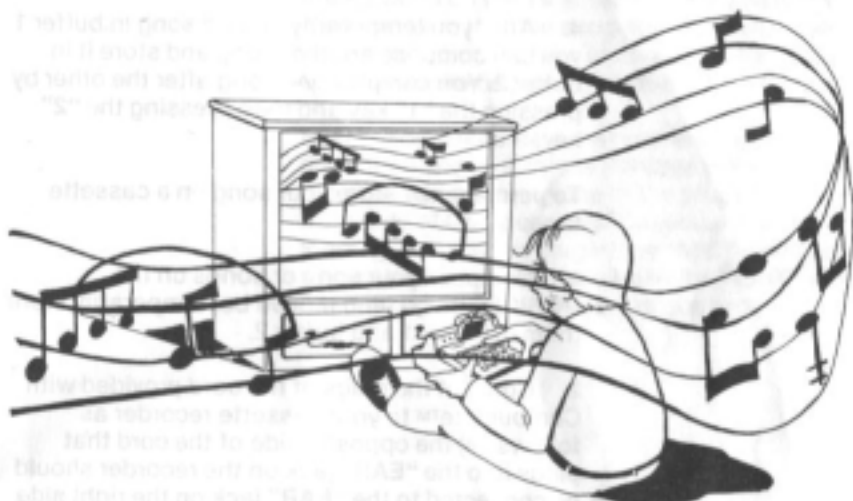


# PART THREE

## CHAPTER 1 Going Ahead With Music



You already know how to write songs with Compumate™. This section will explain how to temporarily save your program in the computer's memory and also how to permanently save your programs on a cassette tape.

To temporarily store and play back your song:

1. Compose your song on the MUSICSCREEN.
2. Once your song is complete, press the **FUNC** key and while holding it down press the **STORE** key (the "Z" key). Release both keys, then press number 1. This will put your song in temporary storage area 1 (called a "buffer" in computer jargon). To prove to yourself that your program is saved press the **FUNC-NEW** key combination. This will clear the screen of your song. Now press the number 1 key and your song will be played back. To make the song reappear on the screen, press the **FUNC** key and while holding it down press the **GET** key (the "X" key). Release both keys, then press number 1. Your song will be retrieved from buffer one and displayed on the screen.

3. There is a second temporary storage area to store a song which is known as buffer 2. If you compose a second song and wish to store it in buffer 2 then repeat step 2, only instead of pressing the number 1 with the **FUNC-STORE** key combination, press number 2 with it. Once your song is stored in buffer 2 and you wish to recall and display it on the screen, press the **FUNC-GET** key combination along with the number 2 instead of the number 1.

4. After you temporarily store a song in buffer 1 you can compose another song and store it in buffer 2. You can play one song after the other by pressing the "1" key and then pressing the "2" key.

To permanently store your song on a cassette tape:

1. Compose your song or songs on the **MUSICSCREEN**, and if need be, temporarily store them in buffer 1 and buffer 2.

2. Connect the plugs of the cord provided with **Compumate™** to your cassette recorder as follows: (a) the opposite side of the cord that plugs into the "EAR" jack on the recorder should be connected to the "EAR" jack on the right side of **Compumate's™** keyboard, and (b) the opposite side of the cord that plugs into the "MIC" jack on the recorder should be connected to the "MIC" jack on the right side of **Compumate's™** keyboard.

3. Set the volume of your recorder to about  $\frac{3}{4}$  of its maximum. If your recorder has a tone control dial, set it on the **HI** position (or if your recorder has separate controls set the treble to **HI** and the bass to **LO**).

4. Press the play and record buttons on your recorder simultaneously. Then press the **FUNC** key and while holding it down press the **SAVE** key (the "H" key). **Compumate™** will do the rest.

**NOTE:** After you instruct **Compumate™** to save or load a song, the TV screen turns red. It will return to normal after the song is saved or loaded (10-30 seconds later).

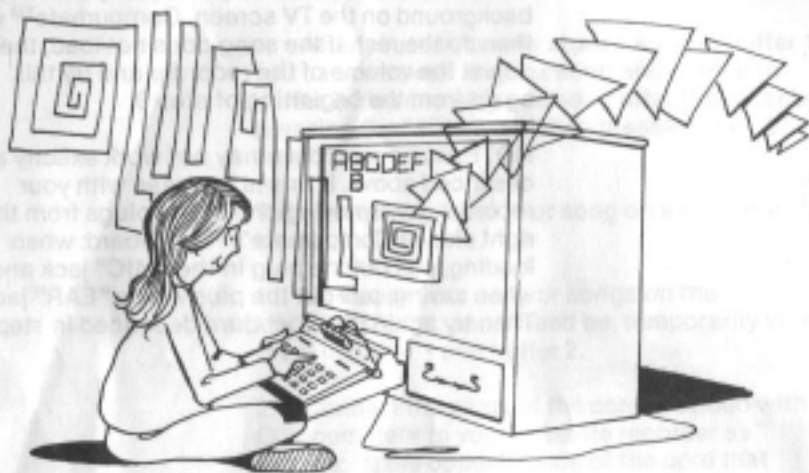
To load a song from your cassette recorder into **Compumate™**:

1. Make sure that the recorder and Compumate™ are properly connected.
2. Press the **FUNC-MUSIC** key combination so that you are on the **MUSICSCREEN**.
3. Press the play key on your recorder. Then press the **FUNC** key and while holding it down press the **LOAD** key ( the "J" key). Within 2 to 3 seconds you should see 2 yellow strips on a red background on the TV screen. Compumate™ will then do the rest. If the song does not load, then adjust the volume of the recorder and try this again from the beginning of step 3.

**NOTE:** Some recorders may not work exactly as described above. If this is the case with your recorder, try removing one of the plugs from the right side of Compumate's™ keyboard: when loading, pull out the plug in the "MIC" jack and when saving, pull out the plug in the "EAR" jack. Then try again the procedure described in step 3.

## CHAPTER 2

# Going Ahead With Graphics



You already know how to draw on the **GRAPHICSCREEN**. This section will explain how to create many pictures and animate them like a cartoon, and how to permanently save your programs on a cassette tape.

To animate your pictures: In the following steps you will draw a series of three different pictures and then connect them to form a movie.

1. Draw a picture on the **GRAPHICSCREEN**.
2. Once your **PICTURE** is complete, you should store it in buffer 1. Press the **FUNC** key and while holding it down press the **STORE** key (the "Z" key) and then press number 1. This will store your picture in buffer 1. To prove to yourself that your picture is saved, press the **FUNC-NEW** key combination. This will clear the screen of your picture. Now press the number 1 key and your picture will be displayed.
3. Press the **FUNC-NEW** key combination to clear the screen and draw another picture.

4. Now you will store the second picture in buffer 2. Repeat step 2 pressing the **FUNC-STORE** key combination with the number 2, instead of the number 1. Your second picture is now stored in buffer 2.

5. Press the **FUNC-NEW** key combination and draw another picture. Repeat step 2 by pressing the **FUNC-STORE** combination with the number 3 (your two previous pictures are stored in buffers 1 and 2). Your third picture is now stored in buffer 3.

6. Here is the moment you have been waiting for! You will now tell Compumate™ to flip through your pictures one after the other thereby giving the impression of a cartoon or movie. You can do this either by pressing key 1, then key 2 and then key 3, or by pressing the **AUTOPLAY** key (the "L" key). You can speed up or slow down the rate at which the pictures change by pressing the **FUNC** key and, while holding it down, pressing the **TEMPO** key (the **ENTER** key). Release both keys and then immediately press a number from 1 to 9. The smaller the number the quicker the pictures will change, and the higher the number the slower the pictures will change.

7. There are 6 buffers available in which to store pictures. They are numbers 1-6. Buffers 7 and 8 contain the two built-in demonstration pictures.

To permanently store your pictures on a cassette tape:

1. Compose your picture or pictures on the **GRAPHICSCREEN**, and temporarily store them in the buffers.
2. Connect the plugs of the cord provided with Compumate™ to your cassette recorder as follows: (a) The opposite side of the cord that plugs into the "EAR" jack on the recorder should be connected to the "EAR" jack on the right side of Compumate's™ keyboard, and (b) the opposite side of the cord that plugs into the "MIC" jack on the recorder should be connected to the "MIC" jack on the right side of Compumate's™ keyboard.

3. Set the volume of your recorder to about  $\frac{3}{4}$  of its maximum. If your recorder has a tone control dial, set it on **HI** (or if your recorder has separate controls, set the treble to **HI** and the bass to **LO**).

4. Press the play and record buttons on your recorder simultaneously and then press the **FUNC** key and while holding it down press the **SAVE** key (the "H" key). Compumate™ will do the rest.

**NOTE:** After you instruct Compumate™ to save or load a picture, the TV screen turns red. It will return to normal after the picture is saved or loaded (10-30 seconds later).

