THE TORPET

BULLETIN OF THE TORONTO PET USERS GROUP $2.00 NO.14 OCT. 1982

PETSPEED

BUY IT

by J. Allan Farguharson

DON'T BUY IT

by Gord Campbell

COMMODORE 64 Maps

by Jim Butterfield

50 NEW DISKS LISTINGS

GORD CAMPBELL CONVENTION CHAIRMAN

the TORPET
published by the
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CALENDAR

TPUG 1982 - 83 Schedule

Central Chapter

Meetings are held at 7:30
at Leaside Public HighSchool
Bayview & Eglinton Avenues

Wed. Nov 10, 1982
Wed. Dec 8, 1982
Wed. Jan 12, 1983
Wed. Feb 9, 1983
Wed. Mar 9, 1983
Wed. Apr 12, 1983

Pet Conference
May 13,14,15, 1983
@ George Brown College

Wed. June 8, 1983 (Last meeting)

Westside Chapter

Meetings are in the cafeteria
at 7:30
at Sheridan College, Oakville
on Trafalgar Road
(2 miles north of the Q.E.W.)

Wed. Oct 27, 1982
Wed. Nov 24, 1982
Wed. Dec 22, 1982

Sustaining Members

by Gord Campbell

Over the summer, a new class of TPUG membership was created. This is the 'Sustaining Member'.

Sustaining membership is open to those organizations who wish to support TPUG to a greater extent than through regular membership. The annual fee for sustaining members is $100.00. In return, these organizations are listed in the TORPET. (Due to technical difficulties, the listings were omitted from the September issue. Apologies are due to our initial Sustaining Members for this omission.)

The charter sustaining members are:

Questar International
Richvale Telecommunications
T. Eaton Co. Ltd.

The idea of the Sustaining Member grew out of the June copy session. It was ultimately decided to charge no fee to organizations who exhibited their products, but rather to concentrate on providing information to the members. However, it was considered desirable to allow commercial organizations to demonstrate their support for the club in some concrete fashion. And thus, the sustaining membership was created.

Torpet Pays $20.00 per Page for Articles

The TORPET is always in need of good articles about the PET, CBM, VIC, C-64, and other related products, software, and subjects. If you wish to submit an article, send it to:

Toronto Pet Users Group
381 Lawrence Ave West
Toronto, Ontario, Canada
M5M 1B9

If you can send it on disk, it will save us time in re-entering the article ourselves. However, we can also take typed or printed articles or even handwritten ones if necessary. To encourage you, we are paying $20 per page that the article fills in the TORPET. If you feel that you have an exceptional article that might command more elsewhere but would like to still submit it to us, please do so and tell us what you feel would be the proper remuneration. If the amount is within our budget we may be willing to still print the article. Many authors prefer to have their articles printed in the TORPET because it is the largest circulation completely independent (and completely Commodore) magazine. Our press time is usually also much more timely than other magazines.

If you send your article in Wordpro, Wordcraft or RTC format ON DISK, we will return that disk with the contents of any TPUG library disk of your choice.

SEPTEMBER WESTSIDE MEETING BY John Easton

The first meeting of the 1982/83 season for TPUG West was held at Sheridan College in the Cafeteria where we will continue to meet until at least December. For those who had trouble finding a parking-space there was a giant almost empty parking lot on the east side next to Trafalgar road.

Should anyone be willing to take over this reporting stuff, which our editor apparantly expects each month, please make yourself known. The usual number of Commodore freaks seemed to be on hand (note to me or whoever is doing the reporting next time, to get a count, we journalists must be accurate!! There were 10 new members ..I think..

Your Torpet Editor/publisher and all round good guy Bruce Beach demonstrated his INDEX program (identified on the Sept. TPUG disk by WW prefix). Bruce's program has been compiled using Petspeed - which very neatly loses the program to prying eyes - but Bruce promises us future issues of the Index program for reference purposes in plain BASIC. What the whole thing does is to allow you to (automatically?) create an index from any manuscript you might have in WordPro type files. Bruce realised the value of such a program when in process of publishing the Whole PET Catalog this summer and commissioned Gottfried Walters to actually write the program. - No, the Whole PET Catalog doesn't have an index.

Moving right along - while the Index program was busy trying to load an uninitialized disk, Bruce had the opportunity to mention the gathering-together of VIC types (those interested in specific VIC programs and programming) at the previous week's Central meeting. And, would you believe it, we not only got ourselves a list of those 17 Westenders interested in this project, but actually received three (count 'em) three offers to act in a liason capacity with Bruce, or whoever, from the Central group. Now THAT's enthusiasm!

David Williams followed Bruce with demonstrations of several of his latest on this month's (SEPT) disk. SUPERSPEED SORT and MARKSCALER.
Superspeed Sort is the latest version of Dave's attempts to be subtle with the English Language's capability of describing something of a rather fast nature. This latest version certainly performs as described (and WarpSpeed WAS just a little much!!) by

manipulating pointer arrays to perform the necessary comparisons and sorts.

I must now really try a comparison with Jim Strasma's SUBSORT (re-named from SUPERSORT this year in response to an apparent previous name/copyright claim). Note to JS / Dave claims that the usual methods of timing his sort on an array of 25 items would waste more time in assigning a value to TI than performing the actual sort. Tell you guys what I'll try to do for next meeting, if I ever get the two programs together long enough to do some useful sorts, I'll let you know the outcome. How about a new kind of SORT INVADERS?

Markscaler is Dave's program to equalize the effects of different teacher's marking tendencies. Given at least ONE COMMON TEST to set a common comparison base, the program then does all the least squares and neat curve stuff that we all forgot back in statistics 101 - and indeed appears to sort out the wildest variations in marks one might expect to discover across the average school or school district. Strange thing, not one teacher in Dave's school or school district (other than Dave, Mister Unbiased himself) has requested the use of this program. Is MARKSCALER the REAL reason that Dave is on a year's sabattical leave from Forest Hill Collegiate??

Never mind Dave - you're doing a fantastic job of chasing down all those little routines that the rest of us thought must work as soon as we got the time to mess with the problem. Carry on regardless!!

By the time these two 'speakers' were done, it was time (where DOES the time go - do we hear it for a 7 PM start yet ?) for coffee and for a change, your choice of great muffins and butter. For the first time in a year my notes aren't chocolate smeared.

Following all that goodwill and sharing, who should appear but old Mr Goodwill and Sharing himself, John Stovekin from BMB in Milton. With much showmanship and derring-do John managed to convince us that he knew absolutely nothing about CP/M.

CP/M, in answer to a query from the last row, stands for Control Program/Microcomputers developed by Digital Research of California as far back as 1974 - based on a previous language called PL/M - Programming Language/ Microcomputers - based in great part on Algol and PL/I - etc.. Also, being a Control Program only, CP/M has no language sold with it and you must buy your own - if you want BASIC, try MBasic, CBasic, CBasic 86 ..and so it goes.

But why am I taking so much time explaining this - well, as one writer in a recent issue of MICROCOMPUTER PRINTOUT says:

Sport is the art of the difficult, made to look easy. If computer programming were a sport, rather than something to be done because you have to clear up the mess, then CP/M would be the greatest invention since the discovery of cricket stumps or the tennis court baseline. ..... CP/M is a ten year old operating system that thinks your screen is a terminal. Most screens were terminals, and a lot of terminals were printers when CP/M was first invented - and so CP/M assumes that you have a piece of paper in a printer, or a screen that behaves as if it were a piece of paper in a printer.

If CP/M still impresses you, then we'll return to the meeting and good old John (who, to the casual observer appears rather underwhelmed by the whole process). As he told us when he turned on (and off, and on) the SoftBox, anything other than that A> on the screen and he was lost. Finally with the help of Bob Lovelace, who had actually used the stuff, they did manage to utilise both the external Z80 in the SoftBox and the internal board from Madison Computer. Both appeared to be capable of running any CP/M-type program that the advertisers would have us believe populates virtually the whole universe!! Trouble is getting those programs in CBM format (though the SoftBox does have a Corvus-compatable input for owners of Corvus-CP/M disks). The trick to accessing this vast world of software FOR NOW, would appear to require downloading from some host computer for which programs ARE available.

Costs involved? I seem to recall mumblings ranging from $500.00 to 1000.00. If you really MUST have a CP/M system, why not have your dealer contact someone at BMB?

So, with five minutes left before our 10 PM equipment/off deadline, John Stovekin is quietly mobbed in the corner by those other BMB types of whom Someone must think there is something to this CP/M rumour - else why do they bother to import the hardware??.

Next month? Well, for a start, you might have noticed that the Space Invaders up on the screen during coffee break looked somewhat different than usual - like 9 ways different. David Lummis from Stoney Creek has donated a copy of his MULTI-INVADERS! for issue on next month's disk. Incidentally, POINTER SORT on the Sept disk is David's work - see his article in September Compute. Comparing his sort with Superspeed sort AND with Strasma's SubSort (all of which manipulate pointers rather than actual data) might be a fun exercise..

In the software demonstration department, Al Farquharson has a version of VIGIL graphics from Abacus to show us, and if he has time, he'd like to show us the PetSpeed Compiler - better still, if Jim Butterfield wouldn't mind lending someone his demonstration disk from the Sept. Central meeting (or if you want me to pick you up Jim.... be my guest) we could quite quickly (chuckle) see the difference in BASIC, PetSpeed compiled BASIC, D.T.L compiled BASIC, and pure Machine Language.

Mad-Mike Donegan, our used-to-be Saskatoon member (now residing in the sensible climate of Hamilton) will demonstrate the capabilities of his favourite AID program SYS-RES (footnote to Mike - it's gotta be short and concise and convince me why I should lay out hard cash for what seems to be available to a great part in plain Basic Aid - i.e. show me what's so special about SYS-RES.)

My apologies to those of you who might have been expecting more time for our question--answer session. Come to think of it, - it's a good thing we ran out of time, else this report would have to be continued NEXT month!! Next meeting, I'll really try to keep a closer watch on the clock - but now that you all know where the secret parking lot is, we'll start on the dot of 7:30 - OK? Wednesday October 27th, Sheridan College Cafeteria.

.....yours lately, John

PETSPEED

Buy It By J. Allan Farguharson

PETSPEED is a Commodore Software product from Oxford Computer Systems (Software) Ltd. The product is known as a four-pass BASIC compiler. This leads one to ask what is a compiler? A compiler is a program which converts a high level language such as Pascal, BASIC, into a form of machine language; as a result the program runs without the need of the usual BASIC interpreter.

Assemblers also produce machine language. The difference is in the way that the machine code is produced. The end product is similar but not the same. Code using an assembler requires that one understand the internal workings of the Central Processor, and its associated mnemonic code, while one may use a compiler without any knowledge of the internals whatsoever.

Since assembly language must be written in a rather tedious fashion, and is very time consuming, assemblers sound redundant. For optimum speed and least memory they produce code which is specifically written by a programmer. As mentioned, Petspeed adds 8k of additional machine code which replaces the normal interpreter.

The handy part of the compiler is that one need only write clean, debugged programs in BASIC, compile them, and away they go! Certainly machine language tends to run faster than BASIC through the computer's interpreter. REM's and spaces deleted make any BASIC program run faster, as well, I must add. But not in the same ball park as machine code.

There is one catch, however. Compiled programs have an aoverheade which takes up considerable memory. For this compiler, about 32 blocks or 8k of code must be added to the program which tends to make it longer that the original until a program reaches about 70 blocks, or over 17k. So why compile a program which just makes it longer? The answer is speed. Both assembled and compiled programs run faster than BASIC.

This program uses a aDongle which plugs in to the familiar cassette user port. It must be in place to compile a program. Fortunateiy, compiled programs will run without one. They cannot be listed. This gives a writer a fair degree of program protection. This is an advantage over the DTL Compiler which requires a Dongle for both compile and run operations.

This program is designed to run in the 8032 Commodore computer with either a 4040 or 8050 disk drive. To use the program, it is loaded in drive 0 with the program to compile in drive 1. For 4040 drives, one should not have other programs on the disk as the disk is used by the program. Several hundred blocks may be required by the compiler. The compiled program ends up on drive 1. It is identified by the suffix .gt appended to the program name on the disk.

One may load Petspeed by pressing run/stop. The program asks for the name of the program to be compiled. Then it takes over. On the first pass, the program builds a symbol table of many of the most frequently-used variables. Since these are placed on page zero, (the first 256 memory locations) they are accessed very rapidly. The 6502 central processor unit (used in this computer) has a special way of handling this page which is very rapid. Other passes examine syntax, build a parse tree, remove remarks and other useless code, re-arrange and evaluate expressions and put it all in memory.

After compiling, only the BASIC systems command will be seen. On Orun. the complier-interpreter takes over and runs the program. The operator may ask for a report and get a list of variables, arrays together with their addresses. Caution: any change in the programs to be compiled will likely result in a new location of the variables and perhaps their order. This does no harm unless one expects to use these locations for some purpose.

Petspeed claims to reduce the program size by a factor of .5 to .65 plus the overhead of 8 k. Remember the purpose is to make a program run faster. Often this requires more memory, Ironically.

To test the program, I loaded in a 63 block program and got back a compiled 74 block result. I found one oglitch . A syntax error occurs when it finds a line such as:

220 gosub 1120, 1140, 1280

but not when using On X gosub 1200, 1300... The program aborts after listing the error and goes to a warm start, which of course removes itself from memory.

What were the results of the compilation? Screen borders wrote quickly, but not as quickly as an assembled version. Music was speeded up to the point of no recognition. Screen presentations flashed by very rapidly.

Built in for-next loops to handle timing appear to be the culprit. So one must use a different approach to programs which are to be compiled. Longer counts could be inserted, based on trial and error to get the correct time sequence. Certainly music must be changed to get the correct timing. For a speed up factor of thirty, one would need to increase BASIC counting loops by thirty times.

One nice point about this compiler: you need not tell it about variables. It uses integer arithmetic wherever it can and converts to floating point when it needs to, for some arithmetic operations. This makes a more rapid run.

Some restraints are placed on the original program. Do not use

10 RUN 100

This is not allowed. Overlays cannot be used, nor dynamic dimensioning. One is not permitted to use machine code routines within the BASIC program. One cannot access PET variables from

an external machine code subroutine, as they are stored differently. Apparently one can access these from within Petspeed by pointers located in the second cassette buffer. By the way, dynamic dimensioning is found in programs which use Dim Y(N), where N is specified at run time. One must specify a numeric value before compiling. This should not lead to many difficulties, however.

Although I have referred to Petspeed as being in machine language, it is actually in a form of pseudo-code, which is converted at run time by the 8k 8headere to its own form of machine code.

This is the least complicated compiler to operate on a Commodore which I have used. One need only set it going and it does its job without interruption unless BASIC has some syntax errors, at which time it halts and goes away, leaving the error message on the screen.

When a report is required, the variables and locations are available for screen or printer. On the 8033P Commodore printer, (Diablo model 630) I found it annoying to have print-out wrapping around the right side of page. Perhaps it does better on a model 2022, or other PET printer. This is not a major fault, however.

The manual includes the usual disclaimer which accepts responsibility for nothing. Imagine buying any other product such as a car and being told that the manufacturer is responsible for nothing, period. I would hope that some time in future that software writers accept responsibility at some level for that which they create. This is a peeve of mine and many others, but does not reflect a poor opinion of the product.

My reaction is enthusiastically positive to this compiler. I don't like dongles, as I already have a number of them, but they are better than the nuisance of plug-in ROMs anyway!. Buy and enjoy.

DON'T BUY IT

by Gord Campbell

This is not a full-fledged review of PETSPEED, but rather several comments based on brief experience with the product.

PETSPEED is a compiler for Commodore BASIC programs. It will translate the BASIC program into a faster-running quasi machine-language equivalent. These remarks are based on 'ISSUE 2.3', for the 8032.

I read the user manual, and compiled several programs, mostly from the TPUG library. The compiler was easy to use, and ran reasonably quickly. The compiler requires a work-diskette with lots of free space. (At least, it seems like a lot if you use a 4040.) To compile requires a 'dongle' which is attached to the cassette port, but the resulting programs do not need this. During compilation, the syntax of the entire program is checked, which is a definite benefit. Yes, one of the programs contained a line which said GOT 1200. As long as the line is not executed, there is no problem. However, for users of the program it amounts to a time-bomb which will go off someday.

The resulting programs were approximately 30 blocks (7K) longer in every case. This included one program which started out at 90 blocks and went to over 120. The documentation claims that larger programs should actually decrease in size, but the handling of variable arrays can easily offset this.

The programs operated up to five times as fast after compilation. One program, which makes patterns on the screen with the quarter-square characters, makes heavy use of the trigonometric functions SIN and COS, and operated only marginally faster. For programs which are converted by hand from BASIC to Assembly (machine) language, I have a rule of thumb that they will operate 100 times as fast, but require about 10 times as much programming effort. PETSPEED clearly provides a useful compromise of these factors.

PETSPEED requires no modification to the program being compiled. Three restrictions do exist. Variables may not be passed to a program which is LOADed by a predecessor. This is not a material restriction, since the variable passing feature is a pain which most menu-based systems cripple. LIST is not supported by the compiler, but that also is no drawback. Arrays may not be dynamically DIMensioned, which is slightly awkward. Even in this case, no change is needed to the source program, since the compiler will prompt you to supply dimension information during compilation. You will get tired of supplying the information after about three compiles though.

