APX

ATARI® Program Exchange

Product Catalog
Fall Edition 1983
Price $2.00

Consumer-written programs for ATARI Home Computers

APX

Product Catalog
Fall 1983

Table of Contents

On the Cover: The city map of GETAWAY!, the APX game of cops and robbers, covers 35 screens. Now a four-color GETAWAY! map measuring approximately 2 feet by 3 feet is available to guide you back to your hideout. The price is $4.00; order number is APX-90012. Shown here is a section of the poster, the creation of the designer of the APX catalog, Jim M'Guinness. On the back cover is the first APX advertisement to appear in magazines across the nation, also for GETAWAY!

Contest deadlines: October 1 marks the deadline for all program submissions to the APX winter contest. Entries submitted by that date will be eligible for the 1983 grand prize — $25,000 in cash! And if the submission relates in some way to an approved Olympic sport, the programmer and a guest of his or her choice is also eligible to win an all-expense-paid trip for two to the 1984 Summer Olympic games in Los Angeles!

Peripheral Contest: Here's a contest for everyone. If you've never submitted a program to APX before, or if you're a bestselling APX author, you have a chance at some nifty prizes, including an annual best-of-all prize of $5,000 in cash, in our new Quarterly ATARI Peripheral Contest. See the inside back cover of this issue for details.

Program availability: Programs are available at the prices listed in this catalog starting September 26, 1983.

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[1] Indicates trademark of The Soft Warehouse
[2] Indicates trademark of Stephen Romejko

Ordering Information

APX products only. The ATARI Program Exchange handles orders only for the items described in this catalog. For all standard ATARI Home Computer products, including any software, hardware, or documentation mentioned in this catalog, see your local ATARI Computer retailer.

$10 minimum order, plus shipping and handling charge. We'll fill orders of $10.00 or more. Please add $2.50 to your order to cover shipping and handling.

Mail Orders. To order by mail, fill out an order form and mail it, together with your payment, to the ATARI Program Exchange, P.O. 3705, Santa Clara, CA 95055.

Phone Orders. For faster service, phone in credit card orders, using our toll-free number, 800/538-1862 (or 800/672-1850 for calls within California). You can also call us at 408/727-5603. Telephone hours are Monday through Saturday, 7 a.m. to 5 p.m. PST.

Payment by check, money order, VISA, or Master-Card. Your payment must accompany all mail orders. Enclose a check or money order, or charge your order to your VISA or MasterCard account. Include the $2.50 shipping and handling charge in your payment. California residents need to add 6.5% sales tax to the merchandise total, exclusive of shipping and handling.

No C.O.D. or purchase orders. We regret that we cannot accept orders paid by C.O.D. or by a purchase order.

Foreign orders. At present, we can handle orders only from the United States. Contact your ATARI supplier for more information.

Delivery to P.O. Box numbers. We normally ship your order by United Parcel Service (UPS). Because UPS doesn't deliver to P.O. Box numbers, please use a street address on your order form.

Alternate shipping method. Please indicate an alternate method of shipment if UPS doesn't deliver to your area.

DISCLAIMER OF WARRANTY ON APX COMPUTER PROGRAMS. Most APX Computer Programs have been written by people not employed by Atari. The programs we select for APX offer something of value that we want to make available to ATARI Home Computer owners. In order to economically offer these programs to the widest number of people, APX Computer Programs are not rigorously tested by Atari and are sold on an "as is" basis without warranty of any kind. Any statements concerning the capabilities or utility of APX Computer Programs are not to be construed as express or implied warranties.

Atari shall have no liability or responsibility to the original consumer purchaser or any other person or entity with respect to any claim, loss, liability, or damage caused or alleged to be caused directly or indirectly by APX Computer Programs. This disclaimer includes, but is not limited to, any interruption of services, loss of business or anticipatory profits, and/or incidental or consequential damages resulting from the purchase, use, or operation of APX Computer Programs.

Some states do not allow the limitation or exclusion of implied warranties or of incidental or consequential damages, so the above limitations or exclusions concerning APX Computer Programs may not apply to you.

LIMITED WARRANTY ON MEDIA AND HARDWARE ACCESSORIES. Atari, Inc. ("Atari") warrants to the original consumer purchaser that the media on which APX Computer Programs are recorded and any hardware accessories sold by APX shall be free from defects in material or workmanship for a period of thirty (30) days from the date of purchase. If you discover such a defect within the 30-day period, call APX for a return authorization number, and then return the product to APX along with proof of purchase date. We will repair or replace the product at our option. If you ship an APX product for in-warranty service, we suggest you package it securely with the problem indicated in writing and insure it for value, as Atari assumes no liability for loss or damage incurred during shipment.

This warranty shall not apply if the APX product has been damaged by accident, unreasonable use, use with any non-ATARI products, unauthorized service, or by other causes unrelated to defective materials or workmanship.

Any applicable implied warranties, including warranties of merchantability and fitness for a particular purpose, are also limited to thirty (30) days from the date of purchase. Consequential or incidental damages resulting from a breach of any applicable express or implied warranties are hereby excluded.

The provisions of the foregoing warranty are valid in the U.S. only. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, and/or do not allow the exclusion of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

No cancellations, returns, refunds, or credits. To keep our costs down, we accept no cancellations and no returns, except for defective media or for goods damaged in shipment. We give no refunds or credits.

Goods damaged in shipment. If your order arrives damaged, please call one of our toll-free numbers within seven days after receiving your order. Have your packing slip at hand and ask for a return authorization number. Do not return a program to APX without this number.

Right to make changes. We reserve the right to make price and availability changes in the products described in the APX catalog at any time and without notice.

Current APX Hits

GETAWAY!
by Mark Reid

Find the loot and stash it before the law nabs you! Your getaway car races across a city that covers 35 screens. See page 48.
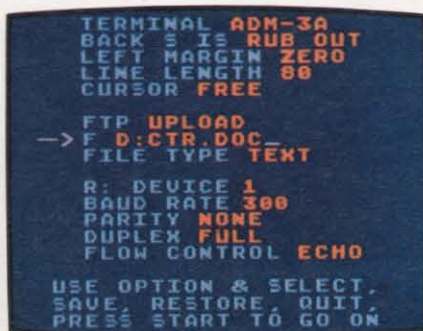
CHAMELEON CRT TERMINAL EMULATOR
by John Howard Palevich

Convert your computer to a Glass TTY, ADM-3, or VT-52 terminal. Features include 80 column, 24-character line display and previous page column buffer. See page 69.

SPELLING GENIE
by Dale Disharoon

Four spelling games filled with magic and whimsy also offer excellent practice in spelling and word recognition. See page 30.
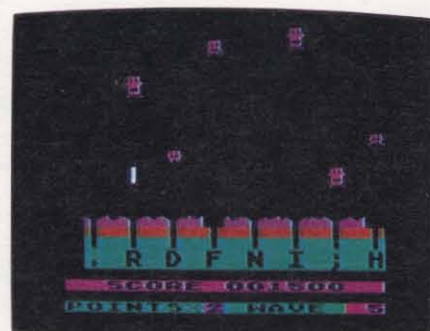
TYPO ATTACK
by David Buehler

Type the right character and destroy the Typos — a great way to practice your touch typing! Nine levels of skill. See page 25.

COUNTER
by Al Casper

An introduction to numbers in four languages. Captivates younger children with color, sound and action. See page 27.

VIDEO MATH FLASH CARDS
by Richard S. Waller

Timed math drills provide no-stress practice, the chance to retry problems missed earlier, and a ranking up to Math Wiz! See page 42.
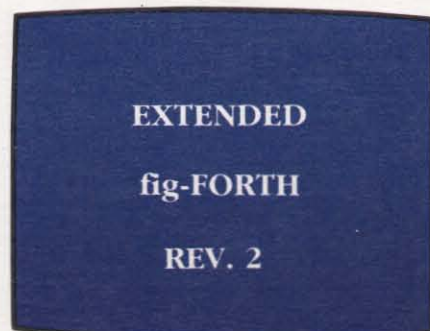
EXTENDED fig-FORTH
by Patrick Mullarky

Full implementation of the increasingly popular programming language with more definitions (for advanced programmers). A good development tool for applications that require high speed and low memory consumption. See page 66.
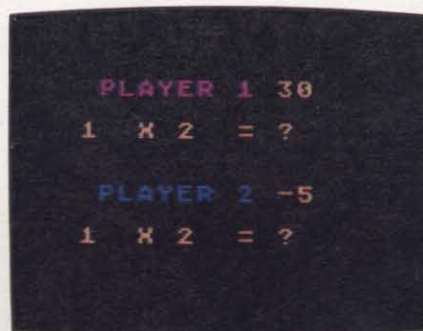
NUMBER BLAST
by Richard Wiitala

Practice solving addition and multiplication problems by "blasting" to the answer more quickly than your opponent. See page 29.
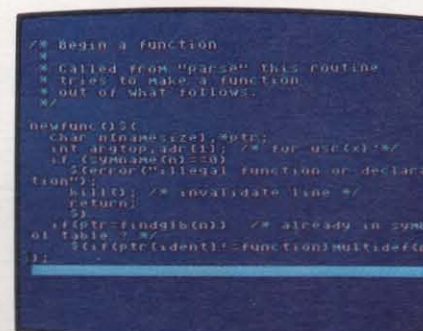
DEEP BLUE C COMPILER
by John H. Palevich

C — more powerful than BASIC, less error-prone than assembly language, transportable. This compiler helps you create large programs with C. See page 64.

Current APX Hits
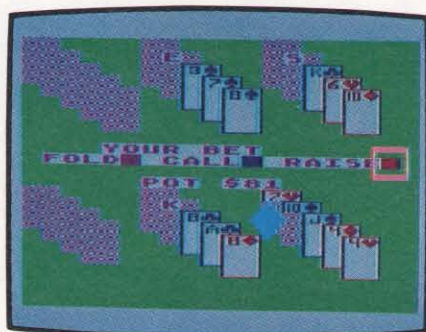
SEVEN CARD STUD
by Monty Webb

Play poker against five opponents, each having four programmable playing traits. An instant all-night poker game! See page 54.
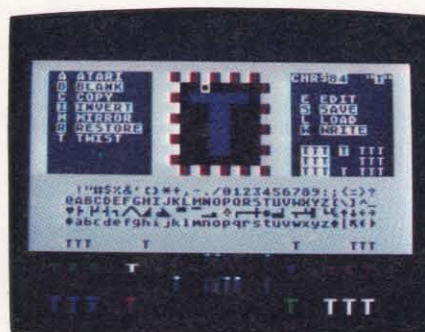
INSTEDIT
by Sheldon Leemon

The best character set editor we've ever seen. INSTEDIT can help you make maximum use of the advanced graphics capabilities of your ATARI Home Computer. There's also a Microsoft BASIC version. See page 65.

DOWNHILL
by Mark Reid

Time to hit the powder! Pick a slope, select your speed, and race against the clock to get to the bottom of the slope without hitting a tree or missing a gate. Thrills without chills, and no broken bones! See page 51.

SALMON RUN
by Bill Williams

Help Sam the Salmon reach his lady love! You guide him upstream, leaping up waterfalls, steering clear of bears, fishermen, and seagulls in a race against time. See page 50.
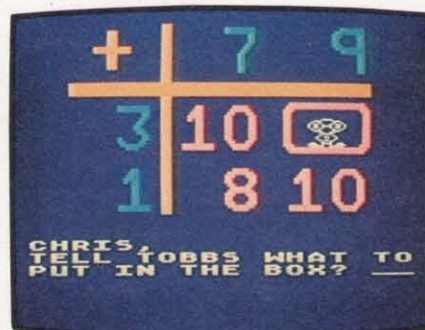
TEASERS BY TOBBS
by Thomas C. O'Brien and
Sunburst Communications

Tobbs is an imp! Fill his boxes with correct answers to math problems. He's glad when you're right, but he shakes his head firmly when you're wrong. Adults are challenged and charmed too. See page 26

ATARI PASCAL LANGUAGE SYSTEM

ISO PASCAL with many enhancements tailored to the needs of advanced PASCAL programmers. See page 70.
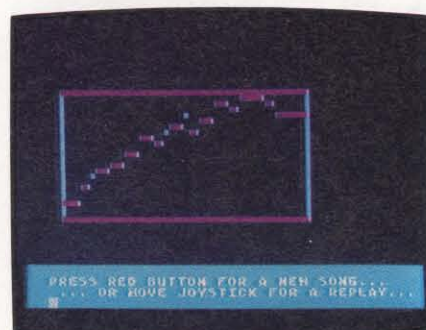
MAGIC MELODY BOX
by W. Wes Horlacher

You've always wanted to write a song, right? But you can't read music, right? Well, now you can be Cole Porter! Create a four-voice harmonized song in just two steps. You design the melody line, the program does the rest. See page 40.
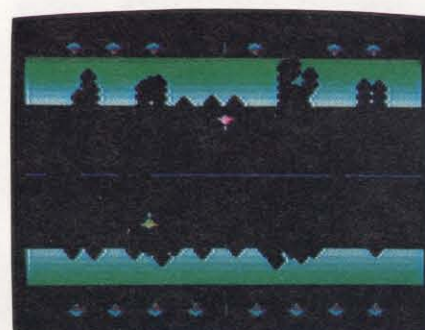
QUARXON
by Scott Ludwig

The enemy is attacking — defend the droids! Quarxon's strange atmosphere makes direct fighting difficult: your own laser fire could become your downfall! See page 52.

KEYBOARD ORGAN
by Alan Griesemer and
Stephen Bradshaw

Turn your ATARI Home Computer into a simple organ! Vibrato and attack features can modify the sound. Record and play back your music, even play both parts of a duet! See page 20.

APX Fall Contest Winners
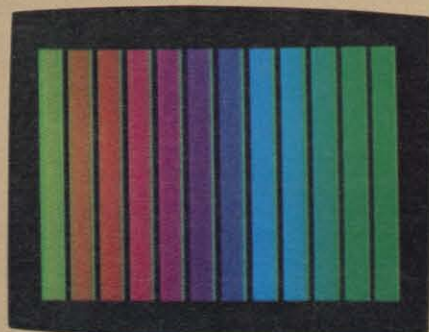
	Home Management	Consumer
1ST PRIZE	**COLOR ALIGNMENT GENERATOR** by Don Lee Use your computer to correct your TV's picture. Clear instructions and on-screen patterns and graphs guide you through the process step by step. See page 10.	**ION ROADWAY** by Jim Sommers You alone must master the joystick control of the I-Car: gain points by spinning out, navigate past dangerous robot cars, and never miss a chance to refuel! See page 46.
2ND PRIZE	**NOT AWARDED THIS QUARTER**	**SARATOGA** by Paul Wehner The year is 1777. You command the American forces: destroy the Redcoats by year end and retain control of Albany, Philadelphia, West Point, and Fort Ticonderoga. Eight scenarios! Games in progress can be saved. See page 47.
3RD PRIZE	**NOT AWARDED THIS QUARTER**	**MOON MARAUDER** by Stephen Romejko Destroy the alien bases on the moon and save the Earth! You control the altitude and direction of your ship. See page 47.
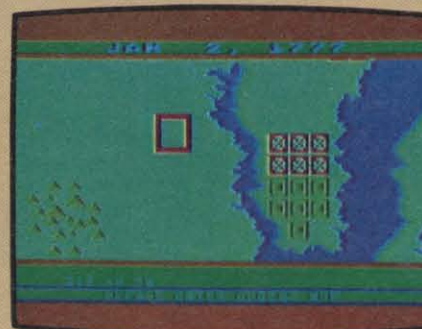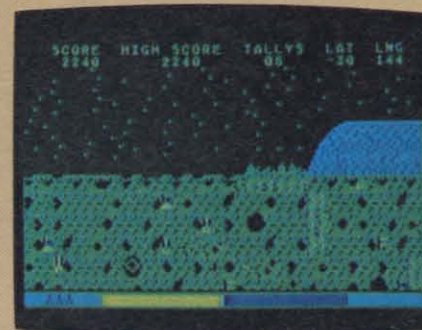
APX Fall Contest Winners
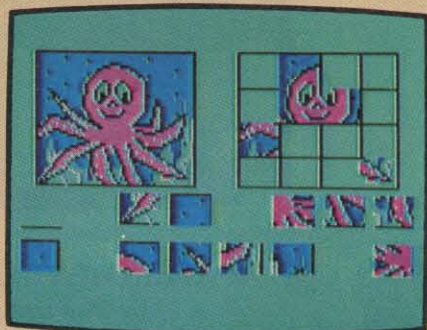
	Learning	Systems/Telecommunications
1ST PRIZE	**PUZZLER**	**CARTOONIST**
	by Paul Lewandowski	by Bryan Talbot
	Your child can work as many as 20 different brightly colored puzzles! Use the joystick to place the pieces — no penalty for mistakes, and a record of tries is kept to mark improvement. See page 23.	Use your ATARI Home Computer to create characters and put them into action. Programmers can add animated sequences to programs, and children can discover the world of animation. See page 60.
2ND PRIZE	**RINGMASTER**	
	by Gregor Novak	by Frank Paris
	Elephants, camels and a show-off monkey teach multiplication tables under the big top! You set the level of difficulty. Bright colors and lively music make learning fun. See page 23.	MATHLIB is a whole library of math functions designed to expand your DEEP BLUE C COMPILER into the area of floating point calculations. Recommended for programmers familiar with DEEP BLUE C. See page 60.
3RD PRIZE	**MUSICAL PILOT**	**NOT AWARDED THIS QUARTER**
	by Charlie Kulas	
	Pilot your plane through the notes of a song. Each note is a balloon that pops when your plane flies through it. Helps children learn relationship between sounds and notes, but first of all, it's fun! See page 22.	
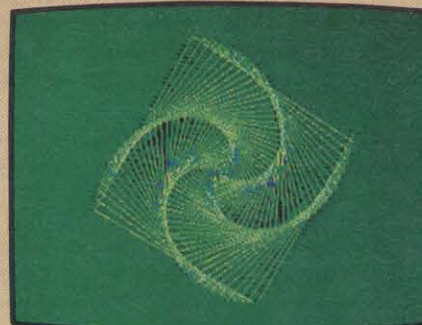
Home Management
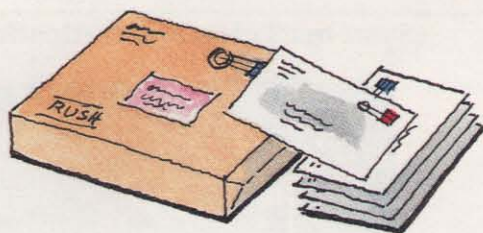
ATARIWRITER™ PRINTER DRIVERS

Recommended for owners of AtariWriter™ and printers
other than the ATARI 825™ and ATARI 1025™
Written in machine language

Adapt the AtariWriter™ Word Processor for use with several printers

Everyone's impressed with the new AtariWriter™ Word Processor because it's so versatile and easy to use. But until now, unless you had an ATARI 825 or ATARI 1025 printer, it was hard to use this powerful word processing system. With this printer driver program, you can adapt several other kinds of printers to AtariWriter™.

It's easy to prepare your diskettes. You just copy a file, using DOS, from the printer driver diskette onto your text diskette, renaming it AUTORUN.SYS, and from then on, you can use that text diskette with your printer. Each time you load your text diskette into computer memory, the printer driver routine loads along with it. There's less computer memory available to you, but the manual shows you how to deal with large text files.

You can use AtariWriter™ Printer Drivers with the following brands and model numbers of printers:

ATARI 1020™ and ATARI 1027
EPSON FX-80, MX-80 and MX-100
EPSON MX-80 GRAFTRAX and MX-100 GRAFTRAX
EPSON MX-80 FT III and MX-100 FT III
GEMINI-10
NEC-8023A
PROWRITER-8510

The manual shows you how to adapt the word processor's special functions to each individual printer.

REVIEW COMMENTS
If you own a printer other than the ATARI 825 or ATARI 1025, this set of drivers makes it easy to use the fine AtariWriter™ word processor. However, it doesn't always allow access to special printer features, such as subscripts and superscripts.

REQUIRES
AtariWriter™ Word Processor cartridge
Diskette(s) containing text files
Printer (listed above)

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$24.95	APX-20223
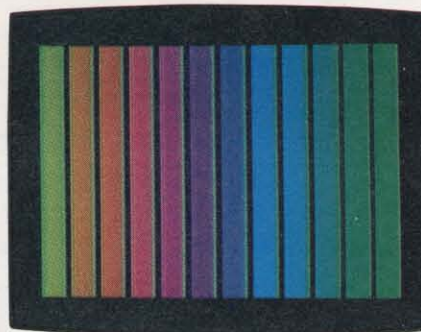
COLOR ALIGNMENT GENERATOR
by Don Lee

Recommended for ages 17 and up
Written in BASIC

Use your computer to correct your TV's picture

How many times on your TV have your green Martians been off-blue, your orange sunsets a pale shade of pink? The color alignment is sometimes off, and you're left with a poor excuse for a color TV. Now with this program you can use your computer to correct this color deficiency without having to surrender your TV to the repairman.

The program guides you through the process step by step in the manual. On the screen, it displays a set of color and black and white patterns and graphs, while the manual describes how to use them to perfect your TV reproduction. Using several easily recognizable controls, you can quickly correct any problem in the color quality or alignment. An electrician or electronics student can use the included NTSC American standard color bars and patterns. No matter what your electrical proficiency, this program can help you achieve better TV reception.

REVIEW COMMENTS
This program, with an easy-to-follow manual, lets the user adjust his or her TV at home, or tell if it needs to be taken into the shop for adjustment.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$19.95	APX-10222
Diskette	32K	$19.95	APX-20222

For credit card orders, use these toll-free numbers: 800/672-1850 (California) or 800/538-1862 (elsewhere in Continental U.S.A.). Or phone direct: 408/727-5603.
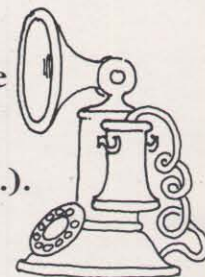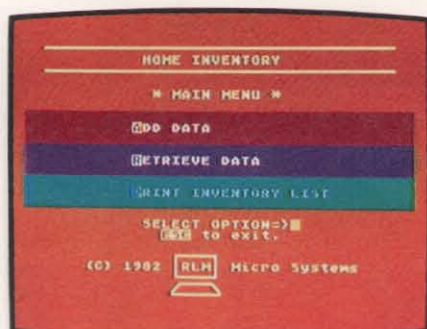
HOME INVENTORY
by RLM Micro Systems

Recommended for ages 15 and up
Written in BASIC and machine language

Protect your property by recording vital information

You've devoted time, effort, and money to acquiring your possessions, and you've insured your valuables against loss or damage. But, have you recorded the information required by your insurance company for reimbursement? For each item, HOME INVENTORY lets you keep track of a name, type, description, serial number, date purchased, and purchase price. You can store information for up to 1200 items on a single diskette, and you can use as many diskettes as necessary to record all your possessions.

HOME INVENTORY is very easy to use. Color-coded screens and simple messages guide you through entering the information for each item, for locating selected items, and for printing complete or condensed inventory lists of all or selected items. You can also erase or revise information for items at a later date. Then, after you record all your valuables, you can store a copy of the diskette containing your records in another location, such as a bank safety deposit box or a friend's home. No one wants to face loss or destruction of property, but with HOME INVENTORY, if disaster strikes, at least you're prepared with the information needed to get restitution from your insurance company.

The authors invite questions and comments by mail and telephone.

REVIEW COMMENTS

This program is easy to understand and use. The color-coded screens help you keep track of where you are, and numerous messages ensure you don't accidentally lose information.

REQUIRES
ATARI BASIC Language Cartridge
Diskette(s) for storing records

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20214

ATSPELLER, Rev. 2
by R. Stanley Kistler

Recommended for ages 12 and up
Written in machine language

Check your documents for correct spelling

How can you look a word up in the dictionary if you can't spell it? At last there's an answer to the perplexing problem of English spelling. ATSPELLER takes any diskette text file produced by such word processors as TYPIT, the ATARI Word Processor, or any other word processor that creates ATARI DOS-compatible files, and checks it against a dictionary file of more than 30,000 words. If that's not enough, you can create your own dictionary file with even more words. You can have the questionable words highlighted on your TV screen or printed on paper. You can edit as you go along, replacing the incorrect word or leaving it as it is. Finally, if you have too many errors, ATSPELLER can write a new file for you. ATSPELLER takes the drudgery out of proofreading, and gives you confidence that your documents aren't marred by spelling and typing errors.

REVIEW COMMENTS
This is a first for Atari. The author worked on and tested ATSPELLER for more than a year before submitting it to APX.

Rev. 2 can be used with only one disk drive, and it has expanded dictionary capabilities.

REQUIRES
Diskette(s) containing text files

OPTIONAL
ATARI printer or equivalent printer
A second Atari 810 or 1050 Disk Drive

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	48K	$39.95	APX-20191
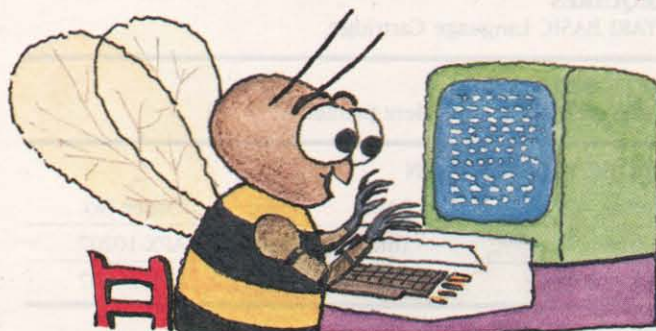
Home Management
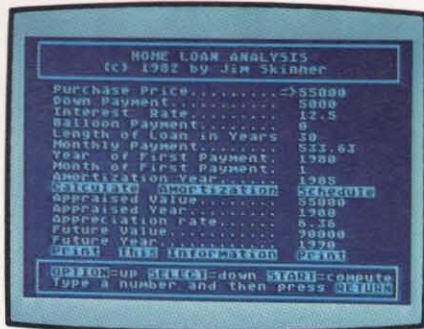
HOME LOAN ANALYSIS
by Jim Skinner

Recommended for adults
Written in BASIC

Evaluate loan alternatives

You're ready to buy a house, but you don't know the appropriate price range. You want your payments to be no more than $750 per month, and you want to finance the loan for 30 years to buy as large a house as possible. If the current interest rate is 14.5 percent, what's the maximum purchase price you can afford?

You want to make improvements to your house that will cost $5,000. You can borrow the money at 16 percent for five or ten years. Which time period would be better?

HOME LOAN ANALYSIS can help you answer these and other kinds of questions related to loans that use an amortization schedule, including mortgages and most automobile loans. You need enter only some combination of interest rate, original purchase price, down payment, balloon payment, and number of years for the loan. HOME LOAN ANALYSIS can then calculate monthly payments, maximum purchase price, appreciation rates, resale values, and amortization schedules. By changing one item, such as interest rate, you can quickly see its effect on the other figures. And you can display the analyses on your TV screen or print them. Can you afford a home improvement loan? Should you refinance your first mortgage or take out a second mortgage? What is the effect of various balloon payments on your regular monthly payment? What will your home be worth ten years from now? With HOME LOAN ANALYSIS, getting the answers to these questions makes evaluating all your options a snap.

The author invites written questions and comments.

