

MUSIC



CAT. NO.
26-3151

Radio Shack

TRS-80

**COLOR
COMPUTER**

TM

Music

Radio Shack[®]

 A DIVISION OF TANDY CORPORATION
FORT WORTH, TEXAS 76102

First Edition

Music Program:

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Music Program Manual:

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Introduction

Have you ever had a tune running around in your head that you wanted to write down, but you didn't know anything about music? Now, using the TRS-80 Color Computer Music program, you can not only write melody lines, but harmony as well.

Composing your own music will become easier with practice. You can experiment with timing, key signatures and tone. All compositions can be saved on tape for future playing.

As you read the manual, you may see some unfamiliar terms. There is a glossary in the back, defining these terms.

Setting Up

First, make sure the cassette is properly connected to the computer. Turn on the TV and turn up the volume slightly. Insert the Music cartridge in the slot on the right side of the computer. Next, when you turn on the computer, the bass and treble clef staves will appear.

Setting the Voice

We will begin by setting the voice. The voice produces different tone qualities (or timbres), and is set by pressing three keys.

1. Press **V**. This tells the computer that you are setting the voice. The first number you enter will determine the voice of the top note. The second number sets the voice of the bottom note. You may choose from the following numbers.

- ∅ – No Sound
- 1 – Normal smooth sound
- 2 – Loud smooth sound
- 3 – Normal harsh sound
- 4 – Loud harsh sound

2. Press **1** to set the voice of the top note.
3. Press **∅** to set the voice of the bottom note. The “∅” silences the bottom notes so that you will be able to concentrate on the melody.

Changing the Voice

The voice may be changed anywhere within the composition by pressing **V**, then the numbers for the tones you want. For example, by pressing the **2** or **4** keys for both the top and bottom notes, you can make a part of your composition forte, or accent a single note. An accent is achieved by inserting a loud, harsh voice within the score directly before the note you want to accent. After the accented note, insert a normal smooth voice.

Now press the **→** key to advance the score to the next space. You must press the


→ after entering each command.

Let's begin by composing the melody, "Over the Rainbow". When we are finished with the melody, we will add more detail and harmony to the tune. After this tune, you may want to try another score at the end of the manual, and soon you will be composing your own music.











Entering a Score

This is how you write music on a TRS-80 Color Computer:

1. To begin, press the **B** key to set a repeat bar at the beginning of the score and press → to advance to the next space.
2. Press the slash, **/**, key. At the bottom center of the screen, you will see that the "tail" of the arrow has moved to the right. This will give you control of the notes on the bottom staff. Beneath the "tail", the name of the current item is shown.
3. Press **↑** or **↓**. A quarter note will appear midway between the two staves. This is Middle C.
4. Press **↓** and a second note will appear below the first. Continue to press **↓** until the note is at the bottom of the bass clef. This will keep the bottom note out of your way while you are composing the melody on the treble clef.

5. Press the  key again to return your control to the top note. The “tail” will move back to the left, with the current item on the left.

Inserting and Linking Notes

1. The first note we need for “Over the Rainbow”, is a half note at Middle C. (We will designate this note as M-C in the rest of the manual.) Since the note is already at M-C, simply press  to make it a half note. At the bottom of your screen, you will see the letter C which indicates that the current item is the note, C. Press the  key to move the score on to the next space.
2. Press the  and a second note will appear at M-C. Press the  again until the note moves up to the next C on the staff. Press  to make this C a quarter note.
3. Link, or slur this note to the note that follows by pressing the  key. A small dot will appear beside the note to indicate that the notes are to be connected. Press the  to move to the next space.
4. Press the  again to enter another C. Press  to slur this note. Remember to press the  after you enter each note.

Add the following notes to the score in the same manner. Letters in quotes are command keys and not notes. Each note will have the same value as the previous note unless you change it. An up or down arrow preceding each note will tell

you the direction to move.

If you forget to enter the note time before pressing the **↔**, you can return to the note that needs correction by pressing the **←** key.

