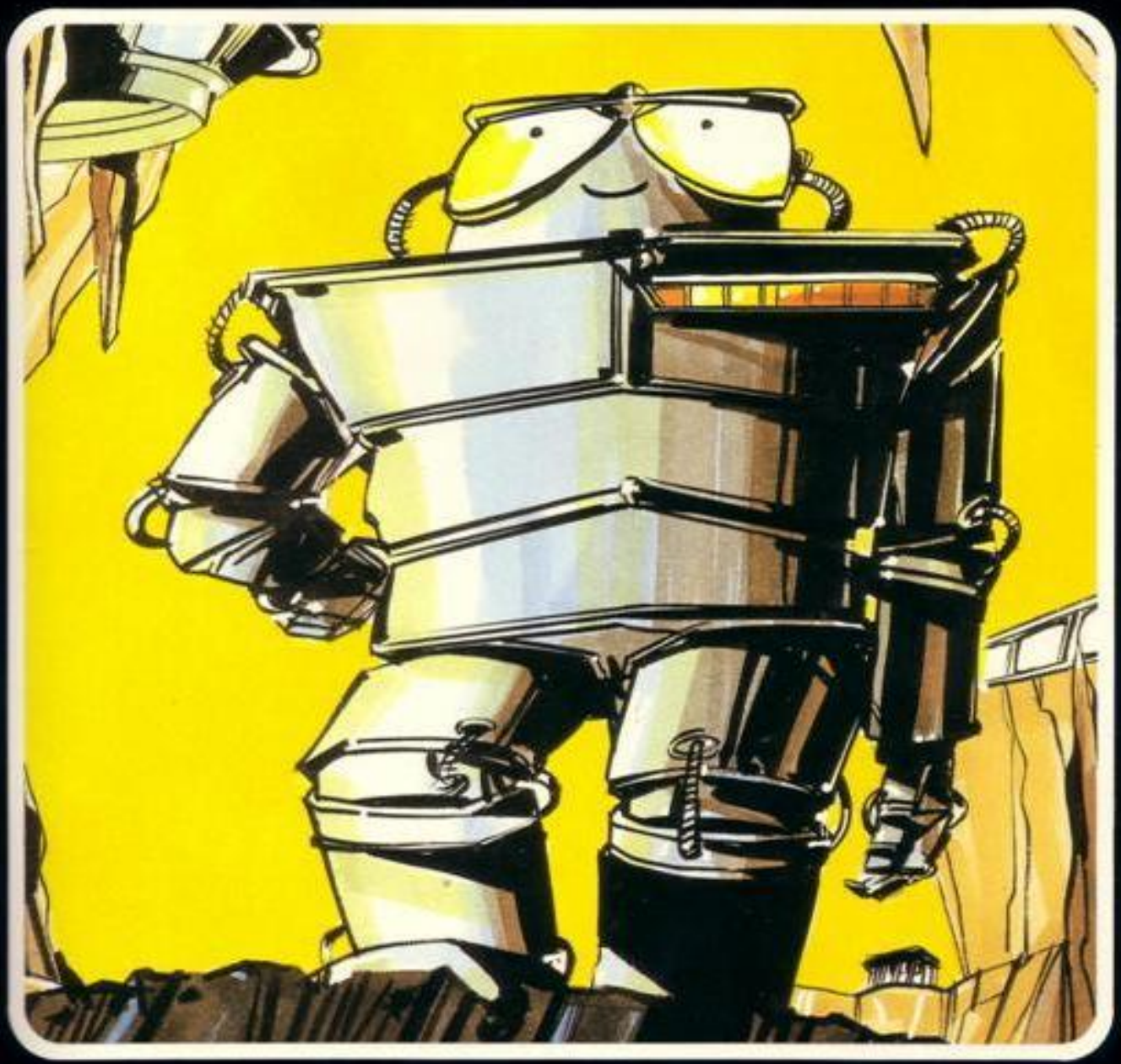
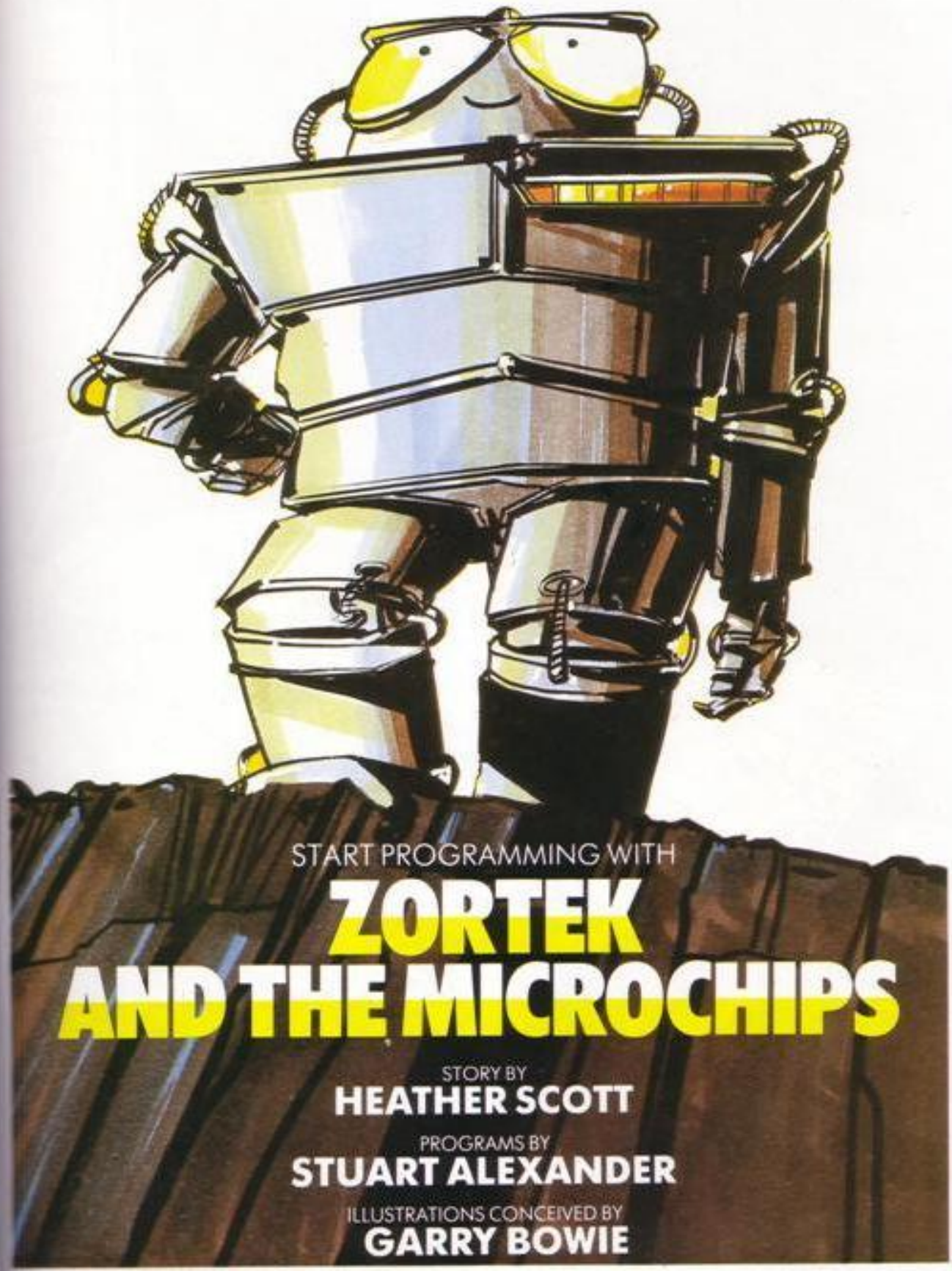
START PROGRAMMING WITH