REVIEW COMMENTS
This program is easy to use, informative, and well designed. It will calculate a schedule for specific years. The manual clearly presents many useful examples.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10207
Diskette	24K	$24.95	APX-20207
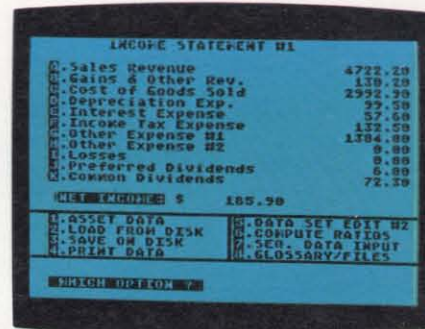
STRATEGIC FINANCIAL RATIO ANALYSIS
by Richard K. Lindgren

Recommended for investors and students
Written in BASIC

Evaluate a firm's performance and management strategies

Investors use financial ratio analysis to assess the performance of a company. You supply information from published financial statements, such as annual reports. STRATEGIC FINANCIAL RATIO ANALYSIS computes ratios that measure a firm's profitability, liquidity, and use of debt.

You can also use the program to interpret a management's business strategies, not always evident from looking at numbers alone. STRATEGIC FINANCIAL RATIO ANALYSIS can help uncover these strategies by presenting a set of key ratios in a format that demonstrates how each factor contributes to the company's success or failure. You can also use the program for "what if" analyses to evaluate the impact of a possible business decision on future performance.

The program guides you through entering the necessary data, which you can save for future use. Because you can work with two sets of information at a time, you can compare information on two different companies or information for two different time periods for one company. You can request as many as 30 different ratios for these two sets, and display or print them in a special format that illustrates their strategic relationships. For quick recall, the program also contains a glossary of all the ratios. With STRATEGIC FINANCIAL RATIO ANALYSIS, you'll spend less time computing and organizing your results than you do now, and you'll have more useful information at your disposal.

The author invites written questions and comments.

REVIEW COMMENTS
This program is easy to use and it's good at helping you avoid making mistakes. The user manual is clear and thorough.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI printer or equivalent printer
Diskette(s) for storing data

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20217

DATA BASE/REPORT SYSTEM

by James W. Burley

Recommended for experienced data base users
Written in BASIC and machine language

If you've ever used a data base manager on a large computer system, you'll appreciate the features of DATA BASE/REPORT SYSTEM. This general purpose system creates and maintains records having a maximum length of 255 characters. You can store about 1300 records having a five-character key on a system with 40K of memory.

You use the program to create a file; add, update, and remove records; sort the file; and print reports. Other programs redefine files by adding fields, modifying field sizes, or changing old field headings. The report writer lets you modify the order in which fields print, sum up numeric fields, and find your records using optional keys.

REQUIRES
ATARI BASIC Language Cartridge
DOS 2-formatted diskette(s) for data

OPTIONAL
ATARI 825 80-Column Printer or Epson printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$24.95	APX-20134

CALCULATOR

Recommended for ages 15 and up
Written in machine language

Now you can use the best qualities of a calculator on your ATARI Home Computer. CALCULATOR contains 145 functions, from simple arithmetic to programming commands that let you write your own programs. You can also work complex conversions and watch the stack and memory displays. Once CALCULATOR automatically loads into memory, you can choose five categories: conversions, fundamental functions, algebraic and trigonometric functions, statistical functions, and financial functions. After you've finished your calculations, you can print your results. Other commands let you store and retrieve programs as well as data. The stack and memory displays share the center of the screen. Along the bottom of the screen is a space for your entries. You can store these entries in memory. A scroll area above the prompt line displays your last seven entries.

REQUIRES
No required accessories.

OPTIONAL
An ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$29.95	APX-20130

BOWLER'S DATABASE, REV. 2

by Jerry White

Recommended for bowlers
Written in BASIC

BOWLER'S DATABASE is a friendly program for keeping track of your bowling scores. You enter your weekly scores for your first, second and third games, using a separate diskette or cassette for each bowler. You can request summary and detailed reports. The summary report contains your highest, lowest, and average scores bowled in the first, second, and third games, your highest, lowest, and average three-game series, and overall average. The detailed report lists all game and individual series totals by week.

BOWLER'S DATABASE gives you detailed records of your bowling performance, making comparisons from one season to the next, or from one league to another. Revision 2 lets you store scores greater than 255, and contains a display change.

REQUIRES
ATARI BASIC Language Cartridge
Additional diskettes for storing data

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$17.95	APX-10091
Diskette	24K	$17.95	APX-20091
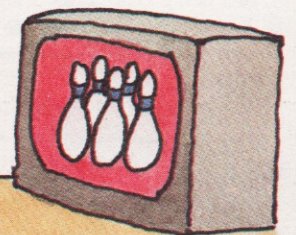
DISKETTE MAILING LIST

by William Bartlett

Recommended for ages 16 and up
Written in BASIC and machine language

DISKETTE MAILING LIST can handle lists having as many as 127 units of information (fields), with each unit as large as 120 characters. The number of records a file can contain is limited only by available diskette space, not memory.

You select program functions from menus. First you define the kinds of information you want to include in the records for a file, and then you add the records themselves. You can revise, add, and remove records as needed. You can sort and re-sort your records by any combination of fields. And you can print your records according to your specifications. Each record prints on one line, and you can also create custom-tailored mailing labels accommodating single and multilabel forms.

REQUIRES

ATARI BASIC Language Cartridge

OPTIONAL

ATARI 825 80-Column Printer or equivalent

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	16K	$24.95	APX-20112

FAMILY VEHICLE EXPENSE

by Jerry Falkenhan

Recommended for ages 18 and up
Written in BASIC

With FAMILY VEHICLE EXPENSE, you can keep track of six vehicles in nine expense categories, using your own blank diskettes to store data on.

The program uses a series of menus to review, enter, change, or delete information on one or all of your cars in any month. It lets you record twelve fuel entries per vehicle per month, and if you enter your odometer readings for at least two fill ups, the program calculates your cost per mile and miles per gallon for each vehicle for each month. You can use the print option at any time to create copies of your entries or to obtain summary reports.

REQUIRES

ATARI BASIC Language Cartridge
DOS 2-formatted diskette(s) for storing data

OPTIONAL

ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$24.95	APX-20128

ENHANCEMENTS TO GRAPH IT*

by Howard D. Siebenrock

Recommended for ages 12 and up
Written in BASIC

If you own the ATARI GRAPH IT program, you know you can create your own pie graphs, bar charts, and different plots on your TV screen, and you can use your Joystick Controller to find values of specific points on the plots. ENHANCEMENTS increases the usefulness of GRAPH IT. With ENHANCEMENTS you can save your work on diskette or cassette and later re-display it. The program also lets you select degrees or radians for plotting trigonometric functions, and the function you use displays below the plot.

Incorporating these features into GRAPH IT is simple. From then on, you use these enhanced GRAPH IT programs as you would the original versions, except that you now have additional features readily available.

REQUIRES

ATARI BASIC Language Cartridge
ATARI 410 or 1010 Program Recorder
GRAPH IT (CX4109)

OPTIONAL

One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$17.95	APX-20074

*Indicates trademark of Atari, Inc.

FINANCIAL ASSET MANAGEMENT SYSTEM

by Robert A. Waldman

Recommended for ages 16 and up
Written in BASIC

The FINANCIAL ASSET MANAGEMENT SYSTEM helps you evaluate the status of all your holdings by creating records for each asset and producing printed reports. Your assets can be of any type, and you can track as many as 99 different assets per file, creating as many files as you need. The system values your portfolio and prints three kinds of reports. One orders all your assets in a file alphabetically and lists each asset's yield, profit, and annual payout. This report also prints subtotals by asset types. The second report sorts all your assets into different lists: value, profit, payout, yield, and percent profit. The third tabulates all your dividends and interest paid on a year-to-date basis. You can also print data input forms to record information manually.

REQUIRES

ATARI BASIC Language Cartridge
ATARI 825 80-Column Printer only

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$29.95	APX-20042

REAL ESTATE CASH FLOW ANALYSIS
by Richard K. Lindgren

Recommended for real estate investors
Written in BASIC

With REAL ESTATE CASH FLOW ANALYSIS, you can make decisions about real estate, but leave the number-crunching to your computer.

The program consists of three sections that analyze the costs and benefits of income-producing property. The Data Editor guides you in compiling, documenting, and modifying relevant analysis data. The Cash Flow analysis section computes before-tax and after-tax cash flows, profitability measures, and projected net worth for an investment property. The Amortization section computes monthly payments, interest rates, principal amounts, and terms for self-amortized loans. You can print all the analyses.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20169

TYPIT
by Charles E. Balthaser

Recommended for any typist
Written in assembly language

TYPIT turns your computer into a typewriter, keeping the editing features of a word processor, but eliminating the complex code symbols.

A page of text appears on the screen just the way it will on the printed page. Each line is as long on the screen as it's going to be on the page. There's no "wraparound." A signal sounds when you are at the end of a line. To help you visualize how each page is going to look, TYPIT displays a dotted line every 65 lines, to show the bottom of an 11-inch piece of paper. The seventeen editing commands are short and simple. With a 48K system, you have room for about four pages. You can save on diskette anything you write with TYPIT.

REQUIRES
ATARI 825 80-column printer or equivalent printer

OPTIONAL
Diskette(s) for storing documents

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$17.95	APX-20192

STOCK MANAGEMENT
by Greg Thrush

Recommended for ages 18 and up
Written in BASIC

With STOCK MANAGEMENT, you record the information from your trade confirmation receipts once. The program then takes care of all your record-keeping chores and performs analyses.

A series of menus and prompts guides you through entering and updating information for these transactions: buy, sell, dividends, stock dividends, stock splits, and nontaxable distributions. For each transaction you record the stock, its symbol, the transaction type and date, the exchange, and the price/dividend, quantity, and commission. The program updates your file whenever you add information, and you can then print several kinds of reports: lists, current status including current value of each stock, summary of all transactions, and a capital gains summary in a given year.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer or Epson 80-Column Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20147

Personal Development

ADVANCED MUSICSYSTEM

by Lee Actor

Recommended for ages 11 and up

Written in BASIC and machine language

With the ADVANCED MUSICSYSTEM, you can use your musical skills, from listening to creating, to their fullest.

You select your activity from a menu of fourteen choices. The editing function is one of the most interesting. You enter a musical note by specifying its parameters. Every time you enter a note, the program reproduces it through the television speaker and displays it on the screen, where it can be modified. You can listen to as many as four independent voices in a 5½-octave range and watch a piano keyboard playing the notes with each of the four voices appearing in a different color. Built-in synchronization functions let you construct a tape with at least eight simultaneous voices using an external tape recorder. ADVANCED MUSICSYSTEM lets you save music on a diskette, and merge files to create very large files.

REQUIRES
ATARI BASIC Language Cartridge
DOS 2-formatted diskette(s) for storing music

OPTIONAL
One set of ATARI Paddle Controllers
Stereo cable
Tape recorder

`PAL`

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$29.95	APX-20100

JUKEBOX #1

by Lee Actor

Recommended for ages 6 and up

Written in BASIC and machine language

Created with the help of ADVANCED MUSICSYSTEM, JUKEBOX #1 turns your ATARI Home Computer into a record player you set and forget. A selection of eight quality classics fills JUKEBOX #1.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$17.95	APX-20135
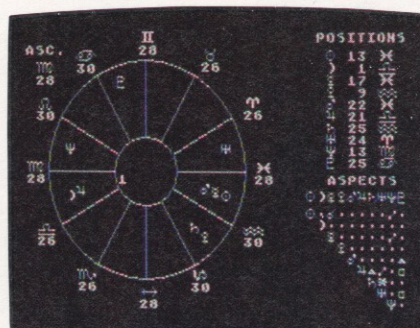
ASTROLOGY

by Harry Koons and Art Prag

Recommended for ages 14 and up

Written in BASIC

Draw astrological charts based on birth date and birthplace

Ptolemy and Morinus, the famous Greek astrologers, had a much harder time computing the locations of the sun, moon, and planets than you will. With ASTROLOGY, the mysteries of the zodiac, planetary positioning, natal charts, and rising signs will unfold in your very own living room.

Once the program loads, enter the exact time and place of birth. Then designate the location as geographical coordinates. If you don't know this information, ASTROLOGY computes it as you move the cursor across either a world or United States map to your birthplace.

After you've typed in the time (to the minute), date, and location of birth, ASTROLOGY takes over. The program processes your data and draws an astrological chart on the screen representing the earth, the zodiac, and the twelve astrological houses at the time of birth. Symbols of the zodiac appear on the lines (cusps) between each house. Each planetary sign is displayed in its proper house. ASTROLOGY also computes the relationships (aspects) of the planets in the houses. The program defines symbols for planets and signs of the zodiac on a separate screen.

Once you have your complete chart, some simple interpretations are available in the manual.

The authors invite written questions and comments.

REVIEW COMMENTS
The user manual includes suggested reading material for further astrological information. You do need additional reference material for a complete interpretation.

Can save charts on diskette, or print the chart with an appropriate printer and printing program.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
Diskettes for storing charts
Printer capable of printing graphics

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$24.95	APX-20078

DRAWIT
by James Burton

Recommended for ages 8 and up
Written in machine language

An extraordinary drawing tool

There are many drawing programs available for ATARI Home Computers. DRAWIT stands out from the crowd because of its well chosen, easy-to-use features and its ability to turn your creations into both a "slide show" for which you control the timing and an automatic message cycling system.

With DRAWIT and 48K of computer memory, you can create up to nine pages of multicolored drawings in memory at a time; with 16K of memory, you can create one page, and with 32K of memory, you can create five pages. Using four color pens, you can choose from sixteen different colors and eight different hues. You can easily draw outlined and solid circles, lines, boxes, different sized text, and freehand sketches. DRAWIT also has a fill feature, along with design relocation, page merging, and two zoom levels for detail work.

You can use your drawings in several ways. For example, DRAWIT includes a program that lets you incorporate your drawings into BASIC programs. And with DRAWIT's animator feature, you can combine pages in imaginative ways, such as fading one page into another or creating page wipes from any of four directions. Or you can turn your ATARI Home Computer into a visual aid for presentations or into an automatic sales or demonstration device. The diskette version includes an animation demonstration.

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
DRAWIT is easy to learn and use, and has many features, such as entering letters of any size, a choice of cursor form and speed, and the ability to load screens from BASIC. The animator demonstration is wonderful.

REQUIRES
One ATARI Joystick Controller

OPTIONAL
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$39.95	APX-10209
Diskette	16K	$39.95	APX-20209
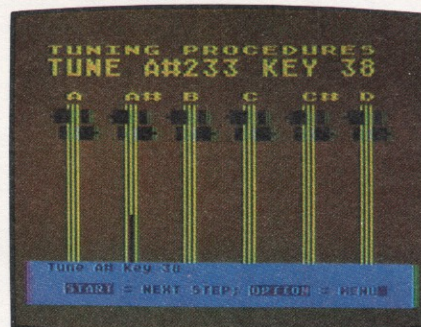
PIANO TUNER
by R. J. Morgan

Recommended for ages 16 and up
(with knowledge of music and piano)
Written in BASIC

Learn piano tuning, tone generation, and ear training

If nobody wants Sam to play it again any more, maybe it's the piano. Keeping this delicate instrument in tune is a difficult but critical part of maintaining it in good condition. PIANO TUNER incorporates the sound capabilities of your ATARI Home Computer to help you learn the procedure and skills you need for this task.

The "tuning procedures" section of the program guides you through the steps to do a general tuning. It prints instructions and illustrations for each step. Then it sounds the tones you need to adjust your piano.

Select the "single tones" option to generate any of the 88 possible pitches on a piano. Each note is listed on the screen, and you use a joystick to select the one you want. Hold down the joystick button to listen to that tone.

To sharpen your skills as a tuner, choose "ear training." You select one pitch, and the program produces another within fifteen cycles per second of the first. Use the joystick to increase or decrease the pitch of the second tone. When you've matched the first tone, you no longer hear the "beat" sound that indicates a difference. Practice makes perfect!

The author invites written questions and comments.

REVIEW COMMENTS
This program doesn't replace the services of a professional piano tuner. The graphic representation of the piano strings is good, and the tuning procedure is easy to follow. It's useful for the piano owner who wants to learn general tuning.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller
Tuning hammer
Damping wedges or felt

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$29.95	APX-10216
Diskette	24K	$29.95	APX-20216

FINGERSPELLING
by Dewey Garton

Recommended for ages 4 and up
Written in BASIC

This colorful program helps you learn to speak with your hands. Although communicating with deaf people is the principal use of fingerspelling, the technique is also useful for situations like working in a noisy environment. It can even be a fun way for kids to communicate with each other "in code." The program has two parts:

● Show me. You type a letter or a word up to ten letters long, and the program displays the hand images one at a time with the letter alongside for reinforcement.
● Test me. You practice reading by typing the letter or word that corresponds to the hand images you see on the screen. You can choose from three levels of difficulty and ten speeds.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10197
Diskette	24K	$24.95	APX-20197

PERSONAL FITNESS PROGRAM
by David Getreu

Recommended for ages 12 and up
Written in BASIC

Have you been spending too many hours at your ATARI Home Computer? Are you developing hobbyist's spread? Do your muscles strain when you lug your equipment to the users' group meeting? Don't despair. Without leaving your computer, you can recapture the old vigor by exercising for 15-30 minutes a day.

The eight exercises in the PERSONAL FITNESS PROGRAM may help improve your flexibility, strength, stamina, coordination, circulation, and general body tone. The program tailors the exercises to you. It contains daily and weekly progress charts.

CONSULT YOUR PHYSICIAN BEFORE USING THIS EXERCISE PROGRAM.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
One set of ATARI Paddle Controllers
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$24.95	APX-20033

BLACKJACK TUTOR, Rev. 1.1
by W. H. Northrup

Recommended for adults
Written in BASIC and machine language

Here's a game with more than entertainment as its purpose. It's also a tutorial designed to increase your mastery of blackjack playing and betting strategy. First you learn basic blackjack strategy so that you can maintain roughly even odds over the dealer. Next you tackle the tens count strategy, which can give you as much as a ten percent advantage over the dealer during some portions of game play.

Designed for players already familiar with the casino card game, BLACKJACK TUTOR is based on the mathematical probabilities of blackjack. As the dealer, the computer follows casino rules. You have the options of staying, hitting, doubling, splitting, surrendering, and asking for insurance.

Rev. 1.1 fixes bugs in doubling and splitting aces.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10057
Diskette	24K	$24.95	APX-20057

PLAYER PIANO
by Jerry White

Recommended for ages 4 and up
Written in BASIC

Turn your computer into a twenty-note minipiano! Everyone can enjoy this versatile program, regardless of music ability or training.

The program displays the twenty black and white piano keys, and a musical note symbol jumps across the keys as you play your tune. You create tunes much like tapping one out on a piano — you strike a key and the note plays. You can save your tune for recall at a later time. PLAYER PIANO lets you build tunes having as many as 400 notes, composed of whole, half quarter, and eighth notes, and having a variety of tempos.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	32K	$24.95	APX-10062
Diskette	32K	$24.95	APX-20062

KEYBOARD ORGAN

by Alan Griesemer and Stephen Bradshaw

Recommended for ages 6 and up
Written in QS FORTH

What does "Z Z B B N N B V V C C X X Z" mean to you? With KEYBOARD ORGAN, it's the beginning of "Twinkle, Twinkle Little Star"! You can turn your ATARI Home Computer into a simple organ with vibrato and attack features. You play songs using the computer's keyboard as if it were an organ keyboard, except that you can play only one note at a time. You can record and play back your songs, and even play duets or rounds by recording a song and playing it back while you play along on the computer keyboard.

REQUIRES
No required accessories

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$24.95	APX-10094
Diskette	24K	$24.95	APX-20094

VIDEO KALEIDOSCOPE

by Raymond Weir

Recommended for ages 4 and up
Written in BASIC and machine language

To introduce a young child to the colorful world of computer graphics, or to show off the graphics capabilities of your ATARI Home Computer, consider VIDEO KALEIDOSCOPE. It's so easy to use that even small children can enjoy creating elaborate, colorful, whirling pictures that go far beyond the simple image mirroring of traditional kaleidoscopes.

First you use a joystick to draw simple or complex designs. The design repeats in the four quadrants of the screen as you draw. Then you begin the kaleidoscope and press any key for a different special effect: rotating rainbows, color flashes and pulses, alternating patterns, graduated spectrums, a freeze-frame effect, and a continuation of design development. You can change colors at any time. A special design can be stored and recalled later.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

OPTIONAL
Diskette(s) for storing designs

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$17.95	APX-20213

BANNER GENERATOR prints banner messages, with characters up to six inches high and up to eighty characters long. Options include different fills and intensities. REQUIRES: ATARI BASIC Language Cartridge, ATARI 825 printer or equivalent printer.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$15.95	APX-10040
Diskette	16K	$15.95	APX-20040

GOING TO THE DOGS helps you project the outcome at dog races, taking into account point rating, ranking, position, and track specifics. REQUIRES: ATARI BASIC Language Cartridge, DOS 2-formatted diskette(s) for storing data, a racetrack program

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$24.95	APX-20123

HYDRAULIC PROGRAM (HYSYS): Fourteen system calculations help you solve equations dealing with hydraulic pumps, motors, and cylinders. REQUIRES: ATARI BASIC Language Cartridge. OPTIONAL: ATARI 825 printer or equivalent printer.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$22.95	APX-20066

ISOPLETH MAP-MAKING PACKAGE: Draw topographical contour maps with just altitude points, and the computer connects all points with the same value. REQUIRES: ATARI BASIC Language Cartridge. OPTIONAL: ATARI 825 printer or equivalent printer.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$22.95	APX-20103

TEXT FORMATTER (FORMS): With FORMS and a cassette or diskette text editor, you can change line spacing and length, left margin, and indentation without re-keying text. REQUIRES: ATARI BASIC Language Cartridge; compatible text editor; ATARI 825 printer or equivalent printer.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10002
Diskette	24K	$24.95	APX-20002

EXCALIBUR

by Chris Crawford, Larry Summers,
and Valerie Atkinson

Recommended for ages 13 and up
Written in machine language

Use your wits and intuition to rule a kingdom.

In Camelot, young Arthur has begun his reign as king. After more than 20 years of petty, bloody wars fought by upstarts and pretenders, the united Britain his father once ruled has been splintered into shards. Now Arthur, the rightful monarch, has come to restore peace, order, and good government. Armed only with his magic sword Excalibur, guided only by his intuition and the spells of Merlin, he must weld these tiny warring kingdoms into a great nation.

How does a monarch learn to govern? Could *you* learn to rule a nation? EXCALIBUR offers you the chance. Its designers (who include Chris Crawford, creator of the bestselling EASTERN FRONT 1941) have built a world. To rule wisely, you must use economics, diplomacy, magic, military strategy, even the loyalties of friends and enemies, to reach your goals.

To heighten your sense of being in a "real" world, you make decisions based on judgment instead of set formulas of play. How you choose to rule shapes the structure of the game. To help you understand the rich and complex world of Arthur, the authors provide a brief manual that outlines the basics, *and* a full-length novel written especially for EXCALIBUR. This is a game for the dedicated player.

You use your joystick to move from the Round Table room, where loyalties ebb and flow, to the throne room, then to the Treasury, where taxes are set and armies are raised, to Merlin's lair. With his help, you can see into the locked treasuries and minds of allies and foes. Or you can leave the castle and travel across the map of Britain to do battle with your enemies in the hope of making them your vassals.

REVIEW COMMENTS
The game is engrossing, and requires thought and perception.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	48K	$29.95	APX-20235
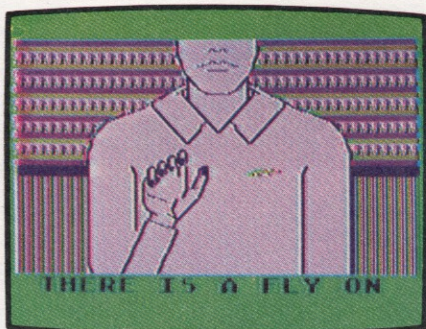
ADVANCED FINGERSPELLING
by Duane Bolster
Recommended for ages 5 and up
Written in BASIC

Sharpen skills of communication in fingerspelling

ADVANCED FINGERSPELLING is an easy and fun way to improve your ability to communicate through fingerspelling. Not only is this useful in communicating with the deaf, but it also can be used by others. In any environment where noise can interrupt speech — from construction sites to sports like football and sailing — fingerspelling is a convenient way to convey information accurately.

This program leads you through different stages of learning the language, from displaying signals on request or automatically, to testing your proficiency. After you feel competent enough, you can move to word and sentence construction and comprehension. The computer keeps score of your efforts, and displays them with bar graphs. With the diskette version you can even add your own words and sentences to the data file, or modify ones that already exist.

The author invites written questions and comments.

REVIEW COMMENTS
The disk storage and modification make this program more advanced than FINGERSPELLING. Good animation makes it user-friendly.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	32K	$24.95	APX-10227
Diskette	32K	$24.95	APX-20227
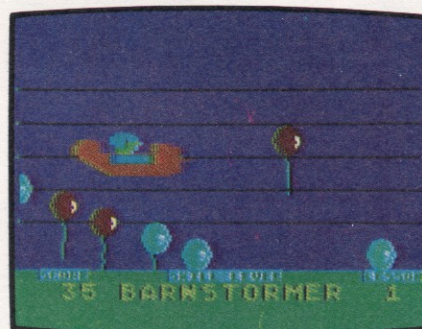
MUSICAL PILOT
by Charlie Kulas
Recommended for ages 3 and up
Written in machine language

Pilot a plane through the musical notes

Off you go, into the wild blue yonder, piloting your own plane through the musical notation of song after song. Each note is represented by a balloon, and you're trying to pop each balloon by flying through it. You have to use your joystick to aim your plane higher or lower so you don't miss the musical notes.

The program has four difficulty levels. On the higher levels, you have to move faster and rely more on the sounds, anticipating what notes are coming up and moving your plane up or down before you get to them. As you learn to do this, you're making progress in correlating the sounds of the song with the notes on the screen. And learning that relationship is what MUSICAL PILOT is all about!

The program keeps score for you, up to 1,000 points for completing the game and becoming an Ace.

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
The colorful screen, with balloons and a pilot in his plane, makes this a fun game for children to play, while they're learning the written representations of sounds and determining higher and lower pitch. Use of the joystick makes this game easy for children to play.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10229
Diskette	32K	$24.95	APX-20229
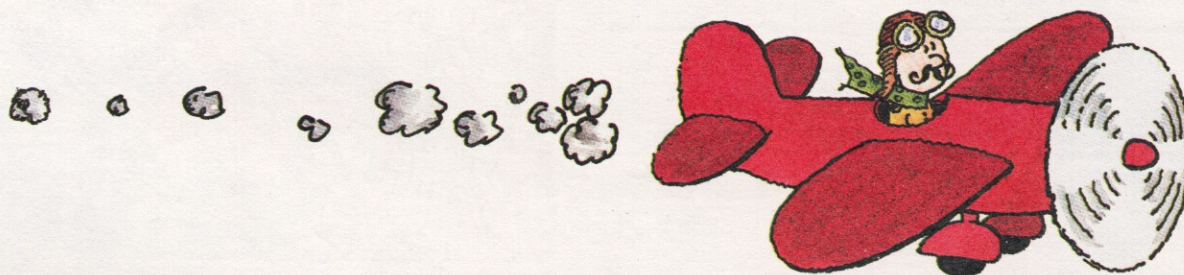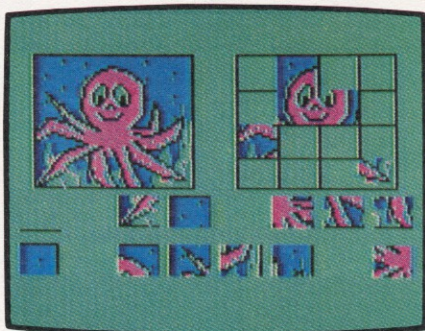
PUZZLER
by Paul Lewandowski
Recommended for ages 5 and up
Written in BASIC

Work jigsaw puzzles on the screen

If you've ever tried to amuse a child on a rainy afternoon, you know nothing works better than a jigsaw puzzle. With the PUZZLER program and your ATARI Home Computer, you don't have to spread out the pieces on your dining room table, yet your child can work as many as 20 different brightly colored puzzles. Don't be surprised if teenagers and parents get involved in the game too!

