

MODEL III

BASIC COURSE

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TRS-80

SOFTWARE

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BASIC Course

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Introduction

The BASIC Course consists of two Model III diskettes which contain a beginning course in Model III BASIC. The course is designed for a Model III Computer with a minimum of 32K and two disk drives. This course does not assume any previous experience with BASIC.

The lessons are designed so that you will be able to write simple programs within a matter of minutes. By using the BASIC Course and your Operation and BASIC Language Reference Manual, you should be able to write programs in BASIC. This BASIC Course is intended as a primary aid in learning BASIC.

The computer offers a unique advantage as an educational tool. Each lesson is self-pacing, interactive, and dynamic. It is not like reading a book; you literally talk back to the computer as you learn. You can progress as fast or as slow as you wish. Graphics, animation, and readability make this approach to learning BASIC fun.

During each lesson, there are quick tests to help you gauge your progress. Unlike written tests, the computer will explain why a particular answer is wrong. At the end of each lesson, and before each test, the program will ask if you wish to repeat the last lesson.

The Lessons

The BASIC Course consists of eight Lessons and an Introduction. The Introduction explains how to load and use each Lesson. Some Lessons are made up of smaller sub-segments, such as LESSON1, L1P2 (Part 2 of Lesson 1), L1P3 (Part 3 of Lesson 1), L1P4 (Part 4 of Lesson 1).

Each Lesson or sub-segment may be studied or reviewed at any time. Once the first part of a Lesson (e.g. LESSON1) is loaded into the computer, it will automatically load the rest of the Lesson (L1P2, L1P3, L1P4, etc.) as needed. To stop a Lesson, or go to a sub-segment, press the **BREAK** key. When **READY>__** appears, type **R U N** **"** and the name of the desired Lesson or segment. You must press **ENTER** after responding to questions that appear on the screen.

Lesson 1

Lesson 1 (Beginning BASIC) is essentially your introduction to the world of computers. It explains the way BASIC works, the use of line numbers, and how BASIC programs are structured. Loading instructions and their contents are as follows:

R U N **"** **L E S S O N 1** **"** **ENTER**

Introduction
LIST
PRINT
RUN

Line Numbers
Variables
NEW

INPUT
Line Editing
Disk Storage

R U N **"** **L 1 P 2** **"** **ENTER**

PRINT Spacing
Expressions
PRINT TAB

PRINT@
Hierarchy
Strings

END
LET

R U N **"** **L 1 P 3** **"** **ENTER**

IF/THEN
READ/DATA
FOR/NEXT

Operator Meanings
Arrays
Looping

GOTO
DIM

R U N " L 1 P 4 " ENTER

ABS GOSUB/RETURN RESTORE

INT ON...GOSUB

RND ON...GOTO

Graphics Statements: SET

RESET

POINT

Lesson 2

Lesson 2 shows you how to make changes to programs, using the Editing functions and the Editing commands. Lesson 2 also covers shortcuts in Editing that let you make changes quickly and easily.

R U N " L E S S O N 2 " ENTER

Using Edit
SPACE BAR
SHIFT UP ARROW
[H] ack
[C] hange
[Q] (quit and exit)

LIST
☐ Delete
 CURSOR MOTION
☒ (end of line)
☐ List edited line
☐ (save and exit)

EDIT

- I** nsert
- S** earch
- K** ill
- A** (cancel)

Lesson 3

Lesson 3 covers the different types of variables and variable names allowed in BASIC. The lesson explains in detail how to use the most efficient type of variable for any application. Lesson 3 also examines the use of arrays to hold large quantities of related information.

R U N " L E S S O N 3 " ENTER

Integer Double Precision Arrays

Single Precision
Strings
DIM

Exponential Form Type Declaration

Lesson 4

Lesson 4 details the use of BASIC Operators and Commands. The operators (arithmetic and logical) are explained in full and their uses. The BASIC Commands are listed and explained.

```
R U N " L E S S O N 4 " ENTER
```

Operators

Arithmetic Operators:

Addition

Division

Subtraction

Exponentiation

Multiplication

Grouping

Relational Operators:

Less Than

Less Than or Equal

Greater Than

Greater Than or Equal

Equal to

Not Equal to

Logical Operators:

True Expression

OR

False Expression

NOT

AND

String Operators:

+ (Plus)

Equal to

Greater Than or Equal

Less Than

Less Than or Equal

Greater Than

Not Equal to

Operator Hierarchy

Commands

AUTO

CLOAD?

CONT

TRON/TROFF

CLEAR

CLOAD

RUN

CSAVE

STOP

SYSTEM

Lesson 5

Lesson 5 explains how to enter and store data, and retrieve it. Saving data on tape for later use is covered in detail.

R U N [] " L E S S O N 5 " [] ENTER

Input/Output (I/O) Statements

INPUT#	INKEY\$
READ	PRINT
PRINT USING	LPRINT
PRINT#	OUT

! and % Field Specifiers

INPUT

INP
PRINT@
LPRINT USING
Field Specifier

R U N [] " L 5 P 2 " [] ENTER

Input/Output (Cont.)