ZORTEK AND THE MICROCHIPS



commodore



START PROGRAMMING WITH

ZORTEK AND THE MICROCHIPS

STORY BY
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PROGRAMS BY
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ILLUSTRATIONS CONCEIVED BY
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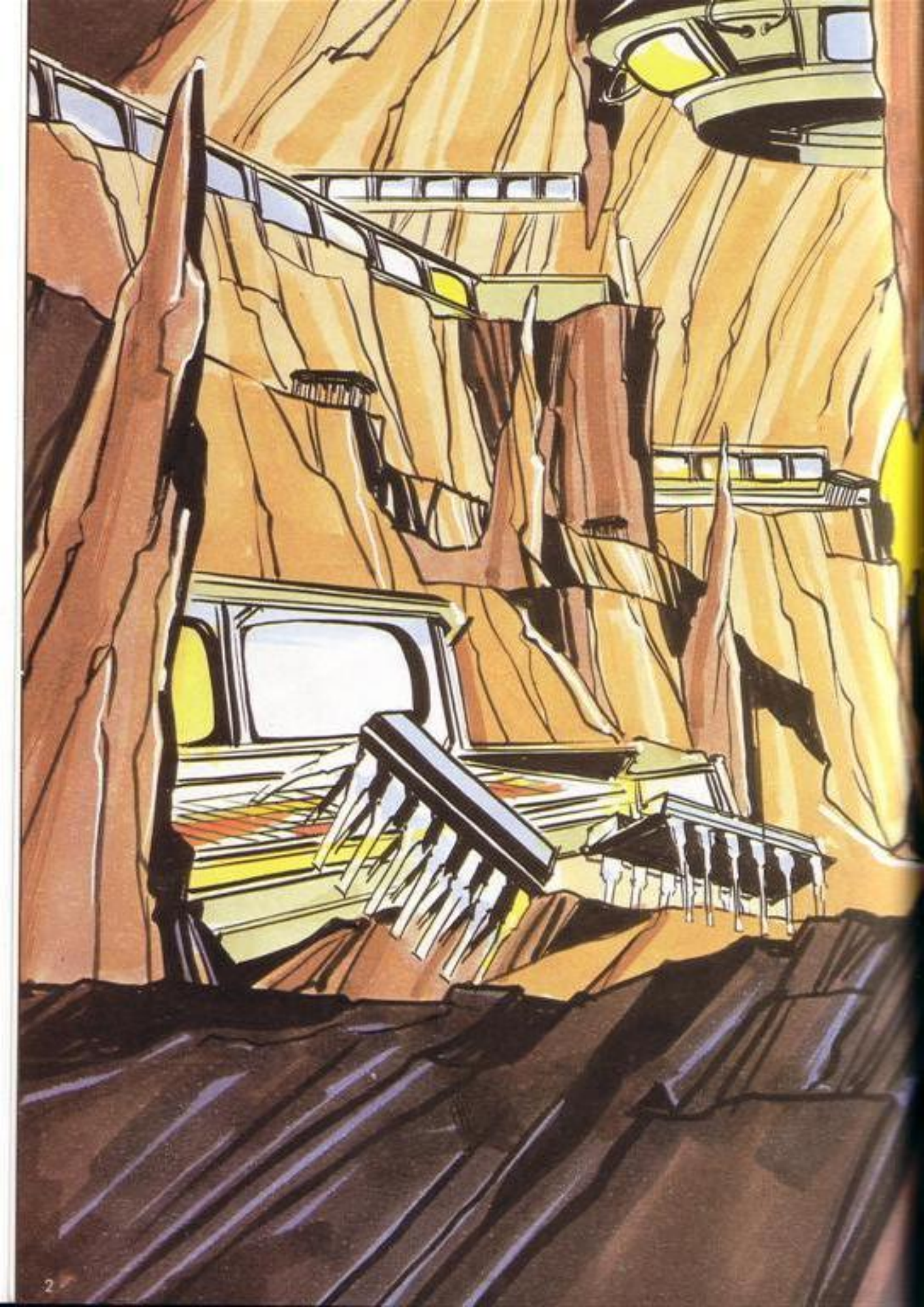
Beyond the oblivion of all numbers, far out in the galaxy and even farther, on the planet of SYNTAX, ZORTEK slid wearily into his service bay.

He would have another quorum of Microchips to train when the black sky faded into the redness of the morning. The imminence of an invasion by the ZITRONS meant that time was of the essence.



Deep underground in the fathomless caverns of SYNTAX, the all powerful, all knowing, perpetual computer CREATIVITY resides. It lives on the imagination of life, fulfilling the many problems of the vast universe, protected by Zortek and the Microchips.

The Zitrons are a fearful race of creatures set upon the destruction of all planets but their own. They have discovered the whereabouts of Creativity and are now trying to confuse its data banks by bombarding the planet's surface with alien letters, and infiltrating space with mis-spelt words. Should they succeed then the whole system will crash, implode and the knowledge of all time will disappear, sucked into a devastating black hole.

News from the information systems indicates that an attack on the planet is imminent, so to help ZORTEK and the Microchips in their task

- LOAD and RUN these simulation programs at your computer consoles. Urgent action is required—you will find the instructions to LOAD and RUN programs in the MICROCHIPS MANUAL on the next page.
- LOAD "ZITRACK" and take your instructions from the program.

Now that the alien letters have been destroyed

- Type the word NEW then press the RETURN key.
- LOAD "ANNIHILATION" and take your instructions from the program.

Zortek has written the Microchips Manual for his Microchips to use during their training. You will need to follow it as well.

When you have run ZITRACK and ANNIHILATION you will be ready to join the Microchips training team and carry on reading through the book.

MICROCHIPS MANUAL

TO LOAD AND RUN A PROGRAM FOLLOW THESE INSTRUCTIONS:

CASSETTE LOADING INSTRUCTIONS

(1) When the computer is switched on type the word NEW and press the RETURN key.

(2) Put the cassette into the tape recorder. (Make sure that all the tape is on the left-hand spool!)

(3) Type the word LOAD " then type the name of the program " then and press the RETURN key.

(4) The computer will now tell you to press the PLAY button on the cassette tape recorder, so, do so!

(5) The computer will then look for the program you want. When it finds the right one, it will say LOADING.

(6) Wait until the computer says it is READY then type RUN and press the RETURN key.

DISK LOADING INSTRUCTIONS

(1) When the computer is switched on type the word NEW and press the RETURN key.

(2) Put the disk in the disk drive with the label uppermost.

(3) Type the word LOAD " then type the name of the program ",8 then and press the RETURN key.

(4) Wait until the computer says it is READY then type RUN and press the RETURN key.

To get the " press the Shift key and at the same time the number 2

The intensity of training can be rather wearing on the circuits of the Microchips. Creativity has allowed for recreational pursuits within the work schedule.

MICROCHIPS

MANUAL

LEISURE TIME

It's time for you to take a break!

All the other microchips are playing flog at the Crater Club . . . so . . .

- LOAD "FLOG" into your computer now so you can enjoy the Microchip fun.
- Keep a record of your score so that when you play again you can check to see whether you have improved.

Go straight on to page 8 when you have finished playing FLOG. Now you are more familiar with the computer keyboard it is time to start your programming course.

MICROCHIPS MANUAL

FLOG

Here is an example of how you might record your round. You can use a post card to make a golf card like this.

Example:

C.N.	H.S.
3	2
6	5
10	12

If the hole length is 48 metres.