↓B"4", ↓G"8", ↑A, ↑B"4", ↑C, C"L", ↓M-C"L", ↑A"L", A"L", ↓G"L", G"L",
G"L", G"L", "RR4"

Inserting Rests

Pressing the letter **R** will insert a rest. The first time it is pressed a note appears. Pressing **R** again will make the rest appear on the clef on which you are working. The time of each rest can be changed in the same way note times are changed. Press **0** for a whole rest, **2** for a half-rest, **4** for a quarter-rest, **8** for an eighth-rest, and **6** for a sixteenth-rest.

If you inserted all the notes correctly the score will look like this:

1 0

Playing Through the Score

Would you like to listen to what you have written so far? Press **[H]** twice to return to the beginning of the score, and **[P]** twice to play the piece.

Ending Repeats and Alternate Endings

Remember the repeat bar we placed at the beginning of the score? This bar tells the program where to begin repeating a phrase. If you want to repeat a phrase, press **[E][0]** at the end of the phrase you want to repeat, to enter an “end repeat bar” (double dots followed by two lines). The program will play the score until it comes to the end repeat bar and return to the beginning and repeat the phrase one more time.


Pairing “E” with a single digit, makes it possible to store up to nine alternate endings. Endings should be entered in the order in which they are to be played and labeled as such. The first label (**[E]1**) should be entered first, followed by the first alternate ending. The second label should follow with its ending. When you play the score, part one will be followed by alternate ending one then repeated, to be followed the second time by alternate ending two.

Dotting Notes

The period dots a note giving that note one and a half times its normal count.


Now enter the rest of the melody.

↓A“4”, ↑F“L”, F, ↓E, ↓C“8”, ↑D, ↑E“4”, ↑F, ↓D, ↓B“8”, ↑C, ↑D“4”, ↑E,
“E1”, ↓D“L4”, D“L”, D“L”, D“L”, “E2L”, ↓C“2 PERIOD L”, “RR8L”

The hardest part is over now. Because the count of each bottom note is the same as the note above it, all you need to do to add harmony to this melody is enter the notes and rests. Press the  key so you will control the bottom note. Go back to the beginning of the composition and enter the following notes to harmonize “Over the Rainbow”.

M-C, ↑E“4”, ↓G, ↑D, ↑E“8”, ↓D, ↑E“4”, E, ↓M-C“L”, ↓F“L”, ↑M-C“L”,
↑D#“L”, ↑E, ↓M-C, ↓B, ↓A#, ↓A“L”, ↓F, ↓A“L”, ↓D, ↑G, ↓E“8”, ↑F, ↑B“4”,
↓A, ↓F, ↑G“8”, G, ↓F“4”, ↑G, ↓D“L”, ↑E“L”, ↑F“L”, ↑G“L”, ↓E“2”

Changing the Speed

Before you listen to your composition again, you have another option to choose, speed. To set the playing speed, press  and one of the following numbers.

- 0 — Double Half-Time — medium speed but with doubled break between the notes (staccato)
- 1 — Half-Time — very slow, half as fast as medium speed
- 2 — Double-Time — very fast, twice as fast as medium speed
- 3 — Medium playing speed — slight break between notes

Because the speed is not entered into the score or saved on tape, it should be entered each time you play the score. The score will be played at medium speed

if no other command is given.

Listen to your composition a few times at different speeds to familiarize yourself with your speed options.

Using Reference Markers

Reference markers can be inserted anywhere in the score. Press **[X]** followed by any number or letter. This marker can be used as part of two functions:

1. It can be used as part of the “homing in” function by pressing **[H]** followed by the key you pressed after the **[X]**. Your score will advance to this marker instantly.
2. As an extension of the play function, **[P]** can be followed by the key you entered after the **[X]**, to play from one part of the score, to the place you have marked.

Playing will begin on the note following the marker.

Deleting and Clearing

Any marker, note, or bar can be deleted from the score by moving the score until the item to be deleted becomes the “current item”. Press **[D]** to delete the item. Press **[D]** again, to delete the space that is left.

You may clear the entire score from memory by pressing **C**.

Your Music Memory Gauge

In the lower left corner of your screen, you will see an F, and in the right corner an E. These are connected by a red line. When you begin your score, the red line will extend all the way across the bottom of the screen. Your memory gauge is full.

As you enter your score and use up memory, the red line will move toward the E. Your memory gauge will be empty (no more room to store music) when the red line disappears. Keep your eye on this gauge while you are composing so you will know how much memory you have left.