The pictures are so charming and the puzzles are so absorbing, children will spend hours playing with them. At the same time, they're sharpening their skills of shape discrimination and pattern organization.

A child can choose to see the completed puzzle before beginning, or try to work it out from imagination. When he or she begins solving the puzzle, a grid appears on the screen with spaces for the puzzle pieces. The pieces are arranged randomly below the grid. Using the joystick, he or she selects a puzzle piece and directs it to the place in the grid where it belongs. There's no penalty for making a mistake, but when the picture is complete, the program displays the number of moves that were made.

The author invites comments and questions by mail and telephone.

REVIEW COMMENTS
This program offers a new dimension in puzzle solving. Small children may view the picture they're trying to create, and more advanced players can solve the puzzle without displaying the picture. Joystick use makes the program accessible to young children.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20230

RINGMASTER*
by Gregor Novak
Recommended for ages 6 and up
Written in machine language

Monkeys, elephants, and camels teach the multiplication tables under the big top

Step right up to the circus! Watch the elephants and the camels on parade as the music plays. Everyone's in a carnival spirit — especially one rambunctious monkey. He's stealing the show by scampering all around the big tent. He hops onto the backs of the marching elephants or camels.

Using your Joystick Controller, you're the ringmaster — you guide him where he wants to go, and you make sure he jumps successfully. He'll make it if he always leaps onto the back of an elephant or camel numbered with a multiple of the number he started from at the bottom of the screen. He makes his way through four rows of animals marching to and fro, from the bottom of the screen to the top and back. He has to pay attention to the music so he's in a safe place when the tune ends. And he'd better not fall!

As you try higher levels of the game (up to the seventh), the speed of the parade increases, and the length of the tune decreases. The monkey has to hop more nimbly, so you have to think faster. At some of the levels, you can press a button for help, and the program displays the multiples of the number you're working on.

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
Elephants, camels, and circus music create an enjoyable atmosphere for learning and practicing the multiplication tables. The help option lets you study multiplication facts before playing.

*RINGMASTER is a Trademark of Sagesoftware

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10234
Diskette	16K	$24.95	APX-20234

From the Editor

APX programs you might have missed

APX has two boards of review. One is made up of permanent members of the APX staff. The other is made up of you: our users. We're proud that many of the APX product review forms you send us are rave reviews. They're always a delight to read, and a little surprising — everyone has the time and energy to complain freely, but it takes a special effort to pay a compliment.

Your positive response often tells us that an APX program deserves special attention. This quarter, two programs have consistently won praise. The first, DATA MANAGEMENT SYSTEM, a home management program by Ronald and Lynn Marcuse (APX-20059), is ideally suited for files of short records such as catalogs of records, tapes, and books. If you're a collector with an out-of-control collection, this program is for you. Menus and prompts guide you through all data entry.

First you set up your file by entering file name, number of fields, field headings, maximum field value (up to 30 characters), and type of editing you'll need on each field. (You can select none, numeric, date, or dollar edits.) You can store records as large as 140 characters.

Once you've set up your file, you can add, update, or delete records. You can search your file on any field (author, for example), or use any of the valid search terms: less than or equal to; equal to; greater than or equal to; and range.

You can display your search results on screen or print them on your printer (up to 130 characters), and can specify either complete or partial records. Last but not least, you can use any field to sort your file, in either ascending or descending order.

This is one program on which all our reviewers agree: for a small data management system, the program is flexible, fast, easy to use, and it provides a large data base of entries. If you're not using your ATARI Home Computer to get yourself organized and free up your time, this program will provide a giant step in the right direction.

The second program, MAPMAKER by Stephen W. Hall (APX-20144), is a systems/telecommunications program of special interest to players of the hugely popular EASTERN FRONT 1941 and to designers of computer simulation games. Are you ready to take the leap up from player to designer? MAPMAKER is a great programming tool! You can use it to create multiscreen map displays that draw on the ATARI Computer's outstanding multicolor, fine-scrolled redefined character sets. The large display that can fit into a small amount of computer memory is wonderful. On systems with at least 40K of memory, 8K is available for displays of up to 34 screens! On a 32K system, 4K is available for up to 17 screens.

MAPMAKER acts as an easel. You try out different shapes by displaying them on the screen. The fine scrolling feature allows smooth movement from one part of your map to another either by Joystick Controller or by keyboard directional keys. The program comes with a set of map elements, but you can create and use your own. (A compatible editor is INSTEDIT, available through APX.) When you complete a map, the program saves your file on diskette.

Chris Crawford, designer of EASTERN FRONT 1941 and one of the designers of EXCALIBUR, is a MAPMAKER user. And those who know MAPMAKER agree that it's easy to use. It may take some time to master, but your results will show it's time well spent. If you're thinking of creating a strategy game, or want to draw great maps, why re-invent the wheel? Save your time and energy for the more creative parts of the fun!

In future issues, as space allows, we'll be looking at other APX programs *you've* liked. Meanwhile, thanks for writing, and keep those cards and letters coming in!

DATA MANAGEMENT SYSTEM
by Ronald and Lynn Marcuse

REQUIRES
ATARI BASIC LANGUAGE CARTRIDGE

OPTIONAL
ATARI 825 80-Column Printer or Epson MX-80 Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20059

MAPMAKER
by Stephen W. Hall

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
One ATARI Joystick Controller
INSTEDIT (APX-10060 or APX-20060) or other compatible character set editor

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ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20144

MONKEY UP A TREE
by Joe Grande

Recommended for ages 4 and up
Written in BASIC

Solve problems so the monkey can reach the bananas

It's lunch time in the jungle and a little monkey has found a tree with lots of ripe bananas. The only way the monkey can climb the tree to reach the bananas is for you to solve arithmetic problems. It's up to you to help the monkey get its lunch today.

Here's what you do. Each time an addition, subtraction, multiplication, or division problem appears below the tree, you type the answer. If you're right, the monkey can climb part way up the tree. If you miss an answer or take too much time, the monkey slides down a bit, and the right answer appears so you can study it. The monkey is very hungry today and wants three bananas for lunch, but he can grab just one on each trip up the tree. Only you can help make a hungry monkey happy (and win the game)!

MONKEY UP A TREE can be enjoyed by one or two players of all ages, because each correct answer entered by a player causes the difficulty level of that player's subsequent problems to change. The difficulty is determined by the speed and accuracy of previous answers and is adjusted continually. This handicapping feature means all family members should try their best rather than adult players "going easy" on children and it means the game grows with a child's growing math ability.

The author invites written questions and comments.

REVIEW COMMENTS
Reaching the bananas is an appealing goal for children. The sliding monkey is an effective motivator. Sharing the keyboard may be a bit awkward at first for two young children. Very small children should have an adult available for guidance.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10165
Diskette	24K	$24.95	APX-20165

Grand Prize
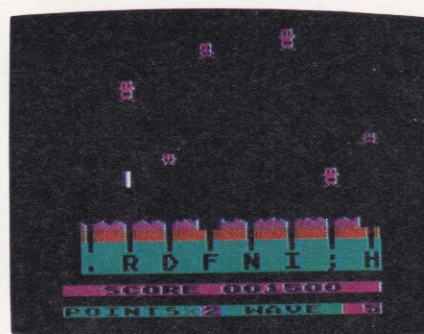
TYPO ATTACK
by David Buehler

Recommended for ages 8 and up
Written in machine language

Type the right key and hit the Typos!

Do you remember the boring drills and practices you endured to increase your typing speed? Too bad TYPO ATTACK wasn't around then. But it's not too late to enjoy this fast-paced game for practicing locating keys on the keyboard and for improving your touch-typing speed and skill. TYPO ATTACK will appeal to beginning and professional typists alike (and will probably convert non-typists, as well).

Your goal is to defend eight bases against animated typo invaders falling directly overhead. Each base displays a keyboard character. To destroy a typo, you type the character directly below it in a base, which sends up an energy bolt. Pressing several keys at the same time won't help; you must type only one character for the bolt to fire. After the first few invasion waves, you have no time to search for the character on the keyboard. You must rely on your touch skill. And to add to the challenge, the characters in the bases change randomly. The better you become at fending off the typos, the faster they fall and the greater the selection of keys displayed in the bases. If you wipe out one set of invaders, you automatically face another of the game's eight kinds of typo invaders. Each time a typo lands, it digs nearer to the base. When a typo finally reaches a character in a base, the game ends.

TYPO ATTACK comes with nine skill levels. The higher levels contain more typos per invasion, more keys displayed in the character bases, and faster typo invaders. The program keeps track of the high score as well as your current score.

The author invites written comments and questions.

REVIEW COMMENTS
What a great way to practice touch typing! This game is hard to put down. The cute creatures, varied songs, and quick action all add up to an engrossing game.

REQUIRES
No required accessories.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	8K	$29.95	APX-10180
Diskette	16K	$29.95	APX-20180
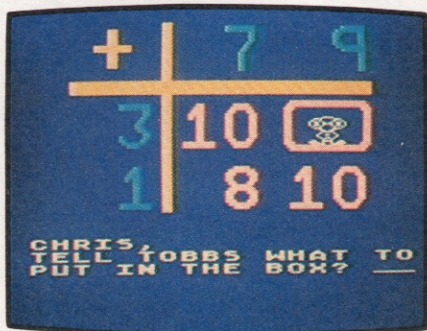
TEASERS BY TOBBS

by Thomas C. O'Brien
and Sunburst Communications

Recommended for ages 8 and up
Written in BASIC

Tell Tobbs how to solve math problems in a puzzle grid

Hours of absorbing, challenging fun are in store when you meet Tobbs and try to solve his "teasers" — puzzles in the form of grids. The puzzle grids are made of three squares across and three squares down. The symbol for addition or multiplication appears in the upper left square, and the other eight work together like a crossword puzzle to show sums or products. At first some of the squares are blank. Tobbs hops about asking what number should fit into each square, based on the relationships among the numbers you can see. He shows his delight when you give him the right number, but he shakes his head firmly when you're wrong.

The program is based on the ideas of Jean Piaget, the father of child developmental psychology. At the easiest level, you supply one-digit answers. But at the higher levels, not only do the squares hold two-digit numbers, but you often have to reason backwards, forwards, and sideways from the sum to the numbers which add or multiply together. For very advanced players, some puzzles have more than one possible answer. If things get too hard for you, Tobbs is always available to give you help. He calculates how many problems you answered correctly at the end of each set of puzzles. Teachers can use the program in the classroom, but parents can also help their children improve their skills. Adults, too, will be challenged by these puzzles!

The author invites questions and comments by telephone.

REVIEW COMMENTS

This program goes far beyond mere computation to tap broad math skills, such as reversibility, a major factor in intellectual development.

The user manual provides educational theory as well as instructions.

REQUIRES

ATARI BASIC Language Cartridge

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	16K	$29.95	APX-20201
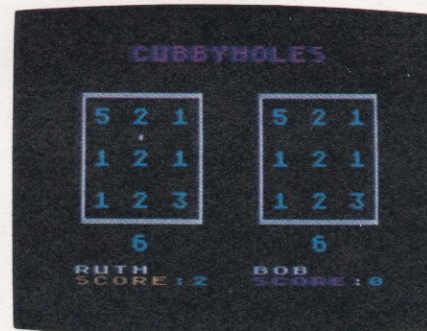
CUBBYHOLES

by Dale Disharoon

Recommended for ages 5-12
Written in BASIC

An addition game for 1-2 players

If you're looking for a fresh approach to teaching addition, your search is over. Youngsters will line up to play CUBBYHOLES! This one- or two-player game gives plenty of addition practice, but players will be so absorbed in wielding their Joystick Controllers and planning their strategy, they'll hardly be aware they're sharpening their addition skills.

In the two-player version, you each work on separate but identical 3-by-3 grids of one-digit numbers. Below the grid a number between 6 and 18 is displayed. You can either select this number yourself or you can opt for CUBBYHOLES to choose it for you. You use a joystick to draw boxes around sets of numbers such that each set adds up to the number below the grid. You must use all the numbers in the grid, and you may enclose each number in only one box. Each grid has only one solution! Once you think you've solved the puzzle, move to the middle of the grid and press the joystick's trigger button. If you're wrong, CUBBYHOLES tells you to try again. If you're right, you score a point and another round begins. You can play as few as two rounds or as many as twenty. In the one-player version, one grid is displayed, and your goal is to complete every round successfully. CUBBYHOLES has more than five hundred puzzle combinations, so line up the kids for fun and competition with an educational twist.

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS

CUBBYHOLES is a charming approach to teaching simple arithmetic. The graphics, sound, and ingenuity add a new dimension to drill and practice programs.

CUBBYHOLES is a teacher's dream for increasing students' concentration, analytical abilities, and math skills — all at the same time. It's a great two-player game, but it's rather weak as a one-player game.

REQUIRES

ATARI BASIC Language Cartridge
One ATARI Joystick Controller per player

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10101
Diskette	24K	$24.95	APX-20101
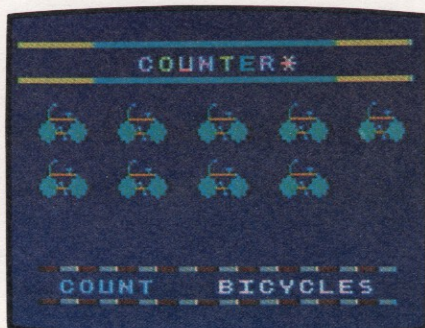
COUNTER
by Al Casper

Recommended for ages 3-8
Written in BASIC and machine language

An introduction to numbers in four languages

Young children will happily learn to count to fifteen with this friendly introduction to numbers. Bright colors and happy sounds capture youngsters' attention and add to the fun of counting exercises in English, French, German, or Spanish.

COUNTER has two parts. First, a number of five-legged Gorks pop up on the screen. For each Gork, the Arabic numeral and the word for the number in the selected language scroll across the bottom of the screen and a chime counts the number of Gorks currently on the screen. In the second part, COUNTER displays a random number of objects, such as sailboats or barns, and waits for the child to count them. He or she can either use the space bar, Joystick Controller, or Paddle Controller to count each object, or press a number key to indicate the total number of objects. Each response changes the screen's background color, and after each correct answer, the screen turns green and a short melody plays. With one keystroke, parents can check on a child's progress.

All four versions of COUNTER have six levels of difficulty. As the levels increase, permitted response time decreases and the maximum number of objects displayed increases. COUNTER can also serve as an elementary vocabulary tutorial in any of the program's four languages.

The author invites written questions and comments.

REVIEW COMMENTS
COUNTER has all the color, sound, and action needed to captivate younger children. When ignored, the program slowly cycles through its repertoire, enticing a child to come play with it.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
A set of ATARI Paddle Controllers
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$29.95	APX-10148
Diskette	24K	$29.95	APX-20148
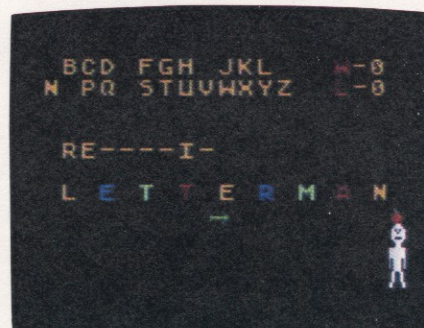
LETTERMAN
by Ed Stewart and Ray Lyons

Recommended for ages 8 and up
Written in BASIC

A non-violent hangman for 1-2 players

Has it ever bothered you that a game as fun as hangman has a violent underlying premise? Well, here's a variation on the traditional paper-and-pencil, word-guessing game that replaces a dismal outcome with lively animation, colorful graphics, and amusing sound effects. The only object in danger is the apple on Letterman's head! You have six turns in which to guess the secret word, one letter at a time. Either the program or another player can choose the word. LETTERMAN contains nearly 400 words within three selectable difficulty levels. And when you've exhausted this list you can continue to enjoy LETTERMAN because the user manual contains easy-to-follow instructions for adding to (if you have more than 16K of computer memory) or revising LETTERMAN's list of words.

The cassette and the diskette versions differ slightly. Both versions work as described above. However, the diskette version offers some added features. You can request hints if you get stuck. You can also choose to play under a time limitation for making each guess. And the program can keep track of as many as nine players' turns and scores.

The authors invite comments by mail and telephone.

REVIEW COMMENTS
The graphics features and lively, friendly approach used in every aspect of LETTERMAN make this program especially appealing.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10096
Diskette	32K	$24.95	APX-20096
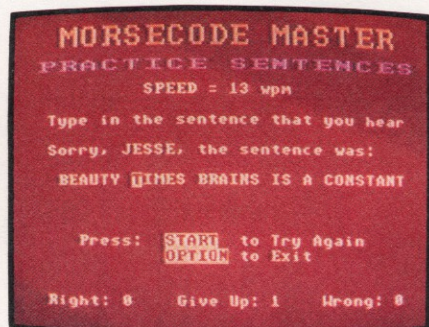
MORSECODE MASTER
by James Bayless

Recommended for ages 8 and up
Written in BASIC

Learn and practice characters, words, and sentences in Morse code

If you're an aspiring amateur radio operator, you know you have to learn Morse code thoroughly before you can be licensed. That used to mean hours of drudgery with charts of dots and dashes. Somehow, no matter how long you practiced, the dots and dashes on the charts seemed completely different from the beep sounds you heard when Morse code was actually used. And learning characters one by one was no way to prepare for the complete sentences you'd have to decipher.

MORSECODE MASTER gives you a way to practice that's both realistic and fun. You begin by typing the character (letter, number, or punctuation mark) you want to learn. The program sounds the code for that character three times in long and short beeps. When you're ready to practice, you can listen to characters chosen randomly and try to identify them.

Then you can practice with words. The program signals whole words (from its repertoire of 400) and you type them in response. If you don't recognize them, you can ask for the answer.

Finally, you can practice with complete sentences as your proficiency grows. This is the most accurate simulation of what it's like to use Morse code. At any time, you can vary the speed and pitch of the drills.

The author invites written comments and questions.

REVIEW COMMENTS
Features like complete sentences and changeable speed and tone make this the best teaching program of its kind.

The user manual features an appendix with a chart of Morse code signals.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$29.95	APX-10211
Diskette	32K	$29.95	APX-20211

MY SPELLING EASEL
by Al P. Casper

Recommended for ages 3-10
Written in BASIC and machine language

Paint landscapes in your computer by typing letters and spelling words

Have you ever seen an artist set up an easel at the beach? It doesn't take long before a crowd gathers. You can expect the same thing to happen when you set up MY SPELLING EASEL for children. The pictures they create are so captivating that everyone wants to get into the act.

Each time a word appears at the bottom of the screen, the child types one or more letters. The word might be "dog" or "hills." A picture representing the word appears, until the child has composed a whole fanciful landscape. And for fun, he can easily change the colors of his picture. Children can play this multilevel game with the keyboard or a Joystick Controller. In the "easy scene," the child can press any letter to add a picture to his landscape. The next level requires a key of a letter in the word. The third level calls for each letter of the word in any order, and the fourth calls for all the letters in order. If nobody's playing, the program automatically creates landscapes.

The author invites written questions and comments:

REVIEW COMMENTS
Al Casper, author of COUNTER, has come up with another unique educational challenge for kids. Beginning readers will love this program. Not only can a non-reader cause a picture to be displayed by touching any key, but newly successful readers can be challenged to type a whole word and display its picture on the TV screen.

The user manual gives simple instructions and includes a Quick Reference.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$29.95	APX-10200
Diskette	24K	$29.95	APX-20200
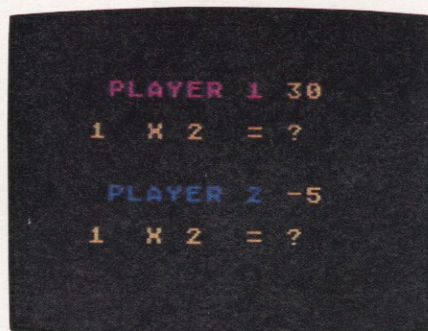
NUMBER BLAST

by Richard Wiitala

Recommended for ages 6-16
Written in BASIC

A multiplication and addition game for 1-2 players

Who doesn't like color, sound, and action to perk up tedious memory drills? Here's a one- or two-player number drill combining quick thinking with quick reflexes. In the two-player version of NUMBER BLAST, you practice your multiplication and addition while working your joystick to "blast" to the correct number more quickly than your opponent. But be careful — incorrect answers cost you points. Depending on the kind of number drill chosen, either the first to score 200 points or the player with the higher score at the end of a set number of problems is the winner. In the one-player version, you can practice your joystick techniques and response speed while blasting your way through the drills. You can select a slow, medium, or fast joystick speed.

NUMBER BLAST offers practice in random addition problems with numbers ranging from 1 to 20; addition tables from 1 to 9 with one number picked at random; and integer addition problems with numbers ranging from −20 to 20. It also offers random multiplication problems with numbers ranging from 1 to 12; multiplication tables from 1 to 9 with one number picked at random; and integer multiplication problems with numbers ranging from −12 to 12.

The author invites written questions and comments.

REVIEW COMMENTS

The joystick aspect of NUMBER BLAST, which is quickly mastered, makes this number drill fun for youngsters. The program also uses color and sound to enliven the drills.

REQUIRES

ATARI BASIC Language Cartridge
A set of ATARI Joystick Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$17.95	APX-10097
Diskette	24K	$17.95	APX-20097
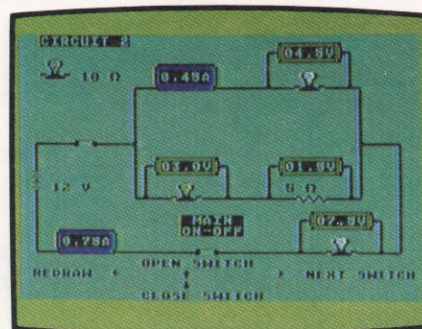
CIRCUIT LAB

by Mark Davids and Sheldon Leemon

Recommended for ages 14 and up
Written in BASIC

Build and test Direct Current electrical circuits

Here's an imaginative program that lets you build an electrical circuit on your TV screen. If you plan everything right, a light bulb snaps on to congratulate you! The program is invaluable in school electronics and physics labs, but it's also useful to anyone wanting to learn about electric circuits.

The program allows you to work with series, parallel, or combination series/parallel circuit layouts. You use a joystick to place switches, light bulbs, resistors, ammeters and voltmeters in the circuit. After building the circuit, you close the main switch and the circuit comes to life. The meters show voltages and currents, and the bulbs even light. You'll see how voltage, current, and resistance are related. If the light bulb doesn't light up, you can redraw the circuit, or replace the components.

If you're working on your own, and find that your circuit needs modifying, the manual gives you plenty of help. It explains design theory in some detail, including the appropriate laws of physics. Complete formulas and diagrams help you test your circuit, calculate the effect of the values, and show you how to do the calculations.

The authors invite written questions and comments.

REVIEW COMMENTS

Tested in high school physics and electronics classes, this program makes electronics simple to understand, and provides interesting insights into physics principles.

REQUIRES

ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20215

SPELLING GENIE, Rev. 2.0
by Dale Disharoon

Recommended for ages 5-14
Written in BASIC

Four one-player spelling games using preset lists or your own

SPELLING GENIE has so much magic and whimsy that children will want to play its four spelling games time and time again. Now with Revision 2.0, you have the option of saving your own word lists to a diskette or cassette. (There's also a slow game, Tip Off.) Teachers and parents will welcome the program's versatility. Along with nine predefined spelling lists, SPELLING GENIE accommodates any spelling list children need to practice.

SPELLING GENIE features four very different approaches to mastering spelling skills. In Pop On, a word flashes briefly and the child then types in the same word. In Mix Up, all the letters of a word appear in random order and the child types in the complete word. In Tip Off, a one-letter clue appears in its proper place, then disappears and is replaced by a letter in another position. SPELLING GENIE also has a tournament option for playing all four games consecutively. In each exercise, players can't go on to another word until typing the current one correctly, but the program helps out in various ways to avoid discouragement.

A child playing alone works against a countdown clock to spell as many words as possible correctly. Two players can compete against each other for the winning score. All games are playable using the computer keyboard, or a Joystick Controller, or a combination. Children can also print their spelling lists for futrther study.

REVIEW COMMENTS
The four different games offer good reinforcement of word recognition and spelling skills.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
One ATARI Joystick Controller per player
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10145
Diskette	24K	$24.95	APX-20145
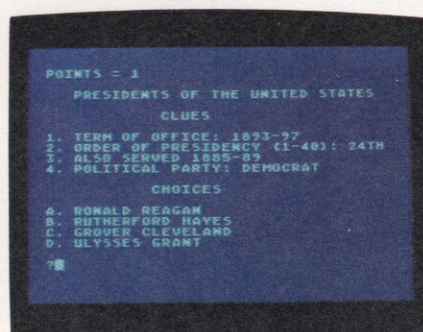
PRESIDENTS OF THE UNITED STATES
by Gary A. Dacus

Recommended for ages 10 and up
Written in BASIC

One-player quizzes on U.S. presidents

Which president can women thank for giving them the vote? If you can't name the man, then you need PRESIDENTS OF THE UNITED STATES. This one-player quiz has two levels. On the novice level, you select a name from four choices; on the advanced level, you type in a president's first and last name. Both levels give you clues. Study the clues carefully because you have only one chance per question. The program displays a running total of your correct answers as you play and your final total at the end of the 40 questions. The game remains a challenge because the clues change from game to game. Oh yes, in case you've forgotten, Warren Harding gave women the vote.

The author invites written questions and comments.

REVIEW COMMENTS
This straightforward quiz program is mostly text, using graphics only for the initial display screen. The programming routines used in the fill-in part let you use various forms of a president's name.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$17.95	APX-10068
Diskette	32K	$17.95	APX-20068

PROGRAMS BY THE MINNESOTA EDUCATIONAL COMPUTING CONSORTIUM

The Minnesota Educational Computing Consortium (MECC) assists users and educational member-systems in coordinating and using computer resources through cooperative planning.

All MECC programs come with documentation prepared by MECC, including materials for background and follow-up activities.

These programs are not currently compatible with the ATARI 1200XL Home Computer.

The following requirements and order information apply to each MECC program available through APX.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	16K	$29.95	see below

METRIC AND PROBLEM SOLVING (APX-20138)

Minnesota Educational Computing Consortium

Recommended for grades 2-6
Written in BASIC

Use these seven programs to practice the metric system and develop problem solving techniques:
● METRIC ESTIMATE — estimate line segments in centimeters and millimeters.
● METRIC LENGTH — convert from one metric unit to another.
● METRIC 21 — play a game of metric blackjack with the computer.
● BAGELS — use clues logically to guess a randomly-selected two- to four-digit number.
● HURKLE — play a game to learn to locate points on a number line or learn the coordinate system.
● NUMBER — guess a number from logical clues.
● TAXMAN — play a game to learn factors and prime numbers.

