# Education: Developing Picture Processing

In this month's educational feature Chris Drage turns his attention to the role of graphics in classroom.

The concept of using a computer as an artistic medium has certain advantages: it provides an alternative to the constraints and restrictions offered by traditional classroom materials and modes
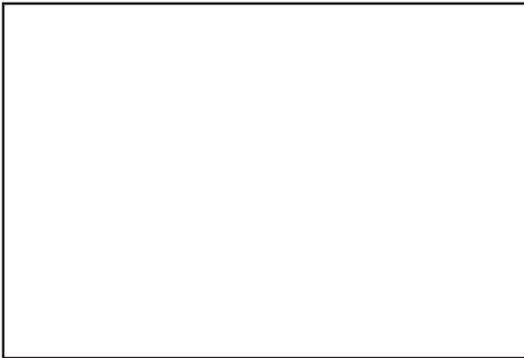

Keyboard Technology's Touch Screen with 1st Paint

of working, and can open up new horizons for exploration. As children have been able to manipulate text in a word processor so they begin to manipulate images, providing the same dynamic approach to editing and alteration as word processing does for writing. Once this concept is understood children begin to see computer-based art as electronic picture processing .

Where a computer art program differs considerably from traditional painting/drawing methods is in the range of tools available. Although an artist may have a range of brushes, pencils or pens at his/her disposal it is not often that an air brush is at hand for example. Similarly, the ability to undo an operation like filling an area with colour is totally unavailable by traditional methods yet is always available
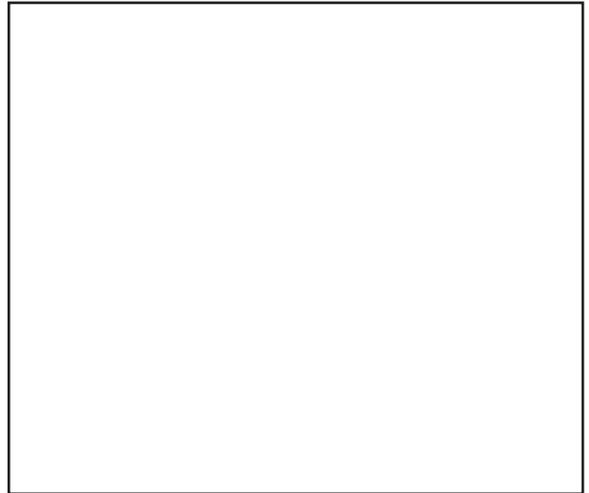
Earlybirds

in good graphic art software, positively encouraging experimentation with design, colour and texture.

Not unnaturally, in exploring this new

Minerva's PrimeArt

medium, children need to develop a range

of concepts, skills and knowledge commensurate with their age and ability. With the range of graphics software available today on Acorn s RISC computers, adopting a develop-mental approach through the school is quite possible and certainly desirable. There are a large number of commercial graphics/design type packages available through which children can experience the joy of processing their pictures using a variety of possible input devices.

