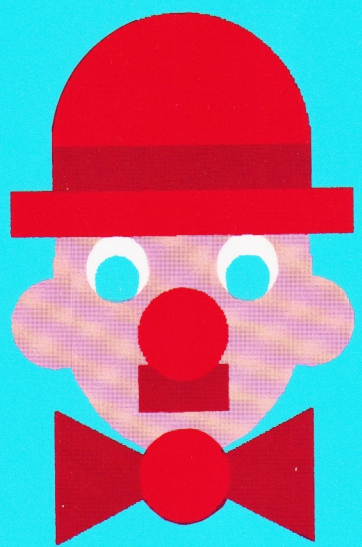
MICRO scope

► Spring 1994

• Picture Builder • News Bulletin •



Curriculum
Resource
Book

NEWMAN COLLEGE with MAPE

Contents

Editor Chris Robson
Illustrations Jenny Russell

ISSN 0264-3847

Correspondence to the Editor: *MICRO-SCOPE*, 99 Foxcote, Wokingham, Berkshire RG11 3PG

MAPE (Micros And Primary Education) is open to individuals and institutions. The current subscription of £15.00 p.a. UK, £20.00 p.a. overseas, includes direct mailing of **MICRO-SCOPE**.
Application forms from: Mrs G Jones, 'The Old Vicarage', Skegby Road, Normanton on Trent, Notts NG23 6RR.

Published by Castlefield (Publishers) Ltd.

Individual copies from: Castlefield (Publishers) Ltd., Castlefield House, 12 Headlands, Kettering, Northants NN15 7HP

MAPE reference for Income and Corporation Tax relief on membership fee: T1644/23/1986/MT
Charity Commission reference: OSP-292898-R Reg. No. 292898
MAPE is grateful for the support received from Acorn, Apple, Cumana, IBM, Microvitec, Commodore, Research Machines and WWF UK.

VAT Number: 544 8661 18

Produced by The Castlefield Press, Kettering, Northants

Picture Builder

Ideas for Classroom Use

Introduction

At first sight Picture Builder may appear to be merely a fun program - a sort of computerised fuzzy-felt - with which children can build up pictures and patterns from regular shapes. The program can, of course, be used in this way to some effect and there is much to be said for giving children plenty of opportunity for free "play" and exploration when they first use it. However, much of the potential of the program will be lost if it is seen only in this light. Used in a planned and structured way Picture Builder can make a valuable contribution to the Mathematics curriculum, presenting opportunities for work on most of the Statements of Attainment of AT4 - Shape and Space. In addition, because the program is concerned with picture making and can involve storage and retrieval of files, it may be used to to develop IT capability at levels 1-3 in the Communicating Information strand of AT5 of the Technology curriculum.

Ideas for classroom use of Picture Builder are presented in the following format:

- an introductory diagram, which may be photocopied as a worksheet;
- notes which offer teaching ideas and extension activities;
- links to the Mathematics National Curriculum;
- a list of key vocabulary which can be developed through use of the activity.

Although the activities are ordered in the sense that they follow the Statements of Attainment of the National Curriculum in Mathematics, they are not designed to be worked through in sequence but to spark off ideas about the types of problem solving activities which Picture Builder can support.

The Role of the Teacher

Picture Builder will be most effective where it is used in the context of other associated mathematical work. Involvement of the teacher is crucial, as a key element of any activity is talking about the mathematical ideas embodied in the program. It will be most valuable for quality teacher time to be given after the use of the program, involving discussion with pupils of the results of their work. Usually this is best done at the computer screen, although if a colour printer is available very effective printouts can be obtained.

Maths talk will also be fostered if pupils work with the program in pairs. Larger groups are unlikely to be as effective because of the practical and interactive nature of the program. However, Picture Builder could be used by a teacher working with a group of pupils. Activities such as 2 and 3 could lend themselves especially well to such a group or class lesson. Before the lesson a pair of pupils could design a pattern or picture and print out a copy. This should be displayed where the pupils, but not the teacher, can see it. The group activity would involve children giving instructions to the teacher at the keyboard to enable her to replicate the original pattern. Greater precision of description will be called for if the teacher deliberately tries to make her version differ from the "blueprint" (it will be easier to do this if a she has managed to sneak a secret glance at the original!). This activity may also be reversed with the teacher giving instructions and pupils building the picture. If the instructions are deliberately vague at first, developing refinement will be called for.

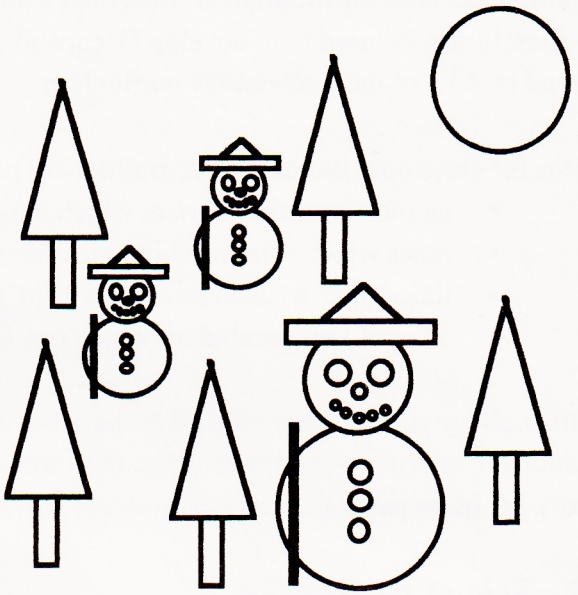
Notes from the Classroom

The following mini case-studies, written by teachers, show how Picture Builder has been successfully used at three different levels in the primary classroom. Our thanks go to the teachers who gave their time to write up their experiences.

Winter Wonderland

When Picture Builder was first introduced to the children, it was as a whole class demonstration of how the program operated and the options available. The children were then allowed free access to the program to allow them to build up confidence and to investigate the options. At this point the children began to use the correct mathematical terms for the shapes without mixing them up. This is something that the less able children in the class had previously had a problem with.

After the initial free investigative period, relevant uses for the program were sought with the help of the children. As we were busy with a topic of Winter Wonderland the children used this as a basis for their ideas. Their first idea was to create snowmen. They enlarged and reduced the circle to produce bodies, heads, eyes, noses, mouths and buttons and then used various other shapes to create hats and other items for the snowmen. When these were printed out we made them into our Christmas cards for this year. The next idea was to create snow scenes with smaller snowmen, fir trees and sun. These were printed out and made into calendars.



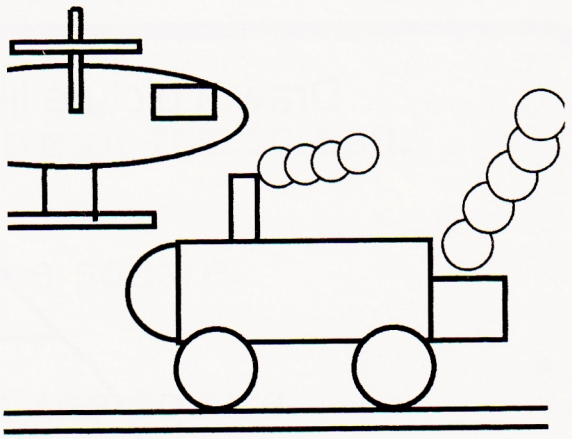
Using the same program for these two activities was very good because it gave the children continuity and a chance to master the operation of the program so that they were able to execute their designs quickly and print them out themselves. Their mathematical language usage increased dramatically until they could use shape names and terms like 'enlarge' and 'reduce' without a second thought.

A Case Study of Tom

While working with Picture Builder I was approached by Tom, a bright year 3 child. He asked what I was doing and inquired whether he could do the experimenting for me. I showed him how to operate the program and he continued with the rectangle and two circles I had already put on the screen. I asked if he could make them into a picture - whatever he liked - and tell me what he was doing while I did other jobs. This was part of his commentary.

"I'm going to make smoke with circles all the same size going on a diagonal."
"I want a funnel. I need a long thin shape"
"Now I need more smoke but smaller circles going backwards."

"I'll stretch this right off the screen and that will make the track."
"I'm making a helicopter but the shapes are all wrong. I know! I'll put the oval off the picture and pretend its flying on to the track."



He struggled to make a semicircle for the front of the loco. He thought of using the circle and overlapping it with the rectangle and making it the same colour. He chose to ignore my remark, "Why didn't you use the semicircle?" - he was now really engrossed in his own problem, determined to solve it to create his picture.

On completion of his picture Tom added a caption, calling the picture 'Bottom'. We printed it and he was delighted.

Tom had been engrossed for about 30 minutes. He had struggled to solve the problems he had set himself and expressed them in precise mathematical language. His only criticism was that he would have liked to have had some shapes outlined (not possible in the version of the program he was using). He explained,

"You can colour it the same colour as the background but then it colours up to and including the line and the shape disappears. It's like rubbing out. That's how I rubbed out the bits I didn't want. It was good fun."

As a result of Tom's picture other children have been keen to use the program.

Into Orbit with Picture Builder

Creating the solar system with Picture Builder was easy - in some ways even easier than with the sophisticated graphics programs we possess - but we had to think quite a bit about shapes.