During operation of compiled programs, the STOP key is normally disabled. This is almost always a desirable feature. If you want the STOP key functional, you may insert special REM statements in the source program to enable or disable it during execution. The INPUT statement is not changed by the compiler, so a null response will still drop the user out of the program.

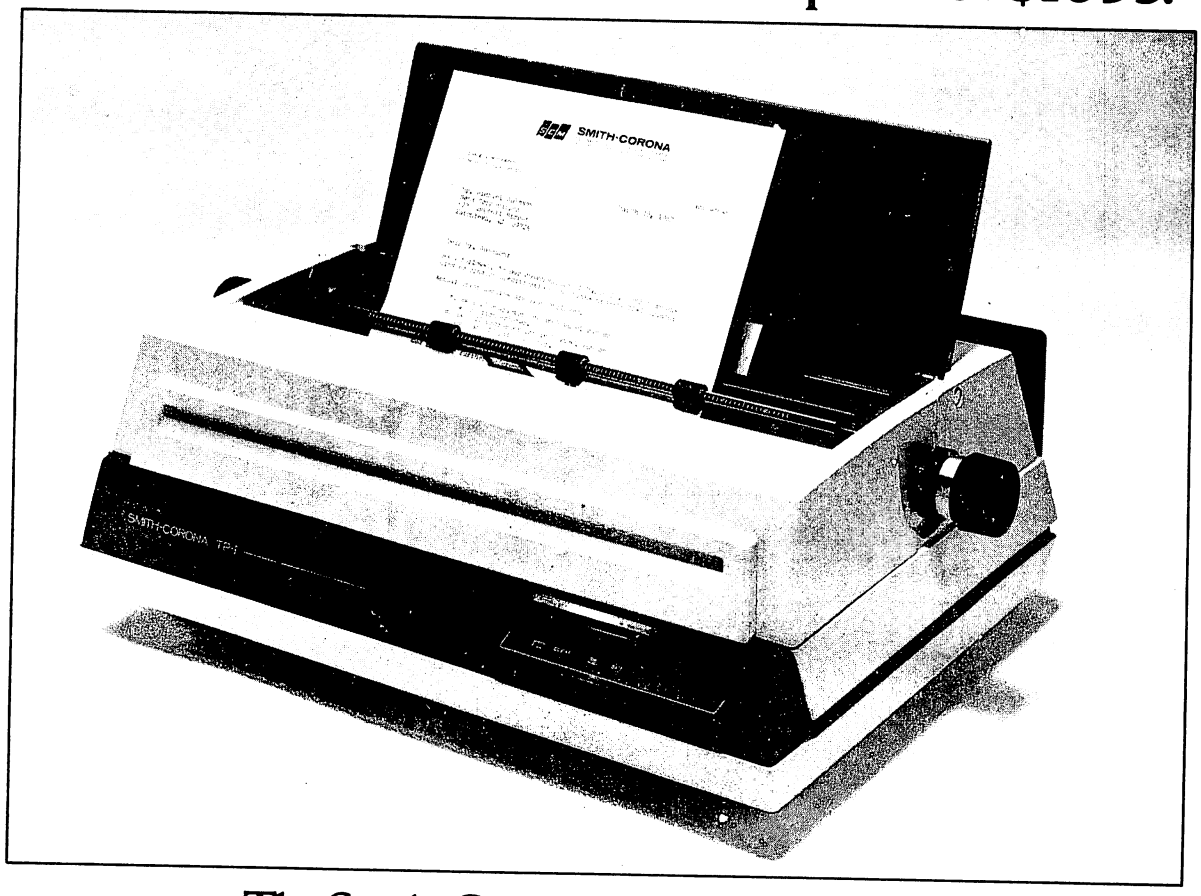
When a compiled program ends, the BASIC pointers are set as if there were no program in memory. This is a minor drawback, since entering a statement such as 'A= 1' in direct mode will smear the program, making it impossible to then say RUN.

I was disappointed that programs compiled for the 8032 would not operate on a 4032. However, the documentation makes no claim that this will work. (All the ones I have compiled on an 8032 have worked on a 4032 -ed.)

Three of the programs which I compiled did not yield identical results after compilation, which is a critical flaw. The game 'SPADES' piled all the cards up without regard for suit. The program which draws patterns went off the screen. A poker simulation incorrectly counted the 'pips' on the cards. I suspect that all of these bugs relate in some way to the fact that PETSPEED tries do do all arithmetic with integers, and goes to floating-point when it seems necessary. I would not buy PETSPEED as long as this bug exists, no matter how desirable it appears.

Who will get value from PETSPEED? People who are developing or using software written in BASIC, but are getting operating speeds which are marginal will get most value from it. (If the speed in BASIC is absolutely intolerable, PETSPEED may not be enough.) The fact that the entire syntax of the program is checked in one pass would yield full value to a heavy program-development shop. But no one will get value from it if they can't trust the results.

Smith-Corona introduces the first printer with real character at the unreal price of $1095.*



The Smith-Corona Daisy Wheel Printer

Until now, if you wanted to include a reasonably-priced printer as part of your computer or word processing system, you had to use a dot matrix printer. Daisy wheel printers were just too expensive.

Not anymore. Now Smith-Corona* offers a daisy wheel printer at such an incredibly low price, you can't afford *not* to include it. That means that even the smallest installation or business can now have letter quality printing capabilities at every work station.

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T

50
Education Disks

by Chris Bennett

We have just received 642 Educational programs from Commodore Canada thanks to Frank Winters and his team of programmers. These programs are contained on 50 diskettes and are identified by a three character ID starting with the letter K. For example, Administration - KAA, Business - KBA & KBB, etc.

These programs are a subset of those worked on by the school boards in the Metro Toronto area. Many of them are updated versions of programs already in our library. However, ALL these programs have been modified so that they will work on the following computers:

PET 2001 (BASIC 2.0)
PET 4000 (BASIC 2.0 or 4.0)
(9 and 12 inch screens)
CBM 8032 (uses CBM 4032 V2)
COMMODORE 64

This is the first time we have had so may programs available for a machine (COMMODORE 64) that is just starting to come off the production lines.

The documentation for these programs include the program title and disk ID, 6 codes and a description line of 108 characters. A description of the documentation follows:

PROGRAM TITLE - Each program is followed by a designation .C1 or .C2 which indicate that the program has been upgraded to the Ontario Software Cataloguing Project Standards. (.C1) indicates an upgrade to the June 23 standard, and has been modified to work on the Commodore 64. (.C2) indicates an upgrade to the August (revised) standard, and will work on the Commodore 64, 2001 Upgrade ROM's, 4000-series (9 and 12 inch screens) and the 8032. Future revisions of these programs will be designated (.C3).

DISK ID - The programs are compiled alphabetically within each of the 13 subject areas.

CATEGORY - Drill, Game, Simulation, Tutorial, Utility, or Other.

GRADE LEVEL - Early child, Primary, Junior, Intermediate, Senior, College, or Trainable mentally retarded.

PST VECTOR ANALYSIS - 3 Numeric Digits.

The first digit represents PRESENTATION and the values are:
0 - page turning
2 - input of single alpha/numeric
4 - alpha/numeric manipulation
6 - non-interactive graphics
9 - interactive text/animated graphics.

The second digit represents STRUCTURE and the values are:
0 - non-progressive
2 - problem level progression
4 - branching/remedial
6 - variations under teacher control
9 - variations control by student interaction

The third digit represents TRACKING and the values are:
0 - no tracking
2 - marking for program only
4 - cumulative marking
6 - marks compared to class (sums marks on file)
9 - marks compared to external standards

STATUS - P Public, PC Copyright, but authorized for limited dis-
tribution in Canada

COMPUTER - P PET/CBM, 6 Commodore 64

MEMORY SIZE - minimum memory size of computer needed to run this program.

These disks can be ordered from the TPUG library in the normal way. ($10 for each 4040 and $12 for 8050) or the COMPLETE SET can be ordered from Aurora Software for $300. The $300 includes the 50 diskettes, two hard cover binders, together with the documentation on all the programs. Orders must be prepaid, except in Canada where school boards may send a Purchase Order. All orders for the COMPLETE SET ($300, payable to Aurora Software) must be sent to:

Aurora Software
Att. Jennifer Godfrey
Box 1394
Haileybury, Ontario
Canada, P0J 1K0

KAA — ADMINISTRATION

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
ANALYSIS 1.C2	KAA	U	IS	400	P	P6	8	THIS STATISTICAL ANALYSIS PROGRAM LETS USER INPUT DATA AND CALCULATES MEDIAN, AVERAGE, ETC.
ANALYSIS 2.C2	KAA	U	IS	400	P	P6	8	THIS STATISTICAL ANALYSIS PROGRAM CALCULATES MEAN, AVERAGE, ETC. FROM USER INPUT DATA.
ANSWER BOX.C2	KAA	D	PJT	502	P	P6	16	REQUIRES QUESTION WORKSHEET. TEACHER-SELECTED ANSWERS ARE STORED IN DATA LINES.
BONDS.C2	KAA	U	IS	410	P	P6	16	CALCULATES SIMPLE BOND YIELD VALUES.
DOG.C2	KAA	S	SC	241	P	P6	32	USER TAKES THE PART OF A SCIENCE TEACHER FACING A STUDENT WHO WANTS TO PERFORM EXPLORATORY SURGERY ON A DOG
EXAM 2.C2	KAA					P6		
FIGHT.C2	KAA	S	SC	241	P	P6	32	SIMULATION OF A TEACHER-STUDENT CONFRONTATION, IN WHICH THE USER TAKES THE PART OF THE TEACHER.
GRADES.C2	KAA	U	C	300	P	P6	32	PROGRAM CALCULATES GRADES FOR UP TO 35 STUDENTS AND 10 TESTS AND ORDERS RESULTS BY ALPHABET OR SCORES.
LETTER.C2	KAA	S	SC	241	P	P6	32	PROGRAM SIMULATES A DISAGREEMENT BETWEEN A PARENT AND A TEACHER; THE USER IS PUT IN THE TEACHER'S POSITION.
MARKS.C2	KAA	U	C		P	P6	16	TEACHER ENTERS PUPILS' NAMES AND MARKS; COMPUTER CALCULATES AVERAGES, ETC. STORES ON TAPE; CAN BE ADDED TO.
MRK STATS.C1	KAA	U	C	110	P	P6	16	FOR SET OF MARKS OUT OF 100. GIVES HIGH, LOW, MEDIAN, AV., FAILURE RATE, NO. & % OF MARKS IN VARIOUS RANGES
NOTES.C2	KAA	O	C	000	P	P6	16	TEACHER'S UTILITY PROGRAM FOR GRADING AND RECORDING STUDENT (CLASS) MARKS FOR TESTS.
SEX ED.C2	KAA	SO	SC	241	P	P6	32	

KBA — BUSINESS

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
ACCOUNTING.C2	KBA	DT	S	602	P	P6	32	TUTORIAL ACCOUNTING AND QUIZ.
AMORT'N TABLE.C2	KBA	U	IS	300	P	P6	16	CALCULATES INTEREST ON A LOAN AND CREATES AN AMORTIZATION TABLE FOR THE LIFE OF THE LOAN.
BONDS.C2	KBA	U	IS	410	P	P6	16	CALCULATES SIMPLE BOND YIELD VALUES.
BUDGETACCOUNT.C2	KBA					P6		
CALENDAR.C2	KBA	U	SC	000	P	P6	16	A PERPETUAL CALENDAR GENERATOR WHICH WILL PROVIDE A CALENDAR FOR ANY MONTH, ANY YEAR.
CREDIT UNION.C2	KBA	D	IS	400	P	P6	16	A DRILL CONCERNED WITH TIME AND INTEREST ON LOANS.
DATES.C2	KBA	U	SC	000	P	P6	16	PROGRAM WILL CALCULATE HOW MANY DAYS AHEAD OR BACK TO ANY GIVEN DATE FROM A STARTING DATE.
DEPRECIATION.C2	KBA	T	IS	300	P	P6	16	ILLUSTRATES STRAIGHT LINE, DOUBLE DECLINING AND SUM OF THE DIGITS DEPRECIATION.
FIFO.C2	KBA	T	SC	300	P	P6	16	DEMONSTRATES THE 'FIRST-IN-FIRST-OUT' METHOD OF INVENTORY EVALUATION.
GROSS PAY.C2	KBA	D	I	200	P	P6	16	DRILLS CALCULATION OF GROSS PAY GIVEN PAY RATE, OVERTIME AND HOURS WORKED.
HISTORY QUIZ.C2	KBA	D	IS	212	P	P6	32	THIS PROGRAM IS A COMPUTER HISTORY QUIZ.
ICE CREAM P.C2	KBA	S	IS	002	P	P6	16	A SMALL BUSINESS SIMULATION WITH SEVERAL VARIABLES - SEE ALSO 'LEMONADE STAND'.
LEMONADE.C2	KBA	S	IS	902	P	P6	16	SIMULATES A SMALL BUSINESS OPERATION TAKING INTO ACCOUNT A NUMBER OF VARIABLES.
LIFE TABLES.C2	KBA	U	SC		P	P6	16	THIS PROGRAM CALCULATES LIFE INSURANCE AND ANNUITY TABLES FOR ANY GIVEN INTEREST RATE.

KBB — BUSINESS

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
MARKET.C2	KBB	S	SC	900	P	P6	16	A SIMULATED MARKET COMPETITION BETWEEN TWO COMPANIES WITH THE SAME PRODUCT.
MONEY FLOW.C2	KBB	SG	S	902	P	P6	16	SIMULATES MONEY FLOW. USER MUST DIRECT CHARACTER TO CORRECT AREA ACCORDING TO STATEMENT GIVEN.
MORTGAGE.C2	KBB	DU	S	440	P	P6	16	COMPUTES MORTGAGE TABLES AND PRINTS TABLE OF PAYMENTS, INTEREST, ETC.
OBJECTIVE1.1.C2	KBB					P6		
PORTFOLIO.C2	KBB	U	SC	410	P	P6	16	PROGRAM KEEPS TAPE FILE OF STOCK TRANSACTIONS AND PERFORMS SIMPLE CALCULATIONS.
SCHOOL-MARM.C2	KBB	D	PJ	402	P	P6	8	THIS PROGRAM ASKS GENERAL KNOWLEDGE QUESTIONS WHICH MAY BE ADAPTED FOR ANY SUBJECT AREA.
SIMULATION.C1	KBB	S	SC	600	P	P6	16	SIMULATION OF HOW A COMPUTER FOLLOWS A FLOW CHART. SHOWS PARTS OF A COMPUTER, SUCH AS MEMORY AND CPU.
STOCK MARKET2.C2	KBB	S	SC	321	P	P6	16	A GAME INVOLVING A SIMULATION OF THE STOCK MARKET.
TAX ONT81V1.C2	KBB	U	SC	221	P	P6	16	ASSISTS USER IN RETURN PREPARATION BY CALCULATING ARITHMETIC OPERATIONS.

KCA — COMPUTER SCIENCE

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
BIG BINARY.C2	KCA	U	SC	500	P	P6	16	PROGRAM CONVERTS NUMBERS INTO BINARY CODE.
COMMANDS.C2	KCA	DT	JS	402	P	P6	16	STUDENT IS GIVEN INFORMATION ABOUT PET COMPUTER AND THEN ASKED RELEVANT QUESTIONS.
COMP CONCEPT.C1	KCA	T	IS	232	P	P6	16	A TUTORIAL PROGRAM WITH GOOD ANIMATION.
COMPUTING.C2	KCA	D	ISC	203	P	P6	32	THIS PROGRAM TESTS KNOWLEDGE OF COMPUTER TECHNOLOGY.
DISK CMD.C2	KCA	T	JISC	000	P	P6	32	THIS IS A TUTORIAL ON THE COMMANDS RELEVANT TO THE DISK DRIVE, USING DOS AND BASIC 4.0 LANGUAGE.
DISK LISTER.C2	KCA	U			P	P6	32	THIS PROGRAM WILL UPDATE MASTER DIRECTORY, DISPLAY SELECTED DIRECTORY OR DELETE DISK ENTRY FROM MASTER.
FEATURES QUIZ.C2	KCA	T	PJIS	202	P	P6	16	LESSONS AND QUIZ CONCERNING THE PET/CBM COMPUTER.
GRAPH SUBROUT.C2	KCA	U	S	000	P	P6	16	ESSENTIALLY AN 8K SUBROUTINE THAT DRAWS GRAPHS (EG. SINE WAVE) IN PET 'HI RES'.
HEX DEC.C2	KCA	U	IS	000	P	P6	16	CONVERTS HEXIDECIMALS TO DECMALS AND VICE-VERSA.
HEX DEMO.C2	KCA	U	SC	300	P	P6	16	CONVERTS DECIMAL NUMBERS BETWEEN 0 AND 255 INTO HEXIDECIMALS, SHOWING THE HIGH AND LOW NYBBLES.
HISTORY QUIZ.C2	KCA	D	IS	212	P	P6	32	THIS PROGRAM IS A COMPUTER HISTORY QUIZ.
HYPO.AUTO.C2	KCA	S	SC	710	P	P6	16	THIS PROGRAM SIMULATES A COMPUTER AND USES A MACHINE LLEVEL LANGUAGE TO DEMOSTRATE OPERATION.
KEYBOARD.C2	KCA	D	PJ	221	P	P6	16	TESTS USER'S ABILITY TO FIND KEYS (ALPHA-NUMERIC, SYMBOLIC) ON THE KEYBOARD.
PLOTTING.C2	KCA	U	S	600	P	P6	16	PLOTTING EXERCISE.
PRGM. LISTER.C2	KCA	PC			P	P6	16	THIS PROGRAM TAKES A LIST. YOU ONE TYPE AND IT PRINTS IT OUT IN ALPHABETICAL ORDER ON A PRINTER.

