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# CHAPTER 4

## GETTING STARTED

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- Keyboard colors
  - Color and reverse printing
  - Some simple programs
  - Correcting typing mistakes
  - Introduction to the Plus/4 screen
  - More about PRINTing on the screen
  - Screen windows
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# INTRODUCTION

The purpose of this chapter is to begin to acquaint you with some of the characteristics and capabilities of the Plus/4, and how to take the first steps toward programming with your computer.

## KEYBOARD COLORS

You can change the color of the characters on the screen to improve readability or to find a color combination you like. To see how the different color characters look on your screen, try this:

- STEP 1 Hold down the **CONTROL** key.
- STEP 2 Press the 6 key while you're holding the **CONTROL** key down. The cursor turns green.
- STEP 3 Let go of **CONTROL** and type some letters. Everything you type appears in green now.

HOLD <b>CONTROL</b> WITH COLOR KEY	COLOR RESULT
1	BLACK
2	WHITE
3	RED
4	CYAN
5	PURPLE
6	GREEN
7	BLUE
8	YELLOW

Using the **CONTROL** key with the number keys 1 through 8 allows you to choose the colors shown on the top of each color key.

Now hold down the **OPTION** key. By typing on the keys between 1 and 8, the cursor changes one of the 8 colors printed on the bottom of each color key. All 16 colors can appear on the screen at the same time.

HOLD <b>OPTION</b> WITH COLOR KEY	COLOR RESULT
1	ORANGE
2	BROWN
3	YELLOW-GREEN
4	PINK
5	BLUE-GREEN
6	LIGHT BLUE
7	DARK BLUE
8	LIGHT GREEN

## COLOR AND REVERSE PRINTING

Your Plus/4 can display numbers, letters and graphic symbols in the 16 different colors. You can also display these characters in reverse, with the primary (cursor) and background colors reversed.

STEP 1 Clear your screen by pressing **SHIFT** and **CLR/HOME**.

STEP 2 Hold down the **CONTROL** key and press the **RVS ON** key:



STEP 3 Release the keys and hold down the space bar (the long bar at the bottom of the keyboard).

STEP 4 Hold down the space bar as long as you want. While you hold down the space bar, a line the same color as the letters on your screen should get longer. If the line gets to the end of the row, it continues on the next row.

STEP 5 Release the space bar (but don't press the **RETURN** key).

STEP 6 Hold down the **CONTROL** key and press one of the color keys (not a color that's already on your screen). As soon as you do this, the cursor will be the color of the key you pressed.

STEP 7 Hold the space bar down again. Now your Plus/4 will draw a line in the new color. Continue changing colors with the **CONTROL** or **C** keys and the color keys. Then hold down the space bar to make different colored lines.

STEP 8 Turn off reverse print by holding down **CONTROL** and pressing the **RVS OFF** key. Pressing the **RETURN** key also turns off reverse printing.



Try typing some letter in reverse. Just hold down **CONTROL** and **RVS ON** to turn on reverse, and then type whatever you want. Reverse letters make excellent headlines. You can also use them to highlight special words and numbers. Try this:

PRINT" **R** COMMODORE **—** PLUS/4"

Press **CONTROL**  
and **RVS ON**

Press **CONTROL**  
and **RVS OFF**

Now try the same line, replacing reverse on and off with FLASH ON and OFF:


PRINT"  COMMODORE  PLUS/4"

Press   
and 

Press   
and 

Both functions may also be used on the Plus/4 as part of a program statement.

## SOME SIMPLE PLUS/4 PROGRAMS

Type this program exactly as it appears here. Don't leave out the numbers at the beginning of the line, since they are the line numbers that tell the order that the lines of the program are implemented by your computer. Be sure to press the  key at the end of each line you type.

10 PRINT"PLUS/4"


This line tells your computer to PRINT Plus/4 on the screen.

20 GOTO 10

This line tells your computer to go back to line 10 and print Plus/4 again.

RUN

This commands your computer to carry out what the 2 lines tell it to do.

Press the  key to stop the program. Why did your Plus/4 print its name so many times? GOTO tells your computer to go back to line 10 and PRINT Plus/4 again and again. This repetition is called a loop.

Now type this:

NEW 

Here you tell the computer to forget the last program and get ready for a new one.



The computer responds:

READY.

You DON'T type this; your Plus/4 does to tell you it's READY for a new program.

10 PRINT "PLUS/4"

Same line 10 as last time. PRINT tells your Plus/4 to display everything between the quotes.

20 COLOR 0,12

This command tells the computer to change the color of the screen.

RUN

This time there's no GOTO loop in the program, so your orders are carried out just once.

## CORRECTING TYPING MISTAKES

If you make a mistake when you're typing, there are several ways to make changes.