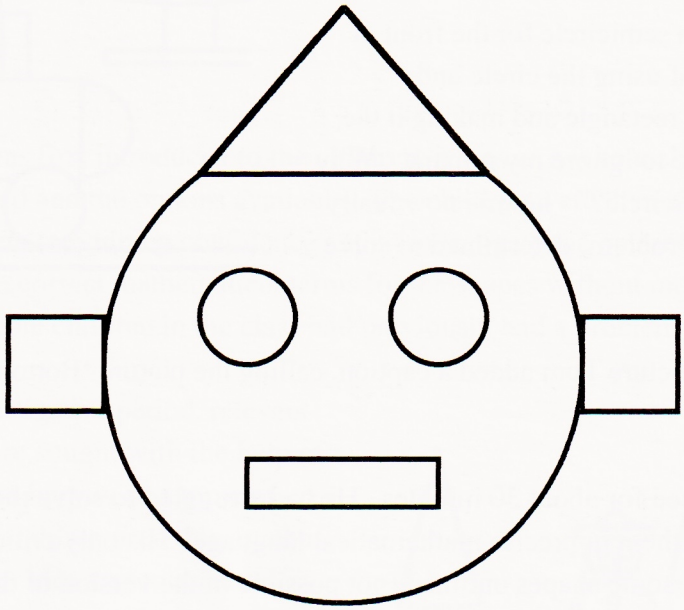
The circular orb of the sun was created first, set in the centre of the screen and filled with yellow. To create the line describing the orbit of Mercury the circle was chosen and stretched and the same oval was enlarged and slightly repositioned to draw the orbits of the remaining planets. We attempted to space these at what we considered to be the correct distances apart. Pluto's orbit is in a different plane to the other 8 planets and so its orbital path needed rotating to produce the desired angle of tilt.

Having produced our nest of orbital paths, creating the planets (various sized circles of suitable colours) was easy... except for Saturn! I know it is not the only planet with rings, but it is the only one we attempted to add rings to. We had to use an ellipse (a squashed circle) for the rings and position a semicircular view of half a planet showing through it. The text option was used to label each of the planets.

We consider the exercise to have been valuable because all the way through the creation, we were thinking about shape in a way that is not usually prompted by the standard maths text books.

1 Talking About Shapes

Draw a picture like this one. Colour it in.



Talk to your teacher about what you did.

Teaching Notes and Extension Ideas

Picture Builder offers opportunities for pupils to construct pictures which can be described in mathematical language. Starting points for talking about shapes could be pictures to copy as in the above example or free drawings, perhaps as a result of challenges such as to draw a boat, train, face etc.

Key Stage 1 - All instructions could be given orally or working groups/pairs constructed so as to ensure that one member of each is able to read the instructions. The maths talk could focus on exploring the basic vocabulary of shape, colour and position.

Key Stage 2 - Pupils would be expected to describe with increasing accuracy, perhaps producing sets of written instructions for others to follow (see next page). Some ideas for pictures to copy are given in the full colour illustration on the centre pages. In some cases pupils will need to decide the order in which to position shapes if they overlap (get the order wrong and the effect will be very different).

Key Vocabulary

straight	flat	curved
round	inside	pointed
on	in	above
under	behind	next to
colours		

National Curriculum

Mathematics AT4 Level 1a

SoA Talk about models they have made

PoS Drawing 2-D shapes and describing them

2 Positional Vocabulary

Put a blue square in the centre of the screen.

Put a green triangle above the square.

Put 3 yellow circles beneath the square.

Put a large yellow hexagon beside the square.

Put two red semicircles inside the hexagon.

Write your name on the right hand side.

Teaching Notes and Extension Ideas

Children can use Picture Builder to explore positional words.

Key Stage 1 - A picture can be designed according to instructions given, as in the above example.

Key Stage 2 - Pupils could design a picture and then formulate a set of instructions to enable a friend to replicate the picture without seeing the original. Because there are likely to be ambiguities in the instructions, the replica may well be quite different from the original. It will be valuable for pupils to discuss this, thinking about how they could make their instructions more precise or, alternatively, how different they could make the two pictures with a given set of instructions.

Key Vocabulary

centre	inside	left
under	above	in
beside	on	middle
outside	right	over
beneath	on top of	next to

National Curriculum

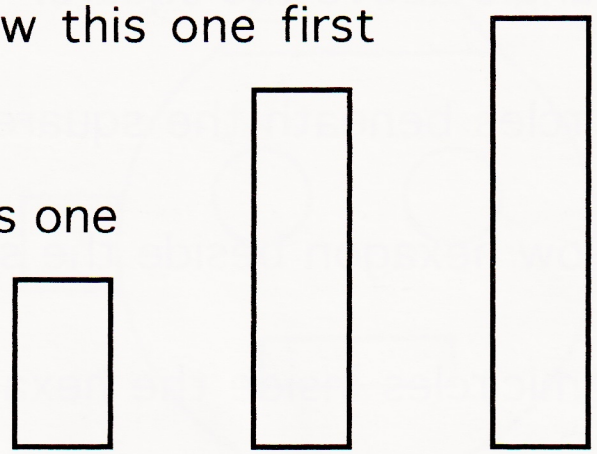
Mathematics AT4 Level 1b

SoA Follow or give instructions related to movement and position

3 Comparative Vocabulary

Draw 3 rectangles like these

Draw this one first



Make this one shorter

Make this one taller

Colour the shortest rectangle red.
Colour the tallest rectangle blue.

Teaching Notes and Extension Ideas

Comparative vocabulary may be used to refine given instructions or children's descriptions of their own drawings.

Key Stage 1 - Positional and comparative vocabulary may be combined with instructions such as to draw a small shape in the middle of the screen; draw a bigger shape above it; draw a longer shape underneath it; draw a taller shape on the right; now colour the widest shape blue. Outcomes could be compared and differences discussed.

Key Stage 2 - The vocabulary associated with transforming shapes, stretching, squashing, enlarging and reducing may be developed. Typical tasks might be; drawing a shape, copying it and then stretching the copy until it is twice the length, or enlarging the copy until it has three times the area.

Key Vocabulary

long	longest	longer
longer than	tall	short
big	narrow	wide
small	stretch	squash
enlarge	shrink	

National Curriculum

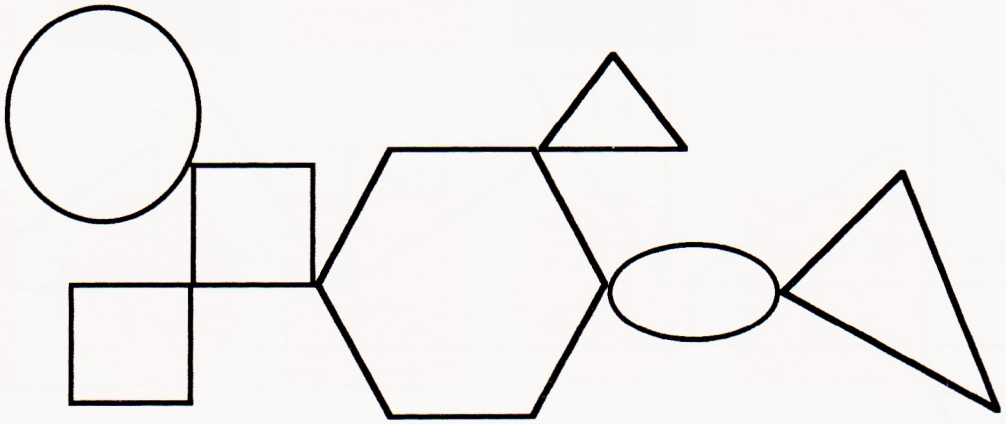
Mathematics AT4 Level 1c

SoA Compare and order objects without measuring

PoS Using appropriate language

4 Shape Vocabulary

Draw a picture like this one.



Colour the squares red.
Colour the triangles blue.
Colour the circles green.
Colour the hexagon black.
Colour the ellipse yellow.

Teaching Notes and Extension Ideas

The focus again here would be on creating pictures and describing them using common mathematical terms. Most of the work is appropriate for pupils at Key Stage 1.

Key Stage 1 - Children could be challenged to create pictures using just a single shape or a pair of shapes, a snowman with only circles, a house with just squares and triangles. Discussion could focus on looking for right-angled corners. Matching exercises such as the one above give further scope for the use of mathematical vocabulary. Ready made files may also be prepared with groups of outline shapes (one is provided on the accompanying disc). Children could then be given the task of fitting shapes on top of those given and colouring them in according to shape, all the triangles red, all the circles blue and so on.

Key Stage 2 - Using the Butterfly file and covering the picture with appropriate shapes in brown and green, children could help to camouflage the butterfly.