KCB — COMPUTER SCIENCE

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
RND GENERATOR.C2	KCB	T	IS	200	P	P6	8	DEMONSTRATES RANDOM NUMBER GENERATOR, SHOWS FORM OF STATEMENT, AND GIVES SAMPLE RUNS.
SIMULATION.C1	KCB	T	S	321	P	P6	32	A SIMULATION OF HOW A COMPUTER FOLLOWS A FLOW CHART.
SOUND SUBS.C2	KCB	U	PJIS	200	P	P6	16	OFFERS 21 SOUND SUBROUTINES FOR USE IN OTHER PROGRAMS OR SIMPLY AS A SOUND DEMO.
STRINGS.C2	KCB	T	PJISC	200	P	P6	16	PROGRAM DEMONSTRATES THE USE OF STRING VARIABLES ON THE PET COMPUTER TERMINAL.
TURTLE 1.C2	KCB	S	JIS	930	P	P6	32	THIS PROGRAM MIMICS LOGO'S TURTLE GRAPHICS USING PET GRAPHICS. LIMITED CHOICE OF DIRECTIONS.
TURTLE 2C2	KCB	S	JIS	930	P	P6	32	THIS PROGRAM MIMICS LOGO'S TURTLE GRAPHICS USING PET GRAPHICS. LIMITED CHOICE OF DIRECTIONS.

KEA — ENGLISH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
A OR AN.C2	KEA	D	PJ	424	P	P6	16	STUDENT COMPLETES SENTENCES BY INSERTING 'A' OR 'AN' BEFORE VARIOUS WORDS.
A STORY.C2	KEA	G	JI	900	P	P6	16	STUDENT FILLS IN THE MISSING PARTS OF SPEECH; COMPUTER MAKES UP A MADLIB STORY WITH THEM.
ALPHA BETTER.C2	KEA	D	P	420	P	P6	16	STUDENT ARRANGES LETTERS IN ALPHABETICAL ORDER.
ALPHABETIZING.C2	KEA	DT	PJI	112	P	P6	16	PROGRAM PROVIDES PRACTICE IN ALPHABETIZING THROUGH DRILLS AND TUTORIALS. CHOICE OF 4 LEVELS OF DIFFICULTY.
ANTONYMS.C2	KEA	DT	JI	302	P	P6	16	STUDENT GIVES THE ANTONYMS OF WORDS PRESENTED BY THE COMPUTER.
APHORISMS.C2	KEA	G	IS	000	P	P6	16	MAKES APHORISMS BY RANDOMLY COMBINING WORDS.
B'BALL MADLIB.C2	KEA	T	J	400	P	P6	16	TEACHES PARTS OF SPEECH - NOUN, ADJ., VERB & ADVERB. STUDENT GIVES EXAMPLES AND PET USES THEM IN A STORY.
COMP. POETRY.C2	KEA	T	J	521	P	P6	16	COMPUTER PROVIDES SHORT POETRY SAMPLES, THEN INVITES THE USER TO WRITE SIMPLE POEMS.
CONC. WORDS.C2	KEA	G	PJ	302	P	P6	32	A MEMORY MATCHING GAME FOR ONE OR TWO PEOPLE.
CONCENTRATION.C2	KEA	G	PJ	702	P	P6	16	THIS IS THE POPULAR WORD GAME OF 'CONCENTRATION' USING SIMILAR-SOUNDING WORDS.
DEFMATCH.C2	KEA	D	IS	421	P	P6	16	STUDENT MATCHES SIX WORDS TO THEIR DEFINITIONS USING NUMBER KEY PAD. (DATA ADAPTABLE TO ANY GRADE LEVEL.)
ENG. MONSTER.C2	KEA	DG	S	402	P	P6	16	PLAYER MUST FIND APPROPRIATE ASSOCIATION WORDS IN ORDER TO RESCUE STUDENTS FROM CANNIBALISTIC TEACHER.
FLASHER.C2	KEA	D	PJI	452	P	P6	16	A WORD OR PHRASE IS FLASHED ON THE SCREEN FOR A SPECIFIED TIME; USER MUST CORRECTLY RETYPE WHAT WAS FLASHED
GRAMMAR 1.C0	KEA	D	IS	210	P	P6	8	A QUIZ ON BASIC PARTS OF SPEECH.
HAIKU.C2	KEA	DT	JIS	100	P	P6	8	PROGRAM GENERATES 'POETRY' IN THE FORM OF AN ORIENTAL HAIKU.

KEB — ENGLISH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
HANGMAN 1.C2	KEB	G	J	420	P	P6	16	TRADITIONAL WORD-GUESSING GAME.
HANGMAN 2.C2	KEB	G	JIS	800	P	P6	32	TRADITIONAL WORD-GUESSING GAME. THIS ONE HAS A CHOICE OF FIVE CATEGORIES.
HANGMAN.C2	KEB	G	I	602	P	P6	32	TRADITIONAL WORD-GUESSING GAME. TEN GUESSES ARE ALLOWED BEFORE 'HANGING'.
HOMOCONC.C2	KEB	G	P	202	P	P6	16	A GOOD 'CONCENTRATION' TYPE GAME.
INIT DIGRAPH.C2	KEB	D	P		P	P6	16	STUDENT COMPLETES WORDS WITH THE APPROPRIATE DIGRAPH IN THIS MULTIPLE-CHOICE DRILL.
JOTTO.C2	KEB	G	JI	401	P	P6	32	PLAYER INPUTS WORDS TO TRY AND MATCH THE PET'S HIDDEN WORD. COMPUTER REVEALS HOW MANY LETTERS ARE CORRECT.
LETTER SQUARE.C2	KEB	G	IS	200	P	P6	8	THIS PROGRAM IS THE GAME OF '15' PLAYED WITH THE LETTERS A-O INSTEAD OF NUMBERS.
LETTER.C2	KEB	G	P	222	P	P6	16	PLAYER TRIES TO GUESS COMPUTER-SELECTED LETTER OF THE ALPHABET WITH THE AID OF CLUES.
'MACBETH QUIZ.C2	KEB				P	P6		
MADLIB.C2	KEB	DG	JI	400	P	P6	32	STUDENT SUPPLIES THE COMPUTER WITH NOUNS, ADJECTIVES AND VERBS AND IT MAKES UP A NONSENSE STORY.
MATCHING.C2	KEB	D	PJ	260	P	P6	16	PROGRAM GIVES STUDENT PRACTICE IN DISTINGUISHING WORDS FROM ONE ANOTHER.
MEDIAL VOWELS.C2	KEB	D	PJ	402	P	P6	16	A MULTIPLE-CHOICE VOCABULARY TEST DEALING WITH MEDIAL VOWELS.
MISSPELLING	5.C2	KEB	D	J	40	P	P6	16 PUPILS TRY TO IDENTIFY AND CORRECT MISSPELLED WORD.
MISSPELLING 6.C2	KEB	D	J	202	P	P6	16	A SPELLING DRILL. STUDENT IS GIVEN 5 WORDS AND MUST IDENTIFY THE ONE THAT IS MISSPELLED.
MM 2LADVF.C2	KEB	T	P	902	P	P6	16	MR MUGS: DRILLING STUDENTS ON APPLYING VERB FORMS. L3 P373 MR. MUGS IS LOST.

KEC — ENGLISH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
MM ADVBFORMS2.C2	KEC	T	P	902	P	P6	16	MR. MUGS DRILLS PUPILS ON THE CORRECT APPLICATION OF ADVERB FORMS. L6 P201 IT'S SATURDAY.
MM CRCOMP.C2	KEC	T	P	902	P	P6	16	MR. MUGS: IDENTIFICATION OF TYPES OF QUESTIONS. L6 P101 MR. MUGGS IS KIDNAPPED.
MM DARK WOOD.C2	KEC	T	P	902	P	P6	16	MR MUGS: VOCABULARY DRILL. L4 P281 IN A DARK WOOD.
MM HOMONYMS.C2	KEC	T	P	902	P	P6	16	MR. MUGS: CHOOSING THE CORRECT WORD OF TWO THAT SOUND THE SAME. L6 P202 IT'S SATURDAY.
MM LADVF.C2	KEC	T	P	902	P	P6	16	MR MUGS: DRILLING STUDENTS ON APPLYING VERB FORMS. L3 P348 MR. MUGS IS LOST.
MM MUGS 2WM.C2	KEC	T	P	902	P	P6	16	MR. MUGS: LEARN VOCABULARY THROUGH CORRECT COMPLETION OF SENTENCES. L5 P153 IN THE RAIN.
MM MUGS WM.C2	KEC	T	P	902	P	P6	16	MR. MUGS: LEARN VOCABULARY THROUGH CORRECT COMPLETION OF SENTENCES. L5 P53 MR. MUGS AT SCHOOL.
MM PUNCTUAT'N.C2	KEC	T	P	902	P	P6	16	MR. MUGS: CORRECT PUNCTUATION OF SENTENCES. L6 P182 IT'S SATURDAY.
MM SADSTORY 2.C2	KEC	T	P	902	P	P6	16	MR MUGS: SENTENCE COMPLETION TECHNIQUES. L3 P333 MR. MUGS IS LOST.
MM SHARE TIME.C2	KEC	T	P	902	P	P6	16	MR MUGS: VOCABULARY DRILL. L4 P39 SHARING TIME.
MM VB FORMS 1.C2	KEC	T	P	902	P	P6	16	MR MUGS: DRILLING PUPILS ON APPLYING VERB FORMS. L5 P95 MR. MUGGS AT SCHOOL.
MM VB FORMS 2.C2	KEC	T	P	902	P	P6	16	MR MUGS: DRILLING STUDENTS ON APPLYING VERB FORMS. L5 P95 MR. MUGS AT SCHOOL.
MM VB FORMS 3.C2	KEC	T	P	902	P	P6	16	MR MUGS: DRILLING STUDENTS ON APPLYING VERB FORMS. L5 P61 MR. MUGS AT SCHOOL.
MM VB FORMS 4.C2	KEC	T	P	902	P	P6	16	MR MUGS: DRILLING PUPILS ON APPLYING VERB FORMS. L5 P191 IN THE RAIN.
MM VB FORMS 5.C2	KEC	T	P	902	P	P6	16	MR MUGS: DRILLING PUPILS ON APPLYING VERB FORMS. L5 P203 IN THE RAIN.

KED — ENGLISH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
MM VB FORMS 6.C2	KED	T	P	902	P	P6	16	MR MUGS: DRILLING PUPILS ON APPLYING VERB FORMS. L5 P230 IN THE RAIN.
MM VB FORMS 7.C2	KED	T	P	902	P	P6	16	MR MUGS: DRILLING STUDENTS ON APPLYING VERB FORMS. L5 P256 MR. MUGS TO THE RESCUE.
MM VB FORMS 8.C2	KED					P6		
MM VB FORMS 9.C2	KED					P6		
MM WORD MEANS.C2	KED	T	P	902	P	P6	16	MR MUGS: SENTENCE COMPLETION TECHNIQUES. L3 P328 MR. MUGS IS LOST.
NEW TACHISTO.C2	KED	D	JI	540	C	P6	32	A SHORT PHRASE APPEARS FOR A FRACTION OF A SECOND AND THE STUDENT MUST RETYPE IT CORRECTLY.
NOUNS.C2	KED	DT	PJ	440	P	P6	16	A QUIZ AND A TUTORIAL ON NOUNS.
P'BLEM P'NOUN.C2	KED	D	JI	202	P	P6	16	THIS IS A QUIZ ON PICKING CORRECT PRONOUNS FOR SENTENCES.
PARTS SPEECH.C2	KED	D	JI		P	P6	16	THIS PROGRAM IS A REVIEW OF THE PARTS OF SPEECH -- NOUN, ADJECTIVE, VERB AND PREPOSITION.

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
PETPITPATPOT.C2	KED	D	I	402	P	P6	16	GIVEN DEFINITION OF WORD THAT BEGINS WITH PET, PIT, PAT, OR POT, STUDENT MUST FIND WORD.
PLURALS.C2	KED	DT	J	422	P	P6	16	THIS PROGRAM TEACHES VARIOUS RULES FOR FORMING THE PLURALS OF WORDS AND GIVES PRACTICE EXERCISES.
PRGM. LISTER.C2	KED	PC			P	P6	16	THIS PROGRAM TAKES A LIST. YOU ONE TYPE AND IT PRINTS IT OUT IN ALPHABETICAL ORDER ON A PRINTER.
READ LEV&EVAL.C2	KED	U	C		P	P6	16	STUDENT IS ASKED TO ENTER A SERIES OF PASSAGES, FROM WHICH THE COMPUTER MAKES A READING LEVEL ASSESSMENT.
READER.C2	KED	D	IS	442	P	P6	32	A PROGRAM WHICH GIVES THE STUDENT NINE CHOICES OF SPEED AT WHICH TO READ MATERIAL.
REMEMBERING.C2	KED	DG	PJ	922	P	P6	16	THIS PROGRAM TESTS THE STUDENT'S ABILITY TO MATCH & REMEMBER SHAPES, WORDS, AND LETTERS.

KEE — ENGLISH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
RHYMECONC.C2	KEE	DG	JI	202	P	P6	16	A GAME PROGRAM DESIGNED TO ASSIST THE LEARNING OF HOMONYMS.
RHYMING.C2	KEE	D	P	702	P	P6	16	A SIMPLE DRILL TO DETERMINE WHETHER THE STUDENT CAN DISTINGUISH BETWEEN RHYMING AND NON-RHYMING WORDS.
ROMEO&JULIET.C2	KEE	D	IS	402	P	P6	16	QUIZ ON THE PLAY ROMEO AND JULIET.
S'PG ERRORS 4.C2	KEE	D	J	292	P	P6	16	STUDENT MUST FIND MISSPELLED WORD IN LIST AND THEN TYPE ITS CORRECT SPELLING.
S'PG ERRORS 5.C2	KEE	D	J	300	P	P6	16	STUDENT MUST FIND MISSPELLED WORD IN LIST AND THEN TYPE ITS CORRECT SPELLING.
S'PG ERRORS 6.C2	KEE	D	J	300	P	P6	16	STUDENT MUST FIND MISSPELLED WORD IN LIST AND THEN TYPE ITS CORRECT SPELLING.
S'PG ERRORS 8.C2	KEE	D	I	300	P	P6	16	STUDENT MUST FIND MISSPELLED WORD IN LIST AND THEN TYPE ITS CORRECT SPELLING.
S-HYPHEN.C2	KEE	D	JI	460	PC	P6	32	READS DATA CREATED BY T-HYPHEN. IT THEN DRILLS STUDENTS ON HYPHENATED WORDS.
S-SPELL.C2	KEE	D	JI	462	PC	P6	16	THIS PROGRAM WORKS IN CONJUNCTION WITH T-SPELL. IT DRILLS STUDENTS IN SPELLING.
SCHOOL-MARM.C2	KEE	D	PJ	402	P	P6	8	THIS PROGRAM ASKS GENERAL KNOWLEDGE QUESTIONS WHICH MAY BE ADAPTED FOR ANY SUBJECT AREA.
SCRAMBLE 4.C2	KEE	G	J	490	P	P6	16	STUDENT IS GIVEN A SCRAMBLED WORD AND MUST UNSCRAMBLE IT (NO TIME LIMIT).
SCRAMBLE 5.C2	KEE	G	I	490	P	P6	16	STUDENT IS GIVEN A SCRAMBLED WORD AND MUST UNSCRAMBLE IT (NO TIME LIMIT).
SCRAMBLE 6.C2	KEE	G	J	490	P	P6	16	STUDENT IS GIVEN A SCRAMBLED WORD AND MUST UNSCRAMBLE IT (NO TIME LIMIT).
SCRAMBLE 7.C2	KEE	G	I	490	P	P6	16	STUDENT IS GIVEN A SCRAMBLED WORD AND MUST UNSCRAMBLE IT (NO TIME LIMIT).
SCRAMBLE 8.C2	KEE	G	I	490	P	P6	16	STUDENT IS GIVEN A SCRAMBLED WORD AND MUST UNSCRAMBLE IT (NO TIME LIMIT).

