

Some Sure-Fire Microcomputer Programs

By Blanche E. Woolls & David V. Loertscher

TO HELP school library media specialists move as quickly as possible into the development of microcomputer software collections, the programs selected for this article are recommended for first purchase. These programs, which are applicable to most school curricula, cost \$100 or less and cover a variety of subjects. We think the programs will be "sure winners" with their intended student audiences because they are all entertaining as well as instructive.

At present, no single, widely accepted set of manufacturing standards exists for many different types of audiovisual equipment, including microcomputers. The manufacturers have not yet developed equipment that can be interfaced (linked) or interchanged. For example, a program developed for a TRS-80 cannot be used with an Apple II microcomputer, just as you cannot play a 33-1/3 rpm record on a 45 rpm phonograph—nor can you play a Betamax videocassette on a VHS machine. Microcomputers that call for videocassette players can only employ programs on cassette tapes, while programs on disks can only be used on microcomputers that are disk-driven.

This variety of hardware dictates equal variety among software and predates the first criterion for the selection of microcomputer software—the programs you purchase *must be compatible with your*

computer. The additional selection criteria are essentially the same as those employed for the purchase of educational materials in other formats:

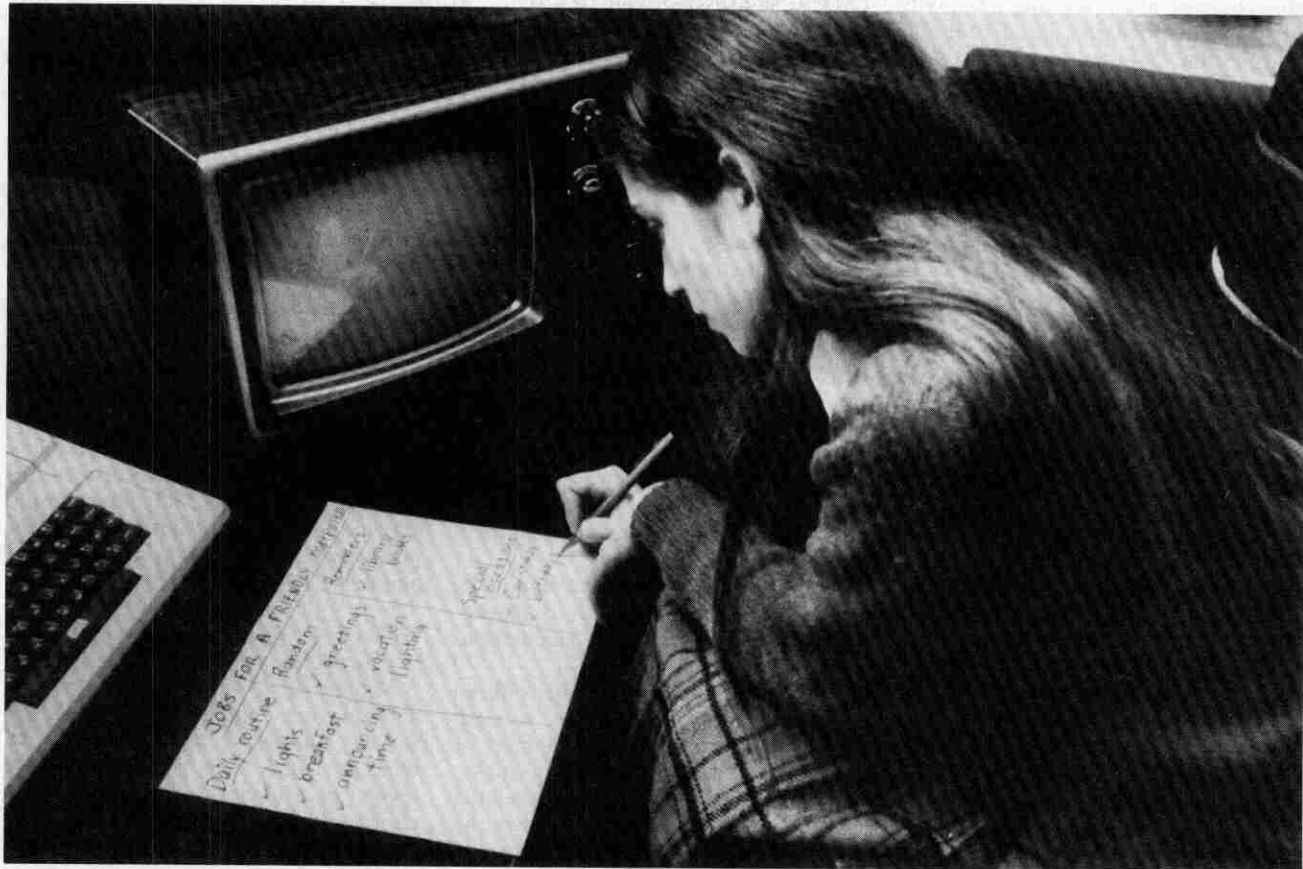
- Accuracy
- Clarity of presentation
- Awareness of audience information needs
- Inclusion of information summary or skills review