Key Vocabulary

rectangle	square	circle
triangle	hexagon	ellipse
pentagon	right-angle	

National Curriculum

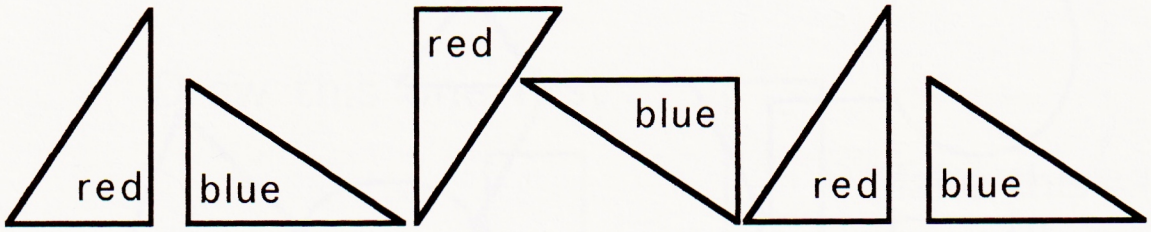
Mathematics AT4 Level 2a

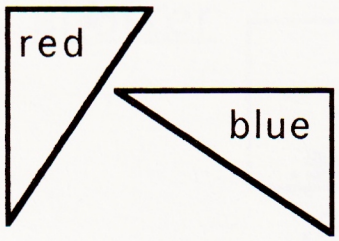
SoA Use mathematical terms to describe common 2-D shapes

PoS Recognising right-angled corners in 2-D shapes

5 Movements and Patterns

Copy this pattern.





Draw and colour the next 3 shapes in the pattern.

Teaching Notes and Extension Ideas

The focus here is on the development of sequences and patterns which involve ordering and transforming shapes through translations (slide moves), rotations and enlargement or reduction.

Key Stage 1 - Patterns should involve changing a single variable at a time (see facing page for examples).

Key Stage 2 - More sophisticated patterns can involve changes to multiple variables (see facing page for examples). Variables which might change in sequences are colour, shape, orientation and size. Prepared files could be used as starting points or the sequences could be copied and extended.

[To create parallel guidelines (such as those shown above) take a square, enlarge it and then stretch it in the horizontal plane until it fills the screen.]

Key Vocabulary

straight	translation
turning	rotation
enlargement	reduction
slide	

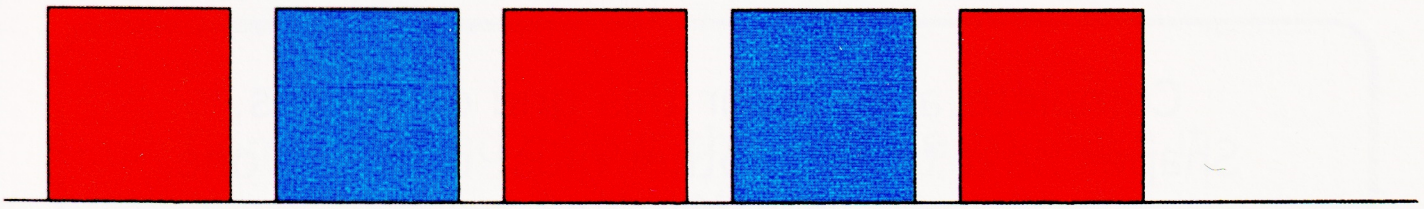
National Curriculum

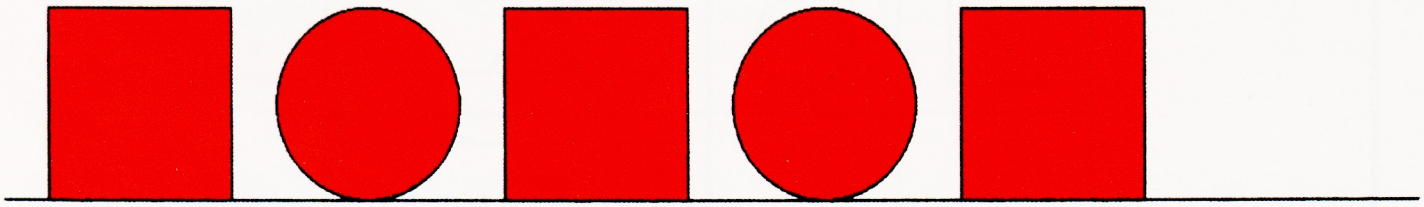
Mathematics AT4 Level 2b

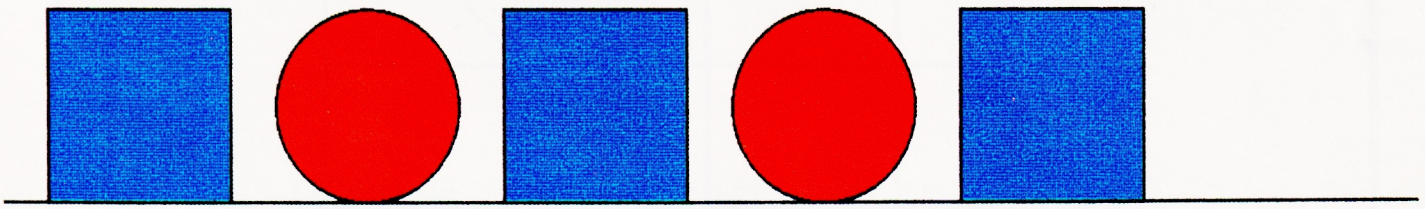
SoA Recognise different types of movement.

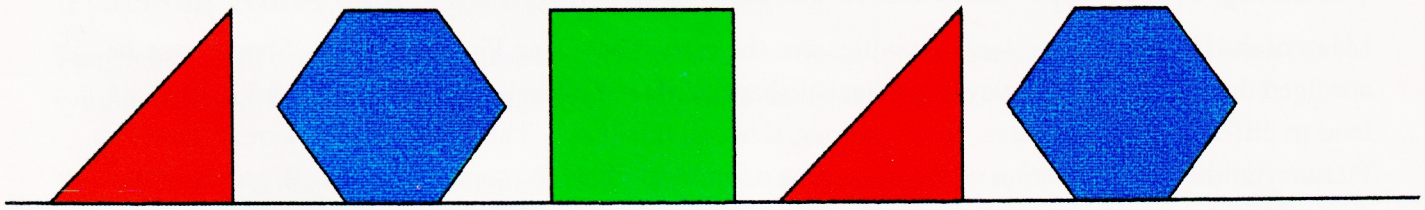
PoS Straight (translation), turning (rotation)

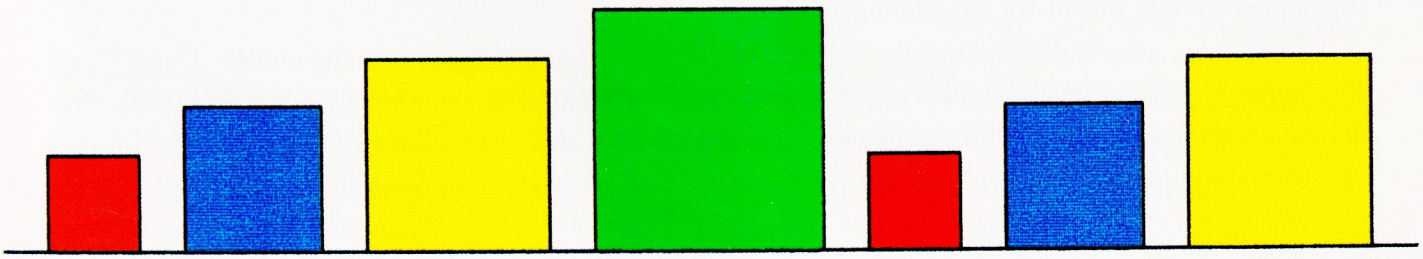
Some ideas for sequences to be copied or extended

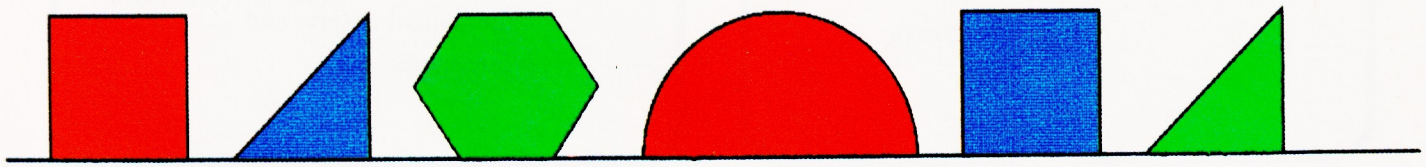






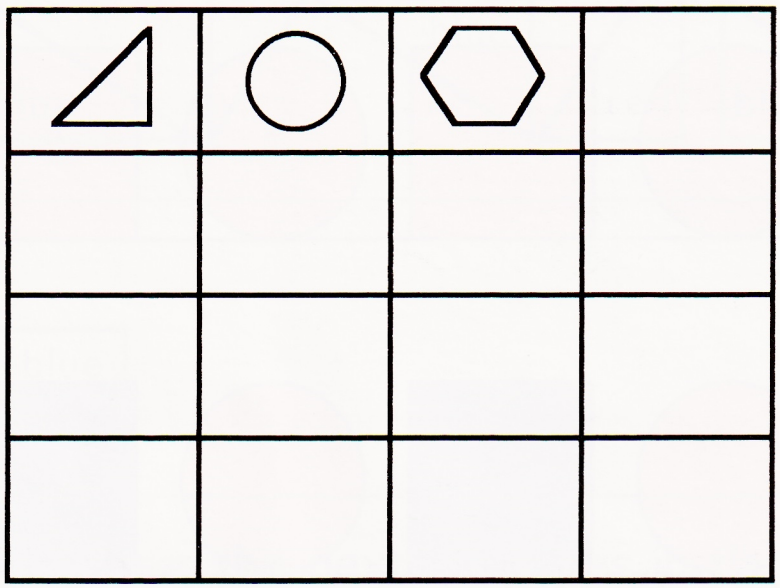






6 Sorting Shapes

Complete and colour this grid of shapes.
Shapes next to each other must differ by one attribute only.