THE MARKET PLACE (APX-20162)

Minnesota Educational Computing Consortium

Recommended for grades 3-8
Written in BASIC

THE MARKET PLACE contains four simulations for teaching basic economic concepts: finding the optimal price based on sales, setting production levels, advertising budget, and setting price to maximize income. The programs even display financial reports.
● SELL APPLES — find the best price based on the number of apples sold (it's different each time).
● SELL PLANTS — set a selling price, with certain fixed costs. Then vary the advertising for five days to learn the best price and the best use of advertising.
● SELL LEMONADE — up to six lemonade stand owners vary their production and advertising costs for 15 days to maximize profits.
● SELL BICYCLES — learn how pricing, advertising, and production levels affect supply and demand by managing two bicycle companies.

GEOGRAPHY (APX-20164)

Minnesota Educational Computing Consortium

Recommended for grades 4-10
Written in BASIC

The GEOGRAPHY diskette contains four programs for practicing identifying names and locations of cities, states, countries, and continents. Students select a geographical area, and the program displays problems to answer. The programs are: STATES, CAPITALS, CONTINENTS, and COUNTRIES.

EARTH SCIENCE (APX-20160)

Minnesota Educational Computing Consortium

Recommended for grades 5-12
Written in BASIC

The EARTH SCIENCE diskette contains five programs:
● EARTHQUAKES — locating epicenters, and solving problems on primary and secondary waves, and lag time.
● MINERALS — identifying 29 minerals.
● SOLAR DISTANCE — understanding distance in space by imaginary travel in different vehicles.
● URSA LESSON — studying star patterns in five northern hemisphere constellations.
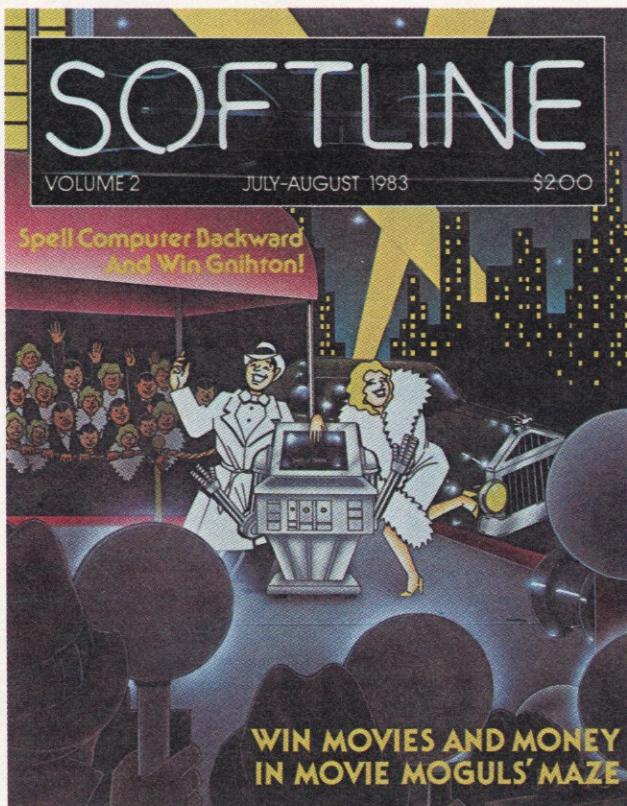● URSA ROTATION — simulating patterns of rotation of constellations on any day of the year.

OPTIONAL
One ATARI Joystick Controller

ELEMENTARY BIOLOGY (APX-20136)

Minnesota Educational Computing Consortium

Recommended for upper elementary-
junior high school levels
Written in BASIC

The ELEMENTARY BIOLOGY diskette contains three programs:
● CIRCULATION examines circulation in a fish with a two-chambered heart. Color graphics show a blood cell moving throughout the circulatory system.
● ODELL LAKE focuses on ecological concepts in a lake. Students role play a fish trying to survive encounters with other fish and organisms.
● ODELL WOODS teaches ecological concepts, using the example of a North American animal who makes the decisions necessary to survive.

PREFIXES (APX-20163)

Minnesota Educational Computing Consortium

Recommended for grades 3-6
Written in BASIC

PREFIXES contains seven programs highlighting the common prefixes "un", "re", "dis", "pre", and "in". The first part of each lesson defines the concept of a prefix and the definition of the prefix being studied, with examples and graphics to clarify the meaning. The second part is an exercise to reinforce the concepts just presented (for example, completing sentences with the appropriate word plus prefix). Two games encourage students to review the material. Since the program selects questions randomly, students can repeat practices without repeating the same sequence of problems.

INSTRUCTIONAL COMPUTING DEMONSTRATION (APX-20137)

Minnesota Educational Computing Consortium

Recommended for teachers
Written in BASIC

The INSTRUCTIONAL COMPUTING DEMONSTRATION highlights some techniques used in MECC programs, such as drill and practice, simulation, educational games, problem solving and demonstration tools. The six programs feature skills used in different school subjects: RHYTHM is a music drill; BASE TEN reinforces multiplication skills; EARTH-QUAKES is a science simulation; WORDS is a word game similar to Concentration; SLOPE demonstrates the concepts of slope and intercept; and LEMONADE is a social studies decision-making simulation.

OPTIONAL
One ATARI Joystick Controller

MUSIC I — TERMS AND NOTATIONS (APX-20139)

Minnesota Educational Computing Consortium

Recommended for grades 5-10
Written in BASIC

This set of programs is the first of three diskettes focusing on music theory drill and practice. Students choose the level of difficulty that's appropriate for them. The program keeps track of the problems answered correctly and selects subsequent problems from ones the student hasn't tried or has answered incorrectly. The programs are: NOTE TYPES, NAME THE NOTE, KEY SIGNATURES, TERMS, and ENHARMONICS.

MUSIC II — RHYTHM & PITCH (APX-20172)

Minnesota Educational Computing Consortium

Recommended for grades 5-10
Written in BASIC

This is the second in a series of diskettes for music theory drill and practice. It contains the following programs:
● COUNTING drills time signatures, note and rest type, and counting.
● AURAL INTERVALS and VISUAL INTERVALS gives practice in recognizing intervals by ear and sight.
● WRONG NOTE compares written and performed pitch patterns.
● MISSING NOTE provides drill in elementary melodic dictation.
● RHYTHM teaches comparison of written and performed rhythm patterns.
● RHYTHM PLAY trains in performing rhythm patterns.

> **Please note.** MECC programs are usable only with those ATARI 810 Disk Drives having a data separator circuit. Drives with a blue "DS" sticker on the disk drive carton have this circuit.

MUSIC III — SCALES & CHORDS (APX-20161)

Minnesota Educational Computing Consortium

Recommended for grades 3-10
Written in BASIC

This is the third diskette in a series for music theory drill and practice. The programs provide aural practice in recognizing musical tones:
● WHOLE-HALF — the computer plays a series of pitches, and the student determines the whole steps and half steps.
● FIND THE HALF — the computer plays a series of pitches, and the student selects between which two pitches a half-step interval occurred.
● TRIADS — identify arpeggiated major, minor, augmented, and diminished triads.
● SCALES — identify major scales, three minor scales, and four modes.
● SEVENTHS — identify major, minor, dominant, half diminished, and full diminished seventh chords.

ATLAS OF CANADA quizzes you on the provinces, capitals, and landmarks of Canada, using an outline map on the screen. REQUIRES: ATARI BASIC Language Cartridge.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10093
Diskette	32K	$24.95	APX-20093

TEXT ANALYST, Rev. 2, analyzes the reading level of a text file based on the Dale-Chall Readability Formula. Rev. 2 lets you analyze several files in sequence and specify the size of the sample. REQUIRES: ATARI BASIC Language Cartridge.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$17.95	APX-20142

FROGMASTER is a fast-moving competitive game for one to four players that teaches the use of conditioning to train animals. The computer simulates a primitive brain. REQUIRES: ATARI BASIC Language Cartridge, One ATARI Joystick Controller per player.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$24.95	APX-20131

HICKORY DICKORY teaches children to tell time by a traditional clock, and to convert the information to digital time. REQUIRES: ATARI BASIC Language Cartridge.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$17.95	APX-10071
Diskette	24K	$17.95	APX-20071

The quarterly APX contest

All programs accepted by APX by the deadlines noted below automatically become contestants in that quarter's judging. First, second, and third prize winners in each of four categories receive ATARI hardware and software products (including APX products) as prizes. The *Consumer* category has larger prize values, reflecting our commitment to the home computer user. The categories (we've revised some of these titles for clarity and brevity) and their prize values are*:

1 Consumer (Entertainment and Personal Development)

1st prize $3,000
2nd prize $2,000
3rd prize $1,000

2 Home Management

3 Learning

4 Systems/Telecommunications

1st prize $2,000
2nd prize $1,500
3rd prize $ 750

Programs accepted by APX on or before October 1, 1983 will be eligible for the 1983 grand prize — $25,000 in cash!

To request an APX Program Submission Packet, containing complete instructions for submitting programs, write or call APX.

*Based on manufacturer's suggested retail prices.

Contest rules

1. Only programs accepted by APX are eligible for the contest.

2. A program is eligible for the prizes in the category in which it is accepted. Atari determines this category.

3. A program is eligible for the quarterly prizes awarded in the quarter in which it is first accepted and for the grand prize of the contest year in which the quarter falls.

4. A program qualifies only once for a quarterly prize and once for a grand prize. Revisions and improvements do not qualify a program for another prize in this contest.

5. A program is judged on a variety of factors by a panel of judges selected by Atari. The judges consider a program's

- User interface and overall design
- Originality
- Ease of use
- Implementation
- Documentation
- Interest level

6. Atari employees and their families are not eligible for the contest.

7. Atari pays for shipping prizes anywhere within the United States. Foreign winners are responsible for any additional shipping charges.

8. The decisions of the judges are final.

9. This contest is void where prohibited by law.

1984 closing dates

The dates by which a program must be accepted for a contest judging are as follows:

Date	Contest
January 3	Spring contest
April 1	Summer contest
July 1	Fall contest
October 3	Winter contest and 1984 grand prize

APX: Programs by our users...for our users

Two years ago, Atari, Inc., created the ATARI Program Exchange to manufacture, distribute, and promote programs written by consumers for ATARI Home Computers.

Since then, APX (pronounced "apex") has grown by leaps and bounds. Today we offer a wide range of useful and imaginative programs tailored to your needs and interests. And that's what makes APX programs so popular: they were designed by people like you with your needs in mind.

Hundreds of programs arrive at APX each quarter in the hope of being picked for distribution by APX. To encourage users to send us submissions, and to help keep our quality high, new products compete for prizes in our quarterly contest, and an annual grand prize of $25,000 in cash is awarded to the program judged best of the year. Any program accepted by APX, prizewinner or not, brings its author royalty payments based on sales.

Each program submitted undergoes a multilevel review. First it must pass a set of checkpoints. We check for such things as completion of all necessary paperwork, correct copyright notice display, verification of specified minimum computer memory, and so on.

Next we consider how well a program's content relates to its APX category. For example, in educational programs, all answers entered by the user must result in a meaningful and appropriate response from the program: positive responses must be clearly positive; negative responses must be clear but not discouraging. As part of the content check, we test all transfer of files to and from data bases. This means the author must provide sample data files with the program.

When a program passes both these initial checks, it goes before the APX Review Board. When the board gives a program its okay, it qualifies for acceptance in the next edition of the APX Catalog. If the program shows promise but is not yet up to the APX standard, the author receives a detailed letter outlining changes that could be made to improve the program. If the author makes these improvements, the board can re-evaluate the program. Programs that do not pass the board's review receive a standard rejection letter.

If you are interested in submitting your program to APX, use the form in this catalog to request an APX Program Submission Package, which includes information for both domestic and international authors. Or you can call the APX toll free numbers: 800/538-1862 (outside California, but in the continental U.S.) or 800/672-1850 (within California). Or write to us at P.O. Box 3705, Santa Clara, CA 95055.

We look forward to hearing from you!

Order Form

Please read all the ordering information before filling out this form

APX
ATARI® Program Exchange

Name _____

Address _____

City _____

State/Country _____ Zip Code _____

Phone ( ) _____

_____
(alternate shipment method if UPS does not deliver in your area)

Please indicate the amount of RAM you have

_____ K

Qty	Order Number	Description	Price Each	Total Each
	APX			
	APX			
	APX			
	APX			
	APX			
	APX			
	APX			
	APX			
	APX			
	APX 9 0 0 0 9	APX Product Catalog, fall 1983 edition	$2.00	

Subtotal of all items ordered	
California residents add 6.5% sales tax	
Shipping & handling charge	$2.50
TOTAL	

ATARI PROGRAM EXCHANGE
P.O. BOX 3705
SANTA CLARA, CA 95055

**Send all orders
to this address**

**Toll-free numbers for
credit card orders**
Within California 800/672-1850
Elsewhere in Continental U.S.A.
800/538-1862

Or call direct at 408/727-5603

Payment —
☐ Check/Money Order
☐ VISA
☐ MasterCard
  Interbank No: _____
Credit card account no.

_____
Credit card expiration date _____
Signature (as appears on card)

**Minimum order
$10.00, plus
shipping and
handling**

Program Submission Packet
Request Form

Fill out this request form to obtain complete information on submitting programs to APX.

Name _____

Address _____

City _____

State/Country _____

Zip Code _____

Phone (   ) _____
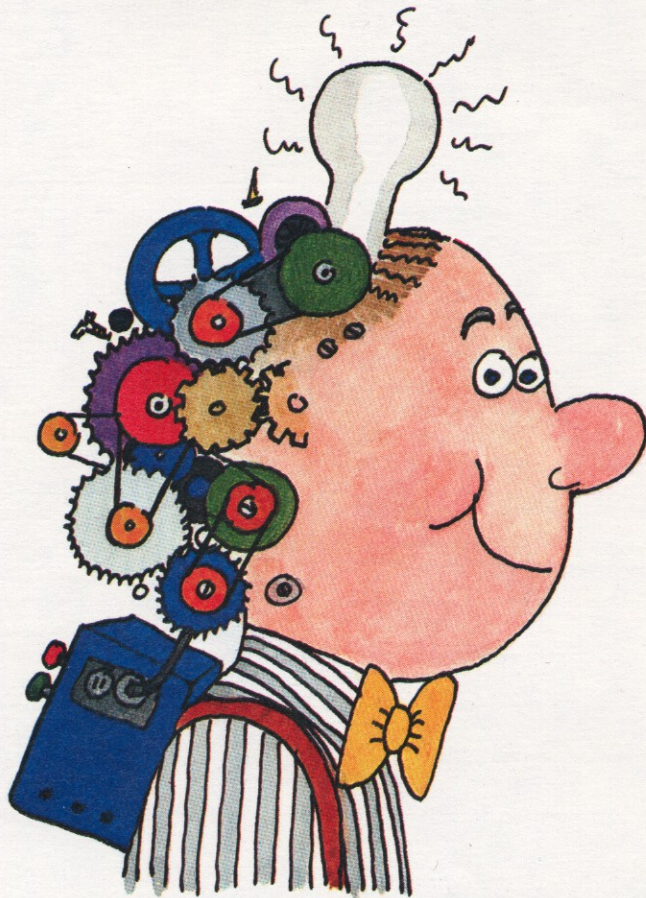
Computer background:

_____ None

_____ Computer user/hobbyist

    _____ Have not used ATARI Computers

    _____ ATARI Computer user

_____ Professional microcomputer software developer (have ads in trade journals and/or existing products

    _____ Have not used ATARI Computers

    _____ ATARI Computer user

_____ Other (please specify):

Area(s) of interest for writing software for ATARI Computers:

EASYGRADER, REV. 1.1

by Dan Hale of A. D. Enterprises

Recommended for teachers & school administrators
Written in BASIC

EASYGRADER helps reduce the effort needed to organize and produce class records. You can store student grades, compute averages, assign final grades, produce statistics, and print reports with this comprehensive package.

You indicate class size, number of assignments, lengths of student and assignment names, and specify your own grading standards (either curve or standard percentage grading). Add or delete student records, or skip students excused from an assignment. Then print final grade reports, class average statistics, and a frequency plot of final grades. Rev. 1.1 has more color and a new menu. Design changes make it easier to use.

REQUIRES
ATARI BASIC Language Cartridge
DOS 2-formatted diskette(s) for storing data

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$24.95	APX-20152

FLAGS OF EUROPE

by Gary A. Dacus

Recommended for ages 8 and up
Written in BASIC and machine language

FLAGS OF EUROPE is a colorful program that can help you quickly become an expert at recognizing European flags. Select from two kinds of quizzes for identifying each illustrated flag: multiple choice quizzes and the more challenging fill-in-the-blank quizzes. The program helps out with clues in response to incorrect answers, then waits for another guess. Correct answers are rewarded with a few bars of the country's national anthem or a native song.

FLAGS OF EUROPE remains a challenge after repeated use, since the order in which the flags appear varies from one session to the next, as does the selection of responses in the multiple choice quizzes. See how long it takes you to become a European flag wizard!

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$24.95	APX-20149

WORDMAKER

by Dale Disharoon

Recommended for ages 6 and up
Written in BASIC

WORDMAKER is a competitive game for people of all ages who enjoy words and reading. It's an effective practice tool for students. The more you play, the better you get.

One or two players use Joystick Controllers to make three- or four-letter words. In a two-player game, you race against time to fill your side of the screen with more words than your opponent. At the end of the game, the winner's name appears. Now you can either reuse all the words in the next game, or delete those words. (If you delete them, the game gets harder because you must think of different words.) In a one-player game, you try to surpass your own best score.

WORDMAKER's printout option lets you study your words after the game.

REQUIRES
ATARI BASIC Language Cartridge
One or two ATARI Joystick Controllers

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	32K	$24.95	APX-10099
Diskette	40K	$24.95	APX-20099

WORD SEARCH GENERATOR

by Max Mulliner

Recommended for ages 6 and up
Written in BASIC

Teachers, students, and word lovers will all enjoy this combination teacher's aid and game. Use WORD SEARCH GENERATOR's two sample word lists, or create your own to tailor a one- or two-player game to a specific list of up to 30 words. Your objective is to locate words hidden in a grid of letters. The program has a wide array of options: you can change the word list, the size of the grid, and the time limit. You can print the grids and solution keys for them.

REQUIRES
ATARI BASIC Language Cartridge
One Joystick Controller per player

OPTIONAL
ATARI 825 80-Column Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$24.95	APX-20140

I'M DIFFERENT!

by Kathleen and Philip Bergh

Recommended for ages 3-7
Written in PILOT and machine language
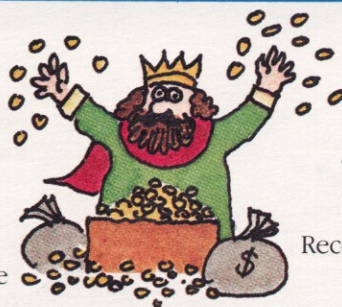
I'M DIFFERENT! is our first ATARI PILOT program. Designed by an experienced teacher and a professional programmer, it's one preschoolers are sure to enjoy. The program introduces the concepts of "same" and "different" in an entertaining, noncompetitive game that doesn't keep score and has no time limit. With the Joystick Controller (in right-handed or left-handed position), a child guides an invisible turtle to the general area of the graphic design that differs from three others displayed on the screen. The turtle leaves a trail wherever he goes. Correct responses cause flashing colors and a merry tune.

Five graphics choices range from differences in color or shape only, to classifying objects. I'M DIFFERENT! can help children learn hand-eye coordination, observation, classification, concentration, and other essential readiness skills.

REQUIRES
ATARI PILOT Language Cartridge (CXL4018)
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20183

THE MAGIC MELODY BOX

by W. Wes Horlacher

Recommended for ages 3 and up
Written in BASIC

THE MAGIC MELODY BOX is a fast, easy, and fun way to introduce young and old to music composition. Use a Joystick Controller to select one of twelve rhythm patterns, and then draw a melody line in the magic box. As you draw, the notes play, and you can back up and redraw your melody at any time. Then the program uses your melody line and rhythm selection to compose about a minute of harmonized music in a popular song format.

This music program doesn't use traditional musical notations, such as measures, notes, and clefs. Instead, it relies on simpler abstract concepts like graphics, balance, and themes. It doesn't teach how to read or play music; rather it teaches how to create music.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$17.95	APX-10182
Diskette	24K	$17.95	APX-20182

THE MIDAS TOUCH

by Duane Bolster

Recommended for ages 8 and up
Written in BASIC

THE MIDAS TOUCH won't turn everything to gold, but this competitive word game provides hours of fun and *thinking*.

You can select a game for as many as four players, and you can choose between two difficulty levels. Your objective is to fill in the blanks on the screen to guess a phrase. You take your chances by spinning a roulette wheel, but you also have to think fast to come up with letters in a time limit. You win dollar values for your answers by turning the letter into a mineral (gold, silver, oil, or rock). At the end, the winner keeps his winnings, while everyone else's score turns to zero.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	32K	$17.95	APX-10115
Diskette	32K	$17.95	APX-20115

MUSICAL COMPUTER-THE MUSIC TUTOR

by Computer Applications Tomorrow

Recommended for ages 6 and up
Written in BASIC

MUSICAL COMPUTER—THE MUSIC TUTOR appeals to the untapped musician in all of us. Good graphics, a catchy tune, and simple explanations make this program an excellent educational tool for all ages — even young children.

MUSICAL COMPUTER gives you an overview of the mechanics of music. You quickly learn about musical symbols, treble and bass clefs, rhythm, and sharps and flats. You also learn the names of every musical note through simple phrases (such as "FACE" for some of the notes in the treble clef). You see how musicians read music by counting notes — whole, half, quarter, and eighth — and the rests in between. You even have time built-in to practice, practice, practice!

REQUIRES
ATARI Basic Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$17.95	APX-20098

ALGICALC*

by The Soft Warehouse

Recommended for ages 14 and up
Written in BASIC

ALGICALC gives you a quick way to perform operations in symbolic algebra and calculus. It's easy to use, and it has help screens you can display while using the program. To perform an operation, you type an expression, and the program then expands it, factors it, or differentiates it, as you request. After the result is displayed, you can enter another expression. In addition, you can assign the results to variables for use in later expressions, letting you perform a sequence of related operations.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$24.95	APX-10126
Diskette	32K	$24.95	APX-20126

*ALGICALC is a trademark of The Soft Warehouse.

POLYCALC*

by The Soft Warehouse

Recommended for ages 14 and up
Written in BASIC

POLYCALC is a computational tool for performing symbolic algebra and calculus operations. It differs from ALGICALC in that it supports polynomials that are generalized to permit fractional and negative powers of variables, and the program can use many unassigned variables, whereas ALGICALC can use only one. However, POLYCALC is essentially a polynomial system rather than a rational expression system. The program is invaluable to professionals as well as students and teachers of algebra and calculus.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$24.95	APX-10127
Diskette	32K	$24.95	APX-20127

*POLYCALC is a trademark of The Soft Warehouse.

$$\int_0^1 x^{-2} y^3 \left[\frac{(3x-4)^3}{xyz} \right]^2 dy\,dx$$

CALCULUS DEMON*

by The Soft Warehouse

Recommended for ages 16 and up
Written in BASIC

CALCULUS DEMON (third in the series that includes ALGICALC and POLYCALC) provides a comprehensive tool for automatically deriving symbolic partial derivatives and indefinite integrals of expressions. It's best at calculus, although it contains some algebraic capabilities. It also offers some trigonometric, logarithmic, and exponential simplification. In contrast, ALGICALC and POLYCALC are better at algebra.

The program provides automatic and optional mathematical transformations to simplify results or aid integration. Unlike most programming languages, which can evaluate an expression only if all variables have numeric values, CALCULUS DEMON can do true non-numeric operations.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	32K	$24.95	APX-10155
Diskette	40K	$24.95	APX-20155

*CALCULUS DEMON is a trademark of The Soft Warehouse.

THREE R MATH CLASSROOM KIT

by Dan Rohr

Recommended for educators (for grades K-8)
Written in BASIC

THREE R MATH CLASSROOM KIT is a comprehensive package of three programs:

● A system students can use to drill on addition, subtraction, multiplication, and division problems on 101 difficulty levels;
● A worksheet printing program for practice drills (with or without answers);
● A gradebook record-keeping program for individual students and whole classes.

If you've looked at programs like this one, you're probably surprised at the low price for all the features available. But the decimal point is in the right place!
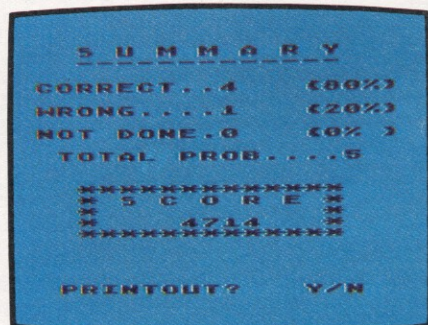
REQUIRES
ATARI BASIC Language Cartridge
ATARI 825 80-column Printer or Epson MX-80 Printer
Diskettes for storing records

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$49.95	APX-20203

THREE R MATH HOME SYSTEM
by Dan Rohr

Recommended for ages 5-13
Written in BASIC

Bring the widely acclaimed Three R Math System into the home

Parents whose children are using THREE R MATH CLASS-ROOM KIT in school tell us they're impressed. The program gives their children work on the precise level they need, it analyzes their progress in detail, it holds their interest with its novel approach, and it encourages them to keep trying. Because of its success in the classroom, an easy-to-use, one-disk version, which omits the grade book feature, was created for home use.

It offers all the same lively (but educationally sound) drills and analyses of the classroom system for the home. Not only does the program give children as much time as they want to practice, but it is also an ideal way for parents and children to work cooperatively.

Parents select one of 101 skill levels of addition, subtraction, multiplication, and division, and incorporate it into a five-letter password specifying the speed, number of problems per assignment, and total time allowed. The child has only to type his name and the password, and the drills begin. The program congratulates and encourages him as he works, and then summarizes his results. It's easy to print a complete analysis of his progress along with extra problems. Worksheets can be printed on any of the 101 levels to supplement the drills on the screen. Answer keys are also available.

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
The user manual includes a complete guide to the 101 difficulty levels. It also suggests ways parents can help their children use the program most effectively.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer or Epson MX-80 Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$24.95	APX-20208

VIDEO MATH FLASH CARDS drills math problems in the familiar flash card format. Work to increase speed and earn rankings like Math Wiz! REQUIRES: ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$17.95	APX-10048
Diskette	24K	$17.95	APX-20048

ESCAPE TO EQUATUS: Help the desperate Mathemen escape from a hostile planet and return to the safety of their robot ship — only your arithmetic skills can save them! REQUIRES: ATARI BASIC Language Cartridge, One ATARI Joystick Controller.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$24.95	APX-10190
Diskette	24K	$24.95	APX-20190

MATH MISSION teaches computational skills in an exciting space game. Refuel a spaceship rocketing across the screen by supplying correct answers to math problems. REQUIRES: ATARI BASIC Language Cartridge. OPTIONAL: One ATARI Joystick Controller.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10193
Diskette	24K	$24.95	APX-20193

MATH*UFO: Can an exciting arcade game improve your arithmetic? Position your guns beside the correct answers to math drills, and then fire at the invading UFO's. REQUIRES: ATARI BASIC Language Cartridge, One ATARI Joystick Controller per player.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$24.95	APX-10151
Diskette	32K	$24.95	APX-20151

MATHEMATIC-TAC-TOE: Sharpen your computation skills! Choose from 15 difficulty levels, set a time limit, then place an X or an O in the boxes with correct problem answers. REQUIRES: ATARI BASIC Language Cartridge.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$17.95	APX-10082
Diskette	24K	$17.95	APX-20082
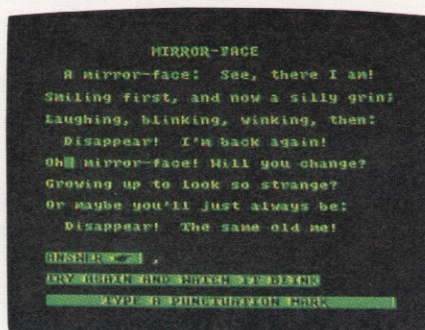
PUNCTUATION PUT-ON

by John D. Perron

Recommended for ages 8-14

Written in BASIC

Practice punctuation in dialogue, narrative, and poetry

Writers use punctuation to express the pauses, gestures, and emotional content of speech. But when children learn to punctuate, they often have to study arbitrary rules, and they apply the rules to lists of sentences that don't appear in any natural context. Eventually they find that *real* writers bend those rules to express themselves. PUNCTUATION PUT-ON puts the student in the place of the writer, making judgments about what punctuation marks enhance the program's dialogue, narrative, and poetry selections.

