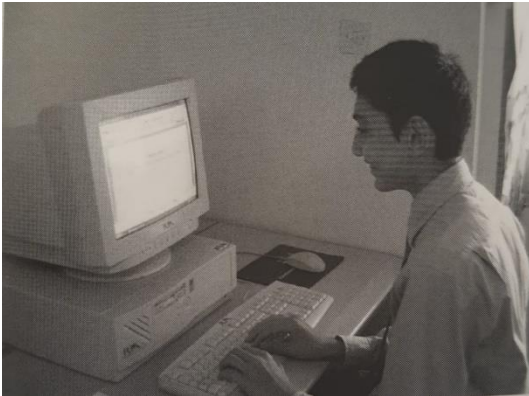# Computing in the Twentieth Century

S10 pupil Kamil – preparing for ICT GCSE

By the turn of the twenty-first century, computers were increasingly becoming part of quotidian life. They were found in offices, increasingly used by teachers in classrooms, and by pupils in their homes. In 2002, S10 pupils prepared for a new GCSE programme on 'ICT' (Information Communications Technology). S10 pupil Kamil shared a glimpse into his studies which included using Microsoft Word and Microsoft Access to find creative solutions for businesses such as creating brochures, letter heads, and databases.

'We used Microsoft Access to solve a company's traditional methods of data handling, such as filing cabinets and update them to become a fully integrated and functioning ICT-based system.'

In the twenty-first century, computing has certainly become a normative part of school life. When 'New School' was opened in 2011, it included two large computer suites with over a dozen computers each – to be used by pupils during class-time, clubs, and breaks. Technology had grown considerably since the mid-twentieth century when computers first came into the fore. An illustration of this advance is noted by the inclusion of a few mid-twentieth century quotes in a 2002 issue of *The Ibstonian*. Well-known experts in the 1940s and 1950s had been dubious, at best, about the gap which computing systems would fill in the world.

'Computers in the future may weigh no more than one and a half tons' – Popular Mechanics, 1949

'I think there is a world market for maybe five computers' - Chairman of IBM, 1943

'I have travelled the length and breadth of this country and talked with the best people, and I can assure you that data processing is a fad that won't last out the year.' – Editor in charge of Business Books for Prentice Hall, 1957

Despite their eminent qualifications, these experts had not foreseen the indelible and consequential mark which computers would make in society. The trajectory of computing began in the middle of the century and was not absent from the experience of Ibstock Place School. The first recorded IPS interaction with computers dated back to 1970.

In 1970, a selection of pupils enjoyed a visit to see a computer at the Merchant Bank in the City of London. This was likely the first experience with a computer for many of the children in attendance. The 1970 *School Magazine* describes the marvel which this visit elicited. The computer they viewed was a NCR 315 – a second generation machine which was used by businesses in the 1960s and 1970s. As you can see from the picture on the right, housing the hardware for computers like these required an entire room; its weight was around
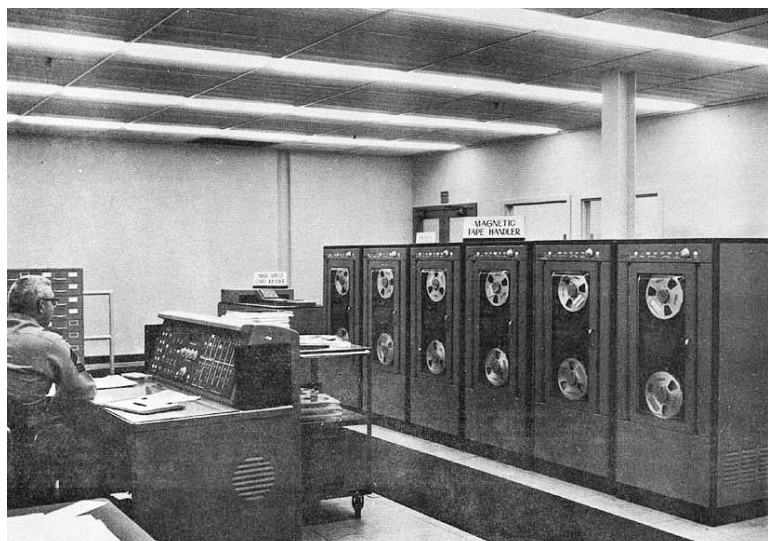
NCR Computer – 1960s

601 kg. Advertisements, like the one pictured below, indicated it could take around six months to set up this computer, though it was still described as both 'compact' and 'high speed'.

USA Advertisement for NCR in 1963

These early computers were almost exclusively utilised by businesses to improve data processing and storage. A 1963 USA advertisement suggested it would cost nearly $3,800 per month to install and maintain this system – a price which would have undoubtedly proved difficult for smaller businesses or households, even if they had the space to house such a machine. Data was entered into these computers through punch cards which were fed into the processor and stored in the system. Without a screen, data could only be read by printing it out through the attached 'high speed printer'.