In addition to these criteria, we have selected programs that take advantage of the unique capabilities of microcomputers. These suggest another set of selection considerations for all microcomputer software programs. They should:

- Permit easy modification
- Provide positive reinforcement
- Be user-friendly

"User-friendly" means that instructions for use are provided in the microcomputer program or its accompanying manual. It means a program is able to stimulate user responses and guide or branch students to questions at the next level of difficulty. We have avoided the recommendation of programs that merely provide a workbook format on a microcomputer screen. When answers can be written into a workbook or calculations can be accomplished on a hand calculator, the use of more elaborate technology is unnecessary.

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Skills learned at school come in handy at home

Alpine Skier. (Apple II 32K; TRS-80 Model I and III disk) Data Command. 1982. \$29.95 each program. Drill/game. Tchr's. manual.

One of a number of programs designed for language arts, this is an example of excellent graphics used to enhance a drill and practice session. Students choose factual statements vs. opinion statements to identify the cause or effect of an action. The categorization game gives two sets of five phrases; students must determine which word or phrase does not belong in each set. The programs should be useful in most schools.

Alphabet Keyboard. (TRS-80 Model I or III 16K cassette, 32K disk) Random House School Division. 1982. \$24 cassette; \$34.50 disk. Tchr's. manual.

Designed to help young children (K-2) learn the alphabet, this can be used with older children who wish to learn the computer keyboard. Teacher record-keeping and scoring are a part of each lesson. It is self-paced with automatic corrections for immediate feedback.

The Arithmetic Classroom: Addition by Fawzy T. Ibrahim, David N. McClintock, & Patricia M. Mullinix. (Apple II 48K) Sterling Swift Pub-

lishing Co. 1982. \$89.95. Tutorial/drill. Tchr's. manual.

One of eight different arithmetic skills programs designed to teach whole numbers, fractions, and decimals, with excellent graphics and animation. The problems range from two, single-digit numbers to four, four-digit numbers. The how-to-add demonstration and the reteaching of problems missed by students is better than comparable computer math programs.

Balance by D. M. Luncsford, R. H. Rivers, & Edward L. Vockell. (Apple II 32K; TRS-80 Model I and III 16K/32K cassette or disk) Diversified Educational Enterprises, Inc. 1982. \$59.95. Simulation. Tchr. and student manuals.

Balance is a simulation of predator-prey relationships in order to study the effects of changes in prey and predator animal populations and of environmental changes. Students can set up equations and experiment, for example, to discover the effects if hunters kill too many deer.

Basic Math Facts and Games. (Apple II 32K; TRS-80 Model I and III 16K cassette/32K disk) Random House School Division. 1982. \$24 cassette, \$34.50 disk. Tchr's. manual.