The program drills the use of the exclamation point, quotation marks, colon, semicolon, question mark, apostrophe, comma, and period. Young children might not know how to type all these punctuaton marks, so there's a special section for them. When they're ready to tackle the program's "stories" section, they choose a short anecdote, a poem, or a dialogue. The program displays the selection with all the punctuation marks intact, and then replaces one mark with a flashing cursor. The child types in the mark belonging in that place. The program congratulates him, often using his name. If he makes a mistake, he sees the correct answer, and he can try again. Children can see how many marks they got right out of how many tries. They can even see how many errors they made on each punctuation mark.

The manual discusses the theory behind the program and contains suggestions for determining the appropriate level for each child using the program.

The author invites written questions and comments.

REVIEW COMMENTS

The program teaches punctuation in an enjoyable, contextual environment. It's limited to five writing selections, and it doesn't detect examples having more than one acceptable answer.

REQUIRES

ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20205

WORDGO

by Greg L. Thrush and Marian Dillashaw

Recommended for ages 8 and up

Written in BASIC

Build word skills by blending letter combinations on a game board

Scholars tell us that English has one of the richest vocabularies of any language, because it has borrowed words and expressions from so many cultures. This is a great advantage for poets, but it makes it hard for children to build their language skills. They have to learn a wide variety of words *and* a system of spelling that doesn't seem to make sense. Traditionally, the only way to build vocabulary and spelling skills was by rote memory work.

Now there's a captivating game, WORDGO, that sharpens these essential skills. You choose one of two difficulty levels, and a grid of sixteen boxes containing word endings (such as "ank" or "ick") appears below one blend of initial consonants (such as "th"). Using your Joystick Controller, you position the cursor over one of the endings ("ank", for example) to form a word with the initial consonants above. If your choice forms a word ("thank"), that box is outlined, and you try again with a new word beginning. When you outline four boxes in a line (vertically, horizontally, or diagonally), you're rewarded. The more words you make, and the faster you work, the more points you score. You can compete against your own high score, or against your opponent's high score. You can multiply your score with double and triple intersecting lines.

If you try to create words you're not sure of, you might surprise yourself by making a word that really exists. If you do, you can request a definition of the word you've made (not always the most ordinary definition!).

The authors invite comments and questions by mail and telephone.

REVIEW COMMENTS

WORDGO is a fun way to build up vocabulary; some of the words and definitions are surprising. Joystick use makes it easy for a child to play.

REQUIRES

ATARI BASIC Language Cartridge
One ATARI Joystick Controller per player

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$24.95	APX-20212

Type RETURN to draw constellations?

STARWARE

by Harry Koons and Art Prag

Recommended for ages 14 and up
Written in BASIC

Sky map generator and constellation quiz

City lights, cloudy skies, and pollution needn't prevent you from stargazing. With STARWARE you can explore the heavens by way of your ATARI Home Computer. STARWARE displays the stars on your TV screen with the brilliance normally seen only by astronomers at remote mountaintop observatories. Its 900 star coordinates accurately locate all the constellations in both hemispheres. You can display high-resolution diagrams of each constellation and maps of the heavens visible from your home (or any other location) at any date and time this century, down to the second. Even the bright planets, sun, and moon are accurately located with respect to the stars. STARWARE takes about 4½ minutes to generate a complete high-resolution map.

The program prompts you for the necessary information, such as longitude, latitude, and time zone, to draw your requested map. You can look at a map in two ways — first with only the stars and then with the constellations outlined. STARWARE has beginner and advanced quizzes for testing your progress in learning to identify the program's 66 constellations.

The program also has handy features for telescope owners. It quickly calculates Local Sidereal Time (a time related to stars), letting you easily set the hour circle on your telescope. A "finder" option lets you specify the Right Ascension and Declination of the center of the map and the size of the field of view. This information is useful for locating objects in astronomy books and comets as they're discovered. Happy stargazing!

The authors invite written questions and comments.

REVIEW COMMENTS

With good program design and human engineering, STARWARE makes excellent use of the ATARI Computer's high-resolution graphics. Even novice astronomers will enjoy STARWARE.

REQUIRES

ATARI BASIC Language Cartridge | PAL |

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$24.95	APX-20111

FINI.

MAPWARE

by Harry Koons and Art Prag

Recommended for teenagers-adults
Written in BASIC

Create and store high-resolution world maps

With the MAPWARE programs you can create a wide variety of high-resolution world maps, store your maps, and display them whenever you like. MAPWARE contains nearly 9000 pairs of geographic coordinates for locating main land masses and islands on Earth. These maps are useful for such applications as games and simulations, tracking satellites, pointing amateur radio antennas, and teaching geography and cartography. The menu-driven programs create and display maps in four different projections: cylindrical (rectangular equal-spaced), orthographic equatorial, azimuthal equidistant, and general perspective (global). Try drawing a world map as you would see it from any distance above your hometown. The map creation program prompts you for the data needed, such as the longitudinal and latitudinal endpoints of your map.

MAPWARE comes on two diskettes — one containing the programs to display and create maps and one containing the coordinate data. You also need a blank formatted diskette for storing data for the maps you create. MAPWARE comes with five sample maps.

The authors invite written questions and comments.
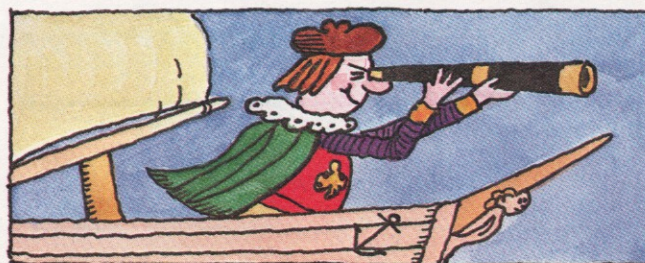
REVIEW COMMENTS

The maps look quite realistic; the amount of detail is impressive. The authors put a lot of work into MAPWARE.

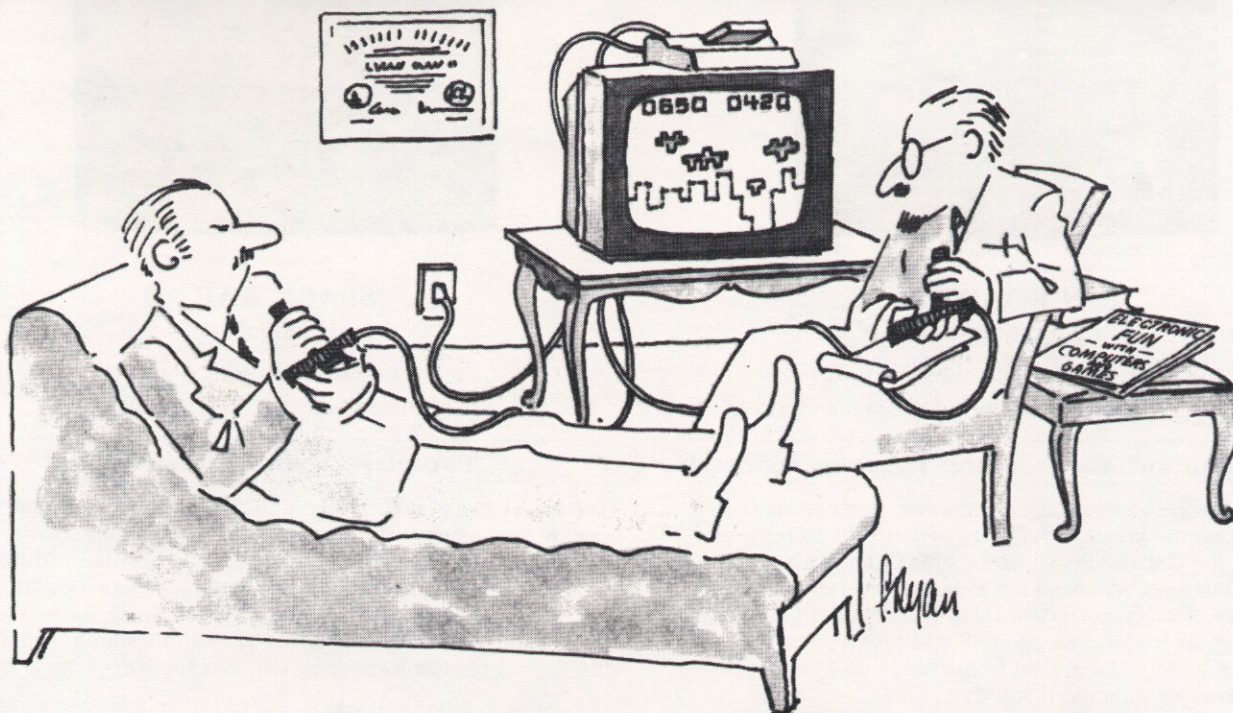### REQUIRES

ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$24.95	APX-20055

ION ROADWAY
by Jim Sommers

Recommended for ages 6 and up
Written in machine language

This endurance race requires lightning reflexes!

"You, Zarg, foremost landracer in the star system Altheta, are about to face the greatest challenge of your life: to represent Altheta in the Galactic Robot Races. Five I-Cars, each equipped with the most advanced ion energy converters known, are available for your use. You know the stakes: if you win, you will be set free to race again. If you lose, you and all memory of you will be erased from every mind in the star system. Now, go! Attempt, if you dare!"

You alone must master the joystick control of the I-Car — decide when to gain points by spinning out, navigate past four lethal configurations of robot cars, and never miss a chance to refuel at an energy platform.

At the same time, you must check your control panel when changing speeds (four forward, one reverse), monitor your energy level, check the distance to the next energy platform, and keep count of the number of cars you have left.

Do all this as the racetrack scrolls diagonally across your screen, as you avoid the robot cars swerving and darting around you, as you try with all your will to steer clear of a crash that will atomize your I-Car and leave only a mushroom cloud on the track.

Attempt, if you dare!

REVIEW COMMENTS
Top-quality sound and visual effects and fast action make ION ROADWAY a white-knuckle game.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10221
Diskette	24K	$24.95	APX-20221

SPACE WAR
by Jay R. Jaeger

Recommended for ages 6 and up
Written in assembly language

Two-player galactic shoot-out

The galaxy can't live in peace until you've vanquished the enemy space ship that threatens to dominate your solar system. You maneuver around the sun, using gravitational waves to propel your rocket fighter into an advantageous position. But watch out, because the enemy lurks, waiting for you to become a prisoner of the sun's gravity and a sitting duck for his Mark II photon torpedoes. Can you survive?

This game is a modern adaptation of the arcade-style game developed in 1962, SPACE WAR. You pilot your fighter through the solar system with your ATARI Joystick Controller, using the flashing sun at the center of the screen to slingshot you through the galaxy and to avoid your opponent's torpedoes. The only way that your enemy can destroy your ship is by scoring a direct hit with their missiles. You fight back by using your joystick button to release return volleys. The sun has no destructive effect on the rockets.

The two players can vary the effect of the gravity, changing it from a pull to a push, and vary the perimeters so the rockets either wrap around or bounce off the edges. You can vary the speed of play, and set a score limit of 10 or 21 points, or no limit, or play in the practice mode.

The author invites written comments and questions.

REVIEW COMMENTS
This is a very slick adaptation of an early '60s mainframe computer game, with several new options worked in.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10224
Diskette	24K	$24.95	APX-20224
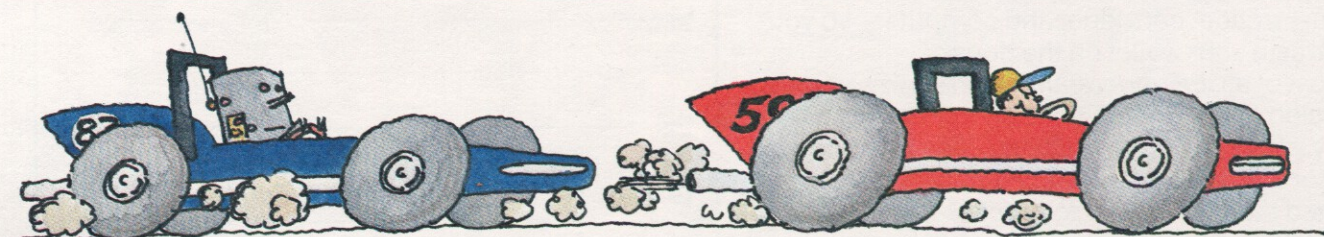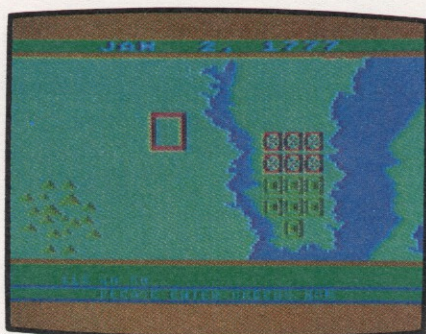
SARATOGA
by Paul Wehner

Recommended for ages 13 and up
Written in machine language

MOON MARAUDER
by Stephen Romejko

Recommended for ages 8 and up
Written in machine language

Revolutionary War strategic board game

The year is 1777. The American revolutionaries are waging a hopeless war against the Redcoats and Hessians of the British Empire. General Washington trusts you to foil the three-pronged attack from British commanders Burgoyne, St. Leger, and Howe. Your men are weary, but there's no time to spare. The strategic target of Albany, New York, must be defended at all costs. Suddenly the Redcoats are spotted marching up from New York City. The time has come, and you swing your troops towards the approaching force. . . .

You play on a large map of the East coast from Maine to Philadelphia and some inland area. You command the American forces, trying to destroy all the British forces by the end of the year, or to keep control of the strategic sites of Albany, Philadelphia, West Point, and Fort Ticonderoga. To do this, you're equipped with the American revolutionary army and local militia. Facing you are the British, consisting of Redcoats and Hessian mercenaries, led by the computer.

The troops are represented on the map by square markers (controlled by the joystick). The marker's travel, with a maximum of eight moves per turn, is affected by mountains and rivers. When two opposing counters are adjacent to each other, combat begins. The computer calculates the combat odds, taking into account muster, terrain, and direction. There are eight different scenarios to choose from, and the games can be saved to a diskette or cassette.

The author invites written comments and questions.

REVIEW COMMENTS
EASTERN FRONT buffs will enjoy this war simulation of the American Revolution. This game takes a couple of hours to complete, but it's interesting and challenging.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	32K	$24.95	APX-10228
Diskette	32K	$24.95	APX-20228
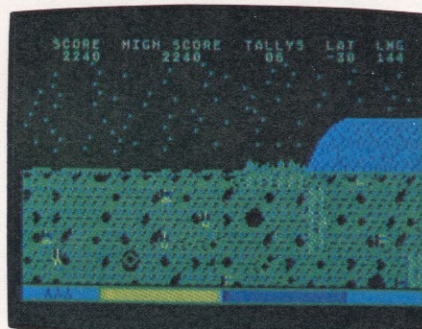
Attack enemy installations on the moon

You are the Earth's last hope. The evil lizard people from the Omega-J5 system have sent an expeditionary force to the moon, and they're building installations there for a final attack on the hapless Earth. Your orders are to attack with your Starfighter to give the Earth time to prepare her defenses. But beware, Omegan fighters and guided missiles patrol the airspace above the moon, eager to die to defend their bases. When it seems your mission is nearly complete, the enemy rebuilds the installations in greater numbers. Now to your fighter and good luck. . . .

Using your joystick, you pilot your fighter across the constantly scrolling screen, destroying bases and fuel tanks, and also winning points for shooting down enemy fighters and guided missiles. On the screen you get a satellite view of your fighter against the moon's surface. Your fighter can bank left and right, and also dive and climb, but if you come too close to the surface, you're likely to crash or slam into an installation or mountain. You can tell your altitude by the fighter's ground shadow, and a cockpit altimeter. If you fly too high, the targets will be out of attacking range, and if you're too low, you'll crash into mountains and targets. You replenish your fuel tanks by shooting enemy fuel depots, and win bonus points after destroying 35 targets, and then after 55, 75, 95, etc. At the completion of each skill level you're also rewarded with an extra ship.

In this one-player game, options include four skill levels, and the choice of play or practice mode. You have four fighters, and you need them all to survive the dogfights with the enemy fighters above the surface.

The author invites written comments and questions.

REVIEW COMMENTS
The satellite view greatly enhances the game play. The player can spot approaching targets and position his ship to destroy them and avoid ground relation problems during dogfights.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10226
Diskette	24K	$24.95	APX-20226

KANGAROO

Recommended for ages 5 and up
Written in machine language

Help Mom save Baby Kangaroo from the fruit-throwing monkeys

Stop monkeying around! You have a baby kangaroo trapped in a cage in a tree high above the ground, and her mom wants to get her down. That looks simple: help Mom climb the ladders and make some superjumps and she'll rescue Baby soon enough. There's just one catch. Several monkeys are trying to knock Mom down by pelting her with fruit.

This is the ATARI Home Computer version of KANGAROO, the popular arcade game. You use the joystick to guide Mom Kangaroo along tree branches, over some big jumps, and up ladders to get to Baby Kangaroo. Along the way she gains points by gathering fruit and punching out the mean monkeys. The monkeys will try to stop her by throwing fruit at her and knocking her off ladders. During each game, Mom must negotiate four separate playing fields. It's an exciting game for all ages, but particularly for young children.

REVIEW COMMENTS
An excellent re-creation of the arcade game. KANGAROO is produced under license with Sun Electronics Corporation.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$29.95	APX-20236

GETAWAY!

by Mark Reid

Recommended for ages 6 and up
Written in machine language

Find the loot and stash it in your hideout before the law nabs you

Quick! Around the corner! The sheriff is in hot pursuit! You've been racing all over town collecting loot and stashing it in your hideout. At first the heists were easy. As long as it was just a little cash here and there, the law wasn't too interested. But then you knocked off an armored van, and the heat's on. You'd better GETAWAY!

You use your Joystick Controller in this one-player game to drive your getaway car around a colorful town covering a scrolling map filling 35 screens. You can collect as much cash and other loot as you want before returning to your hideout. However, the more you're carrying around, the keener the law is on tracking you down. If you're planning a big heist, be sure to stop at a gas station to avoid running out of gas.

Radar blips help you detect nearby patrol cars and armored vans. As soon as you capture the three prizes and the armored van on one level, you automatically move up to the next level. Each level contains bigger prizes and smarter cops. In the end you'll always learn that crime doesn't pay!

The author invites written questions and comments.

REVIEW COMMENTS
GETAWAY! has increasing levels of difficulty, yet it's easy to learn. This is a masterpiece from an experienced game designer. Mark Reid has used the capabilities of ATARI Computers in every way to create an action game of surprising subtlety.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	32K	$29.95	APX-10195
Diskette	32K	$29.95	APX-20195

A large, four-color poster of the complete GETAWAY! map is available through your ATARI Computer retailer, or can be ordered direct from APX. The order number is APX-90012, and the price is $4.00.

DANDY

by John H. Palevich

Recommended for ages 8 and up
Written in machine language

Conquer 26 dungeons through cooperation

"Where *are* you going? The spawners are that way! We need to pick up the food and bombs below us before we can tackle them."

"Ahhh! I'm dead! Forget the food and go find a heart so I can be reincarnated. You need my help!"

DANDY is a 26-level dungeon adventure in which cooperation is the key to success. You and up to three more players must get past the monsters; you lose strength each time a monster rams you, and you must constantly stock up on food to replenish your strength. If you lose all strength, you wind up in limbo, but another player can revive you by shooting an arrow into a heart. You can pick up smart bombs along the way and drop them to wipe out all monsters in the area. You must also find keys to unlock doors in each maze. After exploring a dungeon, you take the down tunnel to warp to the next one.

DANDY provides hours of challenging discovery. All movement is done with joysticks, but you must hover over the computer keyboard to rebuild your health and to drop bombs. The combination adds to the frenzy and fun! Even if you master all the dungeons, the game isn't over. You can start over at higher difficulty levels, and then you can create your own dungeons with the maze editor that comes with the program. DANDY is certain to become a favorite in your game collection.

The author invites written questions and comments.

REVIEW COMMENTS
An excellent game for one to four players, a unique sharing style of game play. (It's a one- or two-player game on the ATARI 1200XL Home Computer.) The whole family will get caught up in DANDY.

REQUIRES
One ATARI Joystick Controller per player

OPTIONAL
ATARI BASIC Language Cartridge
ATARI 825 80-Column Printer or equivalent printer
Diskette(s) for creating your own mazes

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$29.95	APX-20210
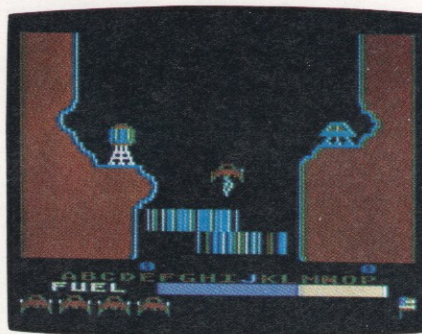
PHOBOS

by Greg Christensen

Recommended for ages 8 and up
Written in machine language

Master 16 levels of defense

Did you wear out your Joystick Controller playing Caverns of Mars*? If so, run right out and buy another one. Greg Christensen has done it again! He's traveled even farther into the cosmos to bring us PHOBOS, Mars' closest and largest moon, where a group of renegade martians have set up a command center.

You must cut through 16 levels of defense to destroy the control center buried deep in the core of PHOBOS. At first, you plummet through caverns, picking up fuel and knocking out missiles. The gravity exerted on your ship isn't noticeable after a while, and soon you can control your speed. But, it's small consolation: you face incredibly narrow and craggy paths — a real challenge to pilots. And that's not all. You must get past many different barriers, such as compound laser gates requiring fine timing and deft steering. Your mission doesn't end should you blow up the control center. You must begin your descent anew, because the martians never stop building!

PHOBOS comes with four skill levels, from novice to commander. Each higher skill level requires navigating through more caverns. Both your current score and the high score for the session are displayed, along with your fuel gauge and your current cavern.

The author invites written questions and comments.

REVIEW COMMENTS
Fans of Greg's first game will want to try their skill at maneuvering through caverns offering new obstacles. The graphics, sound, and design are along the lines of Caverns of Mars and are all extremely good.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$29.95	APX-10184
Diskette	16K	$29.95	APX-20184

*CAVERNS OF MARS is a trademark of Atari, Inc.

SALMON RUN
by Bill Williams

Recommended for ages 8 and up
Written in machine language

Help Sam the salmon swim upstream to spawn

The story of the determined salmon struggling upstream to spawn every season takes a slightly different twist with SALMON RUN. The mighty little fish struggles upstream, fighting bears, waterfalls, and sea gulls. But, is it all for naught? Does he merely die in the end? Now his fate lies in *your* hands.

The screen display of this program shows a salmon in a vertical river course, flanked by a jagged shoreline. At the top of the screen is a display of the game level and your score. Using a Joystick Controller, one to four players take turns guiding Sam the salmon up the river to reach his dear Samantha.

Each game level includes an increasingly difficult series of river courses. Sam faces a variety of complicating circumstances during his journey upstream. He must overcome waterfalls, bears, fishermen, and sea gulls. The frequency of their appearances depends on how long you play the game. Sam can jump the waterfalls and sidestep the fishermen or animals, but if he misses, he starts his trek upstream all over again.

Sam's struggle upstream is timed by a shrinking horizontal bar at the top of the screen. He races the line as well as the life-threatening river course. Should Sam successfully complete one lap, he wins Samantha and a baby salmon.

You win one point for every foot you help Sam swim and ten points for every waterfall he jumps. You lose points if you cause him to fall backwards. In a one-player game, you compete against your own best score. In a multiplayer game, you play for the highest score.

The author invites comments and questions by telephone and mail.

REVIEW COMMENTS
Children of all ages will enjoy SALMON RUN. The graphics are charming!

REQUIRES
One ATARI Joystick Controller per player

| PAL |

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10120
Diskette	24K	$24.95	APX-20120
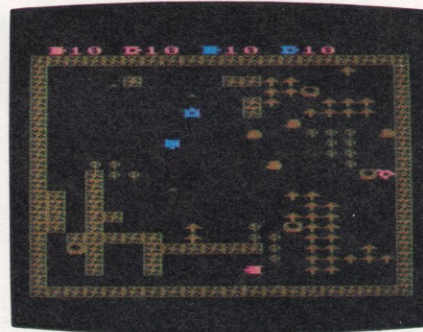
ATTANK!
by Joel Gluck

Recommended for ages 10 and up
Written in BASIC

Destroy your opponent's tanks on the battlefield

Allow yourself plenty of elbow room when you and your opponent start playing ATTANK! You'll be happily squirming in your chair as you maneuver your two tanks around the battlefield. In this two-player game played with joysticks your mission is to destroy both your opponent's tanks before he or she destroys yours. You maneuver your forces through a realistically responsive environment of trees, rocks, walls, land mines, tunnels, and rubble, and then position and fire your guns when your opponent's tank is within firing range. You can choose day or night battle conditions, or a mixture of the two. If you opt for nighttime, only the tanks and shells are visible on the battlefield, except for brief glimpses during explosions.

Packed with colorful graphics and sound effects, ATTANK! is loaded with playing options, such as the number of hits a tank can sustain before being destroyed, shell range, tunnel pattern, and day and/or night battle conditions. You can choose whether to introduce an element of chance into the game by using the random air raid bomb option. ATTANK! also includes two handicap options so that novices can give pro tank players a real workout. And a new battlefield appears each game!

The author invites written questions and comments.

REVIEW COMMENTS
ATTANK! is a deluxe version of the standard tank game. The unique two-tank control and the tunnels are great features. The author makes very interesting use of character graphics.

Because the tanks turn only in one-eighth increments it can be challenging to hit your opponent at close range. Tank motions can be uneven at times.

ATTANK's many options take some reading to understand, but the effort is worthwhile.

REQUIRES
ATARI BASIC Language Cartridge
Two ATARI Joystick Controllers

| PAL |

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$24.95	APX-10072
Diskette	32K	$24.95	APX-20072
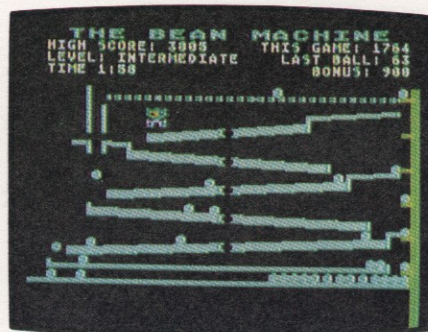
THE BEAN MACHINE
by Steve Robinson

Recommended for ages 6 and up
Written in machine language

Slant beams to guide beans through the bean machine

Here's a game that uses the law of gravity. In THE BEAN MA-CHINE, your goal is to rack up points by maneuvering a series of teeter-totter beams so that 33 beans roll from top to bottom in the least amount of time. The beans start out by rolling across the bottom of the machine and onto an elevator that lifts them to a conveyor belt at the top of the course. Some spill out along the way and start their downward trek at that point. Some make it to the top, move across the conveyor belt, fall down a chute, and then start their journey downward. Your job is to use your Joystick Controller to tip the beams so that the beans continue to roll from one teeter-totter to the next, until the beans come to rest in the bottom trough. You must constantly re-tilt the beams because as a bean falls onto a slanting beam, its weight tends to flatten out the beam or slant it in the opposite direction.

