

A student inspects a frame of honey from the flow hive



Beekeeping in the curriculum

Berenger Allee explains how a fascination for bees is opening up the curriculum for pupils at his school

Some schools keep a hamster in the classroom, a few keep chickens or rabbits in the grounds. Here at Charlton Park Academy we keep bees.

This may seem counterintuitive in a special school: unlike animals, which usually relax when you stroke them, bees require the beekeeper to be calm first, and to remain calm even if the bees start flying around in their thousands. People working with bees find this out quickly. For children and young people with learning difficulties, beekeeping helps them learn the importance of maintaining a calm demeanour no matter what the bees are doing. The calmer they are, the calmer the bees.

Beekeeping at Charlton Park began two years ago following a discussion about how to include more outdoor learning into the curriculum. As a beekeeper, I had recently visited nearby Charlton Manor Primary School where they keep bees and was inspired to follow their lead (see box overleaf).

Choosing the right bees

Charlton Park is a special school for students aged 11 to 21. About half the students have ASD, a few have severe physical disabilities, including cerebral palsy, some have specific learning difficulties, such as dyspraxia and dyslexia, and some have severe learning difficulties.

Some experience and/or knowledge is required to keep bees; there are currently two of us in the school who qualify in that respect – me and my colleague, Vitor Lopez, who went on a course run by our local beekeepers' association. Other staff are keen to learn – it is not a difficult skill to pick up.

After much thought, we decided to use flow hives, the latest design in hives from Australia, combined with a strain of bee called Carnolian, which is typically docile. Nevertheless, opening up a hive can make even these sweet-tempered bees irritable, particularly when we are 'stealing' their honey, which can make the whole environment quite stressful. This

is where the flow hive comes into its own, because it allows us to take off the honey without opening it up. The hive also has observation panels in the sides through which students can see the honey and the bees working.

We now have three hives, two flow hives and a traditional hive called a National. This year the students assisted me in two small honey harvests from the flow hives. This involved simply cranking a handle and within seconds honey poured out of the hive through a tube. It took two and a half hours to take off a bucket and a half of honey. The hive's design is such that all the manipulations are done at the back, away from the main entrance, so, while the bees were attracted by the smell of honey, they were not aggressive because the hive was still closed.

Beekeeping in the curriculum

Beekeeping lends itself to cross-curricular learning – the students are absolutely

Outdoor learning



Berenger Allee and a student consult the plan for building a hive



A student helps Berenger Allee construct a new hive

fascinated by the bees, which means that they are really engaged in anything to do with them. In literacy, they might read or write poems about bees. The Year 7s are doing a topic around puppets – naturally the subject is beekeeping – and they made a queen bee and some worker bees. In maths, we can talk about shapes and measures and weights. For example, we can weigh the hives in the morning and evening and consider the many reasons why the weight might be rising or falling. The science angle is obvious. If teachers

want to take their students to look at how the colony works, they can go down to the hive and view them through the observation window without disturbing the bees.

Beekeeping as an activity is open to everyone in school – from next year, it will form part of our curriculum for Key Stage 3 students when we will introduce the British Beekeepers' Association Junior Certificate, which is well suited for our students. This comprises four elements: oral questions about beekeeping, demonstrating how to examine a frame

of bees, a small piece of course work and keeping a beekeeping diary. Meanwhile, the British Beekeepers' Association is launching a new teaching pack for primary schools this spring which we intend to buy.

Getting parents on board

Not one parent balked at the idea of keeping bees at the school. On the contrary, many were keen for their children to benefit from the experience. Naturally there were anxious questions at the start about whether there would

Beekeeping as a confidence builder

Tim Baker, headteacher of Charlton Manor Primary School, talks about the difference beekeeping has made to pupils.

Our school has kept bees for seven years. It began when a swarm alighted at the school entrance. The children were fascinated and wanted to get closer to look at them while the staff anxiously tried to keep them away and wondered if we should close the school.

This rocked me. Not a beekeeper at the time, I still thought it muddle-headed that we teach children about how good bees are for the environment and then panic if we come across a swarm. Consequently two members of staff and I went on a



Nick Shelley, the school beekeeper and gardener, opens up the observation panels for children to see inside the hive

course at our local beekeepers' association and set up the school hive the following summer.

Beekeeping is a summer activity. The school gardener manages the bees during the holidays. He happened to be on the same introductory course as my staff and me and now keeps his own bees.

The hive is set up next to a bus shelter-like structure which allows children to visit it any time to observe the bees flying in and out without the need to get dressed in protective clothing. Our hive also includes glass panels that can be uncovered, enabling pupils to see right into the hive without disturbing the bees. The main beekeeping sessions are carried out after school and everyone involved is fully suited up.