Teaching Notes and Extension Ideas

Many of the traditional logiblocks activities may be carried out using Picture Builder. Shapes may be arranged on a grid in such a way that adjacent shapes differ in just one attribute. Standard logiblocks tend to differ by four attributes, shape, colour, size and thickness. Thickness cannot be reproduced in Picture Builder but orientation could be used as a fourth attribute for some activities. A grid for use in this activity is supplied as a file on the disc.

Key Stage 1 - At the simplest level, only horizontal changes are considered (with the grid representing a segmented straight line as for sequencing activities).

Key Stage 2 - Further levels of difficulty may be added by requiring attributes to vary vertically and diagonally as well as horizontally and/or by requiring adjacent shapes to differ by two attributes.

Key Vocabulary

attributes	variables	shape
orientation	size	colour

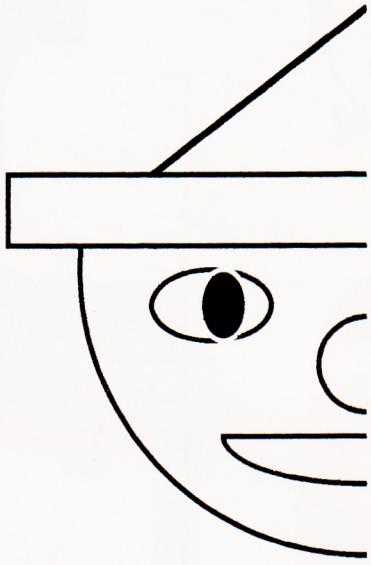
National Curriculum

Mathematics AT4 Level 3a

SoA Sort shapes using mathematical criteria and give reasons.

7 Reflective Symmetry

Complete and colour this picture to make it symmetrical.



What is the quickest way to do this?

Teaching Notes and Extension Ideas

The creation and completion of symmetrical pictures is the focus for this series of activities. Ideas for symmetrical pictures are given on page 16 and in one of the files supplied on the disc.

Key Stage 1 - At this stage when children are just beginning to explore ideas of symmetry the 'Reflect' option in Picture Builder allows symmetrical images to be created very simply by reflecting any individual shape. Horizontal and vertical reflections can be made and the results observed. In versions of the program without 'Reflect', moves and rotations may be used to achieve most of the same effects.

Key Stage 2 - When pictures and patterns are made up of multiple shapes the task of producing the reflected image becomes more complex and may involve movements as well as reflections. It will be useful if children can think about why this is the case and articulate their thoughts. Do they appreciate, for example, that there is often more than one way to achieve a particular effect? Can they write down pairs of congruent operations?

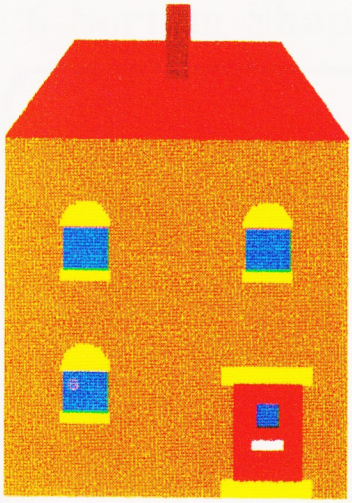
Key Vocabulary

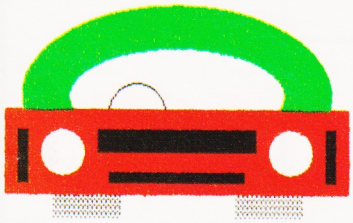
reflective symmetry
lines of symmetry

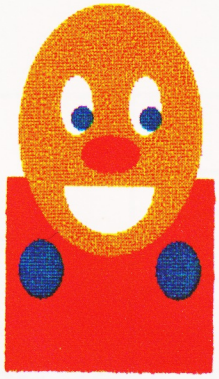
National Curriculum

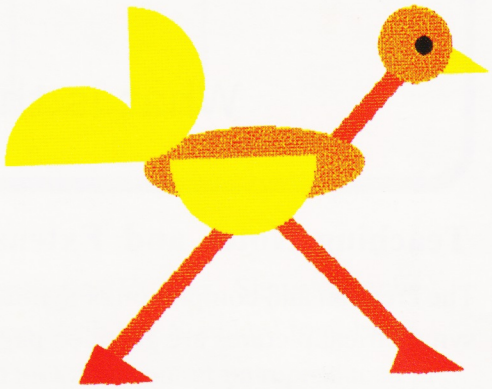
Mathematics AT4 Level 3b
SoA Recognise reflective symmetry.

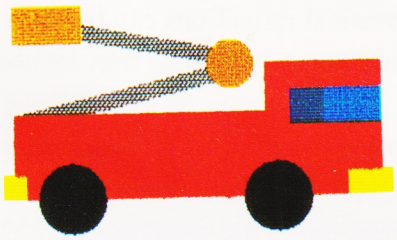
How many of these shapes can you copy?

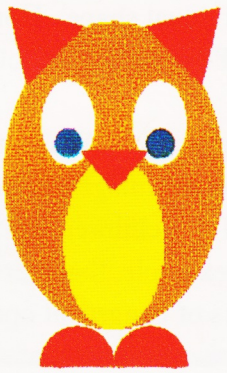




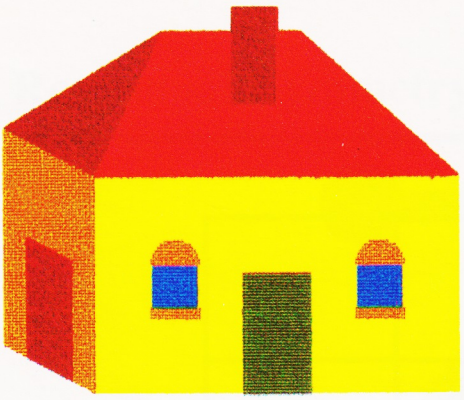




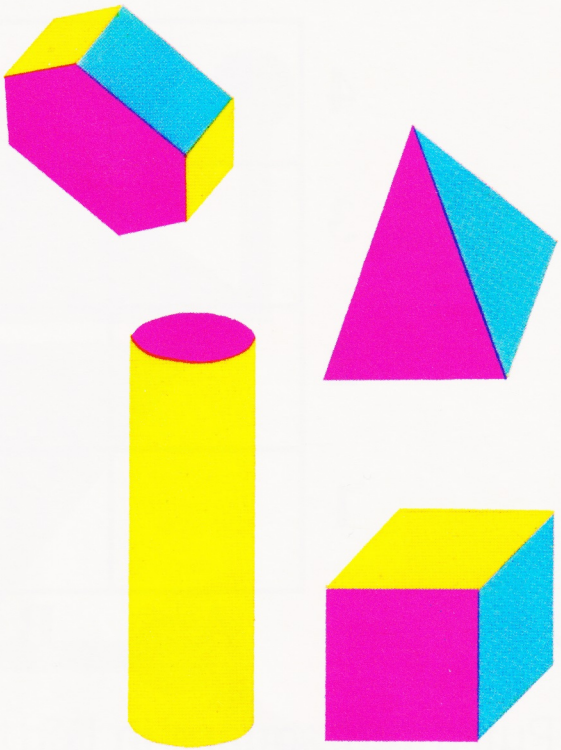


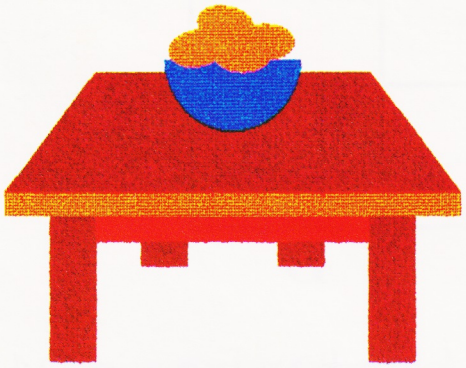


Think about these shapes carefully - many of them overlap.
Some shapes will hide parts of other shapes. Which ones do you have to position first?