Of course, it's not as simple as that. If one bean is stalled on a beam and another bean rolls into it, the beans destroy each other and are replaced by new beans at the bottom. In addition, dangers lurk about the course. For starters, there's a bean-gobbling red spider. Then you must time your beans to roll under Horrible Mitch, but you can blast right into Little Mickey, earning yourself some points and getting rid of him...temporarily. The Masked Mumbo loves to undo your work by rebalancing the beams, but you can roll right over him for revenge. Once you master the beginning level, you can go on to the higher levels, where the beans travel faster. A lively tune accompanies the action.

The author invites written questions and comments.

REVIEW COMMENTS
The game simulates gravity and the motion of the beans very well. It can be tougher on the higher levels.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$24.95	APX-10206
Diskette	24K	$24.95	APX-20206

DOWNHILL
by Mark Reid

Recommended for ages 8 and up
Written in BASIC and machine language

Steer your skier around trees and through gates

Brrrrr! The nippy air triggers your yen to ski. But it's hard to get away, and even when you can get away, the crowds can spoil your fun. Help is here! With DOWNHILL, you can sit by the fire, sip a cup of hot chocolate, and ski to your heart's content. Not only that — you have the slopes all to yourself! This one-player game challenges your hand/eye coordination and timing precision (but your legs can relax). You use a Paddle Controller to steer your skier around trees and through gates on the beginner, intermediate, or expert course. If you like, you can preview each course before running it, or you can run it sight unseen. The intermediate and expert courses have narrower openings between trees and you'll have to turn your skier uphill if you hope to make every gate. When necessary, you can snowplow (slow down) to avoid hitting a tree or gatepost, which costs you precious seconds. Besides choosing the difficulty of your course, you can also vary the degree of the slope to decrease or increase the speed with which your skier runs the course.

The object is to ski to the bottom of the hill as fast as possible, while making every gate. Each gate missed causes a score penalty. The program keeps track of the best time for each course, so you can compete against a friend's time or against your own best time. SWOOSH! Time to hit the powder!

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
DOWNHILL makes colorful and imaginative use of the ATARI Computer's sound effects and graphics features, including vertical scrolling and player missile graphics.

Recovery after wrapping your skier around a tree can be maddeningly slow!
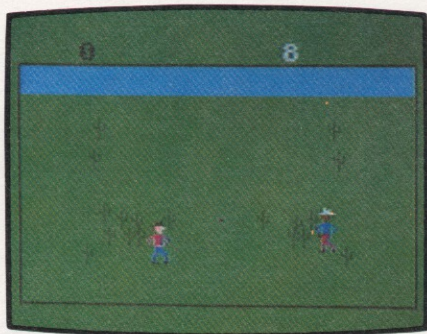
REQUIRES
ATARI BASIC Language Cartridge
ATARI Paddle Controller

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10063
Diskette	32K	$24.95	APX-20063

OUTLAW*/HOWITZER

Recommended for all ages
Written in machine language

Two games of marksmanship

Here are two games to show off your marksmanship. In OUT-LAW you square off against another cowboy who has you cornered in the desert. Fortunately for you, you can hide behind cactuses to elude his bullets. You use your Joystick Controller to chase your opponent and to take aim, then to scamper out of range as he fires back at you. You can run him all over the desert, but he's a real sharpshooter, so you'll be doing some fancy footwork to get him before he gets you. The first to score ten hits is the winner.

In HOWITZER your tank confronts an enemy tank across a river which neither of you can cross. You hear your tank rumble as you use your joystick to maneuver around the field. But you can't count on the trees to protect you from enemy fire. Each shell that misses its target leaves a hole in the field, but you'll know when either of you has scored a hit — the earth shakes and the tank explodes. The first to score ten hits is the winner.

You can play OUTLAW or HOWITZER against the computer or against another player. To compensate for different levels of skill, each side can play with or without handicaps — each game has eight variations.

REVIEW COMMENTS
Both games use colorful, action-packed graphics and sound effects, which make these games appealing to players of all ages and levels of skill. A good party game!

REQUIRES
One ATARI Joystick Controller per player | PAL |

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$24.95	APX-10004
Diskette	24K	$24.95	APX-20004

*OUTLAW is a registered trademark of Atari, Inc.
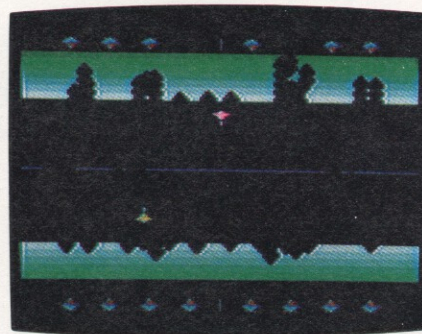
QUARXON
by Scott Ludwig

Recommended for ages 7 and up
Written in machine language

Break through the boundary and destroy the Droids

You no sooner discover friendly droids in a new galaxy, QUARXON, when your scanner picks up enemy movement. Headquarters orders you to defend the droids against enemy attack. You have only one hunter-killer spaceship and your wits to outmaneuver both the enemy ship and the tricky elements unique to QUARXON's atmosphere.

Your primary objective is to fire your laser through randomly occurring openings in the center boundary line to break through the multilayered blockade protecting the enemy's droids, who want to take over the galaxy. At the same time, the enemy is trying to wipe out your droids. If their laser hits your ship, you face the immediate and often fatal danger of the crushing wall. QUARXON's atmosphere contains other precarious conditions. For example, if you shoot through the boundary line twice from the same spot, you create a temporary free shooting zone for the enemy, so you must keep moving at all times. And, if your shot misses an opening in the boundary line, your laser fire rebounds into your blockade! The battle ends when one ship destroys all his opponent's droids.

QUARXON has one- and two-player options, or you can watch the computer battle against itself. Other game options include choosing from three difficulty levels, varying the thickness of the blockade, and varying the number of droids. Fewer droids make for a more difficult battle, since the number of droids determines how many lives you have.

The author invites written questions and comments.

REVIEW COMMENTS
Unique rules make this game fast. Multishaded layers and smooth motion give it a polished look.

REQUIRES
One ATARI Joystick Controller per player

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$29.95	APX-10174
Diskette	24K	$29.95	APX-20174
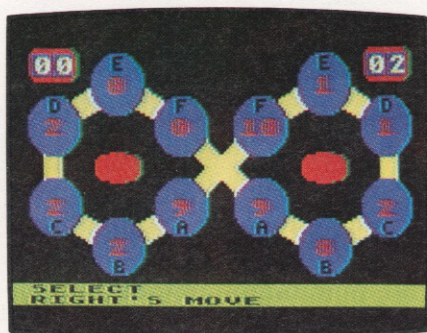
ENNUMEREIGHT
by Philip Baker

Recommended for ages 7 and up
Written in machine language

Move numbers around a circuit to win points

If you're a fan of awari or Mankala, or if you like strategy games, you'll love ENNUMEREIGHT. The playing board is a sideways figure eight, one side belonging to you and the other to your opponent. Each side has six circles; each circle holds a number. When you select a circle on your side, its number is redistributed into the succeeding circles all along the figure eight circuit, and one point is added to the number in each circle until the points are used up. If the last circle to receive a point then contains a two or three and is on your opponent's side, you win the points in that circle, along with those in as many adjacent preceding circles on your opponent's side as hold a two or three. Then your opponent takes a turn.

The game ends when all the circles on one side contain no points. The winner is the player with more points. The arithmetic is simple, but you must keep track not only of the effect of your own moves, but also those of your opponent. The more you think ahead to possible consequences, the better your chances of winning.

ENNUMEREIGHT offers several options. You can play against another player or against the computer, or you can sit back and watch the computer battle against itself. For games with the computer as a player, you can choose from seven levels of difficulty; the higher the level, the more time the computer takes to evaluate its move. You also can select the initial number of points per circle; the more points, the longer the game. And players of all ages will enjoy ENNUMEREIGHT's interesting game animation.

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
This game tests your logic and strategy skills. The graphics and sounds are an integral part of the game play.

REQUIRES
No required accessories

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10204
Diskette	24K	$24.95	APX-20204

SMASHER
by Chris and John Goodman

Recommended for ages 8 and up
Written in machine language

Defend your empire by smashing enemy spacecraft

The might of your empire is known far and wide, and that's why enemies from all over the galaxy are attacking you. So far, you've been safe, because you control the most colossal weapon ever devised: the Smasher. It can easily crush any enemy craft that threaten you. But now the dread Vorpons are swarming through your intergalactic port! Their ships, filled with explosives, cruise relentlessly back and forth, menacing the Smasher itself. And you've heard rumors of their deadly mystery ship. . .what terrors does it hold?

The Smasher patrols the area on the screen by demolishing enemy craft in its path. You use your Joystick Controller to move the Smasher into position and press the red button to crush invaders. Beware! Some of the enemy cruisers contain enough explosives to destroy the Smasher and leave you defenseless. If the enemy ships cruise back and forth unchallenged, they capture part of your territory. The Smasher is destroyed if you touch the captured areas, which encroach on more and more of your port. Even if you successfully defend your empire for a while, you can't be complacent: the mystery ship can appear on the higher levels of the game.

Alone or with another player, you score points by smashing enemy craft. Each time you score 50,000 points, you get another Smasher. Good luck! Your empire is counting on you!

REVIEW COMMENTS
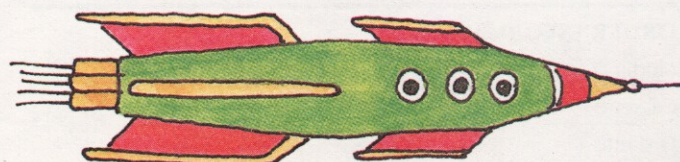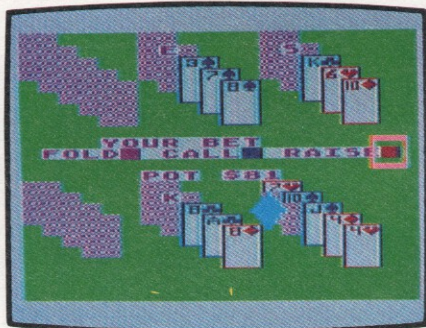SMASHER is a fast-paced, aggressive, exciting game.

REQUIRES
One ATARI Joystick Controller per player

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$24.95	APX-10219
Diskette	24K	$24.95	APX-20219

SEVEN CARD STUD

by Monty Webb

Recommended for ages 10 and up
Written in BASIC

Play poker with five computer opponents

That big game is coming up and you need to practice your poker skills. SEVEN CARD STUD simulates five card-playing partners with four programmable characteristics.

Using a Joystick Controller, you can change the players' characteristics. If you're new to Seven Card Stud, use the pre-programmed personalities, which are quite a challenge. To sharpen your card techniques choose one of three traits in four different categories for each player. First, you decide if a player is hard, average, or easy to bluff. Next, you decide how often this player raises. Then you choose the degree of risk he'll take before he or she folds. Finally, you determine his or her overall playing strategy — too loose, smart, or too tight.

SEVEN CARD STUD shuffles the cards and deals two down and one up to each player. The program finds the highest hand showing and starts the betting. According to the player's programmed characteristics, he or she will fold, call, or raise. The other players respond in turn. When it's your turn, you also choose to fold, call or raise. The pot grows as you bet on each round. At the end of seven cards, all hands still in the game turn face-up. SEVEN CARD STUD then determines the winner and the announcement, "Who Has The Gold?", appears with a list of everyone's winnings. You can then go back and see everyone's cards for study.

At the end of a game, you can play another hand against the same players or you can restart the game and change the players' personalities.

The author invites written questions and comments.

REVIEW COMMENTS

This game is not a beginning tutorial. The graphics are very good. Poker players are sure to enjoy this excellent simulation.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller   `PAL`

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$17.95	APX-10118
Diskette	32K	$17.95	APX-20118
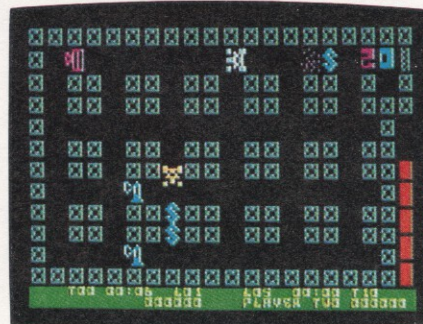
BOOTLEG

by E. M. Freeman

Recommended for ages 8 and up
Written in machine language

Dodge the Prohibition agent through 20 maze screens

The speakeasies are counting on you! Unless you can deliver the moonshine, they can't open tonight — and you've heard they don't like to be disappointed. In your delivery wagon, you're threading your way through the city streets, trying not to get lost or run out of gas. You've got to keep an eye out for a determined Prohibition agent armed with a super-charged patrol car. He can call ahead for roadblocks, but you know a few tricks to slow him down.

Using your Joystick Controller, you move the delivery wagon around a maze, stopping whenever you see symbols such as goblets or flagons. For each delivery, you're paid off in points added to your score. After you've made ten deliveries, you can move to another screen (there are twenty different screens in all). If you're playing against another bootlegger, you alternate turns to try for the higher score.

Your biggest worry is the Prohibition agent. His car moves faster than yours, and he throws out roadblocks when you least expect them. If you meet him, you crash and that round of the game ends. You can use a trap to thwart his pursuit, but it doesn't stop him for long, and it costs you points. You have five lives — and you need them!

Whenever an electrical storm passes over the terrain, it puts the Prohibition agent's radar out of action. This is a good time to escape or increase your score.

A last warning: don't run out of gas! A fuel gauge shows you how much you have left, and you can find fuel pumps at different spots on the mazes. After a hard day's work, why not stop, knock three times, and tell 'em Joe sent you?

The author invites written comments and questions.

REVIEW COMMENTS
You can use offensive and defensive elements to strategize. With twenty screens, there's plenty of variety.

REQUIRES
One ATARI Joystick Controller per player

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10218
Diskette	24K	$24.95	APX-20218
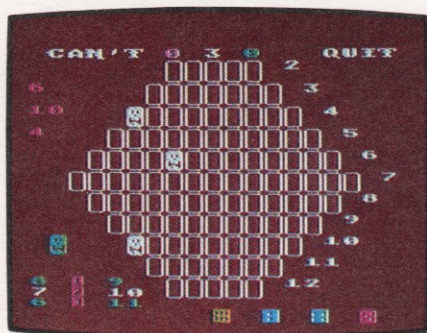
CAN'T QUIT
by John Harris

Recommended for ages 8 and up
Written in BASIC and machine language

Strategize against the odds in a dice game

Success at CAN'T QUIT comes from knowing just when to be bold and when to fold. Since nobody ever does know, this game has surprise after surprise for its players. Luck certainly helps, but it isn't everything. Each roll of the dice forces you to decide: quit now, or take a chance? You'll see who's cautious and who's reckless as you watch the progress of your game tokens across the board.

You can play against another player or against the computer. The diamond-shaped game board is composed of eleven rows of boxes, one row for each number from 2 through 12. When it's your turn, you use a joystick to roll four dice. Then you decide how to pair those dice. If you choose a 3 and a 7, for example, game tokens move one space to the right on rows 3 and 7. The object of the game is to have your tokens move completely to the right on 3 rows (or 4 if you choose).

It sounds at first as if all you have to do is keep on rolling dice until you move completely to the right. But it's not that simple! If you push your luck too far, you wipe out all the progress you've made. You have to resist taking that last turn before you've gone too far. You can play by hunches and guesses, or you can strategize on probabilities — it's fun any way you play.

The author invites written comments and questions.

REVIEW COMMENTS
The game tests your familiarity with the odds on combinations on dice. There are opportunities to strategize. Joystick use makes the game easy to play. The colorful screen is attractive.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10220
Diskette	32K	$24.95	APX-20220
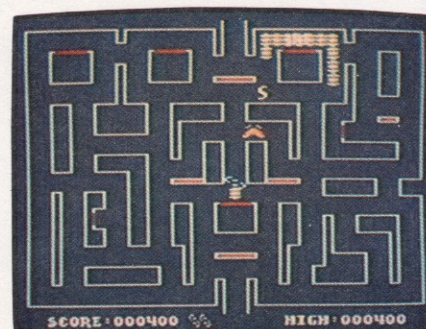
CATERPIGGLE
by Scott Ludwig

Recommended for ages 7 and up
Written in machine language

Devour the snakes crawling through a maze

Who gobbles up fearsome snakes the way Popeye eats spinach? Who fends off Serpent Security guards the way O.J. scatters tacklers? CATERPIGGLE, that's who!

Using your Joystick Controller, you maneuver Caterpiggle through an intricate maze to eat up long snakes that can appear anywhere. These snakes are tricky. Sometimes they grow longer by segments, even while Caterpiggle is devouring them. If he goes for a snake in its middle, the two halves go in different directions. The segments can break off and make their own way through the maze, and Caterpiggle has to chase them down. Even after he has eaten them up, they give him trouble, because they slow him down while they're digesting!

Be careful — the snakes are guarded by the super-vigilant Serpent Security force. If Caterpiggle collides with one of these menacing creatures, he's doomed — for the time being. He has three lives, or three chances to move up to the next level. With each succeeding level, the snakes grow longer and move faster, and it takes Caterpiggle longer to eat each segment. But then you get more points for each level. If you maneuver Caterpiggle skillfully enough, he'll earn a bonus for eating any guards touching a snake!

The author invites written questions and comments.

REVIEW COMMENTS
This exciting game gets very difficult and calls for lots of strategy at higher levels. Music and other sounds are novel and fun.

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10194
Diskette	24K	$24.95	APX-20194
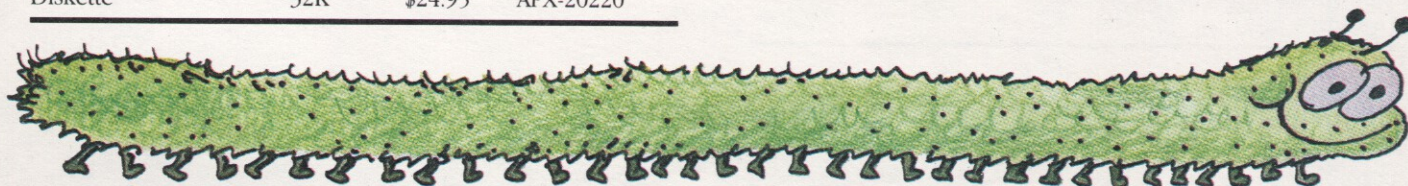
GALAHAD AND THE HOLY GRAIL
by Douglas Crockford

Recommended for ages 12 and up
Written in machine language

A graphic adventure with almost 100 rooms

Harken back to the days of old and the legend of Arthur and the Knights of the Round Table. As you recall, in King Arthur's court several knights set off in search of the Holy Grail. Only the truly virtuous succeeded.

With GALAHAD AND THE HOLY GRAIL, you become one of the knights on this holy mission. First you decide on your goals. You must swear (this *is* a game of honor) to accomplish one or more of several goals, such as to find three keys, find the Holy Grail, return the Grail to the white chapel, or slay all monsters. If you and some friends wish to play a tournament, you first agree on the goals and then take turns playing a complete round.

The first screen displays the white chapel, the beginning of your journey. Using your Joystick Controller, you guide your knight through a terrain of walls, roads, meadows, forests, and other obstacles. Some of the walls have magnetic powers. You can enter secret portals when you pass over them. As you travel horizontally, vertically, backwards, and forwards, you will encounter dangers from such unexpected sources as travelling knights, a dragon, and spiders. If you're lucky, you've found a variety of implements to help you fend off the attackers and assist in your search. If one of the challengers defeats you, the game starts again and another player tries to reach the goal. GALAHAD AND THE HOLY GRAIL comes in two levels of difficulty.

REVIEW COMMENTS
With the monsters, keys, swords, evil knights, castles, and mazes, the game is spellbinding. The action is fast and challenging. The colors and graphics are fun. Secret portals and enchanted walls give elements of surprise.

The user manual is as wonderfully imaginative as the game!

REQUIRES
One ATARI Joystick Controller | PAL |

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$29.95	APX-20132

MICROSAILING
by Glenn Faden

Recommended for ages 8 and up
Written in BASIC and machine language

Sail through four courses that teach tacking and gybing (1 or 2 players)

The saying goes that you'll love sailing if you enjoy standing in a cold shower dropping $100 bills down the drain. MICROSAILING can't replace the thrill of gliding through the water of a brisk, sunny day, but it does give you a taste of the skill required to sail a yacht, without the heavy financial investment or the uncomfortable conditions that can dampen your pleasure.

This yacht racing game for one or two players offers four courses of varying difficulty. A yacht runs through the course before the race to show you how to round the marks. You tack and gybe around the buoys on a course using a Joystick Controller as your tiller. Your speed depends on both your helmsmanship and wind conditions. Experienced sailors can even elect to sail in stormy weather. The game offers two sets of rules. Standard rules ignore boat collisions, whereas advanced play follows the right-of-way rules of the North American Yacht Racing Union. The race ends when one player crosses the finish line after rounding all the marks. The program displays the best time for all races and also shows which player has achieved the best time. MICROSAILING is the perfect way to prepare for your next regatta!

The author invites questions and comments by mail and telephone.

REVIEW COMMENTS
This is an enjoyable simulation of a sailing race, and the computer is a tough competitor.

The user manual contains diagrams of the four courses.
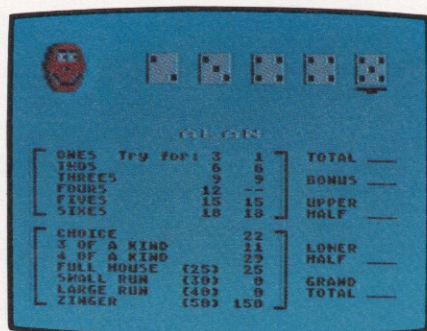
REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller per player

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$17.95	APX-20176

YAHTMAN

by Dan Reinhart

Recommended for ages 6 and up
Written in BASIC and machine language

Play dice poker with Yahtman

Most of us have played some version of the popular dice poker games available in both paper/dice and computerized form, but YAHTMAN is a cut above the rest. For one thing, YAHTMAN joins in every game himself, along with one to six other players. For another, this fellow is very friendly; he sends messages and performs helpful chores throughout the game. And most unusual of all, he shows by his facial expressions what he thinks at all times — for good or bad!

A game of YAHTMAN consists of thirteen rounds of play for each player. In each round, you use a Joystick Controller to roll any or all of five dice up to three times to obtain one of thirteen scoring combinations, such as aces, three of kind, and full house. But you must select some combination each turn, even if you score zero points. You earn bonus points for rolling five of a kind or for high scores. At the end of each round, YAHTMAN suggests which combination will earn you the most points, but you can ignore him and pick any unused combination. As you study each choice, YAHTMAN helpfully displays the score you would earn by picking that choice. At the end of the game, YAHTMAN totals each player's score.

The author invites written questions and comments.

REVIEW COMMENTS

YAHTMAN's "human" traits make him a more companionable computer opponent than normal. His helpful nature gives kids a better chance against adults.

REQUIRES

ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette (410)	16K	$24.95	APX-10175
Diskette (810)	24K	$24.95	APX-20175

BLOCK BUSTER

by Alan Griesemer and Stephen Bradshaw

Recommended for ages 9 and up
Written in QS Forth

What do you do when you're faced with 43 quintillion possible combinations for solving a puzzle? The challenge of cubic puzzles is to unscramble a patchwork of colors so that each side ends up a different solid color. BLOCK BUSTER allows you to view all six sides simultaneously before deciding on your next move. Also of great help is the ability to set up a particularly difficult configuration of colors and then, with one command, tell BLOCK BUSTER to solve the puzzle. The program even records its moves!

OPTIONAL

One ATARI Paddle Controller
ATARI printer or equivalent printer

PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	32K	$17.95	APX-10110
Diskette	32K	$17.95	APX-20110

GRIDIRON GLORY

by Mike Drury and Bob Graves

Recommended for ages 12 and up
Written in BASIC

In GRIDIRON GLORY, you and your opponent can coach any one of twenty-eight professional football teams, using a combination of keyboard and Joystick Controller commands. Each team is programmed with a different profile. You have eight-minute quarters to outcoach and outscore your opponent. A 25-second clock forces each coach to call plays quickly.

The playing field displays your position and movement of the ball after you call your plays. The scoreboard displays yards gained rushing and passing, total first downs, current down, yards to go, time remaining, and time-outs left.

REQUIRES

ATARI BASIC Language Cartridge
A set of ATARI Joystick Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20188
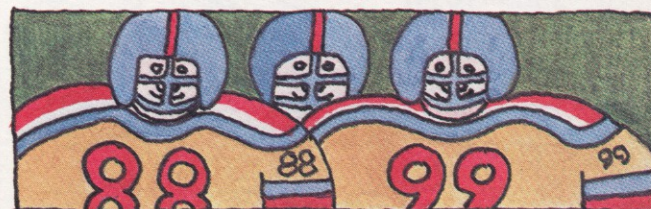
CHECKER KING

by William H. Northrup

Recommended for ages 7 and up
Written in machine language

Are your checkers opponents too predictable? Do you need a *real* challenger, the kind who thinks ahead, and can't be double jumped? Then turn on CHECKER KING, the computerized checkers game.

With this program you can play another opponent or you can challenge the computer. You use the joystick to position the checker pieces and you can establish the level at which the computer plays. You can even set the board up to practice strategies.

REQUIRES
One ATARI Joystick Controller per player   PAL

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10129
Diskette	16K	$24.95	APX-20129

TERRY

by Ingrid Langevin

Recommended for ages 10 and up
Written in BASIC and machine language

Are you feeling low? Just have to talk to someone about your problem? TERRY is a lightweight version of an artificial intelligence program that simulates a psychotherapist. TERRY doesn't pretend to be smart or probing. She prefers rollicking repartee instead. Just type what you have to say and watch it appear on the screen, followed by TERRY's reply. She may ask you more questions or give you some advice. Clarifying problems and possible solutions can help you feel better.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	32K	$17.95	APX-10047
Diskette	32K	$17.95	APX-20047
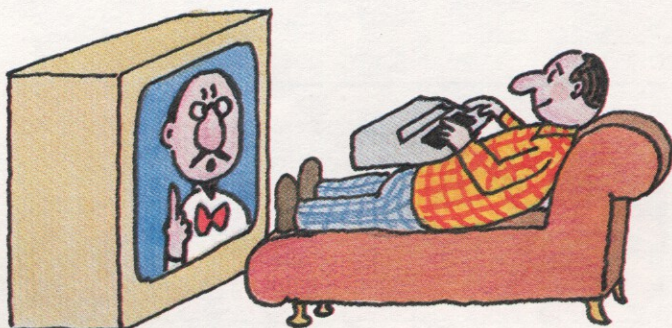
DIGGERBONK

by Steve Robinson

Recommended for ages 8 and up
Written in machine language

Take out your frustrations on the Pulsing Greenies, the Purple Gurple, and a host of other meanies. Maneuver through a vertically scrolling maze to accumulate points by "bonking", or demolishing, your enemies. Of course, they're out to get you, too, so you have to keep your wits about you. There are some last-ditch escape methods, including the Panic Button, for only the most dire emergency.

Besides your enemies, you have to watch out for some hazards in the landscape. If the Orange Whirlers, for example, entice you too far down the screen, you'll be boxed in as the wall scrolls downward. And the dreaded red bomb might go off at any time — its fragments are deadly. Try to bonk as many creatures as possible before your inevitable demise!