1. YOU CAN RETYPE A LINE anytime, even after you've RUN the program. The Plus/4 automatically replaces the old line with the new one when you press **RETURN** to enter the new line. The old line still appears on the screen, but the Plus/4 ignores it. When you have two statements with the same line number, your Plus/4 uses only the last one entered. For example, in a brief program using the COLOR command to change the color of the screen background, a mistake might occur:

10 COKOR 0,3  
20 PRINT "PLUS/4"

mistake

Press the **RETURN** key to get to a fresh line, and just retype line 10 correctly:

10 COLOR 0,3

Now the first line 10 is replaced by the second line 10. You can check this by typing LIST, which displays a line-by-line LISTing of your program as it is stored in the computer's

memory. When you LIST a program, all lines appear in correct order and the replaced lines don't appear:

LIST

The screen reads:

```
10 COLOR 0,3
20 PRINT "PLUS/4"
```

Replacing lines in a program is also a good way to experiment with your computer. When you replace a line, the new one doesn't have to be anything like the old line. For example, instead of correcting the spelling of COLOR, you can type this:

```
10 PRINT "TEN IS SIX "
```

RETURN

Now RUN the program and see what happens.

2. YOU CAN ERASE AN UNWANTED LINE just by typing the number of the line and pressing RETURN. The computer ignores the line even though it still appears on the screen. Type LIST to get the program LISTing to make sure the line is gone from the program.

```
10 PRINT "TEN IS SIX "
```

RETURN

```
20 PRINT "PLUS/4"
```

RETURN

```
10
```

RETURN

```
LIST
```

RETURN

```
20 PRINT "PLUS/4"
```

3. YOU CAN EDIT A LINE. Use the cursor keys to move to the place in the line that you want to change. Now just type over what you want to change. Press RETURN when you finish.

NOTE: When working with numbered program lines, you don't have to be at the end of the line to press RETURN. Your Plus/4 remembers the whole line even if you press RETURN in the middle of the line.

```
10 PRINT "IT IS ONE O'CLOCK"
```

If you want to change the time to TWO, move the cursor to the O in ONE.

```
10 PRINT "IT IS O NE O'CLOCK"
```





## A Little Longer Program

and press **INST/DEL** three times.

10 PRINT " **E** RNOON SCHEDULE"

Type in WEEKLY  
to replace  
ERNOON and  
press **RETURN**

Now that you've experimented a little with your Plus/4, here's a program to try that will take a little longer to type in. (Any experienced programmer will tell you that, if nothing else, programming can help you really improve your typing.)

First, clear the screen by holding down the **SHIFT** key while you press the **CLR/HOME** key. This erases your screen. Then, clear out old programs from memory by typing NEW and pressing **RETURN**

Type in this program exactly as it appears. Remember to type in the line numbers and all punctuation marks. Use the tips for correcting mistakes if you type something incorrectly. Don't forget to press **RETURN** after each line.

NOTE: Remember, you can stop a program by pressing the **RUN/STOP** key.

NEW

10 COLOR 1,8

20 PRINT "A FUNNY THING HAPPENED ";

Be sure to  
leave a  
space here

30 COLOR 1,3

40 PRINT "ON MY WAY TO THE KEYBOARD ";

Be sure to leave a  
space here

50 COLOR 1,7

60 PRINT " ♥♥♥♥♥♥♥ "

Get the hearts  
by holding down  
**SHIFT**  
while you press  
the S key 6 times

70 GOTO 60

RUN



After you STOP the program (by pressing the **RUN/STOP** key), try typing LIST. When the program is displayed on your screen, recall the tips for correcting errors and try changing this program to make it say something more profound.

TIP: Want to slow down this program without stopping it? Just hold down the **C** key.

## THE PLUS/4 TEXT SCREEN

Try typing this program. (Don't forget to press **RETURN** after entering each line.)

NEW

10 PRINT " ♥ ";

press  
and S

20 GOTO 10

RUN

Now your screen fills with hearts. When the entire screen is covered with hearts, press the **RUN/STOP** key to end the program. This program shows you how big your Plus/4's screen is.

Now type this program:

NEW

10 PRINT " ♥ "



press **SHIFT** and **CLR/HOME**

20 FOR X = 1 TO 40

30 PRINT " \* ";

press **SHIFT** and S

40 NEXT X

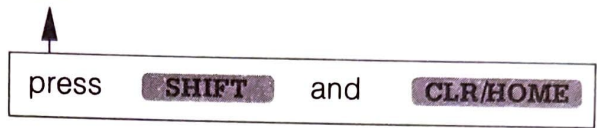
RUN

When you RUN this program, the first row on your screen fills completely with hearts. There are 40 hearts altogether. Since the row is full, you can see that there are 40 positions across the screen. Each position across the screen is called a COLUMN.

Now type this program:

**NEW**

10 PRINT " ♥ "



20 FOR X = 1 TO 25

30 PRINT " ♦ "



40 NEXT X

**RUN**

When you run this program, the first column on your screen fills with diamonds. There are 25 diamonds printed, but the first three disappear at the top of the screen because the word **READY** surrounded by two blank lines always appears at the end of the program. There are, then, 25 rows. A little deductive logic tells you that your Plus/4 has 40 columns and 25 rows. The Plus/4 has 1000 different positions on the screen for letters, numbers, graphic symbols, etc.