LLIST	LPRINT
INPUT#	Cassette Data Files
INKEY\$	INP

LPRINT USING

PRINT#
OUT

Lesson 6

Lesson 6 explains how to manipulate text strings and use them for comparisons and logical operations.

R U N [] " L E S S O N 6 " [] ENTER

String Functions:

ASC	CHR\$	FRE
LEN	LEFT\$	MID\$
RIGHT\$	STR\$	STRING\$
VAL		

String Operations:

ASCII Codes	ASCII Function	CHR\$ Function
Relational Operators	LEFT\$ Function	MID\$ Function
RIGHT\$ Function	LEN Function	VAL Function
STR\$ Function	FRE Function	

Lesson 7

Lesson 7 details the special features of Model III BASIC and how to use these features.

```
R U N " L E S S O N 7 " ENTER
```

? (PRINT)

NEXT

ON ERROR GOTO

ERR Function

' (REM)

Ending Quotes

RESUME

ERL Function

Compact Lines

IF...THEN...ELSE

ERROR Statement

```
R U N " L 7 P 2 " ENTER
```

Special Character Set

Special Options

Lesson 8

Finally, Lesson 8 completes the course with a section on machine language subprograms that are called from a BASIC program.

```
R U N " L E S S O N 8 " ENTER
```

Machine Language

POKE

SYSTEM Command

USR Function

PEEK

VARPTR Function

Loading the Lessons

It is assumed you have reviewed the general operational procedures for your equipment as explained in the Disk System Owner's Manual and are now aware of how to power on your computer, load the Disk Operating System, etc.

Before you use the BASIC Course, it is strongly recommended that you make a Backup copy of each diskette included in this course. If you are not familiar with Backup and Format functions, please refer to page 11.

1. Turn on the system. If you are not familiar with the Model III System, please refer to your Disk System Owner's Manual for System Start Up (Power Up Sequence).
2. Insert the BASIC Course Backup diskette in Drive 0 (the bottom built-in drive, nearest the keyboard). Insert the Drive 1 diskette in Drive 1 (top drive).
3. Press the orange Reset button (in the upper-right corner of the keyboard), and go to the TRSDOS mode.
4. Type: **B A S I C** and press **ENTER**.

5. **The screen will show:**

How Many Files?

Memory Size?

You type:

Press **ENTER**

Press **ENTER**

6. The screen will display the BASIC version number, the amount of memory left (Free Bytes), and number of files allocated. The last line on the screen shows: READY >__.

You type: **R U N** **" I N T R O "** and press **ENTER**.

The Introduction has detailed instructions on using the program and loading the lessons.

Backup Instructions

A Backup consists of two processes:

1. Format (or prepare) a blank diskette for information storage. (You can also re-use an old disk.) The Format process is done automatically if needed when you make a Backup.
2. Backup (or copy) all the information from the original diskette to the new formatted disk.

Here is the step-by-step Backup procedure: (If the computer is on, and at TRSDOS Ready, you may skip steps 1, 4, and 5.)

1. Turn on the Model III computer (the power switch is located about 3 inches from the front, on the right side of the computer, underneath the edge). The bottom diskette drive light will flash briefly. The screen will stay dark. This is normal.
2. Insert the original Program diskette (to be copied) in Drive 0 (the bottom diskette drive, nearest the keyboard). Insert the diskette with the label up. The small square notch in the diskette will be to your left. Close the diskette drive door firmly.
3. Insert the blank diskette (or a diskette you wish to re-use) in Drive 1 (the upper drive), and close the drive door.
4. Press the orange Reset button (in the upper-right corner of the keyboard).
5. The screen will show: Enter Date (MM/DD/YY)?

Type today's date and press **ENTER**. (January 9, 1981 =
01/09/81)

The screen will show: Enter Time (HH:MM:SS)?

Press **ENTER**. TRSDOS Ready will appear with a line of dots.

6. Type: **B A C K U P : 0 : 1** and press **ENTER**.

7. The screen will show: SOURCE Disk Master Password?.

Type: **P A S S W O R D** and press **ENTER**.

Backup Instructions (continued)

If you are re-using an old diskette, one or two additional questions may appear, depending on the previous contents of the diskette. You may see:

Diskette contains DATA. Use Disk or not?

or:

Do you wish to RE-FORMAT the diskette?

If the questions appear, type **Y** and press **ENTER** for each question.

The computer will format the diskette (in Drive 1), read data from the program diskette (in Drive 0), then transfer the data to the copy diskette (in Drive 1).

8. When the Backup is done, you'll see: ** Backup Complete**. You will return to TRSDOS Ready. The diskette in Drive 1 is now identical to the program diskette in Drive 0.
9. Remove the original program diskette and insert the new copy in Drive 0. Store the original program diskette in a safe place. Write the program name on the copy, using a felt-tip pen.

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NOTE: Good data processing procedure dictates that the user test the program, run and test sample sets of data, and run the system in parallel with the system previously in use for a period of time adequate to insure that results of operation of the computer or program are satisfactory.

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