REQUIRES
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10202
Diskette	16K	$24.95	APX-20202

747 LANDING SIMULATOR

by William J. Graham

Recommended for ages 12 and up
Written in BASIC

Here's a game that gives all would-be jumbo jet pilots the frustration, and thrill of landing very own 747 jet . From the cockpit, you see the airport runway and your instrument panel, at the bottom of the screen, is continuously updated. You hear the sounds of air turbulence, various warning signals, even your engines' deceleration after landing. At the end of your flight, you receive a score that reflects your expertise in landing safely. The game has three levels of difficulty and two options — landing with instruments on and with instruments off.

The author invites questions and comments by telephone.

REVIEW COMMENTS
This game is fascinating, complex, and hard to master. The joystick commands take getting used to. The game calls for patience and perseverance. Because the game is written in BASIC, it doesn't have the illusion of real-time flight.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$24.95	APX-10043
Diskette	32K	$24.95	APX-20043

Entertainment

AIR RAID! Fly above eight scrolling screens of landscape to defend your fighter plane, a radar beacon, and two airstrips against enemy bombers. REQUIRES: One ATARI Joystick Controller.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$29.95	APX-10187
Diskette	24K	$29.95	APX-20187

AVALANCHE* provides you with a set of shields to defend yourself against six layers of rocks that fall faster and faster! REQUIRES: A set of ATARI Paddle Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10003
Diskette	16K	$24.95	APX-20003

*Indicates trademark of Atari, Inc.

BLACKJACK CASINO lets you play the famous casino game at home. You can double down, split pairs, surrender, or take insurance — even send out for more money! REQUIRES: One ATARI Joystick Controller per player.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	8K	$17.95	APX-10064
Diskette	16K	$17.95	APX-20064

CRIBBAGE pits you against the computer in a faithful rendition of the traditional English card and board game.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	32K	$17.95	APX-10141
Diskette	40K	$17.95	APX-20141

GAME SHOW is styled just like a current TV show that tests your ability to predict the most popular answers to various questions. (You can add your own questions too.)

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$17.95	APX-20168

IMPACT is a way to play bumper cars in outer space! Up to four players coast around 24 different playing screens, bouncing and bumping into each other. REQUIRES: One ATARI Joystick Controller per player.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	8K	$17.95	APX-10196
Diskette	16K	$17.95	APX-20196

MELT-DOWN challenges you to prevent a nuclear disaster. Carry buckets of water to a leaking cooling tower in a power plant before the mutant mice get you! REQUIRES: One ATARI Joystick Controller per player.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10178
Diskette	32K	$24.95	APX-20178

MEMORY MATCH is a version of the popular board game that sharpens your concentration. Match pairs of hidden objects or symbols or words on a grid after a brief glimpse. REQUIRES: ATARI BASIC Language Cartridge.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10070
Diskette	24K	$24.95	APX-20070

SNARK HUNT Find the snarks hidden inside a mysterious snark box. Fire vorpal beams into the box to see how the snarks affect the beams. Only logic can help! REQUIRES: ATARI BASIC Language Cartridge, One ATARI Joystick Controller.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10154
Diskette	24K	$24.95	APX-20154
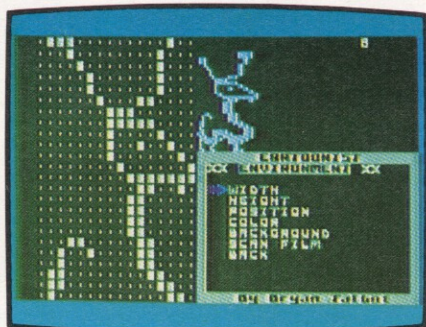
CARTOONIST
by Bryan Talbot

Recommended for ages 8 and up
Written in BASIC and machine language

Create and animate your own cartoon characters

Ever had a secret desire to make your own movie? With CAR-TOONIST, you use your ATARI Home Computer to create your own characters *and* put them into motion. To create a frame, use your Joystick Controller to draw a character on the screen, modifying its height, width, or color — or create its mirror image.

After you complete your first frame, edit to create more frames for your movie. You can insert frames, copy them, exchange different ones, or delete the ones that don't fit. When you've created all the frames, you're ready to animate them. To animate the movie, you run one frame after another and the motion begins. Your character can walk, hop, slink, slither, even fly! You can set the sensitivity of the joystick, and vary the speed of the animation. You can save and recall films you've made.

Programmers can use CARTOONIST to add animated sequences to their programs (a how-to demonstration is included), but it's so versatile that children can develop their creativity by learning to make their own cartoons. You choose options and activities from the program's many menus. To show you what CARTOONIST can do, run one of the program's several short animated sequences.

REVIEW COMMENTS
CARTOONIST is one of the best-designed animation packages we've seen. The program's menu-driven approach makes it easy to master quickly.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

OPTIONAL
One set of ATARI Paddle Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$24.95	APX-20237
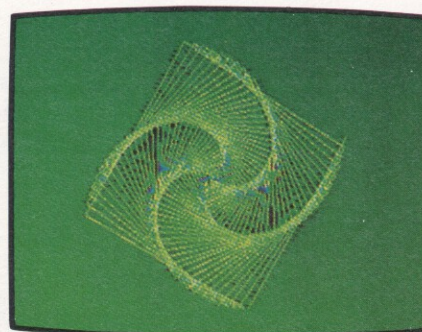
MATHLIB FOR DEEP BLUE C
by Frank Paris

Recommended for programmers familiar with
DEEP BLUE C
Written in Assembly and DEEP BLUE C

Add floating point capability to your DEEP BLUE C COMPILER

Here's the latest addition to the APX family of DEEP BLUE C software. MATHLIB is a whole library of math functions designed to expand your DEEP BLUE C COMPILER into the area of floating point calculations.

DEEP BLUE C is filling the gap between BASIC and assembly languages, but it doesn't support floating point data types. MATHLIB provides the full range of functions needed for DEEP BLUE C to perform floating point calculations. It operates on standard ATARI floating point numbers and provides access to the functions in the ATARI Operating System Floating Point ROM.

Among the 32 new math functions MATHLIB provides are: ATASCII/floating point, integer/floating point, and degree/radians conversions; floating point addition, subtraction, multiplication, division, and square roots; natural and base 10 logarithms and exponentiation; sine, cosine, tangent, and arctangent trigonometric functions in radians or degrees.

MATHLIB's link files can be easily used like any other DEEP BLUE C link file such as Graphics.CCC. Demonstration programs provide unit testing of MATHLIB's functions, examples of how they're used, and MATHLIB's use in Turtle graphics.

The author invites written comments and questions.

REVIEW COMMENTS
MATHLIB requires a familiarity with the C programming language in general and ATARI DEEP BLUE C in particular. The user manual provides detailed information about the subroutines and examples of their use.

REQUIRES
DEEP BLUE C Compiler (APX-20166)

OPTIONAL
ATARI MACRO Assembler

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	48K	$17.95	APX-20231

EASTERN FRONT (1941)*
SCENARIO EDITOR
by Chris Crawford

Recommended for teenagers and up
Written in machine language

Establish your own criteria for the battles of the Eastern Front

"I know I did everything right, but now I'm up to my ears in Russians."

Sound familiar? Any self-respecting EASTERN FRONT wargamer has felt this way more than once. Playing the most challenging war game available can often be frustrating. Wargamers are forever saying, "What if?" What if the Russians hadn't fielded as many armies? What if the Germans were distributed differently during the early stages of the offensive? Now you get your chance to find out.

With the EASTERN FRONT (1941) SCENARIO EDITOR you control more than a dozen factors that could alter the outcome of the Eastern Front Campaign. You determine the type of armies (e.g. infantry, calvary, Fliegerkorps), where and when the units arrive on the map, and factors like combat and muster strength that contribute to the unit's battle effectiveness. The map remains the same, but you can organize the combatants in an almost infinite number of variations. The scenario editor thus lets you fine tune the original EASTERN FRONT scenario, or create your own game.

The scenario editor must be used with the ATARI EASTERN FRONT (1941) Cartridge and can't be used with the original APX version. Three excellent new EASTERN FRONT scenarios (APX-10232 and APX-20232, in cassette or diskette) have been created by Ted Farmer using this editing software.

REVIEW COMMENTS
The human engineering is *very good*. All input is from the joystick or function keys. The manual contains useful designer notes and tips on strategy, but setup time can be extensive.

REQUIRES
ATARI Eastern Front (1941) Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	48K	$24.95	APX-20233

*Indicates trademark of Atari, Inc.

EASTERN FRONT SCENARIOS
1942, 1943, 1944
by Ted Farmer

Recommended for teenagers and up
Written in machine language

Three challenging new scenarios to add to EASTERN FRONT (1941)

Deep in Russia with the temperatures falling and the Russian defenses stiffening, your men are hungry, tired, and ill-equipped. Good luck! Operation Barbarossa has begun an unexpected second year.

With finely detailed historical accuracy, Ted Farmer has recreated the three years of the Eastern Front Campaign following the German blitzkriegs of the summer of 1941. Armchair generals can now see these early successes eclipsed by the devastating Russian counteroffensives. The 1942 scenario centers around the battle for Stalingrad. In 1943 the enormous tank battle of the Kursk Operation takes the center stage. In late 1943 and 1944 the scenarios deal with the German retreat before the massive Russian counteroffensives.

The odds against success are almost insurmountable, but, for the strategic wargamer, these scenarios present the realistic challenge of Barbarossa in the years of its decline. If you're smart and very lucky you may continue a campaign in which survival is a form of victory. Each new scenario requires very different strategies to play well.

The author invites written comments and questions.

REVIEW COMMENTS
Designed with Chris Crawford's new EASTERN FRONT (1941) SCENARIO EDITOR (APX-20233), these new scenarios are all written at the expert level and can be an excellent addition to your Eastern Front library. Can only be used with the ATARI Eastern Front Cartridge. Cannot be used with the original APX version.
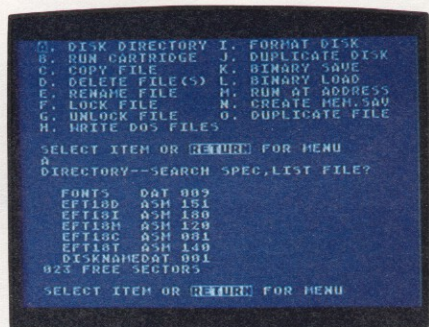
REQUIRES
ATARI Eastern Front (1941) Cartridge
One ATARI Joystick Controller

OPTIONAL
Eastern Front (1941) Scenario Editor (APX-20233)

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$17.95	APX-10232
Diskette	16K	$17.95	APX-20232

SOURCE CODE FOR EASTERN FRONT (1941)
by Chris Crawford

Recommended for advanced programmers
Written in assembly language

A behind-the-scenes look at creating a complex war game

You've played the game...now read the code! Intended for advanced programmers, this package takes you behind the scenes for a look at the thought processes involved in creating a sophisticated, computerized wargame. This diskette contains all the source code files for EASTERN FRONT (1941) — about 700 sectors of code!

The user manual contains a complete source and object code listing, as well as the following sections: program structure review; detailed memory map; unit characteristics chart; map diagrams; explanatory essays on each module; narrative history of EASTERN FRONT development; and discussion of game design considerations.

The package is like a tutorial on advanced game design.

The diskette contains only the source code (that is, the English equivalent of the code the computer runs) for EASTERN FRONT. The object code (that is, the code the computer runs) is sold separately by ATARI. Only advanced programmers should consider using the source code in this package to create an object file for running EASTERN FRONT instead of purchasing the object code.

REVIEW COMMENTS

To get maximum benefit from this package, you need a good understanding of assembly language programming and you should be comfortable using the Assembler Editor Cartridge. Assembly language programmers inexperienced in writing large programs will especially benefit from this package.

REQUIRES
Assembler Editor Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$49.95	APX-20095
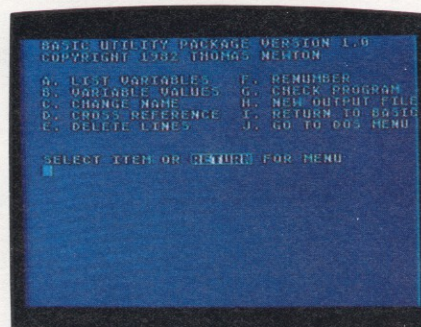
BASIC/XA
by Thomas Newton

Recommended for ATARI BASIC programmers
Written in machine language

Development tools for ATARI BASIC programmers

Here's a package of development tools ATARI BASIC programmers will find invaluable; they're easy to use and *fast*. Interfacing between your program and the DOS menu, BASIC/XA lets you list all program variables, their values and dimensions, and which lines use them; change variable names; delete a range of lines; renumber the program; and check for bad GOTO statements and syntax errors. Another option lets you print, or store on diskette or cassette the variable list, variable values, and the cross-reference table.

To use BASIC/XA with a program, you first boot BASIC/XA into memory. Both the development tools and all the normal DOS options are then available. Next you load in the program you want to work on. To use a tool, you type DOS, which causes the BASIC/XA menu to display. From this menu, you can select a tool, return to ATARI BASIC, or go on to the ATARI DOS menu.

BASIC/XA uses about 4000 bytes of memory. A BASIC program included with both versions lets you relocate the diskette version for your system and provide cassette owners with a way to transfer BASIC/XA to diskette.

The author invites written comments and questions.

REVIEW COMMENTS

This package combines the functions of ULTIMATE RENUMBER UTILITY, VARIABLE CHANGER, and BASIC CROSS-REFERENCE UTILITY, and more, in a very easy-to-use format.

The comprehensive, well-organized manual contains a detailed description of each subroutine in BASIC/XA, its interface with the rest of the package, and its purpose.

REQUIRES
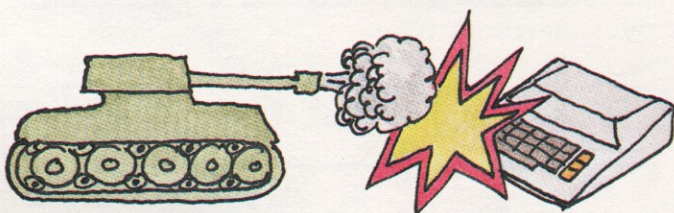ATARI BASIC Language Cartridge

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$29.95	APX-10177
Diskette	24K	$29.95	APX-20177

SUPERSORT

by Bob Fraser

Recommended for intermediate-advanced
BASIC programmers
Written in machine language

SUPERSORT is a high-speed sorting routine you call from
your BASIC programs. The program loads itself into com-
puter memory as a scratch pad and about 1,000 bytes of RAM.
You run your BASIC program as usual, storing in one long
string the items you want sorted. You POKE in your record
and key lengths and execute a USR function. SUPERSORT
sorts the entire string in ascending order by your specified
key(s). It can sort as many as 10,000 records, and it executes
at a speed of 1000 one-byte items in less than two seconds.
Your BASIC program then operates on the sorted data. This
utility is designed for use only with BASIC.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI Assembler Editor Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$24.95	APX-20030

KEYPAD CONTROLLER, Rev. 2

by Thomas D. Newton

Recommended for programmers
Written in BASIC and machine language

While the keyboard on ATARI Home Computers is ideal for
many uses, for activities involving entering lots of numbers, a
numeric keypad would probably serve you better. Using a
pair of keyboard controllers, KEYPAD CONTROLLER not only
allows you to enter numbers in keypad fashion, but also pro-
vides you with program editing functions. You use one con-
troller to enter numbers, periods, and commas and the other
controller to enter arithmetic operators (+, −, ×, /, and ^)
and to move the cursor around the screen. Revision 2 con-
tains an option for using the program with two-player games,
and you can modify the interpretation of the keys with a
BASIC program provided by the author.

REQUIRES
ATARI BASIC Language Cartridge or Assembler Editor
 Cartridge
A pair of ATARI Keyboard Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	8K	$17.95	APX-10106
Diskette	24K	$17.95	APX-20106

SCREEN DUMP UTILITY

Recommended for programmers
Written in machine language

A set of three programs lets you print copies of screen dis-
plays. While you can copy text to most printers, you can copy
text and graphics characters *only* to an ATARI 822 or a Cen-
tronics 739. You can change several of the graphics screen
dump programs' parameters (such as size or proportion of
printed image), and you can call the programs from your
applications programs with a USR function.

The programs are installed below user memory at boot time,
moving lower memory boundary up. Thus, some programs in
machine language may not work if absolute memory loca-
tions must remain available.

REQUIRES
Printer (see program description)

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$17.95	APX-20045

DISK FIXER/LOAD 'N GO

Recommended for programmers
Written in BASIC and machine language

The two programs DISK FIXER (FIX) and LOAD 'N GO are
invaluable tools for the programmer. FIX provides direct ac-
cess to several areas of the diskette including files, allocation
maps, directory entries, and sector data. With it you can trace
sector chains and edit actual sector data. The program is spe-
cifically designed to help you salvage "crashed" diskettes.

By setting up its own AUTORUN.SYS file, LOAD 'N GO lets
you automatically start a BASIC program whenever you turn
on your computer. You can essentially custom tailor your
computer to as many specific applications as you wish. Easy
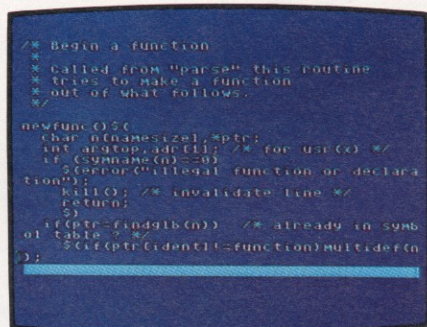to use, the program has almost unlimited applications.

REQUIRES
ATARI BASIC Language Cartridge (for LOAD 'N GO)

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$29.95	APX-20189
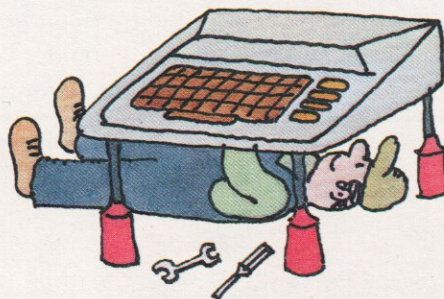
DEEP BLUE C COMPILER
by John H. Palevich

Recommended for programmers familiar with C
Written in C

More powerful and faster than BASIC, yet free of the tedious hours of debugging common in assembly programming, C is a valuable general purpose language. C is also transportable to other computers with minor modifications. The DEEP BLUE C COMPILER helps you create large C programs for your ATARI Home Computer. Some features DEEP BLUE C supports are:

- char, int, and pointer data types
- single dimension arrays
- unary operators: +, −, *, &, + +, − −, !, $-(tilde)
- binary operators: +, −, *, /, %, I, ^, &, = =, !, =, <, < =, >, > =, < <, > >, <op> =, &&, II, ?:, comma
- statements: if, else, while, break, continue, return, for, do, switch, case, default
- #define and #include compiler directives
- relocating linker

REQUIRES
ATARI Program-Text Editor™ or other non-line oriented text editor

OPTIONAL
ATARI Macro Assembler
ATARI Assembler Editor Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	48K	$39.95	APX-20166

Also available from APX is DEEP BLUE SECRETS, the source code for DEEP BLUE C COMPILER and linker and the source text for the interpreter. With it you can maintain, modify, and extend this C language for your programming needs. REQUIRES: DEEP BLUE C COMPILER (APX-20166); ATARI Macro Assembler* and Program-Text Editor* (CX8121).

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	48K	$39.95	APX-20179

*ATARI Macro Assembler and Program-Text Editor are trademarks of Atari, Inc.
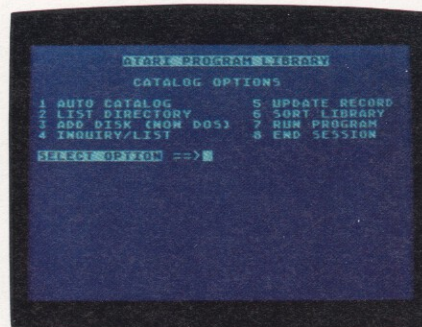
DISKETTE LIBRARIAN
by Ronald & Lynn Marcuse

Recommended for teenagers-adults
Written in BASIC and machine language

Catalog, update, search, sort, and print diskette file data

Why doesn't someone write an on-line cataloging system to organize your diskette files? Help is here! DISKETTE LIBRARIAN catalogs several pieces of information about your diskette files, updates entries, searches and sorts on any unit of information, and displays or prints the formatted catalog. In addition, DISKETTE LIBRARIAN can automatically run a BASIC program stored in SAVE format after it locates the program and prompts you to insert the referenced diskette. This feature can make your computer easier for beginners to use.

A series of menus guides you. DISKETTE LIBRARIAN supports both automatic and manual file updating. You can display or print complete or partial catalogs and complete or partial entries that are sorted or unsorted.

The authors invite questions and comments by telephone.

REVIEW COMMENTS
The assembly sort routine makes for very fast file sorts.

REQUIRES
ATARI BASIC Language Cartridge

OPTIONAL
ATARI 825 80-Column Printer or Epson MX-80 Printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$24.95	APX-20056

For credit card orders, use these toll-free numbers: 800/672-1850 (California) or 800/538-1862 (elsewhere in Continental U.S.A.). Or phone direct: 408/727-5603.
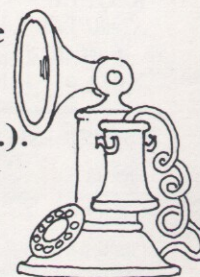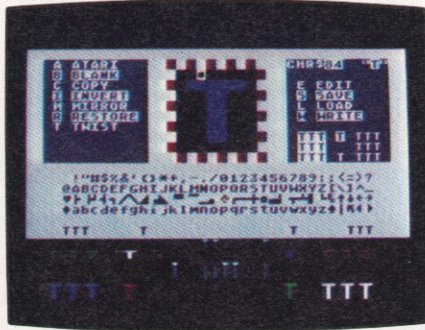
INSTEDIT, REV. 1.1
by Sheldon Leemon

Recommended for programmers
Written in BASIC and machine language

INSTEDIT, a character set editor, can help you take advantage of the advanced graphic capabilities of your ATARI Home Computer. You use the joystick to edit a character in an eight-by-eight matrix, and the modified character is displayed in all six graphics modes. You can create objects for use with ATARI player missile graphics, and even combine characters to make larger objects. INSTEDIT can also save your character data in the form of BASIC DATA statements, assembler source code using the .BYTE directive, or even an entire BASIC subroutine for incorporating your character set into a program.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10060
Diskette	24K	$24.95	APX-20060

INSTEDIT is also available in a Microsoft BASIC version. REQUIRES: ATARI Microsoft BASIC (CX8126); One ATARI Joystick Controller.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$24.95	APX-20113

HEX-A-BUG
by David Kano

Recommended for assembly language programmers
Written in machine language

A hexadecimal-based, screen-oriented debugging tool for the ATARI Computer

New programs rarely work as planned on the first run. But finding the errors is difficult at speeds at which the computer usually runs. HEX-A-BUG is an easy-to-use tool for stopping your program so you can find and correct the bugs. You load HEX-A-BUG and your program into memory, and you use breakpoints to switch control from your program to HEX-A-BUG. Being able to determine the intermediate results of your program by studying memory locations and register values can be invaluable for locating errors. Your program's screen display remains intact and you can easily toggle between it and the HEX-A-BUG display.

This screen-oriented program uses very few commands. The main screen area consists of "strips" across the screen, each one a functional area. You move a flashing cursor from one functional area to another to change the contents of any register, breakpoint, address of a memory strip, or memory location. Horizontal fine scrolling forward and backward from any location gives you quick and easy access to all information. In addition, you use simple commands to do such things as go to DOS, single step through your program, search for a string of values, and continue execution of your program.

The author invites written questions and comments.

REVIEW COMMENTS
HEX-A-BUG has the advantages of design consistency, minimal syntax, and ease of use. It needn't be assembled with your program.

The user manual assumes knowledge of the internals of the 6502 microprocessor.

REQUIRES
No required accessories

OPTIONAL
ATARI MACRO Assembler or ATARI Assembler Editor Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	48K	$39.95	APX-20199

DUNION'S DEBUGGING TOOL (DDT)
by Jim Dunion

Recommended for assembly language programmers
Written in machine language

A debugging tool for use with the ATARI Macro Assembler™

Getting at some of the features designed into the ATARI Home Computer is done more efficiently in low-level assembly language programming than in high-level languages like BASIC and PILOT. Assembly language programmers can benefit greatly from adequate development tools. The ATARI Macro Assembler™ and Program-Text Editor™ is one such powerful programming tool, and now we have a companion piece, DUNION'S DEBUGGING TOOL (DDT), a debugging tool specifically designed for use with the Macro Assembler.

Most of the time, correcting a program bug isn't the central problem; finding it is. DDT's operation centers on control of its display screen and on the ability to monitor and change easily the internal state of the machine. This feature works while also maintaining the user's screen display. The display is divided into six areas, each showing a different aspect of what's going on inside the computer at any instant: (1) a register display shows current contents of the 6502 processor registers; (2) a display window shows the system memory address space; (3) a stack display shows the top 15 items on the system stack; (4) a mini-symbol table shows the names and values of fifteen user-defined declared symbols; (5) a breakpoint table shows settings of user-definable breakpoint and trap registers; and (6) a command window shows commands typed from the keyboard.

Example programs included in the package illustrate ways to set up and use DDT's many features.

The author invites written questions and comments.

REVIEW COMMENTS
For all levels of assembly language programmers, DDT is definitely worth learning to use.

REQUIRES
ATARI Macro Assembler™ and Program-Text Editor™ (CX8121)

OPTIONAL
ATARI BASIC Language Cartridge (for examples)

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	16K	$39.95	APX-20150

EXTENDED fig-FORTH, REV. 2
by Patrick Mullarky

Recommended for advanced programmers
Written in machine language

Full implementation of standard fig-FORTH, with more definitions

Many advanced programmers find that FORTH is a good development tool for applications requiring high speed and low memory consumption, such as process control, systems software, and games. For these kinds of jobs, a FORTH program often runs 10 to 100 times faster than does a BASIC program to perform the same function. Programming in FORTH is usually easier than programming in machine language (although FORTH programs don't run as fast as machine language programs do).

EXTENDED fig-FORTH is a full implementation of the standard FORTH as defined in the Forth Interest Group (fig) Implementation Guide.

This version adds many definitions, including extended double-precision words. Also included in this version are the standard FORTH Editor, a complete Assembler for the 6502, a set of the ATARI Computer's Color/Graphic definitions, and a set of the ATARI Computer's floating-point definitions. A new definition, SAVE, lets you make a self-booting image of FORTH on a diskette and will include any new definitions you add. This version doesn't implement the definitions DLIST, MON, and TASK. It does implement the complete set of ATARI Computer Screen-Editor capabilities, making editing and changing FORTH programs simple and straightforward.

You should be familiar with FORTH to use EXTENDED fig-FORTH. Beginning FORTH programmers might want to consult the primer, *Starting FORTH*, by Leo Brodie (Prentice-Hall). Screens are included in the diskette version for this purpose in Revision 2 (along with some bug fixes).

The cassette version is a subset of the diskette version. It doesn't contain the EDITOR, OS, or COLOR/GRAPHICS screens. However, the manual lists all the screens, so cassette users can type in the screens they want to use. The cassette version is primarily for use as an introduction to FORTH, and not as a software development system.

The author invites questions and comments by telephone and mail.