KEF — ENGLISH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
SHAKESPEARE Q.C1	KEF	D	IS	122	P	P6	32	DRILL ON ROMEO & JULIET, J. CAESAR, K. LEAR, HAMLET, OTHELLO, MERCHANT OF VENICE. 'WHO AM I, WHO SAID' TYPE
SNOWYDAYNOUNS.C2	KEF	S	IS	602	P	P6	16	ASKS THE STUDENT TO INPUT A NUMBER OF NOUNS FROM A PICTURE.
SPD SPELLING2.C2	KEF	D	P	420	P	P6	16	A WORD IS FLASHED ON THE SCREEN. STUDENT TYPES THE WORD. COMPUTER ADJUSTS FLASH SPEED TO CHILD'S ABILITY.
SPD SPELLING3.C2	KEF	D	P	420	P	P6	16	A WORD IS FLASHED ON THE SCREEN. STUDENT TYPES THE WORD. COMPUTER ADJUSTS FLASH SPEED TO CHILD'S ABILITY.
SPD SPELLING4.C2	KEF	D	P	420	P	P6	16	A WORD IS FLASHED ON THE SCREEN. STUDENT TYPES THE WORD. COMPUTER ADJUSTS FLASH SPEED TO CHILD'S ABILITY.
SPD SPELLING5.C2	KEF	D	J	420	P	P6	16	A WORD IS FLASHED ON THE SCREEN. STUDENT TYPES THE WORD. COMPUTER ADJUSTS FLASH SPEED TO CHILD'S ABILITY.
SPD SPELLING6.C2	KEF	D	J	420	P	P6	16	A WORD IS FLASHED ON THE SCREEN. STUDENT TYPES THE WORD. COMPUTER ADJUSTS FLASH SPEED TO CHILD'S ABILITY.
SPD SPELLING7.C2	KEF	D	I	422	P	P6	16	A WORD IS FLASHED ON THE SCREEN. STUDENT TYPES THE WORD. COMPUTER ADJUSTS FLASH SPEED TO CHILD'S ABILITY.
SPD SPELLING8.C2	KEF	D	I	420	P	P6	16	A WORD IS FLASHED ON THE SCREEN. STUDENT TYPES THE WORD. COMPUTER ADJUSTS FLASH SPEED TO CHILD'S ABILITY.
SPEED READ 2.C2	KEF	D	I	490	P	P6	32	HELPS STUDENTS TO IMPROVE ABBILITY TO RECOGNIZE PRINTED PHRASES QUICKLY.
SPELL MEAN 5.C2	KEF	D	J		P	P6	16	MULTIPLE CHOICE FORMAT CHECKS STUDENT'S KNOWLEDGE OF WORD MEANINGS (GRADE FIVE).
SPELL MEAN 6.C2	KEF	D	J		P	P6	16	MULTIPLE CHOICE TEST CHECKS STUDENT'S KNOWLEDGE OF WORD MEANINGS (GRADE SIX).

KEG — ENGLISH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
SPELL MEAN 7.C2	KEG	D	I	P		P6	16	MULTIPLE CHOICE TEST CHECKS STUDENT'S KNOWLEDGE OF WORD MEANINGS (GRADE SIX).
SPELLING BEE.C2	KEG	D	I	202	P	P6	16	USER IS REQUIRED TO REPEAT FLASHED WORDS.
SPELLINGTUTOR.C2	KEG	T	PJI	992	P	P6	16	TEACHER OR STUDENT TYPES IN WORDS. COMPUTER DRILLS BY REVERSING LETTERS, OMMITTING LETTERS, ETC.

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
SWAP NEW ROM.C2	KEG	D	J	422	P	P6	16	EXCHANGE WORDS ON A LIST UNTIL THEY ARE ARRANGED ALPHABETICALLY.
SYLLABLE.C2	KEG	D	PJ	602	P	P6	16	THIS IS A DRILL ON THE SEPARATION OF WORDS INTO SYLLABLES.
SYNONYMS.C2	KEG	DT	JI	302	P	P6	16	STUDENT GIVES THE SYNONYMS OF WORDS PRESENTED BY THE COMPUTER.
T-HYPHEN.C2	KEG	U	JI	302	P	P6	16	PROGRAM CREATES A TEST TO BE USED WITH 'S-HYPHEN'.
T-SPELL.C2	KEG	U	JI	400	P	P6	32	CREATES A FILE FOR TESTING WITH 'S-SPELL'.
THEWORDMARKET.C2	KEG			P6				
TWENTY QUEST.C2	KEG	G	PJ	220	P	P6	16	STUDENT SELECTS AN ITEM FROM A CATEGORY AND PET ASKS QUESTIONS WHICH HAVE BEEN MADE UP BY THE TEACHER.
TWO TO TOO.C2	KEG	DT	PJ	342	P	P6	16	A REVIEW AND TEST INVOLVING THE WORDS 'TWO', 'TOO' AND 'TO' IS PRESENTED.
UNSCRAMBLE.C2	KEG	D	J	402	P	P6	16	USER MUST UNSCRAMBLE VARIOUS WORDS.
VOCAB.C2	KEG	D	J	322	P	P6	32	A MULTIPLE CHOICE TEST OF GRADE 6 VOCABULARY.
VOCABULARY 3.C2	KEG	D	J	312	P	P6	32	A MULTIPLE CHOICE TEST OF GRADE 3 VOCABULARY.

KEH — ENGLISH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
VOCABULARY 4.C2	KEH	D	J	202	P	P6	32	A MULTIPLE CHOICE TEST OF GRADE 4 VOCABULARY.
VOWEL MAGIC.C2	KEH	D	PJ	322	P	P6	16	A DRILL IN WHICH THE STUDENT TYPES A WORD AND THEN MUST TELL THE COMPUTER THE NUMBER OF VOWELS IN IT.
WORD GAME.C2	KEH	D	J	460	P	P6	16	STUDENT INPUTS SYNONYM OF DISPLAYED WORD. TEACHER SHOULD INSERT OWN DATA.
WORD HUNT.C2	KEH	D	JI	303	PC	P6	16	THIS PROGRAM GIVES CLUES IN WANTED POSTER FORMAT. THE STUDENT MUST IDENTIFY THE FUGITIVE WORD.
WORD LADDER.C2	KEH	G	J	300	P	P6	8	USER CHANGES ONE LETTER AT A TIME TO MOVE FROM THE ORIGINAL GIVEN WORD TO THE TARGET WORD ASSIGNED.
WORD POWER.C2	KEH	D	JIS	262	P	P6	16	VOCABULARY QUIZ. TEACHER CAN MAKE OWN DATA FILES.
WORD SEARCH 1.C2	KEH		JIS	501	PC	P6	16	COMPUTER HIDES WORDS, SUPPLIED BY THE PLAYER, INSIDE A CROSSWORD PUZZLE. THE PLAYER MUST FIND THEM AGAIN.

KFA — FRENCH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
DATES.C2	KFA					P6		
FR. SENTENCES.C2	KFA	D	J	901	PC	P6	64	DRILL ON FRENCH VERB TENSES USING VERBS ETRE, AVOIR AND ALLER.
FRENCH AID #1.C2	KFA	DT	JI	300	P	P6	16	THE STUDENT ENTERS AN ENGLISH WORD AND ATTEMPTS TO TRANSLATE IT INTO FRENCH.
FRENCH AID #2.C2	KFA	D	IS	301	P	P	16	THIS PROGRAM GIVES THE STUDENT FRENCH WORDS TO BE TRANSLATED INTO ENGLISH.
FRENCH DRILL.C2	KFA	D	JI	442	P	P6	8	THIS IS AN EXERCISE IN THE TRANSLATION OF ENGLISH WORDS INTO FRENCH.
FRENCH FWC.C2	KFA	DT	I	942	P	P6	32	A REVIEW OF RE, ER AND IRREGULAR VERBS, AND NEGATIVE FORMATION. INCLUDES A TEST AND A FRENCH 'HANGMAN' GAME
FRENCH QUIZ.C2	KFA	D	S	402	P	P6	16	A QUIZ ON TRANSLATION, REPLACEMENT OF NOUNS WITH PRONOUNS, AND NAMING NUMBERS WITH WORDS.
FRENCH TEST.C2	KFA					P6		
FRENCH VERBS.C1	KFA	D	IS	121	P	P6	32	DRILL ON REGULAR AND IRREGULAR FRENCH VERBS AT GRADE 9 OR ADVANCED LEVEL
FRENCH VERBS.C2	KFA	D	J	401	PC	P6	64	DRILLS USER-SELECTED VERB TENSES. ERRORS ARE DISPLAYED AT END OF PROGRAM.
MELI-MELO.C2	KFA	D	P	200	P	P6	32	THE WORDS OF A SENTENCE INPUT BY THE USER ARE RANDOMLY DISTRIBUTED ON THE SCREEN, THEN SLOWLY REASSEMBLED.
SCHOOL-MARM.C2	KFA	D	PJ	402	P	P	8	THIS PROGRAM ASKS GENERAL KNOWLEDGE QUESTIONS WHICH MAY BE ADAPTED FOR ANY SUBJECT AREA.
SERIE 1.C2	KFA					P6		

KGA — GAMES

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
A BLOCK.C2	KGA	G	PJI	801	P	P6	8	MAY BE DIFFICULT TO UNDERSTAND. PLAYER MATCHES ARTICLES BASED ON ATTRIBUTES SIMILAR TO VENN DIAGRAMS.
A-MAZING.C2	KGA	G	IS	600	P	P6	16	DRAWS MAZES, THE DIMENSIONS OF WHICH ARE CHOSEN BY THE USER.
ABSTRACT.C2	KGA	G	JI	402	P	P6	16	VERY SIMILAR TO 'BAGELS'.
ACCELERATION.C2	KGA	G	S	800	P	P	8	THIS IS AN INTERESTING PHYSICS GAME WHICH REQUIRES THE USE OF A CALCULATOR.
AFO.C2	KGA	G	PJ	902	P	P6	16	ACTION GAME WITH SOME JAPANESE TEXT. PLAYER TRIES TO KNOCK OUT 'AFO' WITH A LASER BEFORE BEING HIT HIMSELF.
APPAREIL JET.C2	KGA	G	JIS	411	P	P6	64	SLOT-MACHINE GAME. USER IS 'GIVEN' $100 FOR BETTING PURPOSES.
ARROW!.C2	KGA	G	PJI	902	P	P6	8	YOU GUIDE THE 'SNAKE' TO HIT TARGET BOXES, AVOIDING THE BOUNDARIES AND THE SNAKE ITSELF.
ARTILLERY.C2	KGA	GS	JIS	911	P	P6	32	CHOOSE ANGLE AND AMOUNT OF POWDER REQUIRED TO FIRE A CANNON SHOT OVER A MOUNTAIN AT THE OPPOSING PLAYER.
ATARI II.C2	KGA	G	PJS	202	P	P6	32	THE OBJECT OF THIS GAME IS TO DESTROY AS MANY SPACESHIPS AS POSSIBLE.
BAGEL.C2	KGA	G	JIS	402	P	P6	16	PLAYER ATTEMPTS TO GUESS 3-DIGIT NUMBER, USING COMPUTER CLUES (RIGHT DIGIT, RIGHT POSITION).
BATTLESHIP.C2	KGA	G	JIS	702	P	P6	16	USER PLAYS AGAINST COMPUTER. EACH HAS 5 INVISIBLE SHIPS ON THE GRID; WINNER IS FIRST TO SINK OTHER'S SHIPS
BIORHYTHM.C2	KGA	O	IS	000	P	P	32	PROGRAM GIVES A GRAPHIC ILLUSTRATION OF PLAYER'S PHYSICAL/EMOTIONAL/INTELLECTUAL LEVEL FOR ANY MONTH & YEAR
BLACK BOX.C2	KGA	G	JI	902	P	P	32	TRY TO FIND THE LOCATIONS OF MISSING MARBLES IN THE BLACK BOX. THE LAWS OF REFLECTION AND REFRACTION APPLY.
BLACKJACKE.C2	KGA	G	IS	201	P	P6	32	A COMPUTER BLACKJACK GAME, WITH GRAPHIC ILLUSTRATIONS OF THE CARDS DEALT TO THE PLAYER.
BREAKOUT.C2	KGA	S	PJI	902	P	P6	16	PLAYER POSITIONS A PADDLE SO AS TO DEFLECT A BOUNCING BALL AT A SECTION OF WALL UNTIL IT BREAKS THROUGH.

KGB — GAMES

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
CHASE.C2	KGB	S	JIS		P	P6	16	USER MUST TRY TO ESCAPE FROM THE SECURITY ROBOTS. FOUR LEVELS OF DIFFICULTY.
CIVIL BATTLES.C2	KGB	GS	IS	402	P	P6	32	CIVIL WAR SIMULATION. PLAYER RESPONDS TO COMPUTER QUESTIONS AND ATTEMPTS TO WIN AS MANY BATTLES AS POSSIBLE
CRAPS.C2	KGB	S	JIS	302	P	P	32	THIS PROGRAM IS A SIMULATION OF THE DICE ROLLING GAME CALLED 'SHOOTING CRAPS'.
CRAZY BALLOON.C2	KGB	G	PJ	802	P	P6	32	PLAYER HAS 4 CHANCES TO GUIDE A BALLOON THROUGH SOME PRICKLY STARS WITHOUT HITTING ANY OF THEM.
CYCLON BATTLE.C2	KGB	S	JI	900	P	P6	16	PLAYER ATTEMPTS TO MANOEUVER CYCLON FIGHTERS INTO HIS SIGHTS AND SHOOT THEM DOWN.
DAM BUSTERS.C2	KGB	S	PJ	553	P	P6	16	PLAYER MUST TRY TO BOMB THROUGH A DAM WHILE BEING FIRED ON BY ITS DEFENSES.
DUCKSHOOT.C2	KGB	S	PJIS	902	P	P6	16	PLAYER SCORES POINTS BY SHOOTING DOWN AS MANY DUCKS AS POSSIBLE WITH A FIXED 'RIFLE'.
ENGGAME2.C2	KGB	G	IS	450	P	P6	16	ENGLISH VERSION OF GAME 2 USER SOLVES A MATHEMATICAL PUZZLE INVOLVING +,-,*,/.
FLECHE.C2	KGB	G	JI	902	P	P6	32	A HAND-EYE CO-ORDINATION GAME. USER TRIES TO SCORE POINTS BY HITTING SQUARES WITH ARROWS.
FOX AND HOUND.C2	KGB	G	JIS	200	P	P6	32	PLAYER REPRESENTS HOUNDS AND COMPUTER IS THE FOX; OBJECT IS TO TRAP FOX, USING CHECKER-LIKE MOVES.
FROG RACE.C2	KGB	G	PJI	202	P	P6	16	PLAYERS BET ON ANY OF EIGHT FROGS THAT HOP RANDOMLY OUT OF A BOX. A SUMMARY TABLE KEEPS SCORE.
GAME 4.C2	KGB	G	JI	701	P	P	16	A GAME OF TIC-TAC-TOE WITH ENGLISH INSTRUCTIONS AND A FEW FOREIGN LANGUAGE WORDS.
GOLIWOG.C2	KGB	G	JI	402	P	P6	32	PLAYER HAS 10 GUESSES TO LOCATE THE GOLIWOG HIDING IN A CO-ORDINATE GRID. SOUND AND GRAPHICS OPTIONAL.
GUNNER 2.C2	KGB	S	JI	911	P	P	32	COMBINES GUNNER 1,2,3 AND GUNNER RETRIEVAL TARGET-SHOOTING GAMES. VARIOUS LEVELS OF DIFFICULTY.
HAMLET.C2	KGB	G	JIS	912	P	P6	32	ORGINALLY CALLED 'OSERO', THIS GAME IS IDENTICAL TO THE BOARD GAME 'OTHELLO'. PLAY IS AGAINST THE COMPUTER.

KGC — GAMES

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
HAMMURABI.C0	KGC	S	IS	402	P	P	16	PLAYER, AS KING HAMMURABI, MUST MAKE ECONOMIC DECISIONS WHICH AFFECT THE WELFARE OF HIS PEOPLE.
HANGMAN 1.C2	KGC	G	J	420	P	P6	16	TRADITIONAL WORD-GUESSING GAME.
HANGMAN 3.C2	KGC	G	JIS	302	P	P6	32	WORD GUESSING GAME WITH FIVE LEVELS OF DIFFICULTY.
HANGMAN.C2	KGC	G	I	602	P	P6	32	TRADITIONAL WORD-GUESSING GAME. TEN GUESSES ARE ALLOWED BEFORE 'HANGING'.
HANGMATH 2.C2	KGC					P6		
HANGMATH.C2	KGC	DG	JI	211	P	P6	32	A 'HANGMAN' PROGRAM USING MATHEMATICAL WORDS.
HELLO.C2	KGC	O	JI	400	P	P6	16	COMPUTER 'CONVERSES' WITH THE USER ABOUT MONEY, EMPLOYMENT, HEALTH AND SEX.
HI-Q.C2	KGC	GS	JIS	502	P	P	16	SIMULATION OF A GAME OF HI-Q. OBJECT IS TO REMOVE AS MANY PEGS AS POSSIBLE BY JUMPING INTO EMPTY HOLES.