Choose: C.N. 6
H.S. 5
Direction +

Then: C.N. 6
H.S. 2
Direction +

Then: C.N. 3
H.S. 2
Direction +

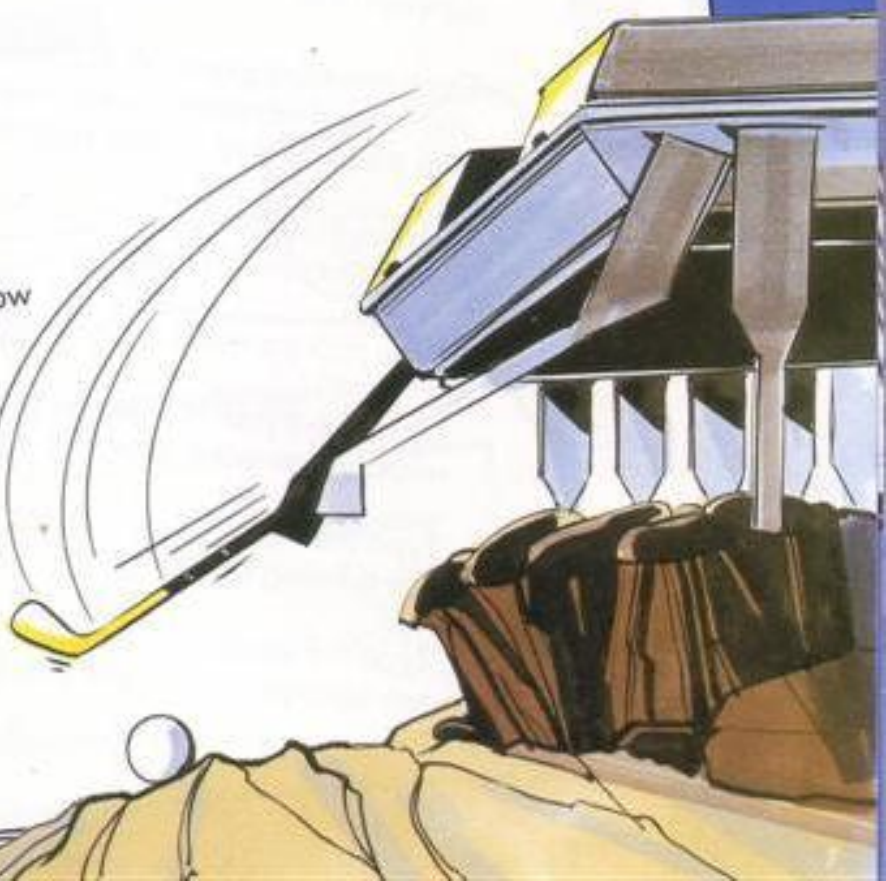
(Look at the card to see how this has been recorded!)

If the hole length is 44 metres.

Choose: C.N. 10
H.S. 5
Direction +

Then: C.N. 3
H.S. 2
Direction −

Hole	Length	Distances	Score
1	48m	→ 30 → 12 → 6	3
2	44m	→ 50 ← 6	2
3			
4			
5			
6			
7			
8			
9			



The next morning the Microchips are given vital instructions in Computer Programming. To avoid devastation when the Zitrons strike they must be competent at programming Creativity. Follow the MICROCHIP MANUAL carefully then you will also be able to program and so help Zortek in his vital task.

MICROCHIPS MANUAL

PROGRAMMING

Every time you write a new program on the computer, type NEW and then press the RETURN key.

Always press the RETURN key when you want to enter your instruction into the computer.

Every instruction to the computer must be written on a different line.

Each line must start with its own line number. Generally, you should increment line numbers by ten (10, 20, 30 . . .) so that there is room to insert additional lines, if required.

Always finish the program with a line number followed by the instruction END.

This will tell the computer you have finished!

If you make a mistake do not press the RETURN key. You can rub out your mistake by pressing the INST DEL key until your mistake has gone, and then you need to retype your line.

Type the word LIST and then press the RETURN key to see a listing of your program.

Type the word RUN and then press the RETURN key to see your program work when you have finished it.

That afternoon the Microchips are given their first program to try.

MICROCHIPS MANUAL

- Switch the computer on, or type NEW.
- Type in the following program:

```
10 PRINT"XXX"
20 PRINT"XXX"
30 END
```

Then don't forget to press the RETURN key!

...All programs finish with END

- Now type the word RUN
- Then press the RETURN key.

You should now see

```
10 PRINT"XXX"
20 PRINT"XXX"
30 END
RUN
XXX
XXX
```

This is what you have asked the computer to do!

PRINT tells the computer to print something on the screen.

If you make a mistake when you are typing in your program —

Either press the INST DEL key, to rub out your mistake.

Or just retype your line again.

MICROCHIPS MANUAL

- Look at the following PRINT statements

```
PRINT"***"
PRINT"*  *"
PRINT"*  "
PRINT"  * "
PRINT"   *"
PRINT"**  "
PRINT" **"
PRINT"    "
```

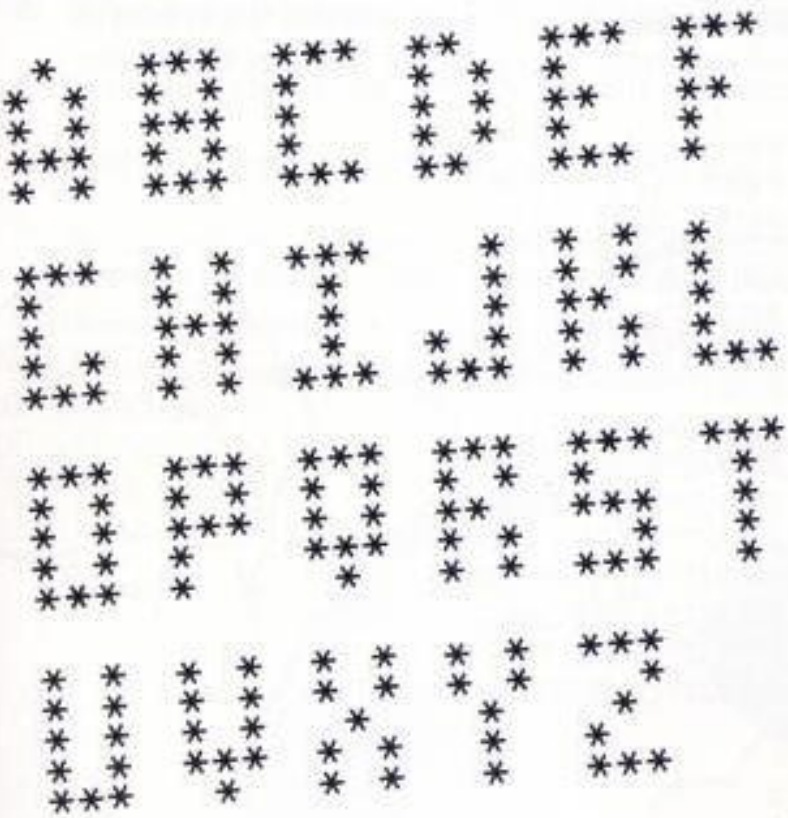
- By using the above PRINT statements, and the

```
END
```

statement, write a program to print one of the letters on the following page on to the computer screen.

```
10 PRINT"***"
20 PRINT"*  *"
30 PRINT"*  *"
40 PRINT"***"
50 END
```

Here are the examples of what you can PRINT on the screen using the print statements shown on page 10.



- Now, still using the same statements, but in a different order, write a program to print a 2 or 3 letter word going down the screen of the computer.
- If you get stuck look in the answer section of the book for an idea.
- When you have RUN your program and made sure that it works you may go on to the next page.

The Microchips have discovered a strange spherical object. They believe it may be a bomb that has been planted by the Zitrons. The sphere has a label that says

SOCCER

Many other words are on the label but they have been scrambled into disorder. Zortek must sort out the Zitron code to see if it is safe to move the sphere. Perhaps Creativity can help. Here are the words.

```
PRINT "AND ";
PRINT"THE IDEA IS ";
PRINT"SOCCER IS ";
PRINT " ■■ . ";
PRINT"WHERE ";
PRINT"SILLY PEOPLE ";
PRINT"KICK ";
PRINT"CHASE AFTER ";
PRINT"A GAME ";
PRINT"EACH OTHER ";
PRINT"TWENTY-TWO MEN ";
PRINT"RUN AROUND ";
PRINT"A RIDICULOUS SPECTACLE ";
PRINT"THE REFEREE ";
PRINT"DRESSED IN SHORTS ";
```

To get this sign press the the key marked ←

Make sure you leave one space between the last letter and the "

Do not worry if the line you type goes onto another line! Only press the RETURN key when you have finished the line completely.

```
PRINT"A BALL ";
PRINT"A SPORT ";
PRINT"KICKING ";
PRINT"FOULING ";
PRINT"PASSING TO ";
PRINT"TO SCORE GOALS ";
PRINT"TO PUT ";
PRINT"KISSING ";
PRINT"IN A NET BETWEEN TWO POSTS ";
END
```

- **Now type NEW and then the following program into the computer. Don't forget to press the RETURN key at the end of each line.**

```
10 PRINT"SOCCER IS ";
20 PRINT"A GAME ";
30 PRINT" ■■ .";
40 END
```

Now run your program to see what happens.