REVIEW COMMENTS
This version does a good job of emulating the fig-FORTH model. This FORTH includes convenient extensions to allow for diskette backup. It also includes the DECOMP (decompile) word in the DEBUG package; DECOMP is a fairly sophisticated function not often found on microcomputer versions of FORTH. This FORTH supports the RS232 port I/O. Two sound commands are included. The user manual assumes familiarity with FORTH.
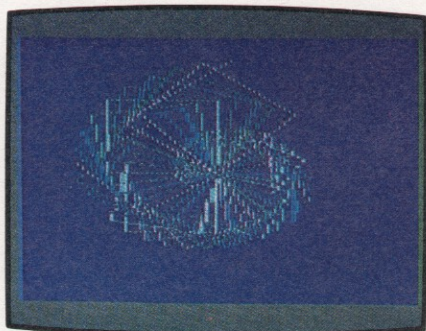
REQUIRES
No required accessories

OPTIONAL
All ATARI peripherals and accessories

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$39.95	APX-10029
Diskette	24K	$39.95	APX-20029

FORTH TURTLE GRAPHICS PLUS
by William D. Volk

Recommended for EXTENDED fig-FORTH
programmers
Written in FORTH

Turtle graphics for use with EXTENDED fig-FORTH

If you're a user of our EXTENDED fig-FORTH, you'll want to investigate FORTH TURTLE GRAPHICS PLUS. This package contains a group of FORTH words (functions) that adds the standard turtle graphics of ATARI PILOT (CXL4018) to EXTENDED fig-FORTH. Using FORTH TURTLE GRAPHICS PLUS, you can design graphic programs displayable in any graphics mode and on any portion of the screen without modifying your program.

Implemented in integer math, the package also includes a normalized coordinate system, the ability to create windows with clipped lines on any part of the screen display, the trigonometric functions *SIN, *COS, and *TAN, and the twelve graphics modes available with the new GTIA chip for use in FORTH programs. Epson printer owners with GRAF-TRAX will appreciate the graphics mode 8 screen dump utility included in the package.

The author invites written questions and comments.

REVIEW COMMENTS
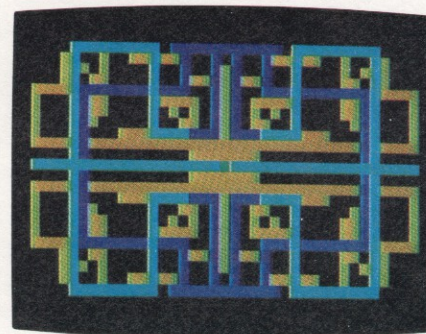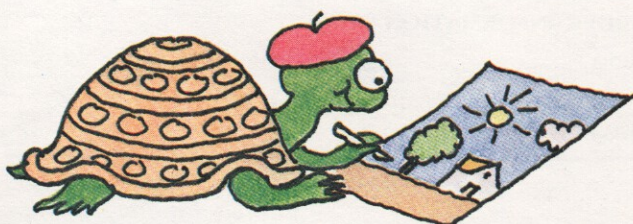This package is an excellent addition to EXTENDED fig-FORTH. Familiarity with FORTH is necessary.

REQUIRES
EXTENDED fig-FORTH (APX-20029)

OPTIONAL
Epson MX-80 or MX-100 printer with GRAFTRAX

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$17.95	APX-20157

fun-FORTH
by Joel Gluck

Recommended for EXTENDED fig-FORTH
programmers
Written in fig-FORTH

Sound and graphics commands for use with EXTENDED fig-FORTH

Fun-FORTH is a valuable set of programming tools to use with another APX program, EXTENDED fig-FORTH. It's especially useful for writing games. The 41 screens of FORTH words (commands) included in fun-FORTH facilitate using advanced sound generation, simple turtle graphics, the Joystick and Paddle Controllers, and the console keys and keyboard in FORTH programs. Also included in this package are various words for timekeeping, random number generation, creation of arrays, and recursion.

Fun-FORTH is clearly organized and designed so that you can load in only the fun-FORTH commands you want to use. You can create families of FORTH words for your specific programming needs. Fun-FORTH not only gives you the programming conveniences available in BASIC, but also provides several new and advanced features.

The author invites written questions and comments.

REVIEW COMMENTS
A working knowledge of FORTH is necessary to use these screens. Programmers interested in increasing their use of the sound and graphics capabilities of ATARI Home Computers will find fun-FORTH a very useful addition to EXTENDED fig-FORTH. In addition to adding many new commands, this extension forms the basis for a very nice program-development package.

REQUIRES
EXTENDED fig-FORTH (APX-20029)

OPTIONAL
One ATARI Joystick Controller
One set of ATARI Paddle Controllers

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$24.95	APX-20146

MANTIS

by John H. Palevich

Recommended for assembly language programmers
Written in machine language

To broaden the potential market for their work, programmers are extremely interested in creating programs for cassette-based ATARI Computers with 16K of memory. Until MANTIS BOOT TAPE DEVELOPMENT SYSTEM (MANTIS) came along, developing such programs usually meant having to remove memory modules, unplug the disk drive, and make temporary cassette copies. No more. With MANTIS, you can assemble and debug machine-language tape programs on your disk-based system with all the memory your system normally contains. You use the ATARI 410 or ATARI 1010 Program Recorder only after you've completely debugged your program.
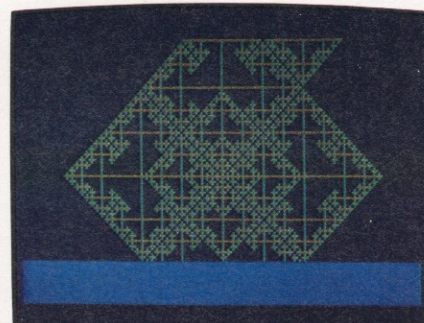
REQUIRES
ATARI 410 or ATARI 1010 Program Recorder

OPTIONAL
Assembler Editor Cartridge
ATARI Macro Assembler™ and Program-Text Editor™
  (CX8121)

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$24.95	APX-20143

EXTENDED WSFN

by Harry Stewart

Recommended for programmers
Written in machine language

An educational graphics language for beginning programmers

Do you know someone who's curious about your ATARI Computer but has no programming knowledge to call on to try out your system? This program might be the answer. WSFN (Which Stands For Nothing) is an educational graphics language developed for teaching programming concepts to beginners. Picture a small robot turtle holding a pen in his mouth and sitting in the middle of your TV screen. Now imagine you can command the turtle to do such things as move, turn, and raise and lower his pen. That's what WSFN is all about. WSFN programs consist of strings of one-letter commands like "F" for "forward" and "L" for "left turn." With simple instructions, users can write such standard programming structures as loops and subroutines. This version of WSFN is greatly extended compared to the original language, and it contains many advanced debugging, graphics, joystick, and mass storage features. Although you can do some fairly advanced graphics with WSFN, it's meant to be a beginner's language. Also, because it's strictly a graphical system, it isn't suitable for developing applications programs.

REVIEW COMMENTS
A comprehensive version of WSFN, with many advanced features. It can be a lot of fun to use and the graphics it generates can be dazzling. Also, this language is *fast*, executing faster than BASIC in most cases.

Because of time and staffing restrictions, this program hasn't undergone the extensive testing that any new language should. Some users may find WSFN's command language a bit cryptic at first.
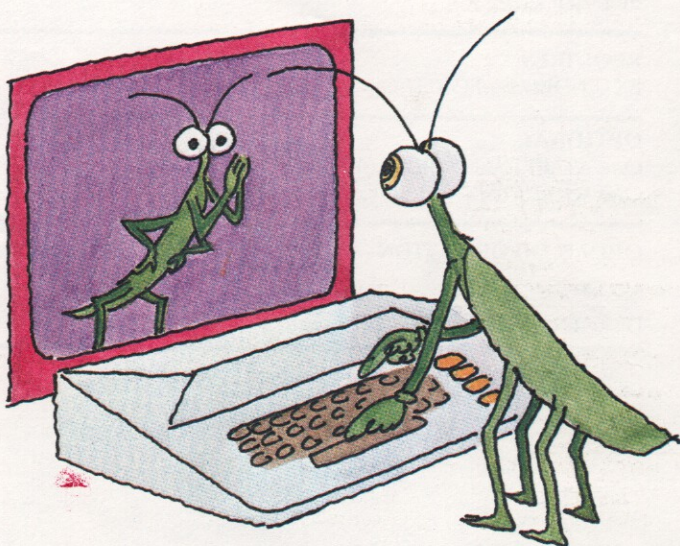
REQUIRES
No required accessories

OPTIONAL
ATARI Joystick Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	16K	$24.95	APX-10026
Diskette	24K	$24.95	APX-20026

T: A TEXT DISPLAY DEVICE
by Joseph J. Wrobel

Recommended for BASIC programmers
Written in machine language

Intermix text and graphics on the same line in any graphics mode

Remember your frustration when you tried to put all that text on the screen and found 40 characters cramping your style? What about the less-than-satisfactory results when you tried to label some graphs? T makes intermixing text and graphics on the same line. You'll have more freedom and control over what you can put on a line with this autoloading, 510-byte routine than you have using the standard technique of doing display list modifications.

REQUIRES
ATARI BASIC Language Cartridge

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	8K	$24.95	APX-10067
Diskette	16K	$24.95	APX-20067

CHAMELEON CRT TERMINAL EMULATOR
by John Howard Palevich

Recommended for ages 14 and up
Written in BASIC and machine language

Convert your ATARI Computer into a computer terminal! For three terminal types, "Glass TTY," ADM-3A, and VT-52, CHAMELEON supports tabs, line feed, form feed, and a visual bell signal. For the ADM-3A and VT-52, it also supports cursor addressing and basic editing features. It doesn't support the special graphics character set of the VT-52 or some rarely used ADM-3A features.

CHAMELEON's many features include: an 80-column, 24-line character display (displaying 40 columns at a time); continuous transmission at baud rates of 75 to 4800 (non-continuous at 9600); full ASCII standard character set; uploading and downloading capability between your computer and a time-sharing system and between two ATARI computers; and the ability to dump the contents of the TV screen to a printer. Assembly language programmers with a 32K disk system and the Assembler Editor Cartridge can define new terminal types with CHAMELEON.

REQUIRES
ATARI BASIC Language Cartridge
ATARI 830 Acoustic Modem or an RS-232C device
ATARI 850 Interface Module

OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$24.95	APX-10058
Diskette	32K	$24.95	APX-20058

ATARI PROGRAM-TEXT EDITOR*

Recommended for teenagers — adults
Written in machine language

An editor for programs and text files

This is an exceptionally well-designed, easy-to-use text editor. It's superb for revising source programs written in various programming languages (for example, ATARI BASIC, ATARI Pascal, or assembly language). An outstanding feature is its two-mode approach of immediate text editing, along with commands for searching the file and for manipulating both text strings and blocks of text. You edit your text by moving a cursor around the 20 lines of text in the text window and then typing in your revisions. The cursor indicates your current position and where the next character will appear. (The cursor also lets you do automatic vertical scrolling forward and backward.) You can position the cursor and revise text in a wide variety of ways.

An auto-indent feature allows repositioning the cursor to an automatic tab stop on the next logical line, useful when writing code in languages like Pascal.

The command window at the bottom of the display screen contains three lines in which you can retain a series of commands and use them repeatedly, as needed. Command mode offers many actions.

The editor supports files too large to fit into computer memory with commands to load in sections of the file. You also use command mode to search for specific strings. The editor accepts wild cards as substitutes for characters in search strings.

Other commands let you insert and delete text strings. You can delete blocks of characters within a line, or you can delete the entire logical line. You can recover a deleted line with another command.

The editor also supports work with blocks of text. After you place markers immediately before and after the relevant text, you can use commands to copy, move, delete, print, or write to a diskette file.

You can also load in a designated diskette file and insert it before the cursor.

Another outstanding feature is the ability to customize the editor to fit categories of files. When you specify a filename with a certain extender, the editor automatically uses the options you set instead of its normal settings. Options include: set tab, tab type, and tab display; set return display; set line length; set screen margins; and set screen color.

REQUIRES
ATARI BASIC Language Cartridge
(for customizer feature only)
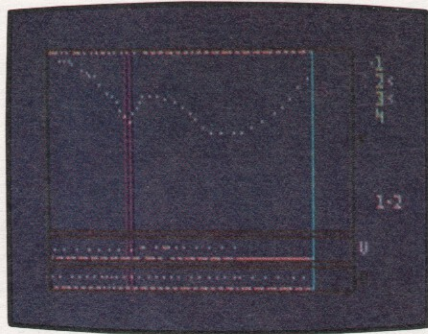
OPTIONAL
ATARI printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$39.95	APX-20075

*ATARI PROGRAM-TEXT EDITOR is a trademark of Atari, Inc.

INSOMNIA (A SOUND EDITOR), REV. 1.1
by Bob Fraser

Recommended for BASIC programmers
Written in BASIC and machine language

Generate up to four-second sounds with up to four voices

This sound editing package gives you an easy and enjoyable method for generating a complex (four-voice) sound or a few simple sounds lasting up to four seconds. You can install these sounds in your BASIC programs through a machine language subroutine included in INSOMNIA that lets your program run unimpeded by the sounds. Thus, your program isn't slowed down by its sounds, but it can turn these sounds on and off at will.

You select the sound parameters and plot your points using a Joystick Controller, a Paddle Controller, or both. Working with any of the ATARI Computer's four sound generators, you immediately hear the changed sound each time you plot a point. You can play your sound either continuously or once only, and you can isolate one voice for modification or you can combine voices to hear the overall effect. INSOMNIA also can produce very low and very high frequency sounds not attainable with conventional sound generating methods. You can save and recall sounds on diskette for further revision. Revision 1.1 corrects bugs in one of the demonstration programs.

REVIEW COMMENTS
This well-designed program is very useful for learning how changing one parameter effects the resulting sound. INSOMNIA supports all four voices, creates sounds as long as four seconds, and doesn't tie up machine time while generating the sound in your program.

INSOMNIA can load four voices into RAM only once, when your program loads in. Thus, you're limited as to sound complexity or variability within a program.

REQUIRES
ATARI BASIC Language Cartridge
One ATARI Joystick Controller
One ATARI Paddle Controller

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$24.95	APX-20073

ATARI PASCAL LANGUAGE SYSTEM

Recommended for advanced programmers
familiar with Pascal
Written in Pascal and assembly language

ISO Pascal with many enhancements

Pascal is an excellent tool for developing and maintaining programs. ATARI Pascal offers a flexible modular compilation scheme to permit easy transition from monolithic programming style to modular programming without extensive preplanning. This modular compilation scheme allows full access to procedures and variables in any module from any other module.

ATARI Pascal supports the International Standards Organization (ISO) draft standard (DPS/7185 as of 10/1/80).

Like UCSD Pascal™, both versions are written around a common core — Pascal as defined by Jensen and Wirth. The differences between ATARI Pascal and UCSD aren't as significant as, for example, the differences in various BASICs.

Pascal contains many enhancements not included in UCSD, such as: additional predefined scalars: BYTE, WORD, STRING; additional operators on integers; null strings; ELSE on CASE statement; external procedures; absolute variables; chaining to another program; and modular compilation.

ATARI Pascal supports sequential and direct access files, text files, and block I/O. It has the same file handling capabilities as the ATARI Disk Operating System 2.OS.

Run-time error handling includes checks for divide by zero, heap overflow, string overflow, and range checking, as well as support for user-supplied routines.

ATARI Pascal has been tested, but not exhaustively. The ISO Test Suite has been successfully executed. Although errors are detected, the results might not be the same as in the ISO Test Suite. Testers agreed that ATARI Pascal is an excellent "second generation" product, but is seriously restricted owing to memory limitations and diskette capacity and performance.

As with other APX programs, ATARI does not support this product after sale. However, we'll study all documented problems we receive for future revisions.

REVIEW COMMENTS
For software developers with patience and persistence. Compilation is time-consuming and is restricted to two disk drives. However, one drive can be used after compilation to run the object program. Before buying, consider carefully its limited testing, support, and lack of tutorial information.

REQUIRES
Two ATARI 810 Disk Drives
ATARI Program-Text Editor (APX-20075)

OPTIONAL
ATARI 825 80-Column Printer or equivalent printer

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	48K	$49.95	APX-20102

BASIC PROGRAM COMPRESSOR

(MASHER) frees up memory in your BASIC programs by removing REM statements, converting some constants to variables, and packing short lines together. REQUIRES: ATARI BASIC Language Cartridge.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	32K	$17.95	APX-20008

BLIS

BLIS uses a number of formatting techniques like indenting and boldface type to make your BASIC programs more readable. Excellent for debugging, this utility is easy to set up. REQUIRES: ATARI BASIC Language Cartridge, ATARI 825 80-Column Printer only.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	16K	$24.95	APX-20049

DISKMENU

DISKMENU is a handy utility for large program and game libraries. By copying two programs from DISKMENU to any diskette, you can automatically load and run any program on that diskette. REQUIRES: ATARI BASIC Language Cartridge.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	16K	$17.95	APX-20173

GTIA DEMONSTRATION DISKETTE

GTIA DEMONSTRATION DISKETTE — a set of BASIC programs showing off the graphics power of the GTIA chip. REQUIRES: an ATARI BASIC Language Cartridge and an ATARI 400/800 Home Computer with GTIA chip installed.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$17.95	APX-20104

MICROSOFT BASIC CROSS-REFERENCE

UTILITY is a variable and line number tracer for ATARI Microsoft BASIC programs. This utility is a good program documentation and debugging aid. REQUIRES: ATARI Microsoft BASIC (CX8126). OPTIONAL: ATARI printer or equivalent printer.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	40K	$17.95	APX-20125

MUSIC PLAYER

MUSIC PLAYER lets you add to your programs music you create with the ATARI MUSIC COMPOSER cartridge. MUSIC PLAYER loads and runs any music file independently of program operation. REQUIRES: file(s) created with ATARI Music Composer (CSL4007). OPTIONAL: ATARI BASIC Language Cartridge (for sample songs).

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	16K	$24.95	APX-20181

PLAYER GENERATOR

PLAYER GENERATOR allows you to design a simple player/missile and then create a program for the design, which can be used in a game or larger program. REQUIRES: ATARI BASIC Language Cartridge, One ATARI Joystick Controller.

ORDER INFORMATION

Media	RAM	Price	Order No.
Cassette	24K	$17.95	APX-10117
Diskette	32K	$17.95	APX-20117

SPEED-O-DISK

SPEED-O-DISK tests the speed of your ATARI 810 Disk Drive. If your disk drive isn't operating at normal speed, you'll get frequent Error 144 or Error 138 messages.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	16K	$24.95	APX-20109

UTILITY DISKETTE II

UTILITY DISKETTE II contains five utility programs that provide useful programming tools such as sorting, memory and file listing, and program comparisons. REQUIRES: ATARI BASIC Language Cartridge. OPTIONAL: ATARI 825 80-Column Printer or equivalent printer.

ORDER INFORMATION

Media	RAM	Price	Order No.
Diskette	24K	$29.95	APX-20124

Publications

De Re ATARI

by Amy Chen, Jim Cox, Chris Crawford, Jim Dunion, Bob Fraser, Kathleen Pitta, and Lane Winner

Handbook for advanced programmers

$19.95 (APX-90008)

De Re ATARI (All About ATARI) tells you everything you want to know about the ATARI 400 and ATARI 800 Home Computers, but were afraid to ask. It's an excellent resource and training text for professional programmers who use ATARI Home Computers and for advanced hobbyists who understand ATARI BASIC and assembly language. Neither an introductory manual nor a reference for the computer, *De Re ATARI* explains the concepts behind the internal structure of the ATARI Home Computer.

Topics include graphics indirection (i.e., color registers and character sets), player-missile graphics, display list interrupts, scrolling, sound, the Operating System, the Disk Operating System, and ATARI BASIC. Many discussions concern the three special-purpose integrated circuits designed by ATARI — ANTIC (a microprocessor for television display), CTIA (a chip for television display), and POKEY (a chip for input/output and sound generation). Extensive appendices, sample programs, display screens, and diagrams generously illustrate the discussions. A glossary defines and explains some less commonly encountered terms.

An added feature is a laminated Programmer's Card containing the most neded facts and figures about the computer.

APX Product Catalog

winter 1982-83 edition

$2.00 (APX-90009 Rev. A)

This 88-page, four-color catalog contains sample screens and descriptions for 159 programs This is the base issue for 1983.

spring 1983 edition

$1.00 (APX-90009 Rev. B)

This issue contains sample screens, full descriptions, and review comments for programs new to the spring edition, and condensed descriptions for all other APX programs.

summer 1983 edition

$1.00 (APX-90009 Rev. C)

This issue contains sample screens, full descriptions, and review comments for programs new to the summer edition, and condensed descriptions for all other APX programs.

fall 1983 edition

$2.00 (APX-90009 Rev. D)

You can also order more copies of this edition.

For credit card orders, use these toll-free numbers: 800/672-1850 (California) or 800/538-1862 (elsewhere in Continental U.S.A.). Or phone direct: 408/727-5603.

Hardware

48K RAM EXPANSION KIT

$110.00 (APX-90015)

With this kit you can upgrade the present memory capacity of your ATARI 400 Computer to 48 K RAM. Now you'll be able to use the more complex, memory-intensive programs available for ATARI Computers, such as those for home management and systems/telecommunications. Your ATARI 400 Computer will then contain enough memory to use *any* program in the ATARI Home Computer and APX product lines. If you're an experienced assembler of electronic kits and have mastered soldering techniques, you can order the expansion board from APX and install it yourself. The kit includes detailed, generously illustrated installation instructions. Because of the level of skill required to install the RAM board, no warranty is available for boards installed by users. If you are not experienced, we recommend that your purchase the expansion board from your local ATARI Authorized Service Center, installed. (Price is slightly higher.) This product is not available through ATARI dealers.

DE-9S WITH DE 110963-1 SHELL

(controller plug) $6.25 (APX-90001)

This connector is suitable for the front joystick ports of the ATARI 400/800 Computers. Because you can program these ports for input or output, they're perfect for many specialized interfacing applications. These 9-pin, female connectors have solder-on, gold-plated contacts in a nylon insulator. To allow the connector to mate more securely with the computer's port, you may need to file the plastic shell slightly.

5-PIN DIN CONNECTOR

$2.49 (APX-90002)

You can use this connector with the ATARI 800 Computer's video plug to connect your computer to video monitors, or to run the sound through a stereo system.

13-PIN I/O PLUG

$9.95 (APX-90003)

You can use this connector, custom-designed for ATARI Home Computers, to build your own interface cables or devices.

13-PIN I/O SOCKET

$4.95 (APX-90004)

This 13-pin, board-mounted connector with right-angle pins is the connector used inside ATARI Computers and peripherals. You can use it to build your own peripherals, extension cables, and interfaces.

DA-15P WITH DA110963-2 SHELL

(850 printer plug) $5.95 (APX-90005)

Use this 15-pin, male connector to connect your ATARI 850 Interface Module to a compatible parallel printer. These connectors have solder-on, gold-plated pins in a nylon insulator.

DE-9P WITH DE110963-1 SHELL

(850 serial plug) $5.49 (APX-90006)

Use this 9-pin, male connector to connect your ATARI 850 Interface Module to external RS-232 or current-loop devices. These connectors have solder-on, gold-plated pins in a nylon insulator.

ATARI Peripheral Contest!

$24,000 in prizes for new and current APX authors

Now, in addition to prizes awarded to winners in the quarterly APX contest, your program could win an additional $1,000, $2,000, or $3,000 in ATARI and APX hardware and software.

Starting with the spring 1984 APX quarterly contest, home programmers whose programs are accepted by APX could win additional prizes if their program makes use of one of Atari's new peripherals: the ATARI Trak-Ball, the Atari 1200 Color Printer, or the speech synthesizer featured in the 1400XL and 1450XLD ATARI Home Computers, or any ATARI modem.*

Program authors who adapt their current APX products for use with peripherals are also eligible for prizes.

Each quarter the APX Board of Review will select three programs that make the best use of one or more of the peripherals. These programs will be ranked in first, second, and third place, and will be awarded a prize of $3,000, $2,000, and $1,000 in ATARI and APX products.

At the end of 1984, Peripheral Contest winners will compete for a grand prize of $5,000 in cash.

New product entries to the contest will first be judged by the standards set by the APX Review Board for all APX submissions. (See article on page 16.) If the program meets these requirements and is accepted, it will then be judged for a Peripheral Contest prize.

Deadline for entries in the spring contest is January 1, 1984.

Contest entries will be judged by all of the following criteria:

1. Ease of use. Does the program allow easy use of the peripheral?

2. Active support. Does the relationship between the program and the peripheral(s) clearly enhance the program's usefulness or entertainment value? Are the benefits of that relationship immediately clear to the user?

3. Creativity. Does the program make the most creative use possible of the peripheral(s)? Is the relationship between the program and its peripheral(s) original or unusual?

4. Flexibilty. Does the program make use of more than one peripheral feature or option?

Specifications for each of the peripherals are available. To request a copy for the peripheral(s) you will be working with, phone the APX toll-free number, 800/538-1862 (continental U.S. except California), or 800/672-1850 (California). Or write to ATARI Program Exchange, P.O. Box 3705, Santa Clara, CA 95055.

* Includes the ATARI 835 Direct Connect Modem, the ATARI 830 modem, and the built-in, direct-connect modems that are part of the 1400 XL Home Computer and the 1450XLD Home Computer.
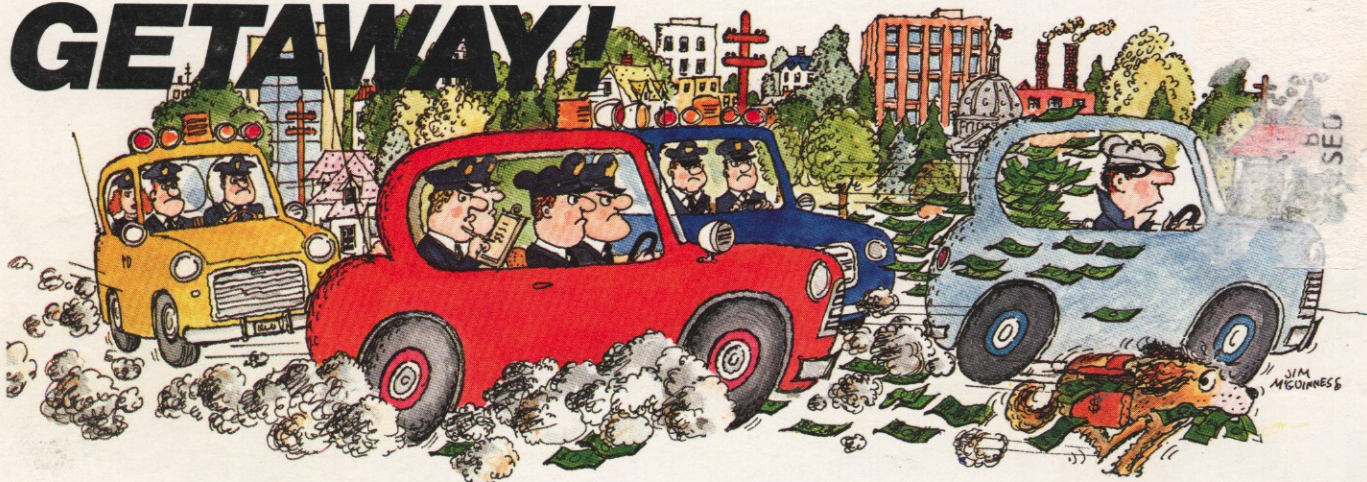
APX

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P.O. Box 3705, Santa Clara, CA 95055

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Diskette	APX-20195 32K	$29.95

For direct orders, add $2.50.

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