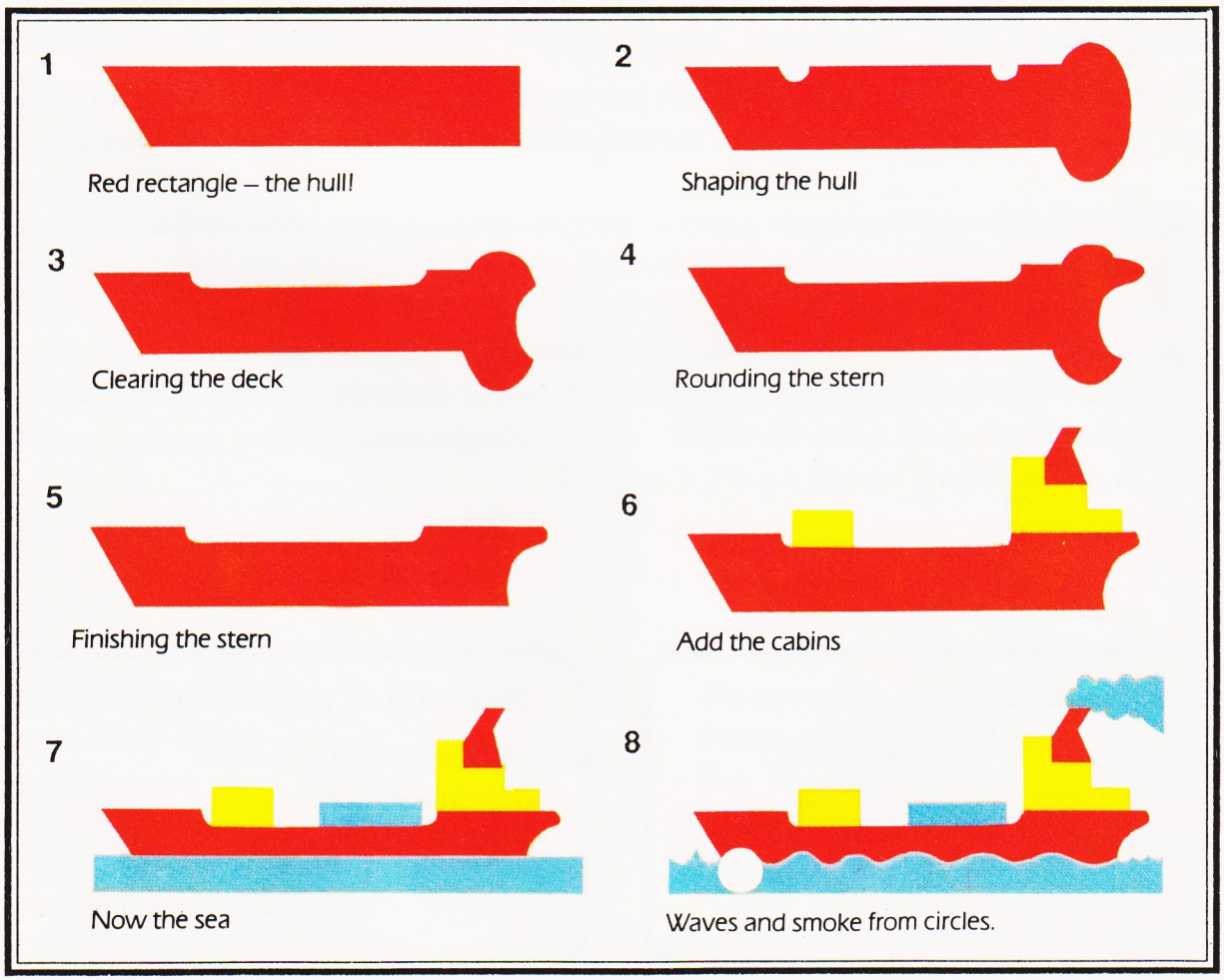


Experiment with ways of making things look as though they have depth as well as height and width.

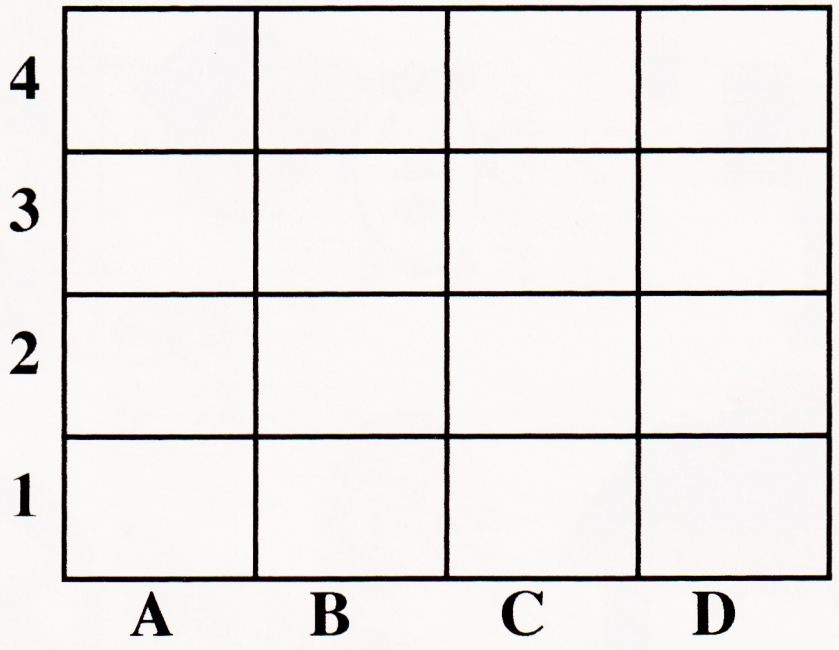




This shows how to build a boat by using shapes of the background colour to 'rub out'



8 Coordinates



Put a red square in B3. Put a blue hexagon in D4.
Put a green ellipse in A1. Put a pink triangle in C2.

Teaching Notes and Extension Ideas

The use of coordinates to specify location can be practised using Picture Builder, either by requiring pupils to create their own diagrams or by the use of the file provided which supplies a ready-made grid.

Key Stage 1 - The National Curriculum places all work on the specification of location at Key Stage 2 although many Year 2 pupils will be ready for work on simple 2 dimensional grids using letters.

Key Stage 2 - Axes on the grid may be labelled either with letters and numbers, as in the above example, or with numbers only, forcing pupils to realise the importance of observing the convention that the horizontal coordinate is given before the vertical. Additional tasks could involving drawing shapes that cover all, or part of, several squares e.g. B1, C1 and C2.

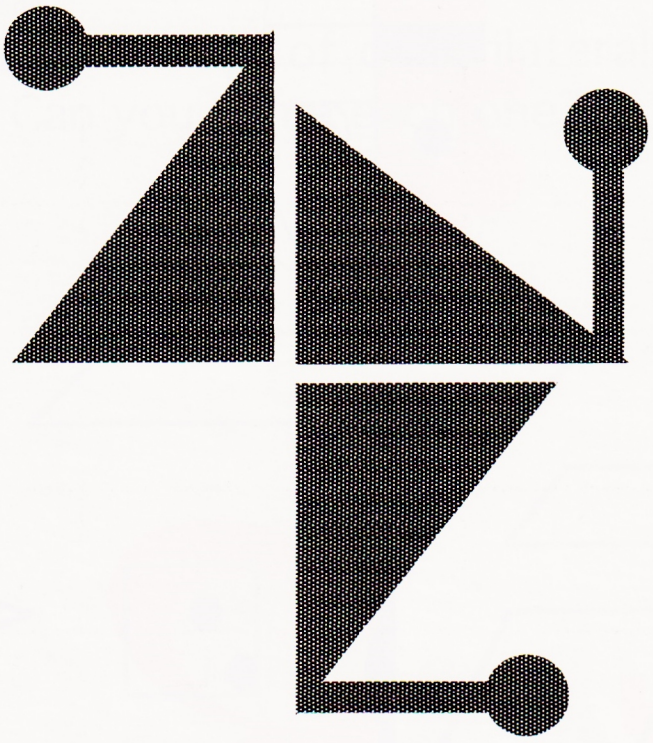
Key Vocabulary

coordinates
grid reference
horizontal axis
vertical axis

National Curriculum

Mathematics AT4 Level 4b
SoA Specify location
PoS By means of coordinates

9 Rotational Symmetry



Complete the pattern so that it has rotational symmetry.

Teaching Notes and Extension Ideas

Patterns with rotational symmetry can be built up using the 'Rotate' option on the Drawing Menu in combination with the 'Copy' option on the Shapes menu.

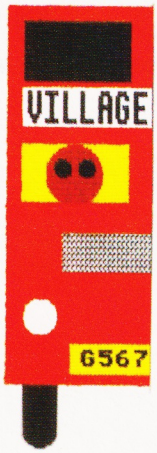
Key Stage 2 - Exploration of rotational symmetry through the completion and creation of designs with rotational symmetry is the focus of this activity. Some ideas for patterns are shown in the colour illustration on page 16. Although the concept of rotational symmetry is fairly straightforward the production of patterns which have rotational symmetry but not reflective symmetry can be quite a demanding task. Experimentation with Picture Builder will help to develop the necessary spatial abilities.