Note: When the memory gauge is on Empty, STOP! Do not enter any more notes or the program will lock up.

Saving Your Composition on Tape

To store your composition, first make sure the cassette tape is completely re-wound. Push the "PLAY" and "RECORD" buttons down at the same time, then press **Z**. It will take only a few seconds to store the composition on tape.

Playing a Composition from Tape

When you want to hear any composition you have saved, rewind the tape, push "PLAY", then press **SHIFT C**. When the tape is loaded, the score will appear on the screen, ready to play.

Changing the Key Signature


Any score can be transposed to a different key. To change the key signature use the following commands.

Press	For the Key of:	Which has:
K0	C	No Sharps/Flats
K1S	G	1 Sharp
K2S	D	2 Sharps
K3S	A	3 Sharps
K4S	E	4 Sharps
K5S	B	5 Sharps
K1F	F	1 Flat
K2F	B Flat	2 Flats
K3F	E Flat	3 Flats
K4F	A Flat	4 Flats
K5F	D Flat	5 Flats
K6F	G Flat	6 Flats
KU	Transposes to Higher Octave	
KD	Transposes to Lower Octave	

Experimenting with and learning about Music will be a lot of fun. Enter the sample score in the back of the manual. Later you can compose your own music, record it and play it for your friends. Have fun.

Glossary of Music Terms

Bar — a vertical line dividing measures on the staff.

Bass Clef — : F clef (with F on the fourth line of the lower staff).

Beginning Repeat Bar — two vertical bars followed by two dots indicating that the phrase which follows is to be repeated.

End Repeat Bar — two dots followed by two vertical lines which indicates that the preceding phrase is to be repeated.

Flat — the character b , which lowers the pitch of the note before which it is set by a half tone.

Forte — to be played loudly.

Key Signature — the sharp(s) or flat(s) at the beginning of the staff.

Legato — a direction to perform the passage in a smooth and connected manner, with no break between the tones.

Measure — the notes and rests contained between two bars.

Octave — an interval formed by two tones, eight diatonic steps apart, or a tone range formed by such an interval.

Piano — a direction to play the passage softly.

Rest — a pause or interval of silence between two tones, or the sign indicating such a pause.

Score — a musical composition.

Sharp — the character $\#$, which raises the pitch of the note before which it is set by a half tone.


Slur — in this program, the dot placed after a note to connect it to the following note, signifying that the connected notes are to be played legato.

Staccato — detached, separated; a style in which the notes played are more or less abruptly disconnected.


Staff — the five lines and four spaces on which musical notes are written.


Step — a tone, as from a line on the staff to a space or space to a line.


Tempo — rate of speed a musical passage is to be played.


Treble Clef —  the G clef (with G on the second line of the upper staff).


Note Timing

Whole Note — the note is usually sustained for four beats. Press the  key to obtain this note value.

Half Note — the note is usually sustained for two beats. Press the  key to obtain this note value.

Quarter Note — the note is usually sustained for one beat. Press the  key to obtain this note value.

Eighth Note — the note is usually sustained for one half of a beat. Press the  key to obtain this note value.

Sixteenth Note — the note is usually sustained for one quarter of a beat. Press the  key to obtain this note value.




A Classic for the Advanced

Now that you have played “Over the Rainbow” until all your friends want to strangle you, try something new. The notes below belong to J.S. Bach’s Two — Part Invention No. 1.

It is easier to enter the Treble Clef first then go back to the beginning and enter the Bass Clef. After a rest, the treble clef begins at Middle C. After a series of

nine rests, the bass part begins at C in the middle of the bass clef. All notes and rests count a sixteenth.

We have included some double arrows in these instructions. These arrows simply mean to move the note in the direction of the arrow until the designated note appears the second time. For example, if the previous note is middle C and the instruction said ↑↑ A, you would pass the A in the middle of the staff and proceed to the A which appears above the staff.

Press the  key to control the treble clef, set the voice at , , and enter the following notes.