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
IN-ORDER.C2	KGC	G	JI	402	P	P6	16	COMPUTER THINKS OF A THREE-DIGIT NUMBER AND PLAYER TRIES TO GUESS IT WITH THE AID OF CLUES.
JOTTO.C2	KGC	G	JI	402	P	P6	16	PET THINKS OF A WORD AND PLAYER MUST GUESS IT. COMPUTER TELLS HOW MANY LETTERS ARE CORRECT IN EACH GUESS.
LAKES-ENG.C2	KGC	G	JI	602	P	P	16	A VARIATION ON THE GAME OF 'HANGMAN' USING PLACE NAMES IN ENGLAND'S LAKE DISTRICT AS THE MYSTERY WORDS.
LE PERDU.C2	KGC	G	PJISC	400	P	P6	8	A FRENCH VERSION OF 'HANGMAN' WITH AN INVENTORY OF ANSWERS WITH CLUES.
LOGIBLOCKS.C2	KGC	G		402	P	P6		THIS IS A LOGIC GAME IN WHICH THE STUDENT ATTEMPTS TO DETERMINE THE ATTRIBUTES OF A BLOCK.
MAGIC SQUARE.C2	KGC	G	IS	000	P	P6	8	A CHANCE GAME IN WHICH PLAYER TRIES TO LIGHT ALL BUT THE MIDDLE SQUARE OF A 9-SQUARE BLOCK.
MASTERMIND1.C2	KGC	G	JIS	500	P	P	8	A COMPUTERIZED VERSION OF THE POPULAR LOGIC GAME.

KGD — GAMES

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
MASTERMIND2C2	KGD	G	JIS	302	P	P6	32	A FIVE-COLOUR CODE IS CREATED BY THE COMPUTER AND THE PLAYER MUST GUESS IT.
MASTERMIND3.C2	KGD	G	JI	202	P	P	16	A MASTERMIND GAME WITH VARIABLE DIFFICULTY.
MATCHES.C2	KGD	G	JI	422	P	P6	16	PLAYER AND COMPUTER TAKE TURNS REMOVING MATCHES FROM APILE. PLAYER CAN ESTABLISH RULES FOR 'NIM'-TYPE GAME.
METEOR.C2	KGD	G	PJI	222	P	P6	16	USER PRESSES A KEY WHEN A FALLING STAR APPEARS; COMPUTER RECORDS REACTION TIME. THREE LEVELS OF DIFFICULTY.
MISSION IMPOS.C2	KGD	S	PJI	992	P	P6	16	PLAYER MUST RETRIEVE WALLETS WHILE AVOIDING FALLING BOMBS.
MOUSE MAZE.C2	KGD	GS	IJS		P	P6	32	USER MUST MOVE THE MOUSE (SYMBOL) THROUGH THE MAZE TO REACH THE PIECE OF CHEESE.
MUGWUMPS.C2	KGD	G	JI	400	P	P6	16	YOU MUST LOCATE THE FOUR 'MUGWUMPS' ON A COORDINATE GRID. THE COMPUTER ADVISES ON CLOSENESS OF GUESSES.
PETALS_ROSE.C2	KGD	G	PJISC	200	P	P	16	FIGURE OUT A MYSTERIOUS RELATION BETWEEN ROLLS OF DICE AND SCORE. DON'T LOSE ANY SLEEP OVER THIS!!!!!!
PICTURES.C2	KGD	G	P	400	P	P6	16	SMALL PICTURES PROVIDED BY THE COMPUTER CAN BE POSITIONED ON THE SCREEN TO CREATE LARGER PICTURES.
PIZZA.C2	KGD	G	JI	302	P	P	16	THIS IS A MATH GAME TEACHING THE USE OF CO-ORDINATE GRIDS.
PLANET PROBE.C2	KGD	S	PJ	553	P	P6	16	USER CONTROLS THRUST OF SPACECRAFT TO APPROACH AND ORBIT A PLANET WHOSE GRAVITY IS SELECTABLE.
PONG.C2	KGD	P	JS	712	P	P6	8	A VARIATION OF THE GAME DEFLECTION. USER MUST PRESS KEYS TO DEFLECT BALLS TO HIT TARGET.
PUB SILLINESS.C2	KGD	G	JI	400	P	P	16	ANOTHER VERSION OF MADLIB.
PUZZLE.C2	KGD					P6		

KGE — GAMES

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
RAGING ROBOTS.C2	KGE	S	JI	802	P	P6	32	PLAYER MUST ESCAPE FROM RAGING ROBOTS USING KEYBOARD CONTROLS. CB2 SOUND, IF DESIRED.
ROAD TRACK.C2	KGE		JI	022	P	P6	16	A GAME FOR ONE PERSON. OBJECTIVE TO MOVE BALL AROUND THE TRACK TO THE END, AVOIDING THE WALLS.
ROTATE 1.C2	KGE	G	JI	700	P	P	16	OBJECT OF THE GAME IS TO PUT THE LETTERS ON THE BOARD IN ORDER BY ROTATING SETS OF 4 LETTERS CLOCKWISE.
SNAKES.C2	KGE	G	JI	992	P	P6	16	PLAYER CONTROLS DIRECTION OF A SNAKE AND HAS USE OF A BLASTER TO CLEAR A WAY.
SNARK.C2	KGE	G	IS	802	P	P6	32	THE SNARK IS HIDING SOMEWHERE UNDER THE GRID. THE USER'S JOB IS TO PINPOINT ITS EXACT LOCATION.
SNERD.C2	KGE	G	PJ	400	P	P6	16	THE CHILD INPUTS A NUMBER OF WORDS THAT ARE USED IN A STORY ABOUT A FICTITIOUS CREATURE.
SNOOPY.C2	KGE	G	JP	902	P	P6	16	A LINE NUMBER GAME IN WHICH SNOOPY SHOOTS DOWN THE RED BARON WITH YOUR HELP.
SPACE PILOT.C2	KGE	G	JI	700	P	P	16	PLAYER ATTEMPTS TO DESTROY ARMS WAREHOUSES OF AN EVIL MAGICIAN BY MEANS OF AN AERIAL BOMBARDMENT.
SPACE WEIGHTS.C2	KGE	G	JI	600	P	P	16	GIVES PERSONAL WEIGHT, JUMPING ABILITY AND DISTANCE A BALL CAN BE THROWN ON PLANET OF PLAYER'S CHOICE.
STAR WARS.C2	KGE	G	JIS	992	P	P	16	PLAYER MUST DESTROY AS MANY OF THE ENEMY FIGHTERS AS POSSIBLE. THIS GAME HAS THREE LEVELS.
STARTREK 2C2	KGE	S	JIS	932	P	P	16	A SIMULATION GAME IN WHICH THE COMPUTER ASSIGNS A SPACE MISSION TO THE USER.
STARTREK IV.C2	KGE	G	JI	922	P	P6	16	PLAYER DIRECTS ENTERPRISE TO PURSUE & ATTACK KLINGONS BY USING VARIOUS COMMANDS COMBINED WITH TREK RULES.
STARTREK.C1	KGE	G	J	221	P	P6	32	A SIMPLE GRAPHIC SPACE GAME.
SUPERDRAW!.C2	KGE	GS	PJ	900	P	P	16	THIS IS A SIMPLE DRAWING PROGRAM.

KGF — GAMES

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
TIC-TAC-PRO.C2	KGF	G	PJ	592	P	P	32	PLAY TIC-TAC-TOE AGAINST THE COMPUTER. THE PROGRAM 'LEARNS' AFTER PLAYING A NUMBER OF TIMES.
TORP BOMBER.C2	KGF	S	PJI	902	P	P6	16	PLAYER IS A PILOT OF A B-29 SUBMARINE HUNTER AND MUST BOMB THE SUBMARINES IN THE WATER BELOW.
TOWER.C2	KGF	G	IS	202	P	P6	32	OBJECT OF THE GAME IS TO MOVE RINGS FROM THE FIRST POLE TO THE SECOND OR THIRD, ACCORDING TO THE RULES.
TURTLE 2.C2	KGF	G	I		P	P	16	USER GIVES ROBOT TURTLE A PROGRAM AND TURTLE LEAVES TRAIL (PROGRAM DRAWS PICTURES ON SCREEN).
TURTLE.C2	KGF	G	I		P	P	16	USER GIVES ROBOT TURTLE A PROGRAM AND TURTLE LEAVES TRAIL (PROGRAM DRAWS PICTURES ON SCREEN).
TWENTY QUEST.C2	KGF	G	PJ	220	P	P	16	STUDENT SELECTS AN ITEM FROM A CATEGORY AND PET ASKS QUESTIONS WHICH HAVE BEEN MADE UP BY THE TEACHER.
UP THE LADDER.C2	KGF	DG	P	602	P	P	16	STUDENT ANSWERS SIMPLE MATH QUESTIONS, MOVING UP A LADDER ONE RUNG AT A TIME WITH EACH CORRECT RESPONSE.
WAREHOUSE.C2	KGF	S	IS	422	P	P6	32	AS WAREHOUSE SUPERVISOR, THE PLAYER MUST MANAGE THE FILLING OF ORDERS, STORING OF SHIPMENTS, ETC.
WESTWARD HO.C2	KGF	GS	JI	942	P	P6	32	SIMULATES EXISTENCE IN THE WILD WEST; AN ENTERTAINING PROGRAM.
YELLOW LIGHT.C2	KGF	G	JI		P	P	16	GAME TESTS PLAYER'S REACTION TIME TO A YELLOW TRAFFIC LIGHT.

KHA — HISTORY

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
ANCIENT HIST.C2	KHA	D	S	402	P	P6	16	THIS PROGRAM IS A QUIZ ON ANCIENT HISTORY, PRIMARILY THAT OF GREECE.
ELECTION.C2	KHA	S	IS	700	P	P6	16	A SIMULATION OF AMERICAN ELECTIONS IN THE NINETEENTH CENTURY. RESULTS ARE BASED ON STRATEGY INPUT.
FAMOUS PEOPLE.C2	KHA	D	S	402	P	P6	32	THIS PROGRAM IS A QUIZ ABOUT FAMOUS PEOPLE, BOTH ANCIENT AND MODERN.
HISTORY QUIZ.C2	KHA	D	S	402	P	P6	16	A QUIZ ON ANCIENT AND MEDIEVAL HISTORY.
MEDIEVAL HIST.C2	KHA	D	S	200	P	P6	16	A QUIZ ON MEDIEVAL AND ANCIENT HISTORY.
MODERN HISTOR.C2	KHA	D	S	200	P	P6	16	A MODERN HISTORY DRILL.
PRESIDNT QUIZ.C2	KHA	DT	I	502	P	P6	16	THIS IS A QUIZ ON PRESIDENTS OF THE UNITED STATES.
TREND LINE.C2	KHA	U	ISC	211	P	P6	8	USER ENTERS HISTORICAL DATA AND PROGRAM DOES ANALYSIS AND FORECASTING.
WORLD WAR II.C2	KHA	D	IS	402	P	P6	16	QUIZ ON WORLD WAR TWO.
WORLD WARS.C2	KHA	D	I	400	P	P6	16	A QUIZ ON BOTH WORLD WARS.

KMA — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
ADD & SUB.C2	KMA	T	IS	000	PC	P6	16	TEACHES STUDENT HOW TO ADD AND SUBTRACT INTEGERS.
ADD DRILL.C2	KMA					P6		
ADDITION RACE.C2	KMA	DG	J	902	P	P6	16	ADDITION DRILL GAME. STUDENTS MOVE THE TWO MEN DISPLAYED ON SCREEN BY CORRECTLY ANSWERING ADDITION PROBLEMS
ADDITION.C2	KMA	D	J	462	P	P6	16	DRILLS ON A SERIES OF RANDOM ADDITION PROBLEMS; ENTRY OF DIGITS IS LEFT TO RIGHT.
ADDS AND SUBS.C2	KMA	D	PJ	922	P	P6	16	DRILLS ADDITION OR SUBTRACTION AND LETS THE STUDENT COUNT OBJECTS IF HE/SHE GETS A QUESTION WRONG.
AGENT BLOTTO.C2	KMA	G	J	442	P	P6	16	CODE-BREAKING GAME USING ALL OPERATIONS (INCLUDING NEGATIVE NUMBERS) TO BREAK CODE.
ALGE VECTORS.C2	KMA	D	S	412	P	P6	16	DRILLS NINE SUB-TOPICS UNDER ALGEBRAIC VECTORS.
AMORT'N TABLE.C2	KMA	U	S	200	P	P6	16	USER INPUTS INFORMATION REGARDING A LOAN AND THE AMORTIZATION TABLE IS OUTPUT.
ANALYSIS 2.C2	KMA					P6		
ANALYSIS.C2	KMA	U	JIS	000	PC	P6	16	PROCESSES UP TO 500 STUDENT MARKS FOR MEDIAN, AVERAGE, NO. OF ENTRIES, STANDARD DEVIATION, NO. PASSING, ETC
ANKOVA.C2	KMA	T	S	200	P	P6	16	TEACHES ANALYSIS OF COVARIANCE.
ANOVA.C2	KMA	I	S	402	P	P6	16	TEACHES ANALYSIS OF VARIANCE.
ARITHMETIC.C2	KMA	D	JI	422	P	P6	16	DRILL IN ADDITION, SUBTRACTION AND MULTIPLICATION. STUDENT HAS CHOICE OF THREE LEVELS OF DIFFICULTY.
ARTILLERY.C2	KMA	GS	JIS	911	P	P6	32	CHOOSE ANGLE AND AMOUNT OF POWDER REQUIRED TO FIRE A CANNON SHOT OVER A MOUNTAIN AT THE OPPOSING PLAYER.
ASTEROID ADD.C2	KMA	DG	PJ	900	P	P6	8	TWO-DIGIT ADDITION GAME.

KMB — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
AUTO ADD TCHR.C2	KMB	D	J	232	P	P6	32	A DRILL IN ADDITION WITH AN AUTOMATIC INCREASE IN DIFFICULTY AS THE STUDENT PROGRESSES.
B.T.C. ADD.C2	KMB	DG	PJ		P	P6	16	PRACTICE IN KNOWLEDGE OF ADDITION FACTS AGAINST USER-SET TIME LIMITS.
B.T.C. DECIML.C2	KMB	DG	JI	222	P	P6	16	MULTIPLICATION OF DECIMALS WITHIN A TIME LIMIT SET BY STUDENT OR TEACHER.
B.T.C. DIVIDE.C2	KMB	DG	JI	242	P	P6	16	POSES DIVISION QUESTIONS WHICH MUST BE ANSWERED WITHIN A TIME LIMIT SET BY STUDENT OR TEACHER.
B.T.C. FRAC.C2	KMB	DG	J		P	P6	16	PRACTICE IN MULTIPLICATION OF FRACTIONS AGAINST USER-SET TIME LIMITS.
B.T.C. MULT.C2	KMB	DG	PJ		P	P6	16	PRACTICE IN KNOWLEDGE OF MULTIPLICATION FACTS AGAINST USER-SET TIME LIMITS.
B.T.C. PERCNT.C2	KMB	DG	JI	222	P	P6	16	DRILLS CONVERSION OF PERCENT TO FRACTIONS AND FINDING PERCENT VALUES OF GIVEN NUMBERS.
BAIRSTOW NTH.C2	KMB	U	S	000	P	P6	16	SOLVES N'TH ORDER POLYNOMIALS.
BALANCE.C1	KMB	D	J	422	P	P6	16	DRILLS A STUDENT IN BALANCING VARIOUS METRIC WEIGHTS.
BASE CHANGE.C1	KMB	U	IS	111	P	P6	16	PROGRAM CHANGES NUMBERS IN BASE 10 TO ANY BASE FROM 2 TO 16.
BASIC STATIST.C2	KMB	U	IS	201	P	P6	16	SOLVES STANDARD ERROR, MEAN AND STANDARD DEVIATION.
BATTLESHIP.C2	KMB	G	JIS	702	P	P6	16	USER PLAYS AGAINST COMPUTER. EACH HAS 5 INVISIBLE SHIPS ON THE GRID; WINNER IS FIRST TO SINK OTHER'S SHIPS
BEADS IN A JA.C2	KMB	S	JI	500	P	P6	8	GRAPHIC AND NUMERIC REPRESENTATION OF BINOMIAL DISTRIBUTION.
BIG ADD.C2	KMB	D	J	202	P	P6	16	PROGRAM DRILLS ADDITION USING LARGE GRAPHIC NUMBERS.
BIG BINARY.C2	KMB	U	IS	400	P	P6	16	SHOWS GRAPHIC CONVERSIONS FROM DECIMAL (UP TO 511) TO BINARY.
BIG DIVIDE.C2	KMB	D	J	502	P	P6	16	THIS PROGRAM DRILLS DIVISION USING LARGE GRAPHIC NUMBERS.