- **Write down what you think the ■■ tells the computer to do.**
- **Write down what you think the ; tells the computer to do.**
- **Help Zortek sort out the PRINT statements —**

  Write your own program (using the PRINT statements given) to print a meaningful sentence about football on the screen.

  There is an idea for a program in the Answer Section.
- **Make sure you have RUN your program before you go on to the next page.**

MICROCHIPS MANUAL

Apart from using letters and/or numbers with the PRINT statement, all the other characters on the keyboard can also be used with it.

- Find the following keys:

- Type the following program into the computer. Don't forget to press the RETURN key at the end of each line!

```
10 PRINT" ♥ ";
20 PRINT" * ";
30 PRINT" ┐ ";
40 PRINT" Q ";
50 PRINT" * ";
60 END
```

To get this sign press the * key!

To get this sign press the SHIFT key and the CLEAR HOME key!

To get this sign press the → key!

To get this sign press the ↓ key!

- Type RUN and press the RETURN key. You should see

```
*
 *
READY.
```

- **It's time for target practice. LOAD "SPLAT" into your computer. (Don't forget to type NEW and press the RETURN key first.)**

The Zitrons' Galacraft are preparing to land. Zortek hurries the Microchips to their next lesson. They must all be ready to repel the invasion! Creativity's counterplot must be programmed and implemented before nightfall.

MICROCHIPS MANUAL

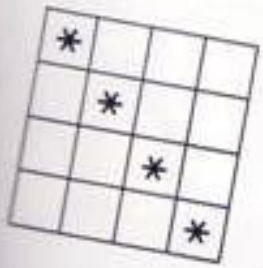
- Use the following PRINT statements:

PRINT" ♥ " ;
PRINT" S " ;
PRINT" Q " ;
PRINT" ▭ " ;
PRINT" ▟ " ;
PRINT" ▮▮ " ;
PRINT" * " ;

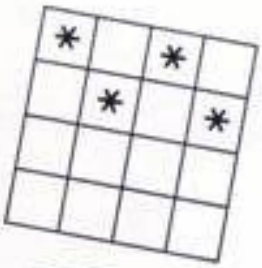
Experiment on the computer, using the keys on page 14, to get the symbols for each different PRINT statement

and the END statement to write a program to produce one of these patterns on the computer screen.

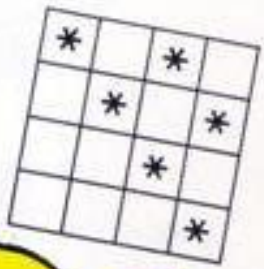
(i)



(ii)



(iii)



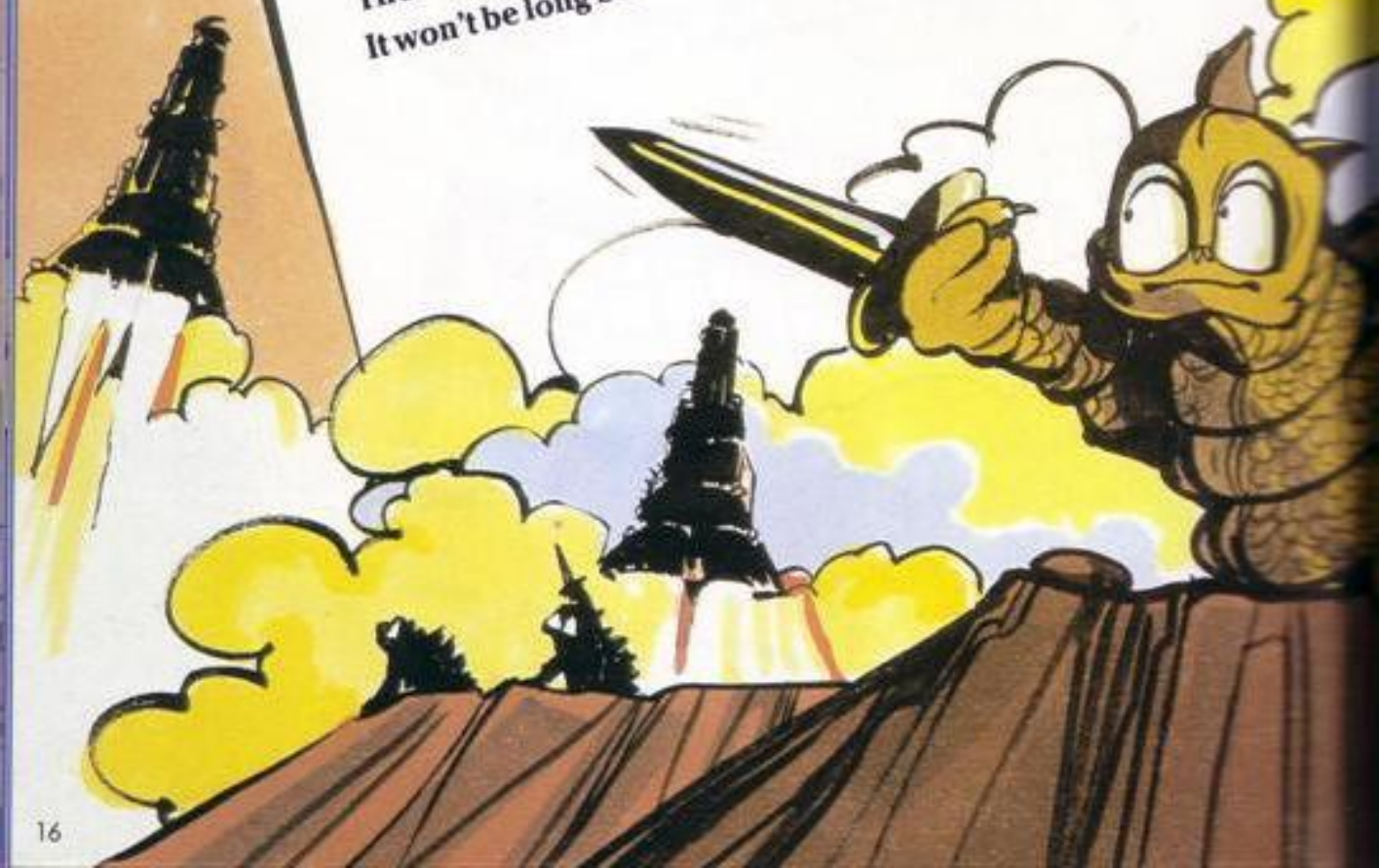
This is only a very small beginning - just to show you how to use some different keys with the PRINT statement. Try out your own ideas now and print what you want to on the screen!

The answers to the patterns above are in the answer section.

So far the Microchips have worked with these commands

- **LOAD** which tells the computer to load a program.
- **RUN** which tells the computer to run the program which you have just loaded, or which you have just written.
- **PRINT** which tells the computer to print something on to the screen.
- **NEW** which tells the computer that you are doing something new.
- **LIST** which tells the computer to list the program that you have just written.

The Microchips are learning fast.
It won't be long before they are prepared to withstand the Zitron attack.

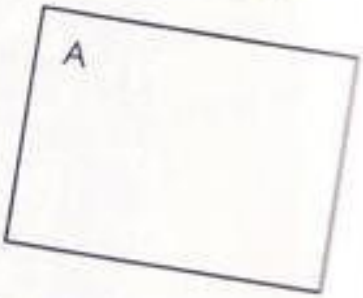



THE ZITRONS HAVE LANDED!
While a magnificent defence strategy is being developed by Zortek and the Microchips the Zitrons have infiltrated Syntax space and have landed at last. The situation is critical; with heavy losses on both sides, Creativity is now in imminent danger of sabotage unless the Microchips can come up with a miracle.
In the meantime training goes on . . .
Make sure that you are up to date with the schedule before you go on to the next page. . . .

