GENWARE

FOR
ATARI

PROGRAM N°.
09970012

PROGRAM IN BASIC

Let OSCAR ease the chore of learning to program.

320 LET A = INT(11×RND(1))

OSCAR is a super programming tutor. By hitting only a few keys, you run two simple BASIC programs — MILES PER GALLON and OSCAR'S DRILL (a multiplication game). Then see in detail how the programs were created.

PROGRAM IN BASIC

SEE HOW THEY RUN

On the following bar code pages are two exercises that reveal the types of programs you'll soon be able to write using OSCAR and the Genware series. The first program is a simple multiplication game. The second program calculates a car's gas mileage.

We've done all the writing of these programs to let you examine how they are constructed. All you have to do is scan the programs into your computer with OSCAR and run them. When you see how they run, then you'll switch the program to the lines of code that make up the program in order to see what a BASIC program looks like. Soon you'll be writing your own programs in the code you study here.

OSCAR's Drill™

The first program, *OSCAR's Drill™*, is a simple multiplication game, the type you would write if your child needs practice with multiplication. *OSCAR's Drill™* presents numbers between 0 and 10 for a player to multiply and asks the player to type in the correct answer. A player starts with 20 points. If an answer is correct, the player gets 5 additional points. If wrong, the player loses 2 points. One game has only four problems, but you can keep playing as long as you like.

After You've Played the Game

Now you'll want to examine the BASIC language lines that make up the program. See the Program Instructions for how to do this. You'll look at the program line by line in sections. Program lines start at 50 and go up in intervals of 10. Lines 50 to 250, therefore, refer to a program's first 15 lines. You use line numbers in BASIC programs to tell the computer the order in which to execute the statements.

Miles Per Gallon™

Your second program, *Miles Per Gallon™*, is an example of how someone might use a computer for calculating a car's gas mileage for a trip to Phoenix. The program takes the mileage readings from the car's odometer each time the driver fills the tank with fuel, and then keeps a running tally of the fuel economy the car has attained from fill to fill.

Miles Per Gallon™ is a completed program that doesn't require your input. But study closely the BASIC language code that makes up the program. The program is a bit more complicated than *OSCAR's Drill™*, so it has more "REM" lines. Again, look at the program line-by-line to get clues on how programs are written. You'll want to refer to "The BASICs of Programming" article (page 44) to help you understand some of the other basic elements of these two programs.

What Types of Statements?

Here are the various types of statements you'll be examining in the program listings for *OSCAR's Drill™* and *Miles Per Gallon™*:

DATA: Used in a program, it lists information that will be assigned to the variables in the READ statement.

FOR-NEXT: Used to cause a *loop*, or repetitions, of part of a program. For example, after the command FOR I = 1 to 10, the program runs, executing all statements, until it hits a line that says NEXT I. Then it goes back to the line beginning FOR again for nine repetitions.

GOTO: Tells the program to jump to the line named.

IF-THEN: A programming statement in which an action is taken when a condition is true. For example, the statement, "IF A = B THEN 220" tells the computer to determine if A equals B, and if so, to go to line 220 in the program.

INPUT: Stops program and requests information from the person running the program; it then assigns that information to a *variable*. For example, if you enter 8 in answer to INPUT S, the program assigns a value of 8 to the variable S.

LET: Tells the computer that whatever follows is true. For example, LET C = 1 means C is equal to 1.

PRINT: Instructions to the computer telling it to put a statement on the monitor.

READ: Assigns information to variables from DATA statement.

REM: A note to people reading a program listing.

Program Instructions

■ Load *OSCAR's Drill™* into your computer with OSCAR. Then type "RUN." (Refer to your User's Manual if you have difficulties.)

■ A multiplication problem will appear. Type your answer to the multiplication problem and press RETURN or ENTER. (Do not type a letter or press RETURN or ENTER without first pressing a number; the program will end and you will have to type "RUN" to play again.)

■ At the end of the game type "Y" (yes) if you want to play again or "N" (no) if you don't, and press RETURN or ENTER.

■ If you've pressed "N," type List 50-130 (50, 130 for Atari) and press RETURN or ENTER to see the first nine lines of the program. After studying these lines list the next section in the same way following this chart:

OSCAR'S DRILL	
50-130	510-590
140-220	600-700
220-300	710-740
310-410	750-820
420-500	830-850

■ Follow the same instructions for *Miles Per Gallon™* using this chart:

M. P. G.	
50-100	470-530
110-180	540-600
190-210	610-650
220-280	660-720
290-350	730-800
360-460	

OSCAR'S DRILL

PROGRAM PAGE

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