

**Bumble bees have smelly feet.** When you find a new book with a title like that, you've got to sit up and take note. **Rachel Weston** is the author and it's self-published.

This is, of course, a book about bumble bees and their remarkable lives  
It is exactly what you'd need as a **TEACHER** if you want to do a unit on bumble bees or a topic for mini-beasts in the curriculum.

Here are some great topics and science-high-lights:

Even in the very cool conditions of late winter, bumble bees can **generate their own body-heat**

\*That's remarkable for a cold-blooded insect! Rapidly shivering the flight muscles while having the wings in "Neutral", can raise body temps to 30 degrees. They can even set off burglar alarms that way!

\*They can see with in the **Ultra-Violet spectrum** range – lots of science experiments here

\*Bumble bees are great pollinators; they not only carry pollen from flower to flower (like bees do), but also dislodge pollen simply through their (wing) vibrations.

\*Tomatoes are perfect flowers to be **buzz-pollinated** by bumble bees: their visits literally cause the pollen to explode in a cloud and fall onto the flower's stigma (female parts) and onto the bee's body too. For teachers and students: you can mimic this action with an electric toothbrush, buzzing the tomato flowers; you can see it happen!

\***Language:** There are four species of bumble bee in NZ they have, of course, different scientific names (Latin names) and also different common names: buff-tailed, garden, ruderal, and short-haired. (think of: why do they have those names?) In old-English they were known as a DUMBLEDORE or HUMBLEBEE.  
I would use these bumble bees as subjects for historical study (where did they come from? Who are they related to? What is their "home habitat"? etc... and then **write a mihi**.

\***Smelly feet:** the bumble bees are covered with a very thin layer of oily substance that leaves a little bit of smell on the flowers they visit. We can't smell that, but other bumble bees can, so they know that a previous bumble has emptied the reservoir of nectar – no point going there then!!!  
In the time the smell wears off, the plant will have replenished the nectar and the bumbles are good to go again!

The book also guides teachers to the resources and contacts needed to – for instance – purchase a captive bumble bee colony in a box, which can be studied in the school garden (Biobees is the company that supplies them) [www.biobees.co.nz](http://www.biobees.co.nz)

Resources at House of Science (Tauranga) [www.houseofscience.nz](http://www.houseofscience.nz)  
New Zealand Bumble Bee Conservation Trust has a lot of info too: [www.nzbct.org.nz](http://www.nzbct.org.nz)

Rachel Weston's website is [www.rachelweston.co.nz](http://www.rachelweston.co.nz) Ruud Kleinpaste – October 2019