KMC — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
BIG MULTIPLY.C2	KMC	D	J	202	P	P6	16	DRILLS ON A SERIES OF RANDOM MULTIPLICATION PROBLEMS PRESENTED IN LARGE NUMERALS.
BIG SUBTRACT.C2	KMC	D	J	462	P	P6	16	DRILLS SUBTRACTION OF WHOLE NUMBERS USING LARGE NUMERICS IN SCREEN DISPLAY.
BIGTIME.C2	KMC	U	600		P	P6	8	A 12 OR 24-HOUR DIGITAL CLOCK, WITH ALARM.
BINOMIAL DRIL.C2	KMC					P6		
BODMAS.C2	KMC	D	PJ	902	P	P6	32	THIS PROGRAM USES A CANNON TO DRILL ORDER OF OPERATIONS.
BOMB ADD.C2	KMC	DG	PJ	712	P	P6	16	STUDENT MUST CORRECTLY ANSWER ADDITION PROBLEMS TO DEFUSE BOMBS.
BONDS.C2	KMC	U	S	400	P	P6	16	THIS IS A PROGRAM FOR CALCULATING THE PRESENT VALUE OF SAVINGS BONDS.
BRAIN CRANE *.C2	KMC	D	PJ	942	P	P6	16	THIS PROGRAM 'BUILDS UP' A STUDENT'S MULTIPLICATION SKILLS BY DRILL METHOD.
BRAIN CRANE +.C2	KMC	D	PJ	942	P	P6	16	THIS PROGRAM 'BUILDS UP' A STUDENT'S ADDITION SKILLS BY DRILL METHOD.
BRAIN CRANE -.C2	KMC	D	PJ	942	P	P6	16	THIS PROGRAM 'BUILDS UP' A STUDENT'S SUBTRACTION SKILLS BY DRILL METHOD.
BRAIN CRANE /.C2	KMC	D	PJ	942	P	P6	16	THIS PROGRAM 'BUILDS UP' A STUDENT'S DIVISION SKILLS BY DRILL METHOD.
CAR RACE MULT.C2	KMC	DG	PJ	852	P	P6	16	TWO-PERSON COMPETITION IN WHICH EACH 'DRIVER' MUST CORRECTLY ANSWER A MULTIPLICATION QUESTION TO PROGRESS.
CHANGEMAKER.C2	KMC	S	J	201	P	P6	16	PROGRAM SIMULATES BUYING ITEMS IN STORE. COMPUTER TOTALS, ADDS SALES TAX AND SHOWS HOW TO MAKE CHANGE.
CHOICES.C2	KMC	U	S	000	P	P6	16	THIS PROGRAM DEALS WITH THE TOPIC OF PROBABILITY.

KMD — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
CLOCK.C2	KMD	D	P	902	P	P6	16	THIS PROGRAM DRILLS THE RELATIONSHIP BETWEEN DIGITAL TIME AND AN ANALOGUE CLOCK FACE.
CO-ORDINATES.C2	KMD	DT	I	942	P	P6	32	PRACTICE IN GRAPHING OF POINTS.
COLLECTERM 1.C2	KMD	D	IS	552	P	P6	16	A DRILL PROGRAM IN COLLECTING LIKE TERMS. THREE LEVELS OF DIFFICULTY.
COLLECTERM 2.C2	KMD	D	IS	200	P	P6	32	A DRILL PROGRAM IN COLLECTING LIKE TERMS.
COUNT 1 TO 10.C2	KMD	T	EP	200	P	P6	16	PROVIDES PRACTICE IN RATIONAL COUNTING (NUMBERS 1-10).
COUNT TEN.C2	KMD	D	EP	601	P	P6	16	THIS PROGRAM USES GRAPHICS TO INCREASE STUDENT'S ABILITY TO COUNT TO TEN.
COUNT FIVE.C2	KMD	T	EP	200	P	P6	16	TYPE A NUMERAL FROM 1 TO 5 AND THE NUMERAL AND A CORRESPONDING NUMBER OF OBJECTS WILL APPEAR.
CURVE FIT 2.C2	KMD	TU	SC	500	P	P6	32	EVALUATION OF A POLYNOMIAL TO FIT A SET OF POINTS. (INTEGRATION & PLOTTING INCLUDED.)
DART.C2	KMD	G	PJI	942	P	P6	16	CHECKS SPEED AND ACCURACY AT +,-,*,/. SCORES ARE DISPLAYED ON A DART BOARD.
DATES.C2	KMD	O	JISC	100	P	P6	16	A PROGRAM THAT TELLS USER WHAT DAY OF THE WEEK A CERTAIN DATE WILL FALL ON.
DECOMPOSITION.C2	KMD	DT	IS	553	P	P6	16	THIS PROGRAM TEACHES AND DRILLS FACTORING OF TRINOMIALS BY DECOMPOSITION.
DEPRECIATION.C2	KMD	T	IS	300	P	P6	16	ILLUSTRATES STRAIGHT LINE, DOUBLE DECLINING AND SUM OF THE DIGITS DEPRECIATION.
DERIV POLY.C2	KMD	U	IS	400	P	P6	16	USER INPUTS A POLYNOMIAL AND 'X' VALUE; THE PET SOLVES FOR 'Y'.

KME — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
DICE THROW.C2	KME	S	IS	001	P	P6	16	PROGRAM KEEPS TRACK OF THE SUMS OF RANDOMLY THROWN DICE IN GRAPH FORM.
DIVISION DRIL.C2	KME	D	J	202	P	P6	16	DRILL ON SIMPLE DIVISION FACTS WITH DIVISORS 1 TO 10.
DRILL S1.C2	KME	D	JI		P	P6	16	DRILLS STUDENTS ON CONVERTING BETWEEN DIFFERENT METRIC UNITS.
DRILL.C2	KME	D	PJ	404	P	P6	16	DRILLS ADDITION, SUBTRACTION (TO 20), DIVISION AND MULTIPLICATION (TO 9 TIMES TABLE).
DRILLS.C2	KME	D	PJ	402	P	P6	16	PRACTICEWITH ADDING, SUBTRACTING, DIVIDING, AND MULTIPLYING.
ELLIPSE-TRANS.C2	KME	SU	S	700	P	P6	8	STUDENT INPUTS THE VARIABLES FOR COMPUTER-DRAWN ELLIPSES AND TRANSFORMATIONS.
ENGGAME 2.C2	KME	G	IS	450	P	P6	16	ENGLISH VERSION OF GAME 2. USER SOLVES A MATHEMATICAL PUZZLE INVOLVING +,-,*,/.
EQN MANIPULAT.C1	KME	T	I	121	P	P6	32	A TUTORIAL ON MANIPULATION OF EQUATIONS.
EQUATIONS 1.C2	KME	T	I	402	P	P6	16	A TUTORIAL TYPE PROGRAM IN WHICH THE USER MUST DETERMINE THE VALUE FOR X THAT MAKES THE EQUATION TRUE.
EQUATIONS 2.C2	KME	D	IS	222	P	P6	32	STUDENT FINDS HOW MANY MARBLES ARE IN A BAG BY BALANCING BAGS AGAINST LOOSE MARBLES ON A SCALE.
EXPONENT MULT.C2	KME	D	IS	220	P	P6	16	THIS PROGRAM DRILLS THE STUDENT IN THE MULTIPLICATION OF MONOMIALS.
EXPONENTS.C2	KME	T	PJ	442	P	P6	32	A TUTORIAL ON MULTIPLICATION AND DIVISION OF EXPONENT. IT HAS A SHORT QUIZ AT THE END.
FACTEUR.C2	KME	TU	IS	300	P	P6	16	PROGRAM BREAKS A USER-INPUT NUMBER INTO ITS PRIME FACTORS.
FACTOR TRINO.C2	KME					P6		
FACTOR TRINOM.C2	KME	D	I	200	P	P6	16	FACTORING TRINOMIALS (QUADRATICS).

KMF — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
FACTOR WHOLES.C2	KMF	D	I	412	P	P6	16	PRIME FACTORING OF WHOLE NUMBERS.
FACTORS.C2	KMF	U	IS	400	P	P6	16	USER INPUTS A NUMBER; PROGRAM RETURNS PRIME FACTORS.
FAST MATH.C2	KMF	D	PJ	442	P	P6	16	A DRILL FOR 2 PLAYERS. CHOICE OF 2-DIGIT ADDITION OR SUBTRACTION, WITH OR WITHOUT REGROUPING, OR MIXED.
FLIP PROBLEM.C2	KMF	T	IS	000	P	P6	16	THIS PROGRAM DOES A COIN-FLIP EXPERIMENT AND USES A GRAPHIC APPROACH TO THE DEMONSTRATION OF PROBABILITY.
FOIL PRACTICE.C2	KMF	D	IS	200	P	P6	16	THIS PROGRAM GIVES THE STUDENT THE OPPORTUNITY TO PRACTICE MULTIPLYING BINOMIALS USING THE 'FOIL' METHOD.
FRAC EST/SOUN.C2	KMF	G	PJ	822	P	P6	16	A FRACTION ESTIMATION GAME IN WHICH THE STUDENT MUST GUESS THE CORRECT FRACTIONAL DISTANCE TO A TARGET.
FRACTION GAME.C2	KMF	G	JI	492	P	P6	16	A TARGET APPEARS ON A NUMBER LINE FROM 0 TO 2. USER MUST GUESS THE FRACTIONAL VALUE THE TARGET REPRESENTS.
FUN. MACHINE.C2	KMF	G	JI	411	P	P6	16	USER INPUTS NUMBER & MUST DEDUCE WHAT FUNCTION THE MACHINE PERFORMED ON IT, AND DO LIKEWISE ON OTHER NUMBER
FUNC PLOT.C2	KMF					P6		
FUNCTION PLOT.C2	KMF	T	IS	900	P	P6	16	STUDENT CAN ASK COMPUTER TO DRAW A NUMBER OF DIFFERENT GRAPHS AND CAN CHANGE THEIR DEFINING EQUATIONS.
GAUSS REDUCT.C2	KMF	T	C	100	P	P6	8	THIS PROGRAM WILL FIND VARIABLES BY USING A GAUSSIAN MATRIX OF COEFFICIENTS FROM ALGEBRAIC EQUATIONS.
GEOMETRY.C2	KMF	D	J	602	P	P6	16	THIS IS A GEOMETRIC SHAPE RECOGNITION DRILL.
GEOMETRYTERMS.C2	KMF	DT	I	202	P	P6	16	GEOMETRIC TERMS ARE EXPLAINED USING EXAMPLES. THE EXPLANATION IS FOLLOWED BY A QUIZ.
GRAPH PLOT.C2	KMF	TU	S	410	P	P6	16	PLOTS THE GRAPH OF A USER-DEFINED FUNCTION.
GRAPHIQUE 1.C2	KMF	S	S	210	P	P6	32	SIMULATES THE PROCESS OF DRAWING GRAPHS.

KMG — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
GUNNER.C2	KMG	G	IS	502	P	P6	16	THE STUDENT GIVES ANGLES AT WHICH THE CANNON MUST FIRE IN ORDER TO HIT THE ENEMY.
HANGMATH 2 .C2	KMG					P6		
HANGMATH.C2	KMG	DG	JI	211	P	P6	32	A 'HANGMAN' PROGRAM USING MATHEMATICAL WORDS.
HEXDEC.C2	KMG	U	IS	000	P	P6	16	CONVERTS HEXIDECIMALS TO DECMALS AND VICE-VERSA.
HI-CALC.C2	KMG	D	S	320	PC	P6	16	PLOTS AN AVERAGE STRAIGHT LINE ON AN X-Y AXIS, GIVEN TWO OR MORE POINTS.
HI-LO.C2	KMG	G	J	200	P	P6	16	COMPUTER GUESSES NUMBER BETWEEN 1 AND 1,000,000.
HOW LONG.C1	KMG	D	PJ	212	P	P6	16	A SIZE RECOGNITION DRILL USING BARS.
HOW MANY.C2	KMG	D	EPT	602	P	P6	16	STUDENT COUNTS 1 TO 10 SQUARES WHICH ARE DISPLAYED ON THE SCREEN.
HURKLE.C2	KMG	G	J	602	P	P6	16	USER MUST FIND 'HURKLE' ON A 9x9 GRID.
HYPERBOLA.C2	KMG	S	S	900	P	P6	8	THIS PROGRAM DRAWS HYPERBOLAS USING STUDENT INPUT PERAAMETERS.
INT. ADD FAST.C2	KMG	D	P	392	P	P6	16	STUDENTS ANSWER SIMPLE ADDITION PROBLEMS IN THIS TIMED DRILL.

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
INTEGER & DEC.C2	KMG	D	J	200	P	P6	16	ADDITION OF INTEGERS AND DECIMALS.
INTEGER ADD.C2	KMG	D	P	402	P	P6	32	THE PRIMARY STUDENT IS GIVEN ADDITION PROBLEMS INVOLVING BOTH POSITIVE AND NEGATIVE NUMBERS.
INTEGER ARITH.C2	KMG	DT	PJ	420	P	P6	32	DRILL ON SIMPLE ADDITION AND SUBTRACTION.
INTEGER LINES.C2	KMG	U	IS	400	P	P6	16	STUDENT INPUTS THE COEFFICIENTS OF TWO LINEAR EQUATIONS AND THE COMPUTER GIVES THEIR POINT OF INTERSECTION.

KMH — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
INTEGERS.C2	KMH	D	JI	694	P	P6	16	THIS IS AN INTEGER MATH DRILL WITH OPTIONAL LEVELS OF DIFFICULTY.
INTEGRATION.C2	KMH					P6		
INTERSECT LIN.C2	KMH	U	S	600	P	P6		PROGRAM FINDS THE INTERSECTION OF TWO LINES INPUT BY THE USER.
IQ TEST.C2	KMH	DG	JISC	219	P	P6	16	PROGRAM ASKS TWENTY MATHEMATICAL SEQUENCE QUESTIONS ON EACH RUN AND GIVES THEIR SOLUTIONS.
LADDER MULT.C2	KMH	DG	PJ	611	P	P6	16	A MULTIPLICATION DRILL PROGRAM.
LAST BOTTLE C.C2	KMH	G	PJI	311	P	P6	16	A VERSION OF 'NIM' - OBJECT IS NOT TO TAKE THE LAST BOTTLECAP.
LAZER MATH.C2	KMH	DG	PJ	900	P	P6	16	PLAYER MUST CORRECTLY ANSWER AN ADDITION QUESTION BEFORE THE LAZER DESTROYS THE WHOLE BLOCK.
LIMIT CIRCLE.C2	KMH	D	S	400	P	P6	16	FINDS AREA OF UNIT CIRCLE USING A equals N(R * COS(pi/N) * R * SIN(pi/N)); N equals # OF SIDES OF INSCRIBED POLYGON.
LIMITS.C2	KMH	DT	S	490	P	P6	32	THIS PROGRAM INTRODUCES A STUDENT TO THE CONCEPT OF A LIMIT BY DISPLAYING SEQUENCES & ASKING FOR THE LIMIT.
LINE GRAPH.C2	KMH	U	ISC	800	P	P6	16	GRAPHS UP TO 4 FUNCTIONS. SOME KNOWLEDGE OF BASIC REQUIRED IN ORDER TO ENTER FUNCTIONS.
LINE OF BEST.C2	KMH	U	S	7	P	P6	32	THIS PROGRAM HELPS USER FIND THE LINE OF BEST FIT FOR POINTS INPUT AND GRAPHS EQUATIONS.
LINEAR EQUA.C2	KMH	T	IJ	800	P	P6	16	PLOTS LINEAR EQUATIONS. AX+BY C
LINEAR SYS.C2	KMH	D	S	092	P	P6	32	SOLVES LINEAR EQUATIONS WITH 1-9 VARIABLES.
LONG DIVISION.C2	KMH	T	I	422	P	P6	16	DRILLS STUDENT IN INTEGER LONG DIVISION WITH SELECTABLE LEVELS OF DIFFICULTY.

KMI — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
MAGIC SQUARE.C2	KMI	DG	JIS	600	P	P6	16	ADDITION QUIZ GAME. USER MUST ANSWER QUESTIONS TO WORK ON PUZZLE. USER TRIES TO GET SQUARE INTO A PATTERN
MAKING CHANGE.C2	KMI	D	J		P	P6	16	QUIZ ON MAKING CHANGE.
MATH DICE.C2	KMI	D	ETP	502	P	P6	16	STUDENTS COUNT THE DOTS ON DICE AND ADDS THEM TO GIVE CORRECT REPONSE. UPPER CASE LETTERS REQUIRED.
MATH DRILL.C2	KMI	D	PJ	402	P	P6	16	A DRILL ON +,-,*,/.
MATH QUIZ.C2	KMI	D	PJ	412	P	P6	16	A DRILL IN ONE AND TWO-DIGIT ADDITION AND SUBTRACTION.
MATH TUTOR.C2	KMI	D	PJ	492	P	P6	16	PROGRAM DRILLS INTEGER +,-,*,/.
MATHPACK.C2	KMI	T	S	400	P	P6	16	COMPUTER PERFORMS DIFFERENT MATH FUNCTIONS.
MATRIX.C2	KMI	T	S	490	PC	P6	32	THIS PROGRAM ALLOWS THE STUDENT TO EXPERIMENT WITH ANDLEARN MATRIX MATH.
METER READING.C1	KMI	D	I	221	P	P6	16	A DRILL ON READING METERS.
METRIC (ECCO).C2	KMI	D	JI	402	P	P6	16	DRILLS STUDENT IN METRIC CONVERSIONS (WITHIN METRIC).
METRIC CON.C1	KMI	U	IS		P	P6	16	PERFORMS METRIC CONVERSIONS.
METRIC.C2	KMI	D	I	402	P	P6	8	A DRILL ON THE METRIC SYSTEM.

