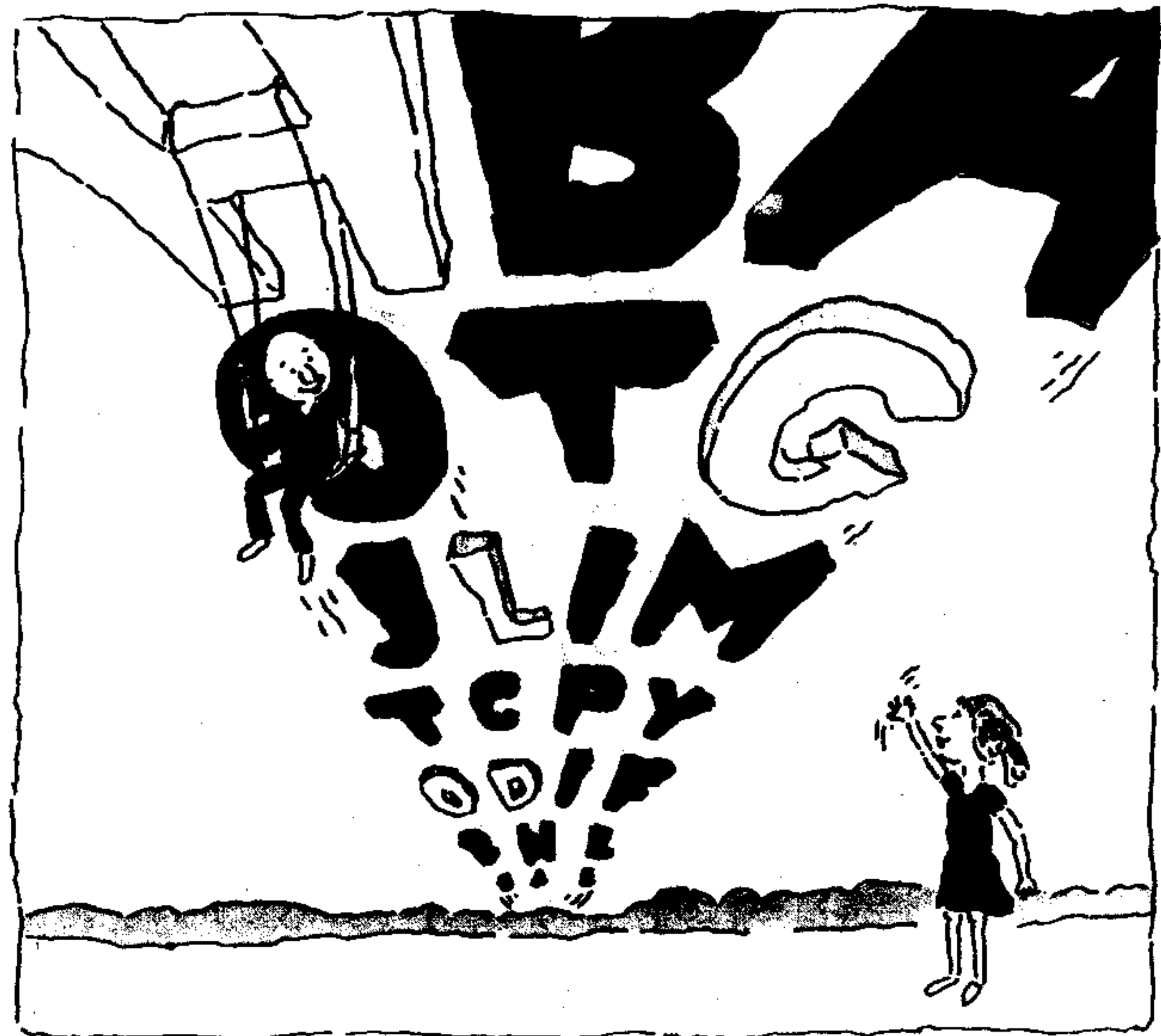# MICRO COMPUTERS SOFTWARE

JOTTO
Ages 8 to Adult   Here's hours of fun that will sharpen vocabulary skills and analytical powers of thinking. Discover the word the computer has chosen at random by making your own word guesses. The computer tells you how many letters in your word match the letters in its selection. An alphabet lets you keep score of correct and incorrect letters right on the screen. Choose from three skills levels—3, 4 or 5 letter words.

TINY LOGO
Ages 4 to Adult   This amazing program allows you to bring the essential benefits of Logo programming into your home at an economical cost. Tiny Logo runs with your basic TI system. Children will love playing with Tiny Logo's turtle. Make it move, turn, and draw in color. For those of you familiar with TI Logo and Logo II, you'll be happy to learn that Tiny Logo incorporates the same principles of recursive programming found in the more expensive versions. Procedures can be defined in the EDIT mode, and procedures can call other procedures for advanced programmers.

ADDITION, SUBTRACTION, MULTIPLICATION & DIVISION
Ages 6 to 12   These four programs help elementary graders acquire good habits and sound mathematical skills in highly motivating practice sessions. Problems are presented one after another. A self-correcting mode makes sure the student will always come up with the right answer. A second mode of practice allows the player to make an error and review his mistakes. Rocket blast-offs and colorful kaleidoscopes reward the students in these programs. All four programs develop students' abilities to solve problems in a standardized, sequential approach and have been extremely well-received by the educational community.