Whilst this was undoubtedly a business machine, the early signs of personal use were already apparent during this visit. The children who visited this NCR 315 described playing Christmas carols and a game of noughts and crosses. When the game reached a stalemate, the printer ejected a sheet of paper 'with a large cross over it'.

Computers

At the beginning of this year I bought my own computer called The Spectrum. I was very excited when I got it and when I started to use it I did not want to stop. With the Spectrum comes an introductory tape. On the tape it has some basic programmes on how the computer works and a few games. Every night after I finished my homework I played on it. The Spectrum has sound and different colours. I bought a 48K Spectrum and not a 16K. A 48K can hold much more memory and can therefore have better programmes. A programme is what tells the computer what to do. Basic is a language used for making programmes. There are other languages, but basic is the simplest, and most home computers are in basic. With the computer comes a booklet, to help you make your own programmes. I started trying to write simple programmes to do my maths homework. I also bought the programme with games on from a shop. My father then asked me to write a programme for him to list the weeks figures of some shops and then turn this into percentages. I wrote the programme after some problems. I like writing programmes because you get problems sometimes and I like to solve them. There is a lot of satisfaction when you have just written a long programme and it works. The actual computer is very easy to use. When you have written a programme, and you want to keep it, you can save it on a normal tape using any tape recorder. One way to find out more about computers if you do not have one yourself is to join the Computer Club at school.

Paul
3rd Year

Personal use of computers first arose in the 1980s. An article in *IPS Treasures* in 1984 details the experience of Paul - a year 3 pupil - with his own new computer: a Spectrum 48K. This computer, as pictured on the right, was sold as a keyboard unit which could be connected to any television for its display. These machines were released in 1982 and became Britain's top-selling microcomputer for a public audience.

Software could be accessed on this computer by connecting a cassette tape player through a line port. Paul noted that he was able to write programmes, complete maths homework and play games on the system. His father also asked him to

Spectrum 48K

write a programme to 'list the weeks figures of some shops' which he also did with ease.

IPS procured its first computers for pupil use in 1984. Unfortunately, plans were foiled by a fire which consumed Priestman House later that year. However, the momentum towards computing was not inhibited; in 1985 the academic school year began with a computer suite including eight computers. Claire Peach, the computing teacher at the time, explained how this transition into computing was received by staff and pupils:

'Several teachers had already seen the tremendous potential for computers in school, but up to that time there had been very little material for use outside the Maths Department and using a computer required a great deal of time and patience as well as technical know-how.'

Ms Claire Peach and her class

Ms Peach noted that some members of staff already had experience with computers through the ownership of a Commodore PET. These small machines had a tiny screen, no colour, no sound and no disc drives; their functionality was apparently limited. Thus, whilst her enthusiasm for the anticipated 'computing turn' some staff members were dubious.

As she noted *'It was hardly surprising that most of the teachers could see the snags rather than the advantages of computers in school'*.

Pupils were similarly disparate in their responses. Ms Peach described beginning the academic year with a selection of enthusiastic pupils, though the group waned when pupils realized 'they could not just play games'. A dedicated number of pupils persevered, however, and by the summer of 1986, the first O/CSE course was completed in Computer Studies.

Since 1986, the School investment in computing has grown exponentially. The opening of the new Froebel Science and Technology Centre was celebrated in 1992. This new building which housed Maths, Science, Information Technology and Design Technology included the addition of twelve new IBM computers.

Enthusiasm for this new installment was palpable, as these facilities were considered 'the envy of many schools'. These computers were updated in 1996, allowing pupils to develop a wide range of skills using CD-ROMs and graphic design software.
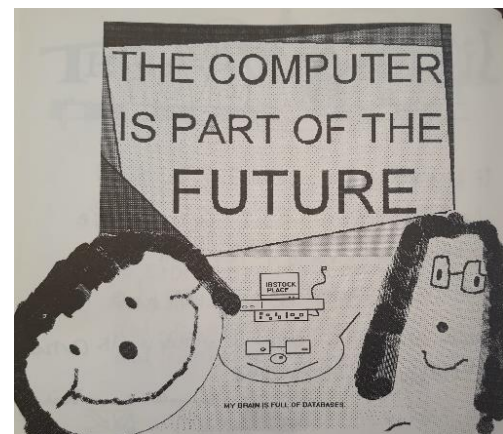
Pupils enthusiastically support the new FSTC

In 1998 a new IT suite with 24 networked PCs was opened in Priestman House 2 (now Roberts Hall). From September of that year, the Information Technology dept was renamed Information Communications Technology – reflecting 'on the changing role that ICT has in schools, industry, and society in general'. By the next year (the end of the twentieth century), ICT had been fully integrated into the curriculum, from kindergarten onwards.

Pupils in computing suite, 1996