To load pictures from your cassette recorder into Compumate™:

1. Make sure that the recorder and Compumate™ are properly connected.

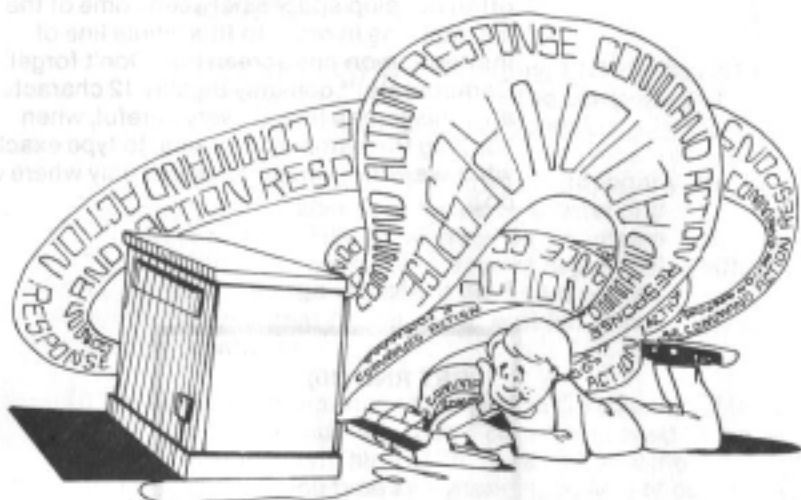
2. Press the **FUNC-GRAPHIC** key combination so that you are on the **GRAPHICSCREEN**.

3. Press the play key on your recorder and then press the **FUNC** key and while holding it down press the **LOAD** key (the "J" key). Within 2-3 seconds you should see 2 yellow strips on a red background on the TV screen. Compumate™ will then do the rest. If the song does not load, adjust the volume of the recorder and try this again from the beginning of step 3.

**NOTE:** Some recorders may not work exactly as described above. If this is the case with your recorder, try removing one of the plugs from the right side of Compumate's™ keyboard: when loading, pull out the plug in the "MIC" jack and when saving, pull out the plug in the "EAR" jack. Then repeat step 3.

## CHAPTER 3

# Going Ahead With Computer Programming



It is time to move ahead and write some fun programs. Along the way we will introduce you to many more instructions of the BASIC computer language. We will proceed by highlighting the names of the new instructions, show you a simple program that demonstrates the new instruction that you should type and run, and then explain the program.

Turn on Compumate™ and press the **FUNC-TEXT** key combination to get on the **TEXTSCREEN**.

### **RND**

The **RND** instruction tells Compumate™ to pick a random number. What is a random number?

Well, if you were to close your eyes and pick a number out of a barrel full of numbers, the number you picked would be called random. Or if you were to spin a pair of dice, the number you rolled would be considered random. A random number is one that is unpredictable (unless of course you were a prophet).

**NOTE:** In each of the sample programs we will often not skip spaces between some of the instructions in order to fit a whole line of instruction on one screen line. Don't forget, Compumate™ can only display 12 characters on any one screen line. Be very careful, when copying the sample programs, to type exactly what we write, skipping spaces only where we do.

Type the following:

```
10PRT RND (10)
```



Now type **RUN ENTER**. Compumate™ will print a number. The **RND (10)** instruction tells Compumate™ to pick a number from 0 to 10 and the **PRT** instruction tells Compumate™ to print it on the TV screen. Type **RUN ENTER** again and Compumate™ should print a different number. Continue pressing **RUN ENTER** a few times until you understand what we mean when we say that the **RND** instruction tells Compumate™ to pick a random number. The number inside the parentheses that follows the **RND** instruction can be from 0 to 255. In other words, the number in parentheses tells Compumate™ to pick a number that is specified in the parentheses. The number in parentheses is the upper boundary of the numbers Compumate™ can choose from.



## **LET**

Type the following:

**10 LET A = 10**

**20 LET B = 20**

**30 LET C = A + B**

**40 PRT C**

Then type **RUN ENTER** (hitting **ENTER** should be automatic for you by now). The computer will print the number 30 on the screen.

The instruction "LET" is a very important one. "LET" is always followed by a letter of the alphabet. This letter is called a container (for those of you that know junior high school math, a container is really a variable). How does Compumate™, and all computers, use containers?

The instruction on line 10 tells Compumate™ to place the number 10 in a container called "A" in its memory. Think of "A" as a cup, and the number you type as a mark on a piece of paper that is placed in the cup. Line 20 tells Compumate™ to put the number 20 in a container called "B". Then on line 30, Compumate™ is told to take the two numbers from containers "A" and "B" and put them into a third container called "C". Finally line 40 tells Compumate™ to print whatever is stored in container "C". Since the numbers 10 and 20 are stored in "C", the sum is 30. That is why Compumate™ prints the number 30 on the screen.

Why do computers use containers?

Container names can be thought of as the number part of the address of your home. If a friend mails a letter to you and the envelope bears only the name of the street you live on but not the specific number of your house, it is quite possible that your mail will be placed in the wrong box. Similarly, if we feed the computer information that is not "correctly addressed", we will have a hard time finding the information we need later on.