KMJ — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
MICROMATH +-.C2	KMJ	DT	JI	232	P	P6	32	TEACHES AND DRILLS THE ADDITION AND SUBTRACTION OF INTEGERS.
MICROMATH.C2	KMJ	DT	JIS	400	P	P6	16	TEACHES THE FINDING OF CO-ORDINATES ON A CARTESIAN PLANE.
MISSING NUMBR.C2	KMJ	D	EPT	200	P	P6	16	GIVEN A SERIES OF NUMBERS FROM 1 TO 10, STUDENT MUST TYPE IN THE MISSING NUMBER.
MIXED NUMBERS.C2	KMJ	D	J	422	P	P6	16	STUDENT ADDS FROM 1-5 MIXED NUMBERS AND REDUCES THE FRACTIONS.
MLA ARITH.C2	KMJ	O	IS	262	P	P6	16	TEST ADDITION, SUBTRACTION, MULTIPLICATION AND DIVISION USING DECIMAL VALUES.
MONOMIAL MULT.C2	KMJ	D	IS	120	P	P6	16	DRILLS MULTIPILCATION OF MONOMIALS WITH THREE LEVELS OF DIFFICULTY.
MONSTER MULT.C2	KMJ	DG	PJ	811	P	P6	16	MULTIPLICATION DRILL. GRAPHICS ARE BETTER FOR A LOSS THAN FOR A WIN. STUDENT MUST ESCAPE MONSTER.
MORTGAGE.C2	KMJ	DU	S	440	P	P6	16	COMPUTES MORTGAGE TABLES AND PRINTS TABLE OF PAYMENTS, INTEREST, ETC.
MUNCHKIN MULT.C2	KMJ	D	PJ	622	P	P6	16	STUDENT CHOOSES ANY MULTIPLICATION TABLE AND IS DRILLED ON IT.

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
JM RECOGN.C2	KMJ	G	P	501	P	P6	16	
NUMBER GUESS.C2	KMJ	D	P	200	P	P6	16	THE PET PICKS A NUMBER AND YOU GUESS IT. THE PET TELLS YOU WHETHER YOUR GUESS WAS TOO HIGH OR TOO LOW.
OPERATIONS.C1	KMJ	D	JI	131	P	P6	16	A DRILL ON ORDER OF OPERATIONS.
ORDERED PAIR.C2	KMJ	SU	IS	700	P	P6	32	THIS PROGRAM CREATES TABLE OF VALUES FOR AN EASILY MODIFIED FUNCTION.
PARABOLA.C2	KMJ	TU	S	800	P	P6	16	DRAWS PARABOLAS USING STUDENT-INPUT VARIABLES.

KMK — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
PERCENT DRILL.C2	KMK	D	JI	332	P	P6	16	DRILLS DECIMAL AND PERCENT EQUATIONS.
PERCENT.C1	KMK	D	I	442	P	P6	16	DRILL ON CALCULATING PERCENTS.
PERIMETERS.C2	KMK	P	J	602	P	P6	16	DRILL AND PRACTICE ON THE PERIMETER OF RECTANGLES.
PI CALCULATOR.C2	KMK	U	IS	100	P	P6	16	CALCULATES PI TO THOUSANDS OF DECIMAL PLACES. ADJUSTS ITSELF FOR THE AMOUNT OF MEMORY SPACE AVAILABLE.
PIZZA.C2	KMK	G	JI	302	P	P6	16	THIS IS A MATH GAME TEACHING THE USE OF CO-ORDINATE GRIDS.
PLACE VALUE#4.C2	KMK	G	J	602	P	P6	16	DRILL AGAINST THE COMPUTER TO GET THE LOWEST SCORE IN A SUBTRACTION PROBLEM.
PLANES.C2	KMK	D	S	442	P	P6	16	GEOMETRY PLANES DRILL.
PLOT.C2	KMK	TU	IS	800	P	P6	16	PLOTS POINT ON SCREEN WITHOUT REFERENTS. SINGLE POINT PLOTTING ONLY. USES PRINT STATEMENT.
PLOTTING.C2	KMK	U	S	600	P	P6	16	PLOTTING EXERCISE.
POINTS.C2	KMK	D	I	553	P	P6	16	DRILL ON GRAPHING POINTS.
POLAR COOR.C2	KMK	DT	S	000	P	P6	16	EXPLAINS POLAR COORDINATE AND ALLOWS USER TO EXPERIMENT WITH PLOTING OF POLAR GRAPHS.
POLICE SUBT.C2	KMK	DG	PJ	522	P	P6	16	SUBTRACTION DRILL WHICH HAS PLAYER TRYING TO SAVE THE TOWN.
POLY PLOT BAS.C2	KMK	T	S	990	P	P6	16	PLOTS POLYNOMIAL CURVE ON SCREEN GIVEN THE ROOTS.
POLYGON SECT.C2	KMK	U	S	000	PC	P6	16	THIS PROGRAM IS A UTILITY THAT CALCULATES PROPERTIES OF POLYGONAL SECTIONS.
POWER-FACT.C2	KMK	U	IS	000	P	P6	16	THIS PROGRAM CALCULATES EXPONENTIALS AND FACTORIALS UPTO 250 DIGITS IN LENGTH.

KML — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
PRIME FACTORS.C2	KML	T	JIS	422	P	P6	16	THIS IS A TUTORIAL ON PRIME NUMBERS AND FACTORS.
PRIME NUMBER.C2	KML	T	J	110	P	P6	16	THIS PROGRAM DISPLAYS PRIME NUMBERS.
PROBABILITY.C2	KML	O	JTS	600	PC		P6 16	THIS PROGRAM SIMULATES A PROBABILITY MACHINE.
PROJ-PLOT.C2	KML	S	S	620	P	P6	16	PLOTS PROJECTILE MOTION.
QUIZ ADD.C2	KML	D	JP	202	P	P6	16	THIS IS A SIMPLE ADDITION DRILL.
QUIZ MULT.C2	KML	D	IJ	202	P	P6	16	THIS IS A SIMPLE MULTIPLICATION DRILL.
R-PLOT.C2	KML	U	IS	202	P	P6	16	PLOTS BEST FIT LINE FOR A SET OF POINTS AND CORRECT X OR Y VALUE FOR A POINT ON THE LINE. ALSO CORRELATION.
RATE 4.C1	KML	S	SC	211	P	P6	32	A RATE SIMULATION PROGRAM.
REDUCING FRAC.C2	KML	D	PJI	402	P	P6	16	DRILL IN REDUCING FRACTIONS.
RESULTANT.C2	KML	U	S	600	P	P6	16	RESOLVES VECTORS ON A CARTESIAN OR POLAR COORDINATE GRID.
ROLLS TIL ONE.C2	KML	T	IS	600	P	P6	16	THIS PROGRAM SHOWS HOW GRAPHS CAN BE USED IN PROBABILITY PROBLEMS.
ROMAN NUMERAL.C2	KML	D	PJI	330	PC	P6	32	TESTS ROMAN NUMERAL CONVERSION AND ARITHMETIC, FOLLOWING GREY COUNTY GUIDELINES.
ROOT FINDER.C2	KML	U	S	300	P	P6	16	SOLVES POLYNOMIALS. HAS FUNCTIONS FOR IMAGINARY NUMBERS. POLYNOMIALS CAN BE UP TO 20 TERMS IN LENGTH.
ROOT QUIZ.C2	KML				P	P6		
SAUCER MULT.C2	KML	DG	PJ	811	P	P6	32	STUDENT ANSWERS MULTIPLICATION QUESTIONS IN AN EFFORT TO SAVE THE EARTH. CHECKED BY TEACHER.
SC-NOTATION.C1	KML	D	IS	110	P	P6	16	TEACHES AND DRILLS INDEX OR POWER NOTATION FOR SCIENTIFIC NOTATION.

KMM — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
SHAPES.C2	KMM	D	J	333	P	P6	16	A DRILL IN SHAPE RECOGNITION.
SIEVE.C1	KMM	T	IS	111	P	P6	16	A LIST OF PRIME NUMBERS ARE DEVELOPED BY ELIMINATING THE MULTIPLES OF A GIVEN INTEGER.
SIG-DIGITS.C1	KMM	D	JI	110	P	P6	16	SIMPLE DRILL QUESTIONS ON SIGNIFICANT DIGITS.
SIGNIFCNT DIG.C2	KMM	D	J	202	P	P6	16	DRILLS STUDENT ON RECOGNITION OF NUMBER OF SIGNIFICANT DIGITS.
SIMEQ. SOLVER.C2	KMM	T	S	490	P	P6	16	SOLVES SIMULTANEOUS EQUATIONS.
SIMPLE SUBST.C2	KMM	D	IS	442	P	P6	16	PRACTICE IN EVALUATION OF MONOMIALS. STUDENT SHOWN METHOD OF SOLUTION IF HE ANSWERS INCORRECTLY.
SINE GRAPH.C2	KMM	T	S	910	P	P6	16	THIS PROBLEM WILL DRAW SINE CURVES WITH STUDENT INPUT VARIABLES.
SKIER.C2	KMM	D	J	602	P	P6	16	SIMPLE ADDITION DRILL.
SLOPE AND INT.C2	KMM	D	IS	400	P	P6	16	THE STUDENT IS ASKED TO SOLVE THE SLOPE AND INTERSECT FOR A GIVEN EQUATION.
SLOPE/INTERCT.C2	KMM	DT	I	202	P	P6	16	FINDS SLOPE, X-INTERCEPT, Y-INTERCEPT OF LINEAR EQUATIONS.
SMALL MATH.C2	KMM		J	610	P	P6	16	DRILL ON ADDITION OR SUBTRACTION OF BIG OR SMALL NUMBERS.
SNOOPY.C2	KMM	G	JP	902	P	P6	16	A LINE NUMBER GAME IN WHICH SNOOPY SHOOTS DOWN THE RED BARON WITH YOUR HELP.
ST LINE PLOT.C2	KMM	T	S	500	P	P6	16	GIVEN CO-ORDINATES OF A STRAIGHT LINE, THE PROGRAM SCREEN GRAPHS IT AND GIVES AN ANALYSIS.
STATISTICS.C1	KMM	T	SC	122	P	P6	32	N/A
SUBTRACTION 2.C2	KMM	D	J	462	P	P6	16	SUBTRACTION EXERCISE.

KMN — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
TABLES.C2	KMN	D	PJ	422	P	P6	16	MULTIPLICATION OF POSITIVE AND NEGATIVE NUMBERS FROM -100 TO 100.
TIC TAC PET.C2	KMN	G	IS	410	P	P6	16	A TIC TAC TOE GAME. STUDENT MUST SOLVE AN EQUATION IN ORDER TO WIN A SQUARE.
TIMES TABLE.C2	KMN	D	J	202	P	P6	16	A SIMPLE DRILL TESTING MULTIPLICATION TABLES 1-20.
TIMES.C2	KMN	D	PJ	342	PC	P6	16	STUDENT HAS 60 SECONDS TO DO AS MANY MULTIPLICATION PROBLEMS AS POSSIBLE. LEVELS OF DIFFICULTY ARE BUILT IN
TRANSLATION.C2	KMN	ST	S	600	P	P6	8	SHIFTS Y X SQUARED ACCORDING TO USER-CHOSEN SHIFTS IN THE X AND Y DIRECTIONS. SHIFT IS ANIMATED.
TREASURE ADD.C2	KMN	DG	P	522	P	P6	16	THIS PROGRAM DRILLS A STUDENT IN ADDITION. FOUR CORRECT ANSWERS ARE REQUIRED.
TRI SOLVING.C2	KMN	TU	S	490	P	P6	16	SOLVES TRIANGLES GIVEN ANY THREE CONDITIONS.
TRI.CLASS-ANG.C2	KMN	DT	I	202	P	P6	16	TRIANGLES ARE CLASSIFIED ACCORDING TO THEIR INTERIOR ANGLES. THE EXPLANATION IS FOLLOWED BY A QUIZ.
TRIANGLES.C1	KMN	D	S	122	P	P6	16	A TRIGONOMETRY DRILL.
TRINOMIAL FAC.C2	KMN	DT	IS	442	P	P6	16	THIS PROGRAM GIVES PRACTICE IN TRINOMIAL FACTORING, WITH EXCELLENT TUTORIAL HINTS IF NEEDED.
UP THE LADDER.C2	KMN	DG	PJ	400	P	P6	16	THIS PROGRAM IS A DRILL OF ADDITION UP TO 9. THE USER MAKES PROGRESS UP A LADDER WITH EACH CORRECT ANSWER.

KMS — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
A OR AN.C2	KMS	D	PJ	424	P	P6	16	STUDENT COMPLETES SENTENCES BY INSERTING 'A' OR 'AN' BEFORE VARIOUS WORDS.
BILINGUALSPEL.C2	KMS	DT	IS	302	PC	P6	16	A SPANISH AND ENGLISH QUIZ PROGRAM.
CHILD ABUSE.C2	KMS	D	S	402	P	P6	16	QUIZ ON CHILD ABUSE, ADOPTION AND TEENAGE PREGNANCY.
COMPOSE.C2	KMS	T		600	P	P6	16	
EXPECTANCTY.C2	KMS	O	ISC	202	P	P6	16	A QUESTIONAIRE DESIGNED TO DETERMINE LIFE EXPECTANCY
FINGERSPELL.C2	KMS	T	EPC	400	P	P6	32	PROGRAM TEACHES SIGN LANGUAGE IN AN EFFECTIVE MANNER.
HAMURABI.C2	KMS	G	ISC	901	P	P6	64	PLAYER'S TASK IS TO GOVERN AND AVOID ECONOMIC DIASTER FOR A PERIOD OF 10 YEARS.
HOCKEY QUIZ.C2	KMS	D	IS	202	P	P6	16	A QUIZ REGULATIONS AND HISTORY OF HOCKEY.
LATIN 123.C2	KMS	D	IS	302	P	P	32	DRILLS LATIN VOCABULARY. STUDENT HAS A CHOICE OF CONVERTING LATIN TO ENGLISH OR VICE-VERSA.
MUSIC THEORY.C2	KMS					P6		
PETUNIA INST.C2	KMS					P6		
SWAP NEW ROM.C2	KMS	D	J	422	P	P6	16	EXCHANGE WORDS ON A LIST UNTIL THEY ARE ARRANGED ALPHABETICALLY.
SWEDISH QUIZ.C2	KMS	D	S	402	P	P6	16	AN ENGLISH-SWEDISH TRANSLATION QUIZ.

KMT — MATH

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
LIFESTYLES.C2	KMT	O	ISC		P	P6	32	USER INPUTS INFORMATION ABOUT LIFESTYLE AND THE COMPUTER ASSESSES IT, AS IT RELATES TO USER'S HEALTH.
METEOR.C2	KMT	G	PJI	222	P	P6	16	USER PRESSES A KEY WHEN A FALLING STAR APPEARS; COMPUTER RECORDS REACTION TIME. THREE LEVELS OF DIFFICULTY.
MM ADVBFORMS1.C2	KMT	T	P	902	P	P6	16	MR. MUGGS DRILLS PUPILS ON CORRECT APPLICATION OF ADVERBS. L5 P14 MR. MUGGS IS KIDNAPPED.
REFLEX TIMER.C2	KMT	O	JIS	002	P	P6	16	TESTS USER'S REFLEXES BY MEASURING REACTION TIME.
STADIUM QUIZ.C2	KMT	D	S	402	P	P6	16	A QUIZ ON STADIUMS IN NORTH AMERICA.

KRA — GEOGRAPHY

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
AFRICA & ASIA.C2	KRA	D	JI	302	P	P6	16	DRILL ON THE CAPITALS OF AFRICAN AND ASIAN NATIONS.
CANADA QUIZ.C2	KRA	D	JI	402	P	P6	16	QUIZ ON PROVINCIAL PREMIERS AND CAPITALS.
CANADA.C2	KRA	D	JIS	800	P	P6	32	DRILL ON PROVINCES AND CAPITAL CITIES. MAP SKILLS ARE NEEDED TO LOCATE EACH CAPITAL ON PROVINCIAL MAPS.
CAPITALS.C2	KRA	DGT	JI	412	P	P6	16	USER MUST MATCH WORLD CAPITALS WITH COUNTRIES. OPTIONAL PROMPTING WITH EITHER COUNTRY OR ITS CAPITAL.
CO-ORD DIST.C2	KRA	U	JIS	600	P	P6	16	THIS PROGRAM HELPS STUDENT FIND THE DISTANCE BETWEEN ANY TWO POINTS IN THE WORLD. AN ATLAS WILL AID USE.
ENGLAND MAP.C2	KRA	O	PJI	200	P	P6	32	PRODUCES A PRINTER DRAWING OF AN OUTLINE MAP OF ENGLAND.
FRENCH TOPICS.C2	KRA	D	S	402	P	P6	16	A QUIZ ON FRENCH TOPICS.
GEOG TEST.C2	KRA	DT	JIS	402	P	P6	32	PROGRAM IS DESIGNED TO TEST STUDENT'S KNOWLEDGE OF THE GEOGRAPHY OF GREAT BRITAIN.
GEOG.C2	KRA	DT	JI	802	P	P6	32	THIS PROGRAM DRAWS A MAP AND DRILLS USER ON THE PHYSICAL FEATURES SHOWN.
GEOGRAPH QUIZ.C2	KRA	D	S	402	P	P6	16	N/A
GEOGRAPHY.C2	KRA	D	JI	402	P	P6	16	A GEOGRAPHY QUIZ.
ITALIAN QUIZ.C2	KRA	D	S	402	P	P6	16	ITALIAN TOPICS QUIZ (IN ENGLISH).