Basic facts in addition, subtraction,

multiplication, and division are presented in seven operations and four levels of difficulty. The problems are randomly generated with immediate correction and feedback. Scoring and record-keeping material for the teacher is included. Game formats such as tic-tac-toe are highly motivating for students in elementary grades 1-6.

Bookshelf. (Commodore PET 16K; Atari 16K) JMH Software of Minnesota. 1981. \$9.95.

Presents three levels of difficulty in correct shelving of library books; tutorial help is provided. A summary is included at the end of each lesson.

Bookworm I. or *Bookworm II.* (Commodore PET 32K) 1981. L. Mannett Co. \$59 each (price increases to \$99 in Sept.). Tchr's. manual.

Bookworm I enables librarians to store circulation statistics for 400 books using limited data statements. *Bookworm II* provides for the circulation of up to 1400 books. Information pertaining to student loans, classroom uses, book classifications, and other statistical data can be easily retrieved.

Computers in the Biology Curriculum. (Apple II 48K; mainframe standard BASIC) Conduit. 1982. \$95. Simulation. Tchr's. manual.

This program, which should be consid-

ered for advanced high school students, contains experiments in inheritance (human, plant, and animal), predator-prey relationships, pond ecology, transpiration, countercurrent systems, human energy expenditure, and biology statistics. A great variety of experiments can be carried out with the computer simulating the real world. Highly recommended.

Computer-Simulated Experiment on the Inclined Plane and in Free Fall and Computer-Simulated Experiment on the A-Machine. (Apple II or Apple II Plus 48K) Educational Materials and Equipment. 1982. \$93.50 both disks. Tchr's. manual.

These physics simulation disks are designed for high school students working in pairs or small groups. Programs can be modified to vary the conditions for obtaining data. Motion is displayed visually with sound frequency as another factor in displaying the speed of an object.

Customized "Flash" Spelling by Jerome I. Weintraub. (Apple II 32K; TRS-80 Model I and III 16K/32K cassette or disk) Random House School Division. 1982. \$24 cassette, \$34.50 disk. Drill. Tchr's. manual.

An excellent example of a "skeleton program"—one which provides a complete structure that may be customized by the teacher to meet local needs. Spelling lists are entered, and are then used to drill students: a word flashes on the screen briefly and the student is then required to type in that word, correctly spelled. The level of difficulty is controlled by the teacher. The student's success rate is recorded on the computer.

Dragon Games by David Herzog & Carol Friedman. (Apple II 48K disk; TRS-80 Model I and III disk or cassette; PET 2000 or 4000 series disk or cassette) Educational Activities, Inc. 1982. \$49. Tchr's. manual.

A typical example of a game in which the student practices a skill and advances or retreats on a gameboard to receive a prize or punishment. Examples of nouns, verbs, adjectives, contractions, synonyms and antonyms are used in the skill drills. This is useful for interest centers; students may be paired—one to teach, the other to play. For enrichment only; this cannot be altered by the teacher.

Elementary Vol. 1: Hurtle. (Apple II 32K) MECC Minnesota Educational Computing Consortium. 1980. \$30 (manual \$8.80). Tchr's. manual.

This disk is worthy of emulation by many other computer software producers. The program is about Hurtle, a little man who hides on a positive and negative number line or on a two or

four coordinate grid. Students must find Hurtle by typing in a location on the grid and then moving left, right, or in eight different compass directions (north, northwest, etc.). An excellent method of learning directions—a skill with which students often have a great deal of trouble.

Human Body: An Overview. (Commodore PET 16K cassette; Apple 32K disk) Micro Center. 1981. \$80. Tchr's. manual.

The systems of the human body are shown through animated graphics. For use in sixth grades and up, the program displays muscular, digestive, respiratory, skeletal, circulatory, and nervous systems. Review tests with immediate feedback on each question are included. Records and scores responses and provides suggestions for lessons to be restudied.

