

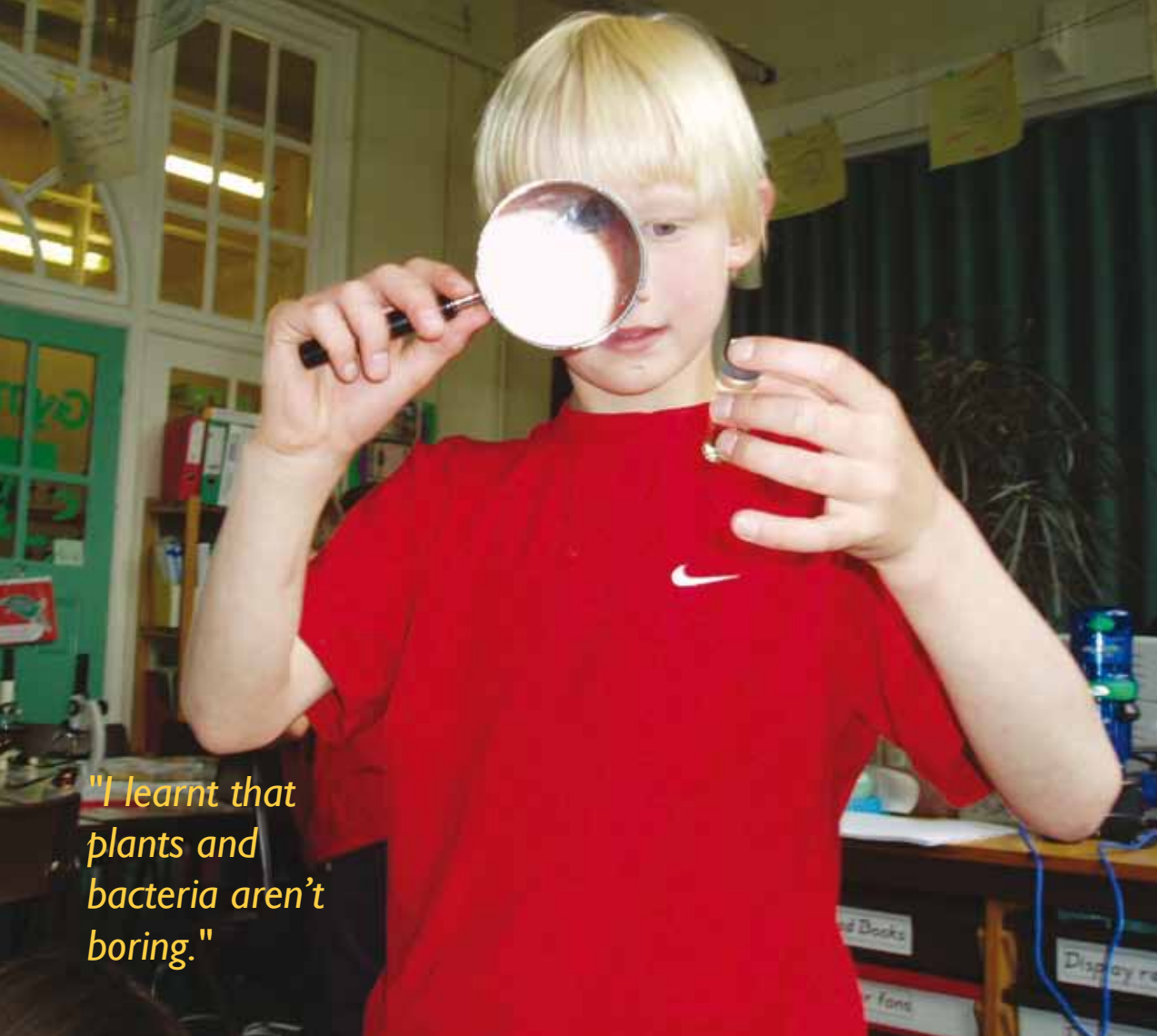


Hidden Worlds – Secret Lives:

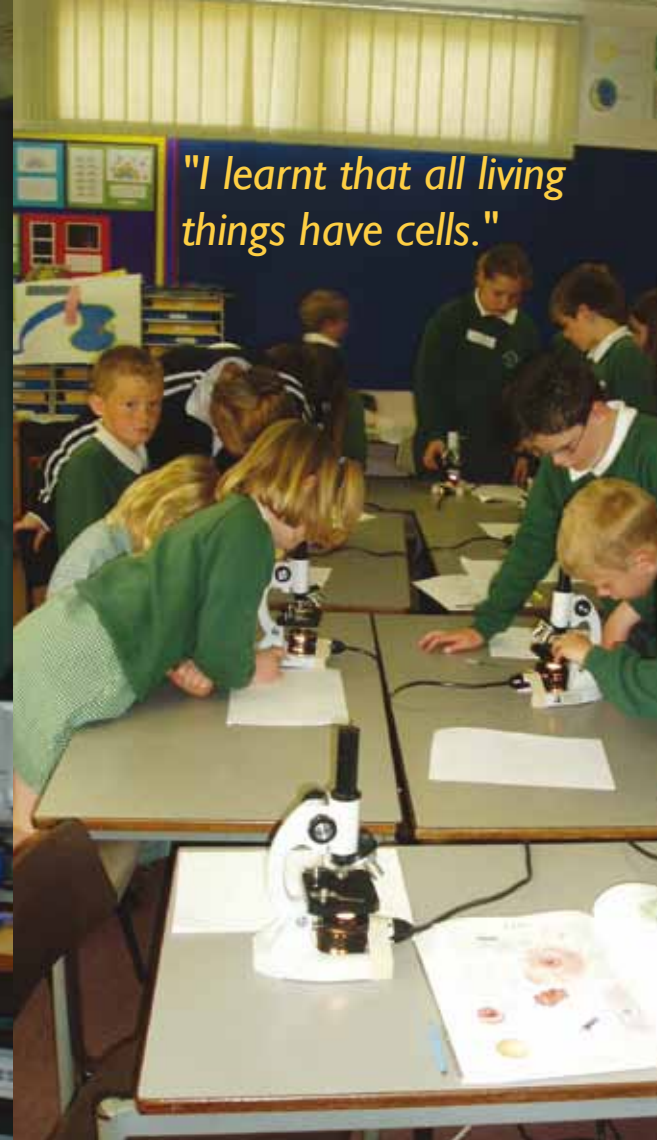
Opening Children's Eyes to
the Beauty of the Microscopic
World Around Them

Nicola Smith

Microscopy in primary schools is often limited by the equipment available and the ability of teachers to use microscopes successfully. A research centre at the University of York set out to address this with an outreach project that introduced primary school pupils and teachers to the wonder of the microscopic world around us and increased their interest and enthusiasm for science.



"I learnt that plants and bacteria aren't boring."



"I learnt that all living things have cells."



The Centre for Novel Agricultural Products (CNAP) is a world class plant and microbe research centre based in the Department of Biology, University of York. Since its inception in 1999, CNAP has been dedicated to providing outreach and education activities to schools and the public. During 2003, Professor Dianna Bowles, the founder of CNAP, initiated a small project that took basic compound microscopes into primary schools local to the university and encouraged children and teachers to look at a range of biological materials. Upper primary

school children were targeted (Years 5/6). At this age, the complex scientific language needed to accurately describe findings can be daunting, so the children were asked instead to draw and paint what they had seen. Initial visits developed into a pilot project with the help of funding from the BBSRC and the Arts Council England.

The reaction to the project was hugely positive and this encouraged the CNAP outreach team to expand the project. Yorkshire Forward, the Regional Development Agency, provided funds for the project

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to run regionally. The programme was further developed into a free of charge, robust, curriculum relevant, day-long science and art workshop which was then promoted to schools in the Yorkshire and Humber region. The programme consisted of a morning microscopy session, led by a member of CNAP outreach staff, and an art-based afternoon session, led by a professional artist, where children used many different mediums to show what they learned during the morning. Alongside this, INSET sessions were run for teachers from the schools receiving visits so that they could participate fully in the school-based session and also think about how microscopy could be used to aid their teaching. Yorkshire Forward funding enabled the project to run for three-and-a-half years.

Just a selection of comments from pupils in relation to the project:

- 'I enjoyed doing the abstract art paintings of the things we saw down the microscope.'
- 'We got to have some independence and get creative. That was fun because it was different from other art lessons'.
- 'There wasn't a part that I didn't like because the whole workshop was excellent.'
- 'It was fantastic because we learnt about all sorts of horrible things like germs and bacteria and paint it all in the same day. I would do it again and again. It was brilliant.'

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"I learnt that micro-organisms are very interesting – when you can see them properly!"

- 'The best bit was when you were talking about the friendly bacteria because I didn't know what it did.'
- 'My favourite bit was looking down the microscopes and seeing all of the different patterns and shapes.'
- 'I learnt that there are some things that you can't see without a microscope.'
- 'I learnt how to use a microscope properly and I also had loads of fun!'
- 'I really want to come to the science department when I'm older.'

Enthusiasm for the project in the Yorkshire region has led to invitations to run the course further afield, including The British School in The Netherlands. It has also led to the initiation of a sister programme in East Africa. CNAP has sent science and art equipment out to five primary schools near the Kilombero Sugar Plantation, Morogoro, Tanzania, with the help of Illovo Sugar Ltd. The schools, which have very little or nothing in the way of resources, received all they needed to run the Hidden Worlds activity, including microscopes, specimens, crayons, paper and other essentials. These schools already receive volunteer teachers from the UK on 6 month placements so, prior to their departure, volunteers were trained at CNAP in the use of microscopes and how to run the Hidden Worlds activity. The Tanzanian school children involved in the project had never had access to science equipment in school before, and the opportunity to be hands on with microscopes and art materials has been hugely enjoyable for them and enhanced their learning. Some pictures from the Tanzania project are included on this page.

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