The activity is open to all pupils, but each year we end up with a core of around 15 pupils who are particularly keen. They take part in weekly inspections on a rota. They practise their skills on a virtual hive until they feel ready to work with bees, and we keep the group that is handling the bees small – just three or four pupils at a time.

Beekeeping allows staff to expose children to risk in a safe way. Meanwhile, when it comes to children with SEND, beekeeping is a hugely inclusive activity and a great leveller. Helping with the colony has made a difference to two children in particular, one with ADHD and one with ASD, both lacking in self-esteem and confidence. I don't know



Pupils assess this year's honey harvest

what it is about bees, but the children's difficulties seem to fade when they work with them. They behave responsibly and take the risks in their stride. They have blossomed so much that they were able to give a really good presentation to members of the local beekeeping association recently, as well as to the local MP and dignitaries.



Tim Baker is headteacher of Charlton Manor Primary School, London



One student controls the smoker as the other starts to remove a frame of honey



Zippering up carefully to keep bees out of suits is part of the drill

be bees in the classroom and where we planned to site the hives. In fact, these are kept well away from the playground and properly fenced off. To date, the only grievance is that there is not enough honey for everyone.

We took time to explain to parents how their children might react to bee stings and the possible danger of anaphylactic shock. Meanwhile, the school completed reams of risk assessments and staff received training on what to do if someone had a bad reaction to a sting.

In the event, only one student was stung last year. I called his parents straight away, anxious that they might stop him taking part in the activity. As it turned out, they were more worried that I might exclude him from the bee club.

Developing confidence

The students' reactions to bees surprised me. They are captivated by these busy little creatures. A few, who used to be scared of any insects, have turned out to be my most enthusiastic assistants. Everybody is anxious about things they do not understand, and every parent tells their child that bees sting, so at first students were really, really careful around the hive, walking slowly and close to each other. Now they are fearless. There may be lots of bees flying around them but they don't get alarmed any more.

It's a question of teaching them to be steady and sensible around bees. I model calm behaviour and show them that if I don't flap my arms and behave aggressively, the bees remain calm too, and that provided students are properly protected, it is acceptable, and indeed interesting, to have bees land on them.

The school has invested in a range of bee suits in different sizes so that almost everyone can take a turn to gather

around the hive to observe. For children in wheelchairs, dressing up in a bee suit is a lengthy process, and yet two of them regularly come down to visit the hives with us. The rest of the students wear veils and stand further away.

“*The students are captivated by these busy little creatures*”

Working in small groups

Students have really taken to beekeeping. Right from the start they helped unpack and assemble the flow hive. I work with groups of three or four students at a time down in the apiary. They are learning how to inspect a frame of bees, and what to look for in terms of pollen stores, honey and brood. They are always mesmerised by how the bees continue to go about their business on the frame when I do this, maybe even doing a waggle dance to communicate to other bees the location of a source of forage.

One student will be in charge of the smoker and will gently waft smoke over the colony. Bees' reaction to smoke is to drink honey so that they have a supply of food with them if the 'fire' forces them to evacuate their nest, so they are more intent on feeding than flying around. Another student will be in charge of taking lots of pictures, which I put up on the whiteboard later to stimulate a discussion with the rest of the students about what we saw in the hive that day. We'll talk about the different jobs bees have, such as nursing the brood or standing guard to protect the colony from wasps, and how every bee has an important and valuable role in this community.

From time to time, I might encourage students to pick up a drone and pass it around – drones do not have stings. Until now, I carried out full colony inspections on my own; this summer, I plan to invite one or two of the keenest and most confident students to help me with this.

As a special needs school, classroom learning does not suit our students. They do best when they are active, on their feet and with their eyes popping out in excitement. Keeping bees offers us endless possibilities to harness their fascination in these social insects.

Tips for other schools

- Contact a local beekeeper or your local beekeepers' association. If no one at the school is a beekeeper but you feel it would be a good addition to your curriculum, getting some training in beekeeping is easy.
- Consider the environment. You need an accessible outdoor space away from classrooms and the playground.
- Get your colleagues on board – beekeeping offers a lot of scope for learning outside the classroom while making learning about nature, flowers, pollination and the environment more tangible and memorable.



Berenger Allee is head of design and technology and head beekeeper at Charlton Park Academy, London

@CPA_Beekeepers

FIND OUT MORE

- Flow hives: http://bit.ly/flow_hive
- The British Beekeepers' Association puts schools in touch with local beekeeping groups. This spring, it is launching an education pack especially designed for primary schools. www.bbka.org.uk