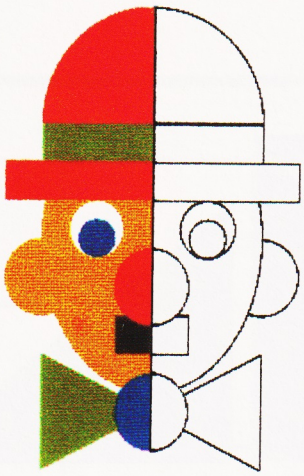
Key Vocabulary

rotational symmetry
axis of rotation
compound shapes

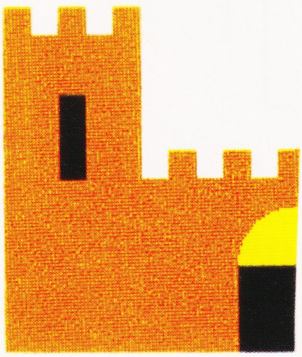
National Curriculum

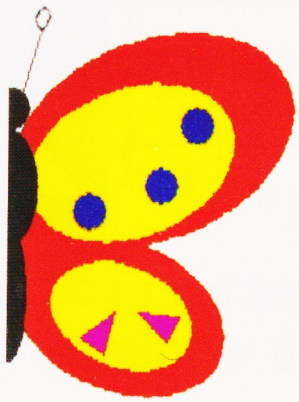
Mathematics AT4 Level 4c
SoA Recognise rotational symmetry

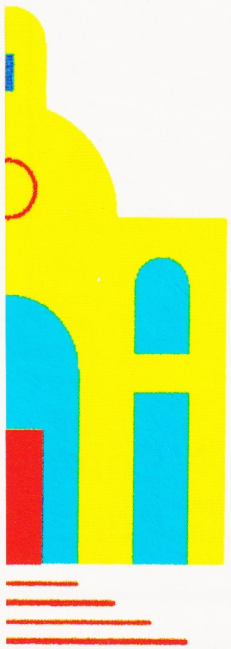




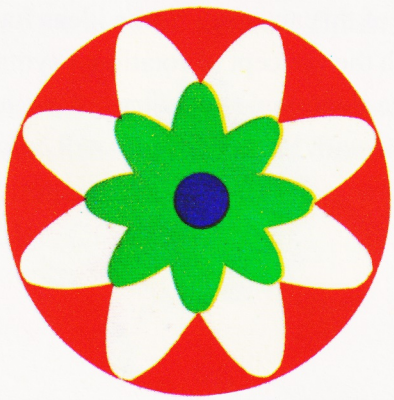
Each of these pictures is symmetrical about a vertical line. Can you complete the whole picture?

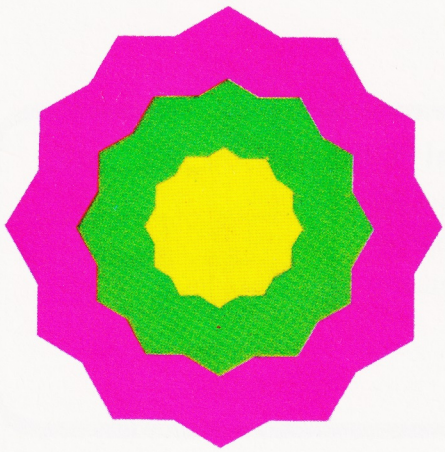


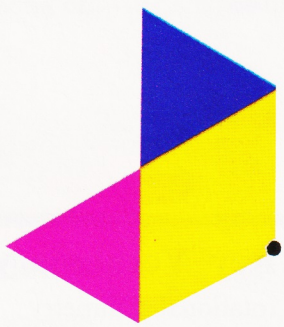




These shapes have rotational symmetry (in addition to bilateral symmetry). Can you copy them in as few moves as possible?



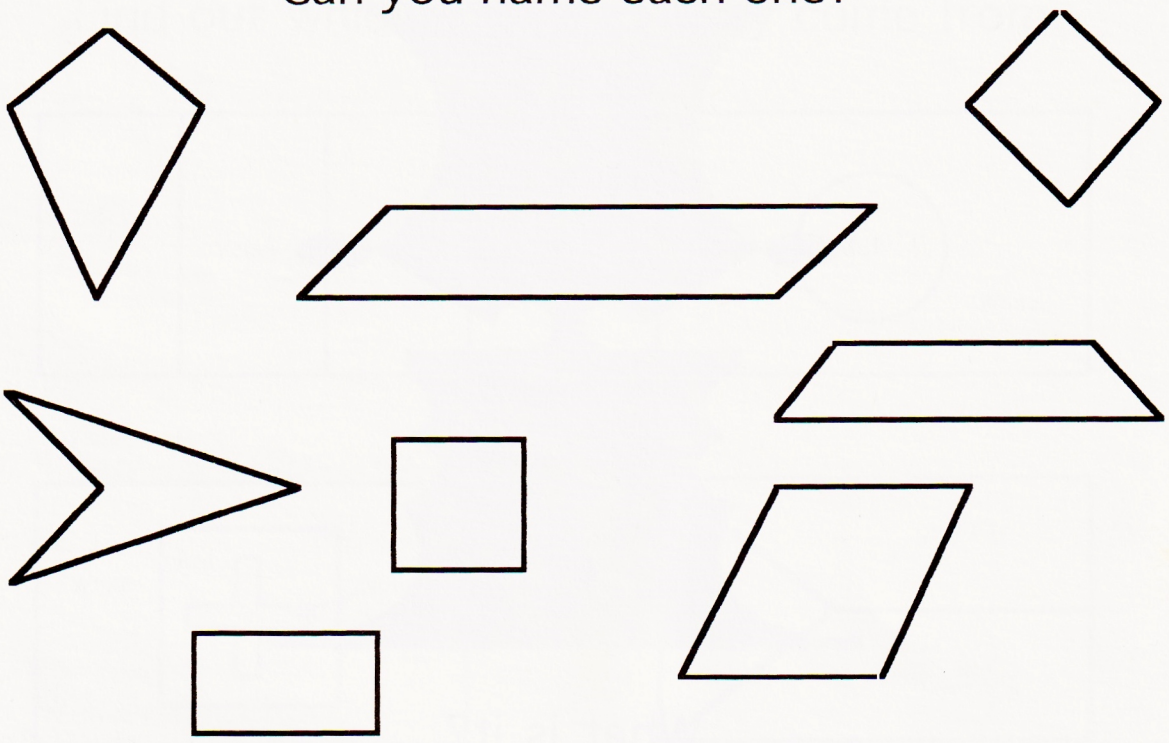




This shape has rotational symmetry order 6. Can you complete it? The black dot indicates the centre.

10 Polygons

Create this set of quadrilaterals.
Can you name each one?



Teaching Notes and Extension Ideas

The focus of this activity is on sets of polygons and the work is appropriate for Key Stage 2 pupils.

Key Stage 2 - Picture Builder can be used for the construction and classifications of a variety of sets of polygons. The following questions pose some suitable challenges.

- Can pupils name all the types of quadrilateral shown in the above diagram?
- Can they colour blue all the shapes with two angles greater than 90°?
- Can they colour red all the shapes with at least one line of bilateral symmetry?
- Can they construct a similar set of triangles including triangles which are; isosceles, equilateral, right-angled, scalene?
- Is it possible to draw a pentagon, octagon etc?

Other possible explorations could involve producing tessellations, tiling patterns - making an octagon out of squares and triangles for example, or congruence activities where designs are copied but made smaller or larger.

Key Vocabulary

polygon	quadrilateral
trapezium	rhombus
parallelogram	kite
isosceles	equilateral
irregular	diamond

National Curriculum

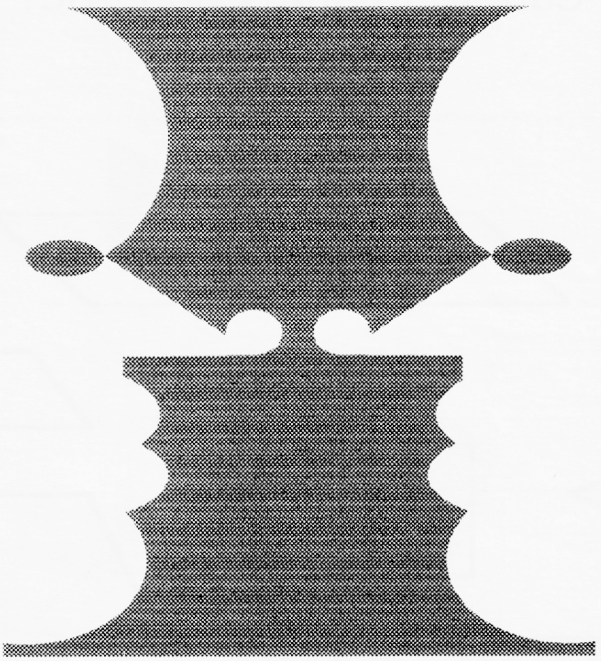
Mathematics AT4 Level 6b

SoA Transform shapes using a computer

PoS Classifying & defining types of quadrilaterals

11 Further Challenges - Irregular Shapes

Can you make this shape?



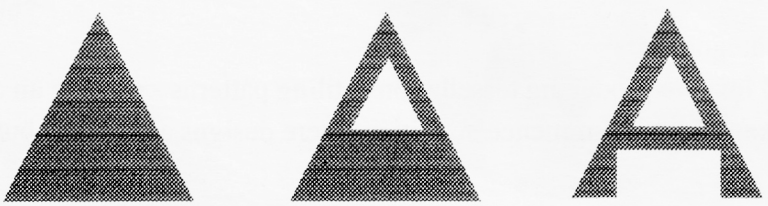
What is it?

Teaching Notes and Extension Ideas

It is possible to make interesting irregular shapes by erasing part of a previously drawn figure by drawing another shape over it in the background colour. In the Case Study of Tom (page 2), Tom had discovered how to do this and describes the potency of the technique.

Suggestions for challenges could be a church window, an apple core, a car or other vehicle, an animal. Free exploration would also be valuable.

Letters of the alphabet offer an interesting challenge. Can children write their own initials in this way? e.g.