MICROCHIPS MANUAL

INFORMATION ON SYNTAX IS KEPT IN BOXES

If the Microchips want to store numbers, they put them into a box labelled with a letter.



For example, the number 5003 might be stored in a box which is labelled A.

If the Microchips want to store letters, words, or sentences, they must put them into a box labelled with a letter and a $ sign.

For example, the word ZORTEK might be stored in a box which is labelled A$.

To tell the computer which box something is to be stored in the Microchips use the command LET.

For example LET A = 5003

or LET A$ = "ZORTEK"

- Now LOAD "BOXES"

You can see how the boxes work in a program if you read this page of the MICROPCHIPS MANUAL.

MICROCHIPS MANUAL

- Type the following program into the computer. Press the RETURN key when you have finished a statement.

```
10 LET A$ = "THE FACTORS OF "
20 LET B$ = "ARE: "
30 LET C$ = "AND "
40 LET D$ = "■■."
50 PRINT A$;
60 PRINT "8 ";
70 PRINT B$;
80 PRINT "1 ";
90 PRINT "2 ";
100 PRINT "4 ";
110 PRINT C$;
120 PRINT "8 ";
130 PRINT D$
140 END
```

- Now RUN your program.
- Now LIST your program and then, without changing lines 10, 20, 30 and 40, rewrite the other lines so that the computer prints the factors of six. (To re-write a line just type in its number again, and then the statement that you want in its place.)
- By now you should know where to find the answers if you get stuck!
- Run your program to see that it works.

The Microchips in the Satellite Centre have asked the trainees to help by entering current battle data into the telemonitors. The status report of the struggle is changing every hour so as soon as you are ready to help continue with the lesson below.

MICROCHIPS MANUAL

- Type NEW then after pressing the RETURN key LOAD "STATUS REPORT"
- LIST this program and you should see the following:

```
10 LET A$ = "**********************"
20 LET B$ = "STATUS REPORT"
30 LET C$ = "MICROCHIP LOSSES"
40 LET D$ = "ZITRON LOSSES"
50 LET E$ = "STARFIGHTER LOSSES"
60 LET F$ = "GALACRAFT LOSSES"
70 LET G$ = " ♥ "
80 PRINT G$
90 PRINT A$
100 PRINT" "
110 PRINT B$
120 PRINT" "
130 PRINT C$;
140 PRINT" 10"
150 PRINT" "
160 PRINT D$;
170 PRINT" 15"
180 PRINT" "
190 PRINT A$
200 END
```

When you LIST the program you will need to slow the computer down. You can do this by pressing the key marked C=

- Now RUN the program.

You should then see the current data displayed on your screen.

After you have RUN your program . . .

- LIST your program and without changing all of the lines . . . change the rest of your program so that it will show the following on the screen (you will need to change lines 130, 140, 160 and 170 by just retyping these lines to say what you want them to say):

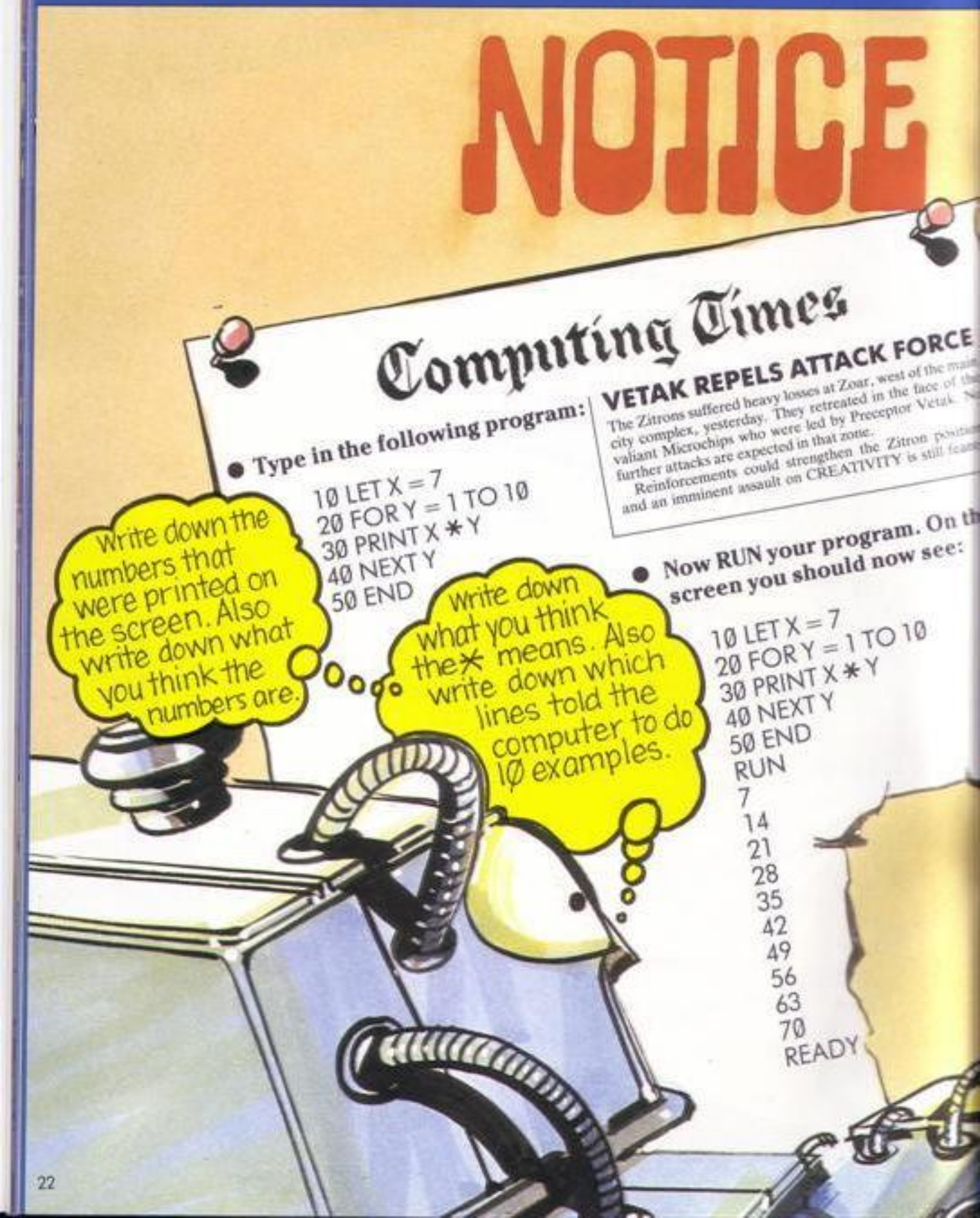
```
**********************
STATUS REPORT
STARFIGHTER LOSSES 3
GALACRAFT LOSSES 7
**********************
```

- Now RUN your program to see that it works.

You may also check your program with the answer in the back of the book.

Whilst the battle rages on, Zortek and the Microchips are encouraged by their army's decreasing losses. They must work extra hard the next day on the new tactics for repelling the Zitron forces.

The Computing Times is the Microchips' daily newspaper. Zortek makes sure that all of them have a look so that they can keep up with the battle news. Today there is also an important program which cannot be missed.



So — keep in the picture, too; read this extract carefully and carry out all the instructions.

BOARD

- **Here are two more programs:**

i)
```
10 LET X = 9
20 FOR Y = 1 TO 20
30 PRINT X * Y
40 NEXT Y
50 END
```

ii)
```
10 LET X = 139
20 FOR Y = 1 TO 15
30 PRINT X * Y
40 NEXT Y
50 END
```

- **Write down what you think each of them does.**

- **Write a program to print the answers to the 14 times table, from 1 × 14 to 12 × 14, on the screen.**

  Type your program into the computer and then RUN it to see that it works.

- **Write a program to print the 234 times table out fully, from 234 × 1 to 234 × 10 on the screen.**

  Type your program into the computer and then RUN it to see that it works.

