

Collaborative STEM project

with DHFY STEM School in Bozhou, China



In May 2019, children at Kate Greenaway Nursery School began a collaborative STEM project with a kindergarten school in Bozhou, China.

The project was based around video link calls made twice a week between the two schools.

In the first weekly call, the children would be working together to program and test a robot named Cubetto.



In the second video call, the children would participate in games and stories that would enable both groups to learn about each others' lives and cultures.

We learned some Chinese, including greetings and animal names, while children in China developed their English through speaking to us via a webcam.

At Kate Greenaway, our emphasis is always on active play, direct experiences and interaction with other people. As a result, we think very carefully about how to use technology with children, particularly tech with screens.

We believe that children need to develop confidence and basic skills in the use of technology to equip them for life in the 21st century.

This collaborative project fit well with our view of technology at Kate Greenaway, and the potential for learning in a wide range of areas was evident from the beginning.





The collaborative project offered the opportunity for children at Kate Greenaway to learn some coding skills by programming instructions into Cubetto.

The first thing the children learned about Cubetto was that it could only move in response to their instructions. By placing a direction block onto the control panel, they could send a command to Cubetto.

This simple step is the beginning of understanding computer programming. As complex as some computers can be, they can only do what a human has programmed them to do.

- Nicholas, age 4: "We put the blocks on there... and it moved."



From this first step, the children learned some more complex early programming skills.

They quickly realised that each block they placed on the control board would ask Cubetto to make one movement, either a turn left or right or a short movement forwards.

Using Cubetto's map, the children planned where they wanted it to go by counting squares and turns, then programmed these instructions into the control board.

Programming Cubetto allowed the children to develop some more complex problem solving skills.

If Cubetto did not go where they expected it to go, the children could look at the instructions they had given it and work out where they had made a mistake. This ability to check where they had gone wrong enabled the children to de-bug and replace a command, then try again.





As the children became more familiar with Cubetto, they were increasingly able to program longer sequences into the control board. Working together with the children in China, we set ourselves the challenge of moving Cubetto from one location on the map to another.

This gave the children the opportunity to make predictions about how Cubetto would respond to their instructions, and then test their reasoning.



In the second set of weekly video calls, the children developed their confidence in speaking to their peers in China, in the process, becoming more familiar with using a webcam and microphone.

Kate Greenaway children learned some new words in Chinese, and practiced these in some games. They got to see some photos of DHFY STEM School and of life in a busy Chinese city, comparing these to images of the local area around Kings Cross.

The collaborative project gave Kate Greenaway children the opportunity to participate in a cultural exchange with children in Bozhou, China. They developed confidence in using technology and learned to program a sequence of instructions into Cubetto.

At the same time, the project led to in depth staff discussions around using technology and sharing practice with the partner school in China. This has opened up the possibility of further collaboration involving different forms of technology.