Treble Lines

RR "6", M-C, ↑D, ↑E, ↑F, ↓D, ↑E, ↓M-C, ↑G"L", G, ↑C"L", C, ↓B, B, ↑C"L", C, ↑D, ↓G, ↑A, ↑B, ↑C, ↓A, ↑B, ↓G, ↑D"L", D, ↑G"L", G, ↓F, F, ↑G"L", G, ↓E, ↑A, ↓G, ↓F, ↓E, ↑G, ↓F, ↑A, ↓G, ↓F, ↓E, ↓D, ↓C, ↑E, ↓D, ↑F, ↓E, ↓D, ↓C, ↓B, ↓A, ↑C, ↓B, ↑D, ↓C, ↓B, ↓A, ↓G, ↓F#, ↑A, ↓G, ↑B, ↓A"L", A, ↓D"L", D, ↑C, C, ↑D"L", D, ↓B, ↓A, ↓G, ↓F#, ↓E, ↑G, ↓F#, ↑A, ↓G, ↑B, ↓A, ↑C, ↓B, ↑D, ↓C, ↑E, ↓D, ↓B, ↑G, ↓D, ↓B, ↑C, ↓A, ↓G, G.

If you are using a TRS-80 16K Color Computer, enter the rest of the notes below. If you are using a 4K machine, return to the beginning of the score and enter the bass lines.

RR, RR, ↓B, ↑M-C, RR, ↓B, RR, ↑D, ↑G, ↑A, ↑B, ↑C, ↓A, ↑B, ↓G, ↓F#, RR, RR, RR, RR, RR, RR, RR, ↑A, ↑B, ↑C, ↑D, ↓B, ↑C, ↓A, ↑B, ↓G, ↓F, ↓E, ↓D, ↑F, ↓E, ↑G, ↓F, ↑D, ↓C, ↓B, ↓A, ↑C, ↓B, ↑D, ↓C, ↓A, ↓G, ↓F, ↓E, ↑G, ↓F,

↑A, ↓G, ↑E, ↓D, ↓C, ↓B, ↑D, ↓C#, ↑E, ↓D''L'', D, ↓C#''L'', C, ↑D''L'', D, ↑E''L'', E, ↑F''L'', F, ↓A''L'', A, ↑B''L'', B, ↑C#''L'', C#, ↑D''L'', D, ↓F#''L'', F#, ↑G#''L'', G#, ↑A''L'', A, ↑B''L'', B, ↑C''L'', C, ↑D''L'', D''L'', D''L'', D''L'', D, ↓E, ↑F#, ↑G#, ↑A, ↓F#, ↑G#, ↓E, ↑E, ↓D, ↓C, ↑E, ↓D, ↓C, ↓B, ↑D, ↓C, ↑A, ↓G#, G#, ↑A, ↓E, ↑F, ↓D, ↓G#, ↑F, ↓E, ↓D, ↓C, ↑D, ↓B, ↓A, A, ↑A, ↓G, ↓F, ↓E, ↑G, ↓F, ↑A, ↓G, ↓↓E, ↓D, ↓M-C, ↓B, ↑D, ↓M-C#, ↑E, ↓D''L'', ↑↑E, ↑F, ↑G, ↑A, ↓F, ↑G, ↓E, ↑F''L'', F''L'', F, ↓M-C, ↑D, ↓B, ↑M-C, ↓B''L'', ↑↑G, ↓F, ↓E, ↓D, ↑F, ↓E, ↑G, ↓F''L'', F''L'', F, ↓↓B, RR, ↑M-C, ↓B, ↑D, ↓M-C''L'', ↑↑D, ↑E, ↑F, ↑G, ↓E, ↑F, ↓D, ↑E''L'', E''L'', E, ↓↓A#, ↑M-C, RR, ↓A#, RR, RR, ↑C, ↑D, ↑E, ↑F, ↓D, ↑E, ↓C, ↑D, ↑E, ↑F, ↑G, ↑A, ↓F, ↑G, ↓E, ↑F, ↑G, ↑A, ↓B, ↑C, ↑A, ↓B, ↑G, ↓C''L'', C, ↑G''L'', G, ↓E, ↑F, ↓D, ↓B, ↑C, ↓A#, A, ↓G, ↓F, ↑A, ↓G, ↑A#, A, ↑B, ↑C, ↓E, ↓D, ↑C, ↓F, ↓B, ↑C''L'', C''L'', C

Bass Lines

Press the key to move control to the bass cleff, set the voice at , , and enter the following notes:

RR''6'', RR, RR, RR, RR, RR, RR, RR, RR, C, ↑D, ↑E, ↑F, ↓D, ↑E, ↓C, ↑G, RR, ↓G''L'', G, RR, RR, RR, RR, RR, ↑G, ↑A, ↑B, ↑M-C, ↓A, ↑B, ↓G, ↑M-C''L'', M-C, ↓B''L'', B, ↑M-C''L'', M-C, ↑D''L'', D, ↑E, RR, ↓G''L'', G, ↑A''L'', A, ↑B''L'', B, ↑M-C''L'', RR, ↓E''L'', E, ↑F#''L'', F#, ↑G''L'', G, ↑A''L'', A, ↑B''L'', B, ↑M-C''L'', M-C''L'', M-C''L'', M-C, RR, ↓D, ↑E, ↑F#, ↑G, ↓E, ↑F#, ↓D, ↑G''L'', G, ↓B''L'', B, ↑C''L'', C, ↑D''L'', D, ↑E''L'', E, ↑F#''L'', F#, ↑G''L'', G, ↓E''L'', E, ↑G, RR, ↓C, RR, ↑D, RR, ↓D''L'', D, RR.

If your Color Computer has 16K of memory, enter the rest of the notes below.

If you are using a 4K computer, return to the beginning and play the score.

↑↑G, ↑A, RR, RR, A, RR, ↓G, RR, RR, G''L'', G, ↓F#''L'', F#, ↑G''L'', G, ↑A,
 ↓D, ↑E, ↑F#, ↑G, ↓E, ↑F#, ↓D, ↑A''L'', A, ↑D''L'', D, ↓M-C''L'', M-C, ↑D''L'',
 D, ↓G, RR, RR, RR, RR, RR, RR, RR, RR, RR, ↑D, RR, ↑F, RR, ↓G, RR,
 ↑M-C, RR, RR, RR, RR, RR, RR, RR, RR, RR, M-C, RR, ↑G, RR, ↓A, RR, ↑D,
 ↑A#, A, ↓G, ↓F, ↑A, ↓G, ↑A#, A, ↓G, ↓F, ↓E, ↓D, ↑F, ↓E, ↑G, ↓F, ↓E, ↓D,
 ↓M-C, ↓B, ↑D, ↓M-C, ↑E, ↓D, ↓M-C, ↓B, ↓A, ↓G#, ↑B, ↓A, ↑M-C, ↓B''L'', B,
 ↑E''L'', E, ↑D, ↓B, ↑E, RR, ↓M-C, ↓B, ↓A, ↑M-C, ↓B, ↓A, ↓G#, ↑B, ↓A''L'', A,
 ↓E''L'', E, ↑A''L'', A, ↓D''L'', D, ↑F, RR, ↓B, RR, ↑E''L'', E, ↓E''L'', E, ↑A''L'',
 A''L'', A''L'', A''L'', RR, RR, RR, RR, RR, RR, RR, RR, RR, RR, RR, RR, RR, RR,
 RR, ↑D''L'', D, RR, RR, RR, RR, RR, RR, ↓A, ↑B, RR, RR, RR, RR, ↑A,
 RR, ↑B''L'', B, RR, RR, RR, RR, RR, RR, ↑D, ↓M-C, RR, ↓A, RR, RR, RR,
 RR, ↑M-C''L'', M-C, RR, RR, RR, RR, RR, RR, ↓G, ↑A, RR, RR, A, RR, ↓G,
 ↑A''L'', A, A#''L'', A#, A''L'', A, ↓G''L'', G, ↓F''L'', F, ↑D''L'', D, ↓M-C''L'',
 M-C, ↓A#''L'', A#, A''L'', A, ↑F''L'', F, ↓E''L'', E, ↓D''L'', D, ↑E, ↓D, ↑E, ↑F,
 ↑G, ↓E, ↑F, ↓D, ↓M-C, M-C, ↑D, ↑E, ↑F, ↓D, ↑G, ↓E, ↑F''L'', F, ↓D''L'', D,
 ↑G''L'', G, ↓G''L'', G, ↑C''L'', C''L'', C

Now go back to the beginning of the score. Set the voice at **2** for the treble clef
 and **1** for the bass and play your Bach Invention.



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