**NOTE:** Sometimes you'll type a particularly long line on your Plus/4, such as this:

10 PRINT "I LIKE YOUR TOUCH ON MY KEYBOARD. DO YOU COME HERE OFTEN?"

(That's quite a line—over 50 characters long!)

You'll notice that as you type this, you run out of room on one row. But keep typing; the Plus/4 automatically moves on to the next row and continues printing there until your line is finished. You can type as many as 80 characters on one program line (up to two full rows).

Now try **RUN**ning this one line program. The message is printed on two rows. If your line is longer than one row, the Plus/4 lets it spill over to the next row. The Plus/4 considers the line ended when you press the **RETURN** key, not when you type to the end of the row. You'll get used to this as you use your Plus/4.

Now type this program:

NEW

10 PRINT " ♥ ";

20 GOTO 10

RUN

Leave a space on  
each side of the heart.

press **SHIFT** and S

When you RUN this program, you can see that it's possible to tell the Plus/4 exactly where to PRINT something on the screen.

## MORE ABOUT PRINTING ON THE SCREEN

Try typing this program:

NEW

10 PRINT "A","B"

20 PRINT "A";"B"

RUN

Here's how the screen looks:

A

B

line 10 PRINTed this

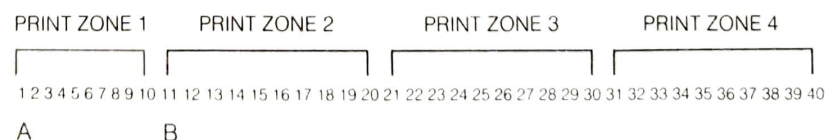
AB

line 20 PRINTed this

If line 10 and line 20 are nearly identical, why is there such a difference in what they PRINT on the screen? The difference is in the punctuation between the items this program PRINTs.

When you use a comma to separate items in a PRINT statement, the items are PRINTed several spaces apart. When you use a semicolon, the items are PRINTed right next to each other.

As you recall, the Plus/4's screen has 40 columns across. These columns are divided into four 10 space areas, called PRINT ZONES. When you use a comma to separate PRINTed items, the Plus/4 prints the first item in the first print zone, the second item in the second print zone, etc. The commas work like tabs on a typewriter.





If you try to PRINT more than four items separated by commas, the Plus/4 automatically goes to the next line to PRINT. For example:

```
PRINT "A", "B", "C", "D", "E", "F"
```

spaces the letters like this on your screen:

		1	11	21	31	COLUMN
ROW	1	A	B	C	D	
	2	E	F			

When you use semicolons to separate items in a PRINT statement, the Plus/4 ignores the print zones and PRINTs all the items one after another:

```
PRINT "A", "B", "C", "D", "E", "F"
```

PRINTs this:

**ABCDEF**

Here's what happens if the first print item is 12 letters long and the second item is separated by a comma:

```
PRINT "ABCDEFGHijkl", "M"
```

PRINTs this:

ABCDEFGHijkl	M	
print zone 1	print zone 3	print zone 4

Now clear your screen and type this program:

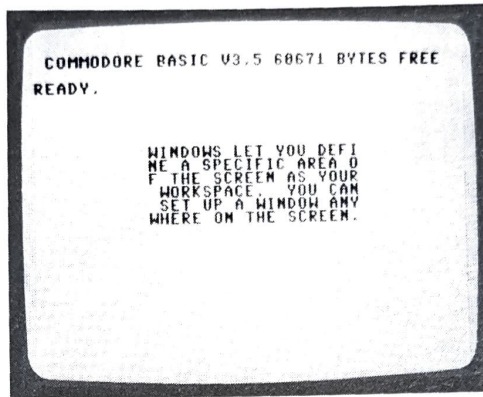
```
NEW
10 PRINT 1,2
20 PRINT 1;2
RUN
1      2
1  2
```

This program shows you two new things:

1. Numbers don't have to be put in quotes in a PRINT statement.

2. Numbers are displayed with a space on both sides of them, so when you use a semicolon, the numbers aren't PRINTed right next to each other the way letters are. The space allows for minus signs to go in front of negative numbers when needed.

## SCREEN WINDOWS



Windows let you define a specific area of the screen as your workspace. Everything you type (lines you type, LISTings of programs, etc.) after setting a window appears within the window's boundaries, not affecting the screen outside the window area. You can set up a window anywhere on the screen.

To set a window, follow these steps:

1. Move the cursor to the screen position you want as the top left corner of the window.
2. Press the ESCape key, and then the letter T.
3. Move the cursor to the position you want to be the bottom right corner of the window.
4. Press ESCape, followed by B. Your window is now set.

All screen output is confined to the 'box' you have defined. To cancel the window, press the home key twice. The window is then erased, and the cursor is positioned in the top left corner of the screen.