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MICRO COMPUTERS SOFTWARE

JOTTO
WORD GAME

Family fun for adults and children (Grade 3 and up).
Builds vocabulary, analytical powers, and promotes logical thinking.

CASSETTE
FOR THE TEXAS INSTRUMENTS 99/4A HOME COMPUTER
Requires the use of a cassette tape recorder for loading program.

JOTTO

JOTTO is a great word game that's fun for adults and children alike. Playing JOTTO builds vocabulary, develops your ability to analyze patterns, and promotes logical thinking.

LEVELS OF PLAY

JOTTO can be played at one of three levels — with 3-letter words, 4-letter words, or 5-letter words. The difficulty grows as the word length increases. You can designate the playing level at the start of a game.

OBJECT

As the game begins, the computer randomly selects a secret word of your chosen length. The object of JOTTO is to discover this three, four or five letter word in the least number of guesses. All guesses must be words of the length you selected. After each guess, the computer reports how many letters in your guess word match the letters in its secret word. If, for example, the computer chose BROWN and the player guessed ELBOW, ELBOW 3 will appear on the screen because the B, the O, and the W are in both words.

NO REPEATING LETTERS

There is one important thing to remember — no letters can occur more than once in either the computer's word or in any of your guess words. The words PEP, WEED, and RAZOR are ruled out because each contains duplicate letters. If you do try to guess a word with duplicate letters, the computer will reject it.

KEEPING TRACK

JOTTO provides a convenient method of recording letters you determine to be in, or not in, the computer's word. An alphabet runs across the bottom of the screen. To mark a letter that you are sure is in the word, press the space bar, the letter, and 'Y'. To mark a letter as not in the word, press space bar, the letter, and 'N'. To cancel a marking previously made, press space bar, the letter, and then the space bar again. Keeping track of the known information about letters makes it easier to choose the best word for your next guess.

STRATEGY

A knowledge of the frequency of letters in English words helps in formulating guesses. One study of English prose developed the frequency table shown below. The most frequent letter, E, is on the left. Letters to the right of E have lower and lower frequencies. Z, X, J and Q occur least often.

E-T-A-O-I-N-S-H-R-D-L-U-M-G-C-P-F-B-K-Y-V-W-Z-X-J-Q

Clearly, the chance of picking a word with letters matching those in the computer's word is greater if your guess contains some letters on the left side of the frequency table. Once you have some matching letters, try to find out which they are. As you continue to play the game you will locate other matching letters, until you know all the letters in the computer's word.

Sometimes a word you choose will have no letters in common with the computer's word. This is a favorable development, since it enables you to mark all the letters as not in the computer's word. Sometimes, you may want to know whether a certain letter is in the word you're seeking. You may have guessed THOSE, been told THOSE 3, and need to know for sure if H is one of the three common letters. A good procedure is to pick a word made up of the same letters as THOSE except for the H, such as STOKE or POETS. If you use POETS and the computer displays POETS 2,

you have proof positive that H is in the computer's word. Occasionally, an assumption that seems likely based on earlier guesses is proved false later in the game. This necessitates looking for an alternative assumption that fits all the information you have.

When you succeed in guessing the computer's word, the computer rewards you with a fanfare and graphic display, and shows you how many guesses you took to win. Remember that it is possible to have all the letters correct and still not have the computer's word! For example, you might have chosen TEAMS (or TAMES or MATES or MEATS) while the computer's word was STEAM.

Good luck playing JOTTO. The more you play, the more your vocabulary will improve. Chances are you'll also become sharper at making deductions and logical inferences. Have fun!

SAMPLE GAME

Assuming you have picked the five-letter word category, you choose the word SPACE as your first guess and the computer responds SPACE 2. Two of the five letters are correct, but which two? Based on frequency, the two letters are likely to be E and A, E and S, or A and S. It's possible, but not likely, that the two letters include a C or a P. One way to get additional information is to next choose a word containing two of the three letters E, A, and S, but neither P nor C. Let's say you choose GRAVE and the result is GRAVE 3. It is now a reasonable assumption that E and A are correct, along with one of the letters G, R, or V. You might now try BREAD and be told BREAD 2. This further reinforces E and A, tells you that R is not in the word, and implies that G or V is in the word.

A good way to check if the third letter is G is to make your next guess BRAVE. We're told BRAVE 2 and can infer immediately that G is in the word, since we only changed a single letter. We're now pretty safe in marking E, A, and G as *in* the word, and S, P, C, and V as *not* in the word. We select GAMES as our fourth guess; that will give us some information about M.

GAMES 3 on the screen tells us no M in the word. The fifth guess GRADE also gives GRADE 3 and eliminates D as a possibility. We go on to LARGE and are happy to see LARGE 4. The additional letter must be L because we already know that R is not in the word. What can the fifth letter be? RANGE will give us a check on N. Eureka, RANGE 4! The five letters must be E, A, G, N, L. What can the word be? GLEAN? No, we get GLEAN 5 as the result, meaning that we have found a transposal of the letters in the computer's word. Next, we try ANGEL. That's it! A total of 9 guesses.

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