Key Vocabulary

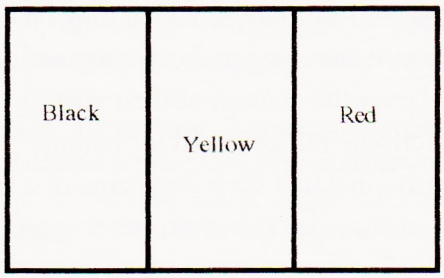
irregular shapes
erasing

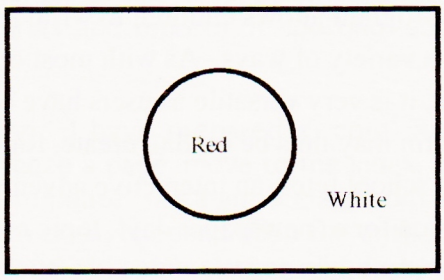
National Curriculum

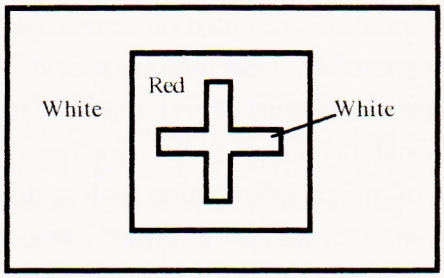
Mathematics AT1
Using and Applying Mathematics

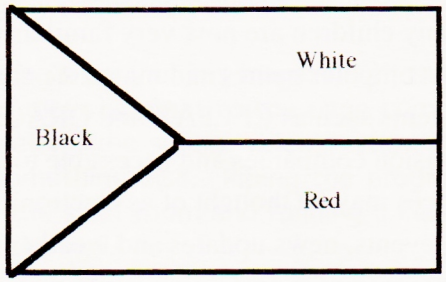
12 Further Challenges - Flags

Can you draw these flags?
Find out which countries they come from.









Teaching Notes and Extension Ideas

The construction of flags using Picture Builder is a fairly straightforward task as the majority of national flags are made up of regular shapes. Simple striped flags such as those of France or Germany are easy, as are simple crosses such as on the flags of Sweden or Finland. More interesting challenges are offered by crosses with outlines in a different colour such as on the flag of Norway or by more complex designs such as the flags of Greece or the Czech Republic.

The Union Jack offers a particular challenge, built up as it is of the flags of the British national saints. It is interesting to explore whether or not the Union flag can be built up in Picture Builder by superimposition of the various crosses. Diagonal crosses are more tricky than vertical or horizontal crosses and erasing will be necessary to tidy up the corners.

Many flags have five pointed stars on them. Is it possible to create one with Picture Builder? What about more complex stars such as the six pointed star of David from the flag of Israel?

Key Vocabulary

vertical
horizontal
diagonal

National Curriculum

Mathematics AT1
Using and Applying Mathematics

News Bulletin
Ideas for Classroom Use

Introduction

News Bulletin may be thought of as a cross between a magazine and a notice board - in electronic form. The program allows children to write and read screenfuls of information which may be linked together in a variety of ways. As with most other programs for the handling and communication of information, it is very versatile as users have complete control over the content of their writing. News Bulletin may thus be used to create, for example, an electronic notice board for parents evenings or school fetes, an interactive adventure game, an easily updated class magazine or a source of information for a 'newspaper day', topic or project. Many of these ideas are explored in more detail in the ideas pages.

News Bulletin is essentially a videotext system - a program for presenting information on a television screen. Many children are now very familiar with reading information presented on screen, such as that used in computer games and magazine-style television programmes. Less familiar may be teletext systems such as CEEFAX and ORACLE which comprise screenfuls of text, transmitted free by the television companies and accessible to anyone having a suitably adapted television receiver. These services may be thought of as electronic magazines full of topical information such as diaries of sporting events, news updates and weather forecasts. They also contain pages directly linked to television programmes containing items such a recipes or holiday dates and prices. PRESTEL is somewhat different as this service supplies data to a television set via a telephone link. Far more information is available through this "electronic encyclopaedia", but a charge is made for most of it and so PRESTEL can prove quite expensive to use.

News Bulletin allows children to emulate these services, creating their own teletext magazines or information screens. It may thus be used to develop IT capability in both the Communicating Information and Handling Information strands of AT5 of the National Curriculum in Technology. Its use will also contribute to children's understanding of the Applications and Effects of IT in society (strand 5 of AT5). In addition, as children will be using the program to write for an audience, it can make a valuable contribution to AT3 of the English curriculum at Key Stage 2. Cross-curricular skills of collaborative groupwork, planning and design, and the collection and preparation of information are also practised by a group of children using the program.

Each of the following ideas for the use of News Bulletin is presented in the form of an introductory illustration (which may be a mini case study) followed by notes which offer teaching ideas and extension activities. Links to the National Curriculum for English are shown and suggestions for the use of the message reel provided for each application. Our thanks go to the contributors of ideas and case studies.

1 An Electronic Magazine

News Bulletin for Parents Evenings

In November and July we have a Parent Teacher Discussion week when, directly after school and on two evenings, parents can come to the school to discuss the work and progress of their children. Ever since News Bulletin appeared, it has been a feature in our 14 classrooms, providing parents with school news, reports of past events, details of forthcoming events, PTA news and, above all, with pages of jokes, articles, stories and reports of sporting, social and musical events written by the children.

All classes, from Year 3 upwards, make a contribution. I have prepared a 'core' magazine which contains a newsreel with instructions on how to freeze a page, move to the index, or find a particular page, and some pages of staff news which I update. As I am a classroom support teacher, present for only an hour or so each week in each class, I depend upon the enthusiasm of the class teacher to continue with the IT once I have gone. In some classes all I do is supply a copy of the core magazine and get things started but where the teacher is less confident I take around my master disc and a page is added here and there. Completed pages with the names of the writers are then added to the index page and given a display sequence position.

At Parents Evening the teachers have a choice of displaying a copy of the magazine on their class computer, with the advantage that parents are able to move straight to the page compiled by their child, or having it broadcast as a running newsreel via the school video system into the classroom television, thus freeing the computer for something else. Piping the program into the classrooms simply entails moving a computer into the staff room and running a cable from the computer "UHF out" socket into the booster box on the wall.

Teaching Notes and Extension Ideas

A whole school magazine, such as the one described in the case study, is an ambitious project which needs an enthusiastic coordinator and the support of most of the staff. A class magazine, still targeted at visiting parents, could be a more modest affair which Year 6 pupils could easily manage by themselves. The content of the magazine could be general and wide ranging, as above, or related directly to the current class topic - 'movement' or 'the Victorians'. Each pupil in the class could write a page, with an editorial team coordinating the whole project. There is scope for research by pupils into issues such as the delay needed on a newsreel to give readers time to read the whole page or whether a help card is necessary for novice users.

The audience could be widened, from solely parents, if the magazine were on permanent display in the school reception area where it could be seen by all comers. A whole school magazine sited here could show the areas being studied and the range of experiences offered throughout the school.

Ideas for Message Reel

Advertise forthcoming events.
Give notice of proposed visits.
Welcome visitors personally.
Appeal for artifacts or materials.

National Curriculum

English AT3 Level 5a)
SoA Write in a variety of forms for a range of purposes and audiences in ways which attempt to engage the interest of the reader

2 A Bulletin Board for Pupils

School Experience Supervision: A Tutor's Tale

On a visit to a school, one dull and misty December day, I noted a group of children peering attentively through what I thought was the staff room window. The mist wasn't quite severe enough for it to be declared a 'wet break' but I was moved to compassion at the thought of them peering in envy through the window of the staff room with its roaring log fire and endless supply of hot coffee and mince pies (more poetic than a one bar electric fire and a tepid tea urn). I ventured closer to find that it was not the staff room window but that of an ordinary classroom. At that moment there was a shriek of optimism - Aztecs had been cancelled (will they ever discover the source of chocolate now?) and all of the upper school were asked to go to the hall for a surprise visit from the 'animal man'.

But how had this information been conveyed to the pupils? Yes, you may have guessed - via News Bulletin. Every morning an enthusiastic teacher, with the help of a team of 'journalists', set up a daily newsheet (20 pages - not all of which changed every day) and at break times the computer screen was positioned by the classroom window facing outwards. The 20 pages were left to cycle through, bringing local news and current affairs to all who peered in. Birthdays, puzzles, messages and jokes were all part of the sequence. If any child wanted a message displayed, all they had to do was jot it down on a piece of paper and hand it to one of the 'journalists' - by the next day it was up on the screen. The arrival of Pete's new brother, the return of Wendy's nan from America - all the current news was on display.

Wait a minute though - what is this message on the newsreel? *"Class 3G, please be on your best behaviour after break, Miss Graham's tutor is coming in to see you work - let's create a good impression."* Well it makes a change from the Head holding you up for a quick chat while some messenger scuttles off down the corridor with the glad tidings!

Teaching Notes and Extension Ideas

The electronic billboard in the case study above has been an effective strategy for encouraging a large number of children to read voluntarily, and for a purpose, during their break times. A rotating editorial team would enable all pupils in Year 6 to have an opportunity of taking on all the responsibilities and challenges involved in setting up the display and children of all classes reading the display would be made aware of this real world use of IT.

An alternative use of a billboard for pupils might be an advertising board in the school library. Here the display could carry book recommendations, posters promoting reading, book reviews, book sales and swaps, or information about where to look for books on certain topics.

Dedicated billboards could be created such as a Birthday Honours Board or a 'Travellers World' where children returning from holiday give a brief description of those features (weather, views, activities, beach) that have particularly impressed them.