Choose one of the programs to type in and then RUN the program to see that it works.

You will need to use this line:

```
PRINT X;"*";Y;"=";X * Y
```

in place of the other line 30.

FOR SALE

ROBOT DOG — One well trained robot dog. Needs oil change and new wiring. Answers to "ROVER". Plays chess well. Signal Astro 8888 for details.

Computer art is an important feature of Syntax life and one which is not being omitted from the training schedule. The Zitrons have never been in an artistic world and Creativity is relying on surprise strategy as an intricate part of the counterplot. Imaginative ingenuity will surely enhance the Microchips' chances of success. Zortek uses straightforward patterns to instruct the Microchips in the techniques of design.

MICROCHIPS MANUAL

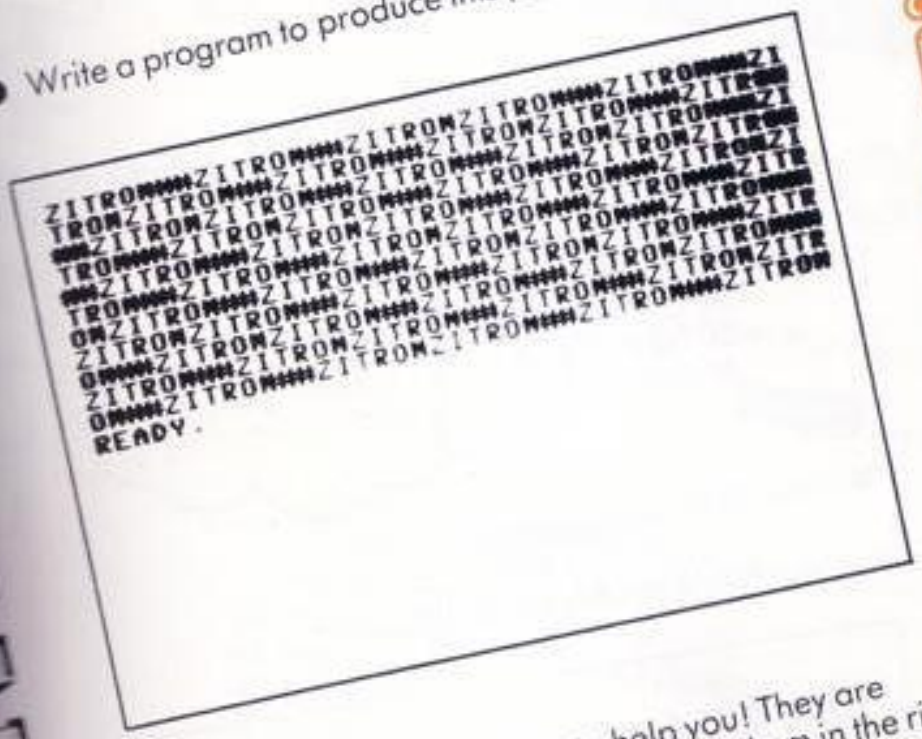
- LOAD "COMPUTER ART"

```
ZORTEK******ZORTEK******ZORTEK******ZORT
EK******ZORTEK******ZORTEK******ZORTEK**
**ZORTEK******ZORTEK******ZORTEK******Z
ORTEK******ZORTEK******ZORTEK******ZORT
EK******ZORTEK******ZORTEK******ZORTEK**
**ZORTEK******ZORTEK******ZORTEK******Z
ORTEK******ZORTEK******ZORTEK******ZORT
EK******ZORTEK******ZORTEK******ZORTEK**
**ZORTEK******ZORTEK******ZORTEK******Z
ORTEK******ZORTEK******ZORTEK******ZORT
READY.
```

- RUN the program and you should see the above patterns appear on the screen.
- LIST the program and make a note of the line statements.

MICROCHIPS MANUAL

- Write a program to produce this pattern on the screen.



Use the following statements to help you! They are all muddled up and you will need to put them in the right order.

```
PRINT " ♥ "
END
FOR T = 1 TO 20
NEXT T
PRINT "ZITRON # # ZITRON # # ZITRON";
```

- Now, use your skill to write a program which will produce your own original computer art on the screen.

MICROCHIPS MANUAL

MULTIPLE PATTERNS

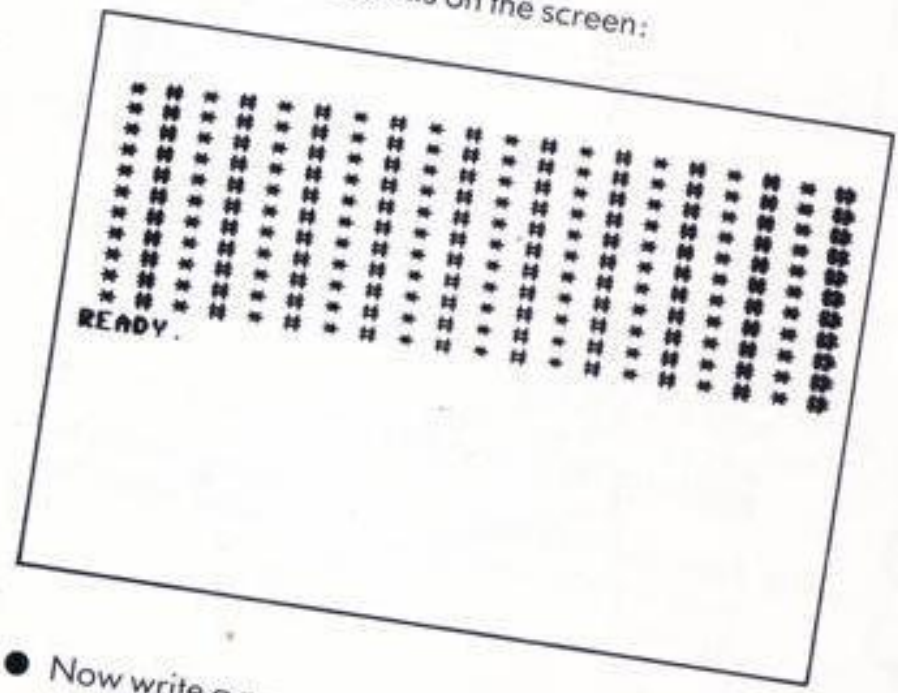
- Type in the following program:

```
5 PRINT " ■ "
10 FOR T = 1 TO 110
20 PRINT" *   # ";
30 NEXT T
40 END
```

Make sure you leave one space!

- Now RUN your program.

You should see this on the screen:



- Now write a program to print something in every 3rd space on the screen.

Zortek also teaches the Microchips to program the computer so that it is friendly. A smile generates a smile and hopefully if the Zitrons do reach Creativity the aura and friendliness of this amazing computer will allay immediate devastation and give the Microchips time to regroup.

MICROCHIPS MANUAL

- LOAD "CONVERSATION 1" and then RUN it.

Then after typing NEW and pressing the RETURN key . . .

- LOAD "CONVERSATION 2"
- Now LIST the program and you should see this (read through the listing carefully):

```
10 PRINT "♥HELLO _"
20 PRINT "WHAT IS YOUR NAME?"
30 INPUT A$
40 PRINT " "
50 PRINT "HELLO AGAIN"
60 PRINT A$
70 PRINT "I AM PLEASED"
80 PRINT "TO MEET YOU."
90 PRINT " "
100 PRINT "HOW OLD ARE YOU?"
110 INPUT B$
120 PRINT B$;" THAT'S A BIT"
130 PRINT "YOUNG TO START"
140 PRINT "TO PROGRAM ME"
150 PRINT A$;"."
```

- Now RUN the program to see how it works.
- Now continue the above program so that it asks the following question and then prints a sensible reply.

"What is your favourite lesson at school?"

- RUN your program to see that it works.

Make sure you leave spaces in the right places when you type in your lines.

The Microchips are having a hard fight. A Zitron scouting party has discovered the entrance to the inner sanctum of Syntax and a fierce assault on the entrance has begun. The Microchips have moved into the very caverns where Creativity lives so they can continue their work.