1st Paint from Keyboard Technology
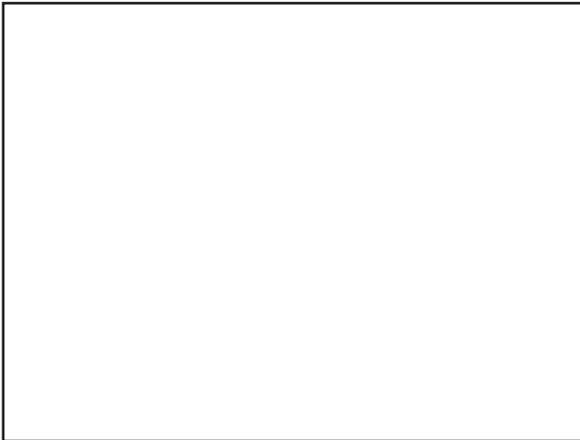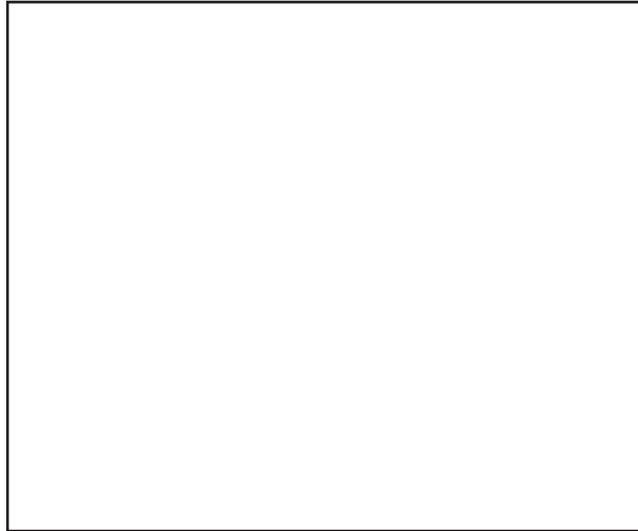
leaving some aspects open for discovery. Second, allow children time to play and experiment with the facilities on offer. When they have discovered an interesting technique they will quite often be motivated to attempt a complete picture or design. Third, give them time to develop and amend their work of art . This is heavy on computer time but is

In exploring computer art, the children will need to develop new skills, so it is wise to introduce new tools and techniques gradually as they are ready. The mouse is a great help here as it proves much better than the keyboard for graphic art work, as gross hand movement is easier for most children to achieve once hand and eye co-ordination has been established.

It is useful to divide the children s experience into three parts. First, demonstrate how certain essential things are achieved with the hardware and software provided, giving them a taste but
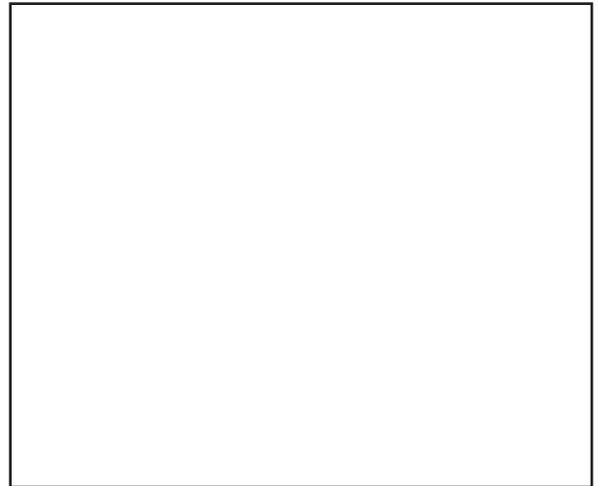
Kid Pix from ESM

time well spent, and is amply rewarded by the pride and satisfaction gained by the

children. A well executed picture can be printed directly or dragged into a piece of writing first, so that each child has one copy to take home and one for the teacher to add to the wall display.

Although the National Art Curriculum contains few specific references to c o m p u t e r

generated art throughout the Key Stages, it does state that children should use... a variety of tools and techniques . The non-statutory guidance also emphasizes computers as part of each child s armoury of tools. The Technology orders, however, state that as early as Key Stage 1 (age 5-7 years), children should be manipulating a variety of computer generated information including pictorial information. At the higher levels children s work will find a niche in all manner of computer created presentations (DTP, graphical databases, multimedia etc.).

The following should help teachers and parents gain an overall impression of a number of proven computer art programs which can be used to create designs and images in their own right or for use in other software.

INTRODUCING YOUNG CHILDREN
TO COMPUTER ART (KEY STAGE 1)

Earlybirds for the Archimedes is a sensibly designed and delightfully easy program to use. It is clear, bold, mouse driven and virtually crash proof, and is ideal for pre-school and reception class children. It offers only basic tools: a 12-colour palette, three brush sizes, rectangle, circle and fill options and virtually no keyboard input. Once saved the pictures can be used in a variety of other programs: SNAP, CUT UP (puzzle program), and planned programs covering sequencing, tessellation and pelmanism.

The Earlybirds suite is thoroughly recommended for budding pre-school artists.