Ideas for Message Reel

Messages such as 'Field too wet'
Birthday greetings
Jokes
Latest additions to the library

National Curriculum

English AT3 Level 4c)
SoA Organise non-chronological writing for different purposes in orderly ways

3 Adventure Game Writing

Start 100

You are an adventurer and you have stumbled across a valley that has been taken over by the nightmares. The villagers have begged you to help them get rid of the nightmares. To do this you have to get the 'eye of the tiger'. To your left is a graveyard (p 101). To your right is a stone path (p 102).

Stone Path 102

After walking down the stone path for five minutes you are overcome by ghosts and have to return to the start. Turn to p 100.

Graveyard 101

You are in a graveyard. There are a lot of graves around. You are shaking and you see skeletons of other people that have tried to return the eye of the tiger. To your left is the swamp (p 103). Straight ahead is an open tomb (p 104).

Swamp 103

You are in the swamp. The water is up to your waist. You are very lucky that the crocodiles are asleep. You have got past them. Go right to the forest (p 107) or straight on across a bridge (p 106)

Teaching Notes and Extension Ideas

Because News Bulletin allows pages of text to be linked together, it lends itself easily to the task of writing interactive adventure games. Two examples which have been produced by children are supplied on the disc.

Careful planning is needed to make a successful game. Children should have preliminary experience of seeing existing text based games (such as Lost Frog) and should be aware of how screens can be linked together in News Bulletin. Time at the keyboard is maximised if the scenes are written out on cards beforehand (see illustration). Each scene must have a name and page number and contain part of the action of the story followed by a choice of scenes to be read next.

Another creative application of News Bulletin is for a classroom poetry anthology. Different sections may be used for different themes or types of poems, and poetry written by the children can be included alongside favourite works by other poets.

Ideas for Message Reel

Running instructions e.g. 'Type the number you want to continue'.
Atmosphere building words e.g. 'CREAK...GROAN...OOOOOH'

National Curriculum

English AT3 Level 5e)
SoA Recognise variations in vocabulary according to purpose, topic and audience...and use them appropriately in their writing

4 An Information Pack in the Classroom

Life, The Universe and Bulletin

There is something seductive about ever changing images on a computer screen against which ordinary paper displays cannot compete. In addition, in the space occupied by one computer, more writing and pictures may be displayed than on a large pinboard. Thus, in presenting research information from our "Space" project, my Year 7 class decided to use News Bulletin.

Nine groups were formed to boldly go into the school library, seek out basic astronomic facts about each of the planets of our solar system and record them on a News Bulletin page. Some made good use of the Space Encyclopaedia CD ROM that graces our library while others used more traditional resources.

Soon each group had created their text and the magazine was nearly complete. The computer would soon be able to display each group's findings to other groups and to any visitors. The message reel facility, however, had not yet been used. What could we do with that? We toyed with the idea of using it to display instructions for viewers but felt that they weren't really necessary. Or what about an advertisement, "Boldly go to..." but we didn't know what to advertise. At last we thought of using it to display amazing facts - something to catch the attention such as, *"The sun is 150 million kilometres from Earth. It takes light 8 minutes to reach us from it."*

Now that we are experts at the program we shall be using it again as Christmas approaches to present a changing Christmas greeting display.

Teaching Notes and Extension Ideas

Use of News Bulletin to record the findings of library research is one strategy for moving children on from simply copying chunks of text out of books. Because only a small amount of text can be presented on each News Bulletin page, writers must give careful consideration as to what are the most important facts and how these can best be expressed succinctly.

A class information pack could be a real working document, on going and built up over a period of study of a topic or theme. As well as sections for researched information, as in the illustration above, a reference index for useful books, or accounts of class educational visits could be included.

An alternative application would be to use a teacher prepared file as a source of information for a newspaper day. In this type of simulation children are charged with the task of producing a newspaper in a day of real time using data obtained sporadically via a computer screen. Files could be prepared providing real or imaginary news, current or historical, set in the context of the class topic or project.

Ideas for Message Reel

Deadlines for finishing work.
Key points to remember.

National Curriculum

English AT2 Reading Level 6d)
SoA Select from a range of reference materials using appropriate methods to identify key points

ACKNOWLEDGEMENT

Our thanks go to the following teachers who contributed case study material.

Alison Galbraith	All Saints Infant School, South Shields, South Tyneside
Betty Lumley	St Helen's College, Hillingdon, London
Chris Robinson	Horndean Middle School, Waterlooville, Hampshire
John Raybould	Norwich Road School, Thetford, Norfolk
Reg Eyre	Curriculum Support Teacher for IT in Wiltshire
Roger Keeling	Newman College, Birmingham
Anne Farr	"
Senga Whiteman	"
Bill Urwin	Curriculum Support Teacher for IT in Somerset

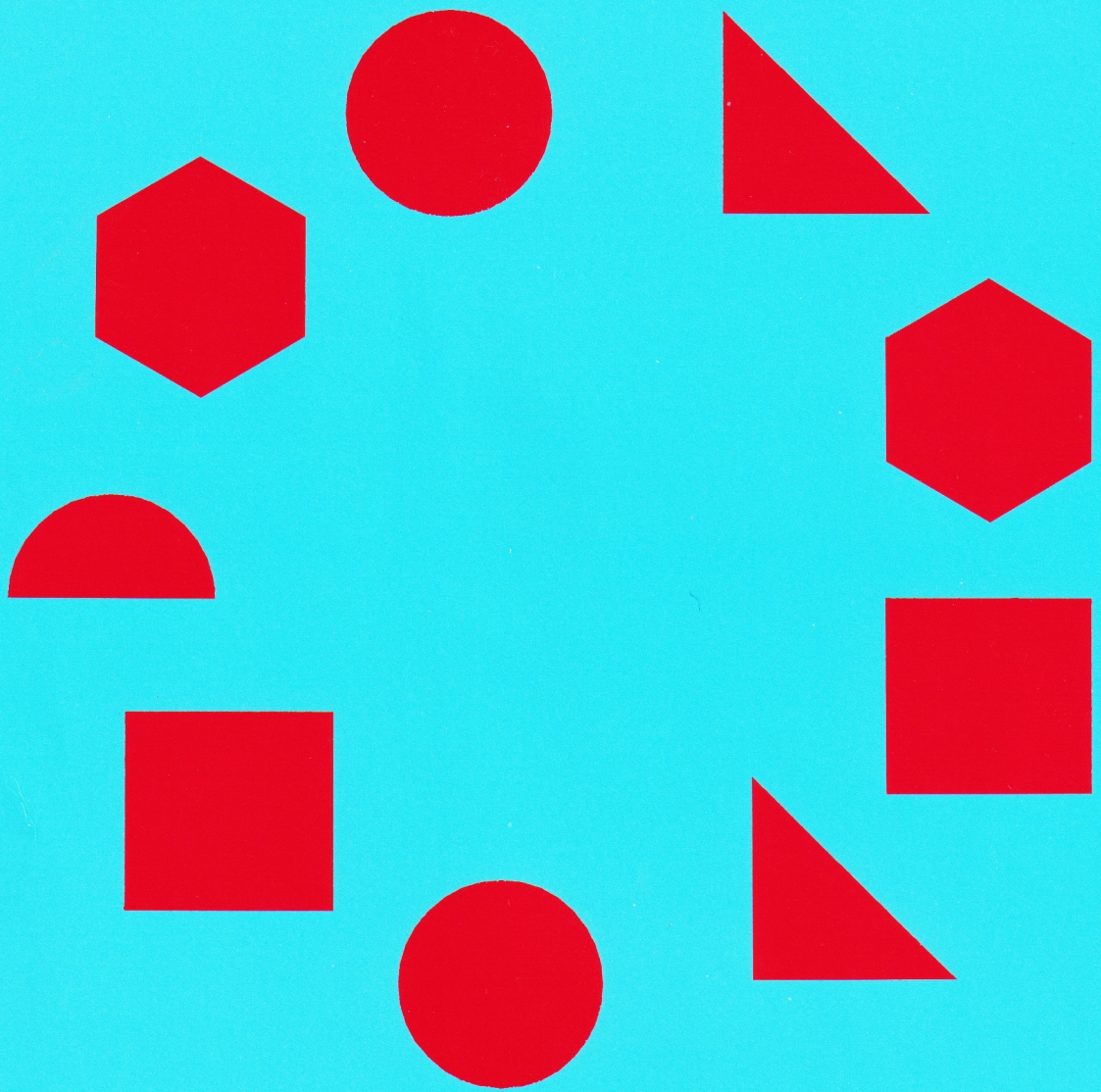
Materials Compiled by:	Heather Govier
Additional illustrations by:	Mohammed Iftikhar
Software design by:	Roger Keeling

MAPE would like to thank NCET for making Picture Builder (BBC version) available to this Software Special.

Additional copies of this book are available at £3 each (including p & p) from MAPE at Newman College, Genners Lane, Bartley Green, Birmingham B32 3NT.
Tel: 021 476 1181 ext 271.

Picture Builder and Newsbulletin are available at £20 each plus VAT.

MICRO-SCOPE



Published by Castlefield (Publishers) Ltd, Castlefield House,
12 Headlands, Kettering, Northants NN15 7HP

NEWMAN COLLEGE with MAPE