MICROCHIPS MANUAL

- Type the following program into the computer:

```
10 PRINT " "
20 PRINT "LET ME SHOW YOU"
30 PRINT "HOW CLEVER I AM."
40 PRINT " "
50 PRINT "I CAN ADD TOGETHER"
60 PRINT "ANY TWO NUMBERS THAT"
70 PRINT "YOU GIVE ME IN A"
80 PRINT "SUPERFAST TIME."
90 FOR T = 1 TO 5
100 PRINT " "
110 PRINT "TYPE IN"
120 PRINT "YOUR FIRST NUMBER."
130 INPUT A
140 PRINT " "
150 PRINT "NOW TYPE IN"
160 PRINT "YOUR SECOND NUMBER"
170 INPUT B
180 PRINT "THE ANSWER IS —"
190 PRINT A + B
200 NEXT T
210 END
```

These lines te
the compute
to give you 5 g

- Now RUN the program.
- Rewrite line 90 so that the computer will give you 10 goes. Then RUN your program to see that it works.

MICROCHIPS MANUAL

- Choose one of the following ideas:

(Remember to make the computer as friendly as possible when you are writing your program!)

1. Write a program to take away one number from another.
2. Write a program to multiply two numbers together.
3. Write a program to divide one number into another.

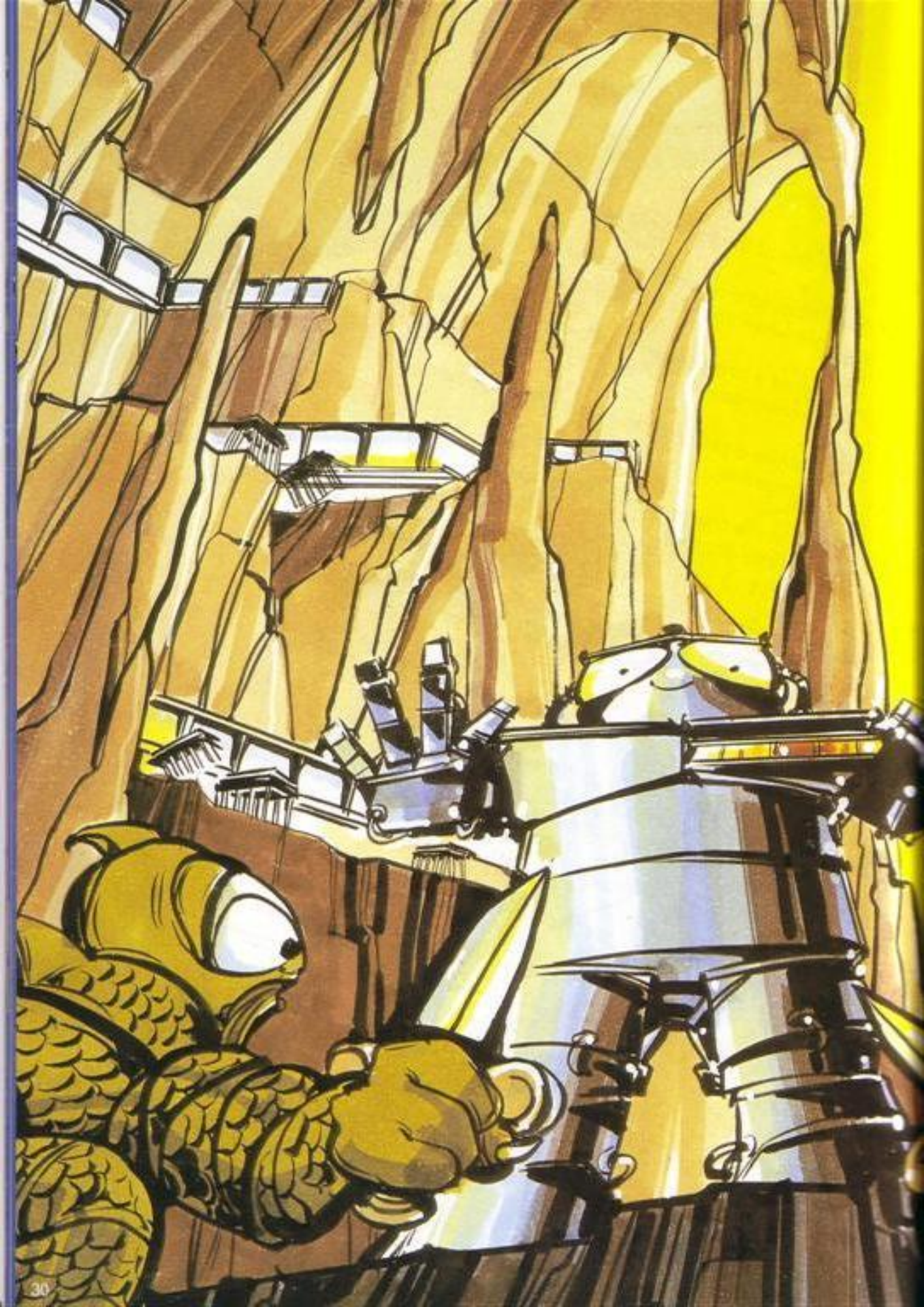
PRACTICE USING '+' '−' '×' and '÷'

Remember that the 'add' and 'take' signs on the computer are the same. The multiply and divide signs are not —

the * means multiply

the / means divide

TIME FOR A BREAK! Zortek thinks that you have worked hard up to this point so LOAD "PV" before going on to the next section.



The might of the Zitron army has landed. With seemingly little regard for the purposes of Creativity they have set upon their task of ultimate destruction. A few of the Zitrons have infiltrated the inner sanctum on Syntax and are intent on eliminating the all knowing computer. On their path of evil they have been halted by a flashing computer screen. Their inquisitive nature has overcome their evil intents . . . is it possible that there might be better things in life?

The flashing cursor has mesmerised them all. Violent intent gone from their minds, they are intrigued by the program on the screen. Each Zitron is clamouring to try it out for himself.

The last two pages of the MICROCHIPS MANUAL have two exercises to test the Microchips' knowledge of programming. The more knowledge they have gained, the better are their chances of capturing the Zitrons' interest and neutralizing their attack for good.

MICROCHIPS MANUAL

ODD-ONE-OUT

This is an idea for a program which can be developed further at a later stage.

- Write a program which tests your ability to spot the odd-one-out! Choose your line statements from the ones listed below:

```
PRINT "CAR  HOUSE BICYCLE"
PRINT "ELEPHANT  LION  SNAKE"
PRINT "HOE  RAKE  CHISEL"
PRINT "FIND THE ODD ONE OUT – "
PRINT "  "
PRINT "TYPE IN YOUR ANSWER – ";
INPUT A$
IF A$ = "HOUSE" THEN
IF A$ = "SNAKE" THEN
IF A$ = "CHISEL" THEN
GOTO
PRINT "CORRECT"
PRINT "TRY AGAIN!"
PRINT "DO YOU WANT ANOTHER"
INPUT B$
IF B$ = "YES" THEN
IF B$ = "NO" THEN
PRINT " "
PRINT "QUESTION?"
```

Remember you need to type in a line number after typing GOTO or THEN

- If you are not sure how to get started on this program look in the answer section for an idea.

AREA OF A RECTANGLE

- Write a program to give you the Area and the Perimeter of a rectangle if you type in its length and width.