Math Software Special Package. (Apple II 48K disk). Math Software. 1982. \$99.95. Simulation/calculation. Tchr's. manual.

Some of the 20-plus programs offered by this company for college, secondary, and junior high students (singly or in groups) overlap on the various disks. This package contains problems related to: a contained area under a curve; the arithmetic of functions; simultaneous linear systems; how to solve linear equations. The programs, for practice and experimentation, have clear objectives and excellent graphics.

Paint. (Atari 800) Reston Publishing Co. \$39.95. Manual.

For this computer-art program (created for the Children's Museum of Washington Inc., D.C.), children use a "brush" to create a computer painting by backing up or zooming in on parts of the painting. Different sized brushes and many different patterns and textures may be used and the painting may be saved for future use.

Santa Paravia and Fiumaccio. (Apple II 48K disk or cassette; TRS-80 Model I or III cassette; PET cassette) Instant Software. 1980. \$9.95 cassette, \$19.95 disk. Simulation. Player's manual.

This simulation economics game pairs up to four players to harvest grain, feed peasants, buy factories, etc., vying to become king or queen. If players cannot finish the two-hour game, it may be saved for later play. Worth its weight in gold!

The Shell Games. (Apple II 32K) Apple Computer, Inc. (purchase from local dealer). 1979. \$30. Game. Tchr's. manual.

Three games are provided, including the *Math Machine*, a matching quiz, and *Mr. Multiple*, a multiple-choice

question and answer game. The disk comes with sample games which allow students to review questions for any unit of instruction. Students can create games using questions they have prepared, and teams could compete to make up the best items. This provides not only lesson-oriented knowledge, but also an opportunity to teach computer literacy as students learn to modify line numbers in a program. The only drawback is that *The Shell Games* are only available in Integer BASIC and not in Applesoft.

Teacher Utilities, Vol. 1. (Apple II 32K) MECC Minnesota Educational Computing Consortium. 1980. \$30. Manual \$10.60.

This disk creates crossword puzzles, wordfinds, large block letters, does frequency distributions and other simple statistics (which are useful in grading), prints posters, and creates review drills and tests. A printer is required.

TicTacToe Math. (Commodore PET 16K; Atari 16K) JMH Software of Minnesota. 1981. \$9.95.

Two players compete in a tic-tac-toe format, answering math problems to win the game. The program has six levels of difficulty and presents a choice of addition, subtraction, multiplication, division, or mixed-operation problems.

TicTacToe Spell. (Commodore PET 16K; Atari 16K) JMH Software of Minnesota. 1981. \$9.95.

Presents the 100 most commonly misspelled words at the elementary level in ten groups. The computer generates spelling practice in a tic-tac-toe format for two students.

Distributors

Conduit, P.O. Box 388, Iowa City, Iowa 52244.

Data Command, P.O. Box 548, Kankakee, Ill. 60901.

Diversified Educational Enterprises, Inc., 725 Main St., Lafayette, Ind. 47901.

Educational Activities, Inc., 1937 Grand Ave., Baldwin, N.Y. 11510.

Educational Materials & Equipment, P.O. Box 17, Pelham, N.Y. 10803.

Instant Software, Peterborough, N.J. 03458. JMH Software of Minnesota, 4850 Wellington Lane, Minneapolis, Minn. 55442.

J. L. Mannett Co., Box 545, Hammett Place, Braintree, Mass. 02184.

Math Software, 1233 Blackthorn Place, Deerfield, Ill. 60015.

Micro Center, P.O. Box 6, Pleasantville, N.Y. 10570.

Minnesota Educational Computing Corp. (MECC), 2520 Broadway Dr., St. Paul, Minn. 55113.

Random House School Division, Dept. 271A, 400 Hahn Rd., Westminster, Md. 21157.

Reston Publishing Co., 11480 Sunset Hills Rd., Reston, Va. 22090.

Sterling Swift Publishing Co., 1600 Fortview Rd., Austin, Tex. 78704. ◀