business advice. Justin began by explaining the importance of a **budget**. This is a way to estimate costs. Then the class would know how much income they'd need so they could pay their bills. The school was happy to cover any bee-keeping costs for the first year, but the students would have to repay this money after their first season.

"So let's look at the costs for your first year," Justin said. He wrote two headings on the board: "**Needs**" and "**Wants**". Then he asked the students to think about what expenses would be unavoidable. "These are your needs," he explained. "They are different from wants. A want is something you'd like, but it isn't necessary."

Lucy's hand shot up. "We'll need to register as bee-keepers," she said. "That costs about thirty-five dollars."

"Over winter, there's less pollen," said Onel. "So bees eat sugar syrup. We'll need to buy sugar."

"It would be nice to buy extra bee-friendly plant seeds," said Tallulah. "But I guess that's a want."



The students also talked about hives. As well as a Langstroth, they were keen to try a top-bar hive. Maybe one kind of hive would produce more honey than the other. After a few harvests, they would be able to compare the results.

"It's a good idea," said Justin. "More honey means more income, but buying a second hive will be a big expense. Let's see how your first year goes. If you're still interested – and you've made a **profit** – you can buy a top-bar hive next year." The students agreed to wait, and Justin listed the cost under "Wants".

"We'll need to pay for varroa treatment strips," said Beth, "otherwise our bees might die."

"We'll also need an adrenalin injector for our first-aid kit," said Claire. The adrenalin injector was a big cost, but Claire was adamant it was a need and wasn't negotiable. "No one at this school has a serious allergic reaction to bee stings, but that could change. We can't take the risk."

"Anything else?" Justin asked.

The students had been thinking about how they might package their honey. One option was to bring jars from home. Recycled jars would be free and good for the environment, but they'd come in all shapes and sizes, and the students wanted their honey to look professional. Having jars that were all the same would also make it easier to measure equal amounts of honey.

Justin wasn't convinced. "Sorry, guys. New jars will be expensive, and they're not essential. Let's put that under wants till we know more about your income."



Te Aro School Bees: Costs for the first year

Needs

Registration	\$35
Sugar	\$40
Varroa treatment strips	\$40
Adrenalin	\$300

\$415

Wants

Plant seeds	\$20
Top-bar hive	\$150
Jars	\$150

\$320

The Big Question

Now that the class had its costs, it was time to think about income. The big question: Would the students receive enough money in their first year to cover essential costs and repay their loan from the school? There were two important things to consider. How much honey would the bees produce, and how much koha might people give?

Martin had said to expect a harvest of around 40 kilograms. Together with Justin, the students did the maths. If parents gave five dollars for a 250-gram jar of honey, this would be twenty dollars per kilogram – eight hundred dollars in total. It would be enough income to cover both needs and wants! Maybe the students could have their new jars after all.

“The good news is you seem to have a viable business plan,” Justin said. “The bad news is there’ll be no money until after your first harvest, and don’t forget you are being given koha. That means your income may vary.” The students decided to see how it went before buying any extras. It was time to call in the bees!

Money in the Bank

Two years down the track, the school’s honey business is a great success. The bees are busy in the school garden, and the honey – in smart, matching honeycomb-shaped jars – is in hot demand. “It’s so delicious, everyone wants some,” Lucy says. There’s even money in the bank to pay for some new bee suits – and a top-bar hive.

Now that really is a sweet business.



Budget: First Year
Costs (needs)
\$415

Income
\$800



FINANCIAL LITERACY TERMS

budget:	costs you expect to pay and money you expect to receive over a certain amount of time
income:	money received over a certain amount of time
needs:	essential costs
ongoing costs:	things that have to be paid for every year
profit:	money left over when all costs have been paid
start-up costs:	one-off costs of starting a business
wants:	non-essential costs

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