Choose your line statements from the ones listed below:

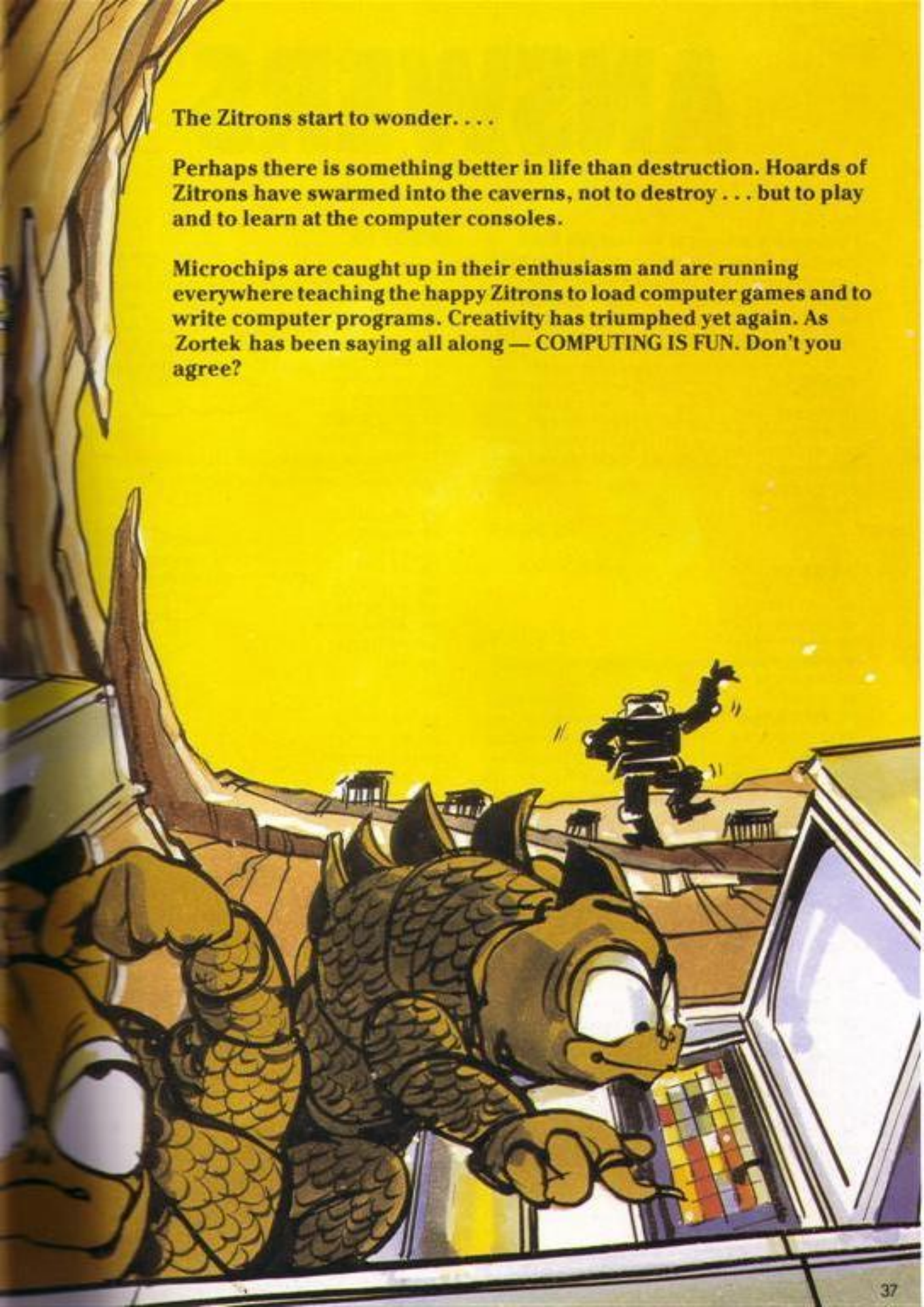
```
IF Z$ = "NO" THEN
IF Z$ = "YES" THEN
INPUT A
INPUT Z$
INPUT B
PRINT A * B
PRINT "TO FIND THE AREA"
PRINT " "
PRINT "AREA = ";
PRINT "AREA OF A RECTANGLE"
PRINT "TYPE IN WIDTH - "
PRINT "OF A RECTANGLE"
END
PRINT 2 * (A+B)
PRINT "ANOTHER QUESTION?"
PRINT "♥"
PRINT "TYPE IN LENGTH - "
PRINT "PERIMETER = ";
PRINT "AND PERIMETER"
PRINT " = LENGTH * WIDTH"
PRINT "= 2 * (LENGTH + WIDTH)"
GOTO
```

- If you are not sure how to get started on this program look in the answer section for an idea!

The Zitrons start to wonder. . . .

Perhaps there is something better in life than destruction. Hoards of Zitrons have swarmed into the caverns, not to destroy . . . but to play and to learn at the computer consoles.

Microchips are caught up in their enthusiasm and are running everywhere teaching the happy Zitrons to load computer games and to write computer programs. Creativity has triumphed yet again. As Zortek has been saying all along — COMPUTING IS FUN. Don't you agree?



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```
80 PRINT"WHAT IS THIS WORD -"
90 PRINT" "
100 PRINT"REKZOT"
110 INPUT B$
120 IF B$="ZORTEK" THEN 140
130 GOTO 80
140 PRINT"CORRECT"
150 PRINT"WHAT IS THIS WORD -"
160 PRINT" "
170 PRINT"SIPCH"
180 INPUT C$
190 IF C$="CHIPS" THEN 210
200 GOTO 150
210 PRINT"CORRECT"
220 PRINT"WHAT IS THIS WORD -"
230 PRINT" "
240 PRINT"NITROZ"
250 INPUT D$
260 IF D$="ZITRON" THEN 280
270 GOTO 220
280 PRINT"CORRECT"
290 PRINT"THANKS FOR THE GAME!"
300 END
```

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```
" PRINT"□"
10 PRINT"FIND THE ODD ONE OUT -"
20 PRINT"CAR HOUSE BICYCLE"
30 PRINT" "
40 PRINT"TYPE IN YOUR ANSWER -"
50 INPUT A$
60 IF A$="HOUSE" THEN 90
70 PRINT"TRY AGAIN!"
80 GOTO 10
90 PRINT"CORRECT"
100 PRINT"DO YOU WANT ANOTHER"
110 PRINT"QUESTION?"
120 INPUT B$
130 IF B$="YES" THEN 150
140 IF B$="NO" THEN 360
150 PRINT"FIND THE ODD ONE OUT -"
160 PRINT"HOE RAKE CHISEL"
170 PRINT" "
180 PRINT"TYPE IN YOUR ANSWER -"
190 INPUT A$
200
360 END
```

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```
10 PRINT"□"
20 PRINT"TO FIND THE AREA"
30 PRINT"AND PERIMETER"
40 PRINT"OF A RECTANGLE"
50 PRINT" "
60 PRINT"TYPE IN LENGTH -"
70 INPUT A
80 PRINT"TYPE IN WIDTH -"
90 INPUT B
95 PRINT" "
100 PRINT"AREA OF A RECTANGLE"
110 PRINT"= LENGTH * WIDTH"
120 PRINT"AREA = ";
130 PRINT A*B
140 PRINT"AND PERIMETER"
150 PRINT"=2*(LENGTH+WIDTH)"
160 PRINT"PERIMETER =";
170 PRINT 2*(A+B)
180 PRINT" "
190 PRINT"ANOTHER QUESTION?"
200 INPUT Z$
210 IF Z$="YES" THEN 10
220 IF Z$="NO" THEN 300
230 GOTO 190
300 END
```

This delightful and unique concept in teaching young people to program couples a space adventure story with lessons in BASIC programming.

The planet of Syntax is being invaded by fearsome Zitrons! Zortek is working furiously to teach the Microchips to program the great computer to ward off the attack. The full colour story book of this adventure incorporates the Microchips Training Manual that will teach your child the fundamentals of programming in BASIC. They too, can help stop the Zitrons.

The book which includes eleven imaginative illustrations in vivid colours, is accompanied by two cassettes or a single diskette containing educational games and other programs. In addition to using the programs provided, throughout the training manual there are programs to be typed into the computer by the "trainee". At the end of the story the great computer "Creativity" is saved by the programming that your child and the Microchips have learned from Zortek. Successful trainees earn the right to wear the Zortek badge which comes in the package.

The innovative approach to computer education and the space adventure story with which it is interwoven is the creation of three English school teachers. They designed the package for 10 to 13 year-olds although it is suitable for younger children with parental assistance. Older children and even adults will find it informative and fun as well. This is the first in a series that is marketed exclusively by Commodore, worldwide.

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