Keyboard Technology s First Paint, also for Key Stage 1, makes excellent use of the company s Touchwindow hardware, but is not dependent on it and can be used with equal success under mouse control. Utilising simple, large icons, First Paint deliberately keeps all operations manageable for young children. It employs a 16-colour palette, eight patterns and drawing shapes and eight picture stamps for making repeated patterns. First Paint is my choice of starting point for serious picture processing on the Arc and without exception all children take to it like ducks to water. With a Touchscreen or Trackerball (N.W.SEMERC - one of the Special Education centres)) or similar input device, First Paint is ideally suited to introducing children with special educational needs to computer art.

KEY STAGE 2 (JUNIOR SCHOOL)

The Archimedes range offers an excellent working environment where screens/sprites etc. can be shared with other relevant applications simply by dragging and dropping them in place. However, the need for an equally simple means of creating them has never been greater.

There are relatively few object-oriented drawing programs for youngsters; Picture IT however, permits young children to build up interesting and complex pictures/scenes from libraries of simple Draw objects - a sort of computerised Fuzzy Felt. The bonus is that these libraries are linked to specific topics within the National Curriculum e.g. Buildings, Transport, Map-Maker, Solar System, Birds, Clothes, Christmas and Dinosaurs.

Files of parts can be dragged to the object window from library discs to be displayed for selection. From here the parts are assembled and manipulated (stretched, shrunk etc.), coloured in and pinned in place to produce a finished picture. An animation program is included which will animate any set of saved images which are numbered sequentially. The program can share Draw files/objects with any other RISC OS compliant program, and offers a unique focus for a wide range of topic based activities for Key Stage 2 children.

There can be few if any more ingenious and innovative starting points to art with a computer than KidPix (ESM). As an introduction to computer graphic art, KidPix, complete with unusual sounds and visual effects, is really hard to beat! Deliberately easy to use, it is packed with different brushes, special effects and ready-made images which positively encourage the most reluctant child to experiment. This well-designed program can become a springboard for investigations into many varied visual concepts like thick/thin, light/dark, inside/outside, opaque/ transparent etc. With its variety of safety features including Small Kids Mode, preventing young children from accidentally opening menus or applications, KidPix is one program that really does come up to the claim: ...children can work independently with little or no supervision. With its ready-made graphics and rubber-stamp features, KidPix is one of my favourites.

PrimeArt (Minerva Software) is one of the most comprehensive art programs for Key Stage 2 children available. It employs no less than eleven types of colour fill! Undoubtedly, its major attribute is that menus can be tailored to suit particular requirements, and the whole setup saved with a child s picture to be reinstated automatically when work is later loaded. Similarly, different set-ups can be created and saved to suit particular projects or tasks. Concept Keyboard input, brush hatching, sticky menus, magnified pixel editing, and a 256 colour palette are just a few of the multitude of features within this program. Sprites can be sized, placed anywhere on the screen, rotated, flipped and tiled using the most novel tiling tool I ve yet seen. Four options on the menu will produce the final prints in small, portrait, landscape or poster sizes. The poster option produces prints which occupy four A4 sheets which are then joined. There is even the optional Display Kit (£12.00) with which to create a slide show of children s work. PrimeArt is a truly comprehensive art program.

If PrimeArt s price tag puts you off, then Imagine (Topologika) at half the price will really please. Although it is not RISC OS compliant, Imagine is specifically designed to be easy to use, and has some interesting features. These include built-in mathematics facilities (tessellation, symmetry, mapping, nine geometric shapes), magic pen, on-screen help, and being able to copy between two 256-colour screens concurrently. These are in addition to all the usual drawing/painting tools/techniques. This program even remembers which option was chosen from a menu last time it was accessed. As it can be fully configured, Imagine can be as complex or as simple as required. Even the mouse can be configured for left-handed use.

Software which lies at the intersection of maths and art is The Art Machine Pattern Book Packs 1 & 2 (Topologika): two suites of five programs, respectively, for investigating weaving, pattern, bounce, tiling, Koch Flakes (snowflakes), tracks, moving squares, cyclical