KRB — GEOGRAPHY

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
KOPPEN.C2	KRB	D	S	402	P	P6	32	DRILLS STUDENTS ON THE KOPPEN CLASSIFICATION SYSTEM FOR CLIMATES AND GIVES A MARK OUT OF TEN.
LAKES-ENG.C2	KRB	G	JI	602	P	P6	16	A VARIATION ON THE GAME OF 'HANGMAN' USING PLACE NAMES IN ENGLAND'S LAKE DISTRICT AS THE MYSTERY WORDS.
MILEAGE.C2	KRB	U	IS	900	P	P6	32	PROGRAM CALCULATES MILEAGE BETWEEN TWO LOCATIONS INPUT BY THE USER.
MILEAGE.C2	KRB	U	IS	401	P	P6	16	USER INPUTS LONGITUDES AND LATITUDES OF TWO LOCATIONS; COMPUTER CALCULATES THE DISTANCE BETWEEN THEM.
NORTH EAST.C2	KRB	G	JI	602	P	P6	16	A 'HANGMAN' GAME USING PLACE NAMES IN ENGLAND AS THE MYSTERY WORDS.
OCEAN QUIZ.C2	KRB	D	S	400	P	P6	32	QUIZ ON OCEANS.
SLOPE(GEOG).C2	KRB	T	IS	300	P	P6	16	SLOPE OF A HILL IS GIVEN AFTER USER INPUTS ELEVATION OF TOP AND BOTTOM OF HILL. FOR USE WITH CONTOUR MAPS.
STATES & CAP.C1	KRB	D	JI	132	P	P6	32	A QUIZ ON STATES AND CAPITALS WITH MULTIPLE CHOICE OR 'FILL IN THE BLANKS' QUESTIONS.
STATES & REG.C2	KRB	DT	JI	202	P	P6	16	AMERICAN GEOGRAPHY ONLY.
WORLD CAPTALS.C2	KRB	D	JI	302	P	P6	16	A DRILL ON WORLD CAPITALS.

KSA — SCIENCE

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
ACCELERATION.C2	KSA	G	S	800	P	P	8	THIS IS AN INTERESTING PHYSICS GAME WHICH REQUIRES THE USE OF A CALCULATOR.
ACTINIUM DECA.C2	KSA	DT	S	600	P	P6	16	THIS PROGRAM WORKS THE STUDENT THROUGH THE ACTINIUM DECAY SERIES AND GIVES A GRAPH. REQUIRES PERIODIC TABLE
AVORM.C2	KSA	DT	PJI	202	P	P	16	STUDENT MUST LABEL THE NAMED OBJECT AS ANIMAL, VEGETABLE OR MINERAL.
AZIMUTH & ALT.C2	KSA	SU	IS	300	P	P	16	PROGRAM HELPS STUDENT LOCATE EIGHT IMPORTANT STARS IN THE SKY BY PROVIDING THE ALTITUDE & AZIMUTH FOR EACH.
BALANCE CHEM.C2	KSA	DT	S	202	P	P	32	BALANCES CHEMICAL EQUATIONS.
BALLISTICS.C2	KSA	D	S	900	P	P6	16	DRILL ON PROJECTILE MOTION PROBLEMS. REQUIRES CALCULATOR, TRIG TABLES.
BERNIE TOWER.C2	KSA	S	I	600	P	P6	16	SIMULATES OPERATION OF BUBBLE TOWER TO SEPARATE TAR, GAS, KEROSENE AND COAL OIL FROM CRUDE OIL.
BOHR ATOM.C1	KSA	T	S	421	P	P6	32	A TUTORIAL ON THE BHOR ATOM.
BOYLE'S LAW.C2	KSA	DST	S	902	P	P6	32	SIMULATES EFFECT OF MODIFYING PRESSURE ON CONTAINED GAS, THEN GRAPHS RESULTS AND DRILLS CONCEPT.

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
BUOYANCY.C1	KSA	DT	S	490	P	P6	32	THIS PROGRAM TEACHES AND TESTS THE STUDENT ON DENSITY, BUOYANCY AND FLOATATION.
CAI MOMENTUM.C2	KSA	D	S	202	P	P	32	PRELIMINARY TO II MOMENTUM PROGRAM.
CASCADE.C2	KSA	S	J	600	P	P	16	A SIMULATION OF WATER SEEPING UNDERGROUND.
CHARGE.C2	KSA	S	IS	402	P	P	32	A SIMULATION OF MILLIKAN'S OIL DROP EXPERIMENT.

KSB — SCIENCE

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
CHEM 12.C2	KSB	D	S	401	P	P6	16	THIS PROGRAM DRILLS SYMBOLS & VALENCES OF COMMON ELEMENTS, THE RATIO IN WHICH THEY MIX & THE COMPOUND NAME.
CHEM EQUA.C2	KSB	D	S	555	P	P	32	DRILL ON BALANCING CHEMICAL EQUATIONS.
CHEMIST QUIZ.C2	KSB	D	S	202	P	P	32	DRILL ON SYMBOLS, VALENCES AND NAMES OF ELEMENTS.
CHEMIST.C2	KSB	S	I	402	P	P	16	A CHEMICAL RATIO QUIZ PROGRAM.
CIRCUITS.C1	KSB	DST	CS	722	P	P6	16	USER EXAMINES DIFFERENT CIRCUITS TO DETERMINE WHETHER THEY WILL LIGHT A LAMP OR NOT, AND WHY.
COMPOUND.C2	KSB	D	S		P	P6	16	A TEN-QUESTION TEST CONCERNED WITH THE FORMULAS OF IONIC COMPOUNDS.
COMPOUNDS 2.C1	KSB	D	S	222	P	P6	16	DRILLS THE STUDENT ON THE CHEMICAL FORMULAS OF VARIOUS COMPOUNDS.
CYLINDERS.C1	KSB	D	I	422	P	P6	32	
DEFECT.C2	KSB	T	S		P	P		PROGRAM INVESTIGATES MASS DEFECT DEALING WITH A SINGLE ATOM. USER INPUTS VARIABLES; PET CALCULATES ANSWER.
E.M.T.C2	KSB	DS	IS	602	P	P6	32	EMERGENCY MEDICAL TRAINING DRILL WITH GRAPHICS.
ELECTRICAL PR.C1	KSB	D	S	121	P	P6	32	A DRILL ON VARIOUS ELECTRICAL PROBLEMS.
ELECTRO MAG.C2	KSB					P6		

KSC — SCIENCE

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
ELEMENT.C1	KSC	DT	S		P	P6		A TEST CONCERNING THE CHEMICAL ELEMENTS AND THEIR SYMBOLS.
ELEMENTS.C2	KSC	D	S	202	P	P6	16	A DRILL ON THE CHEMICAL SYMBOLS OF THE ELEMENTS.
ENERGY.C2	KSC	DT	S	300	P	P	16	DERIVES ELECTRONIC CONFIGURATION OF ANY ELEMENT, AND DRAWS ENERGY LEVEL DIAGRAMS.
ENV. PROFILE.C2	KSC	O	IS	202	P	P6	32	USER PRIORITIZES RESPONSES TO ENVIRONMENTAL PROBLEMS; COMPUTER ASSESSES ENVIRONMENTAL RESPONSIBILITY.
ENZYME.C2	KSC	S	S	900	P	P		ALLOWS USER TO EXAMINE THE EFFECT OF CERTAIN LIMITING FACTORS ON THE RATE AT WHICH ENZYMES WORK.
EQUATIONS.C1	KSC	D	IS	222	P	P6	32	STUDENT FINDS HOW MANY MARBLES ARE IN A BAG BY BALANCING BAGS AGAINST LOOSE MARBLES ON A SCALE.
EQUIVALENTS.C2	KSC	DT	S		P	P6	32	A TUTORIAL ON EQUIVALENTS AND NORMALITY, TOUCHING ON VALENCES AND MASSES. THE LESSON IS FOLLOWED BY A DRILL
FAMILY.C1	KSC	S	S	12	P	P6	16	A FAMILY GROWTH SIMULATION IN GENETICS.
FISHERY.C2	KSC	S	IS	502	P	P	16	N/A
FORCE CONV.C2	KSC					P6		
FOURIER PLOT.C2	KSC	TU	IS	502	P	P	16	A FOURIER PLOT DEMONSTRATION.
FUSE.C2	KSC	D	SC	302	P	P6	16	USER IS TESTED ON THE RELATIONSHIP BETWEEN POWER RATING AND AMPERES. A RUNNING SCORE IS KEPT.
GAS EQUATIONS.C1	KSC	U	S	111	P	P6	16	PROBLEMS INVOLVING PRESSURE, TEMPERATURE AND VOLUME ARE SOLVED BY THIS PROGRAM.
GEIGERCOUNTER.C2	KSC	S	S	602	P	P	16	SIMULATION OF A GEIGER COUNTER.

KSD — SCIENCE

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
GRAVITY QUIZ.C2	KSD	D	S	200	P	P	16	A THIRTY-QUESTION QUIZ ON GRAVITY.
HALF LIFE.C2	KSD	D	S	000	P	P6	16	PRESENTS PROBLEMS BASED ON A HALF-LIFE EXPERIMENT. NO ANSWERS ARE PROVIDED.
HARMONICDSPLY.C2	KSD	S	S	600	P	P6	16	DISPLAYS COMBINED FREQUENCIES OR HARMONICS.
HEAT SOLVER.C2	KSD	U	S	600	P	P6	8	SPECIFIC HEAT AND HEAT OF FUSION PROBLEM SOLVER.
INORG CHEM.C1	KSD	D	SC	121	P	P6	32	A DRILL ON INORGANIC CHEMISTRY.
INTERFERENCE.C1	KSD	I		211	P	P6	16	A DEMO ON INTERFERENCE OF WAVES.
ION.C1	KSD	T	S		P	P6		TEN QUESTIONS TEST THE STUDENT'S KNOWLEDGE OF ION CHARGES AND FORMULAS.
KINEMATICS.C1	KSD	T	S	402	P	P6	8	PROGRAM GENERATES PROBLEMS CONCERNING THE MOTION OF A BALL THROWN VERTICALLY UPWARDS.
LOCKEY.C2	KSD	T	S	402	P	P	32	COMPETITIVE INHIBITION STUDY OF ENZYME ACETYLCHOLINESTERASE FEATURING THE 'LOCK AND KEY' HYPOTHESIS.
MALARIA.C2	KSD	S	IS	402	PC	P	32	SIMULATES A POPULATION GROUP INFECTED WITH MALARIA.

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
MARBLE STAT.C2	KSD	S	IS	602	P	P6	16	SIMULATES A PROBABILITY MACHINE AND COMPILES RESULTS.
METER READ.C2	KSD	DT	IS	602	P	P	16	METER READING IS TAUGHT AND TESTED BY THIS PROGRAM.
METER READING.C2	KSD				P	P6		
METRIC VOLUME.C2	KSD	D	J		P	P6	16	OFFERS PRACTICE IN CONVERTING VOLUME MEASUREMENTS FROM ONE METRIC UNIT TO ANOTHER.

KSE — SCIENCE

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
MICROSCOPY.C2	KSE	T	IS	600	P	P	32	A TUTORIAL IN THE OPERATION OF A MICROSCOPE.
MITOSIS.C2	KSE					P6		
MOLAR.C2	KSE	T	S	900	P	P	16	MOLAR CALCULATIONS AVAILABLE ON THIS PROGRAM. USER INPUTS MASS OF SUBSTANCE AND THE COMPUTER CALCULATES.
MOLECULE RACE.C2	KSE	GS	IS	900	P	P6	32	SPEED OF TWO MOLECULES COMPARED .
MOLECULES 2C1	KSE	DT	SC	121	P	P6	32	A STUDY AND REVIEW OF MOLECULAR STRUCTURE WITH DRILL QUESTIONS.
MOLECULES.C1	KSE	D	S	222	P	P6	32	A QUIZ ON MOLECULES AND THEIR SHAPES.
MOMENTUM II.C2	KSE	D	S	222	P	P6	16	SOLVE MOMENTUM PROBLEMS AND CHECK ANSWERS WITH COMPUTER.
MOTION PROB.C1	KSE	D	S	441	P	P6	16	THE STUDENT IS GIVEN DIFFERENT TYPES OF MOTION PROBLEMS TO SOLVE.
MOTORCYJUMP.C2	KSE	S	JI	602	P	P6	16	SIMULATION OF A MOTORCYCLE JUMP. VARIABLES OF DISTANCE, ANGLE, SPEED. SOUND OPTION.
MULTIMICRO.C1	KSE	T	S	322	P	P6	32	THIS PROGRAM IS A DRILL ON THE READING OF A MICROMETER GAUGE AND A MULTIMETER.
MUTANT.C1	KSE	T	IS	321	P	P6	16	A STUDY OF PEPER MOTH MUTATION.

KSF — SCIENCE

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
NICHE.C2	KSF	GS	IS	502	P	P	32	USER TRIES TO FIT A VARIETY OF ANIMALS INTO THEIR PROPER NICHE. MANY VARIABLES.
NOMENCLATURE.C1	KSF	D	SC	221	P	P6	32	A COMPOUND DRILL WITH RADICALS, ACIDS AND OUS-IC COMPOUNDS.
OHM2.C2	KSF	D	SC		P	P6	16	USER IS TESTED ON OHM'S LAW. A RUNNING SCORE IS KEPT.
PEND 1.C2	KSF	T	S	402	P	P	16	PROGRAM ALLOWS USER TO EXAMINE EFFECTS VARIOUS FACTORS HAVE ON PERIOD OF SIMPLE PENDULUM. GRAPHS.
PEND 2.C2	KSF				P	P6		
PERCENT.C1	KSF	U	SC		P	P6	8	A CHEMISTRY UTILITY PROGRAM WHICH CALCULATES PERCENT COMPOSITION BY MASS.
PERIODIC PROB.C1	KSF	ST	S	600	P	P6	16	BAR GRAPHS ARE DRAWN DEMONSTRATING THE PERIODIC NATURE OF THE PERIODIC TABLE.
PET NCL REACT.C2	KSF	S	IS	610	P	P6	32	SIMULATION OF A NUCLEAR POWER PLANT. HAS GRAPHICS. VARIABLES DETAILED.
PH PROBLEMS.C1	KSF	T	S	132	P	P6	32	DRILLS THE STUDENT ON FINDING THE 'PH' OF VARIOUS SOLUTIONS.
PHOTEL.C1	KSF	D	SC	111	P	P6	16	GIVEN FREQUENCY OF X-RAYS, FIND VOLTAGE SETTING NECESSARY TO CAUSE THE COLLECTOR CURRENT TO REDUCE TO ZERO.
PHOTOSYNTHES.C2	KSF	S	S	101	P	P6	32	ALLOWS USER TO CONDUCT PHOTOSYNTHESIS EXPERIMENTS WHICH WOULD NOT BE PRACTICAL IN CLASS TIME.

KSG — SCIENCE

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
POLLUTION.C2	KSG	S	S	602	P	P6	32	SIMULATES WASTE AND OXYGEN CONTENT OF A BODY OF WATER.
RATE 4.C1	KSG	T	IS		P	P6	16	PRORGAM ALLOWS USER TO EXAMINE THE EFECT OF CHANGES IN THE RATE CONSTANTS OF CONSECUTIVE REACTIONS.
REFLEX TIMER.C2	KSG	O	EPJ	402	P	P6	16	TESTS REFLEX TIME AND COMPILES RESULTS.
REG PWR SUP.C2	KSG	O		900	P	P6	32	DESIGN REGULATED POWER SUPPLIES WITH THIS PROGRAM. GOOD GRAPHICS. HAS PRINTER OPTION.
REMDL NOMENCL.C2	KSG	OT	S	490	P	P6	32	THIS IS A REMEDIAL CHEMICAL NOMENCLATURE PROGRAM.
RESISTORS.C1	KSG	OT	S	440	P	P6	32	RESISTORS AND OHM'S LAW ARE REVIEWED AND TESTED IN THIS PROGRAM. A CALCULATOR IS A HELPFUL AID.
RESOLV'N TIME.C2	KSG	D	S	000	P	P6	16	RESOLVING TIME PROBLEM FROM RADIATION EXPERIMENT. NO ANSWER GIVEN.
RESONANCE.C2	KSG	DT	S	742	P	P	32	RESOLVING TIME PROBLEM FROM THIS COMBINATION DRILL AND TUTORIAL ON RESONANCE.
RUTHERFORD.C2	KSG					P6		A CALCULATOR IS REQUIRED FOR THIS
SC-NOTATION.C1	KSG	D	IS	110	P	P6	16	TEACHES AND DRILLS INDEX OR POWER NOTATION FOR SCIENTIFIC NOTATION.
SHIELD EXPT.C2	KSG	S	P			P6	16	GIVES PROBLEM FROM EXPERIMENT. NO ANSWERS GIVEN.

KSH — SCIENCE

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
SI CONV.C2	KSH					P6		
SIG-DIGITS.C1	KSH	D	JI	110	P	P6	16	SIMPLE DRILL QUESTIONS ON SIGNIFICANT DIGITS.
SMPLEPENDULUM.C2	KSH	S	S	400	P	P6	16	SIMPLE PENDULUM PROGRAM USING PENDULUM EQUATIONS.
SPECIFIC HEAT.C2	KSH	U	S	200	P	P6	16	FACILITATES MARKING OF A LAB TEST ON SPECIFIC HEAT CAPACITY.
STOICH.C2	KSH	T	S	900	P	P	16	PROGRAM DESIGNED TO SOLVE STOICHIOMETRIC CALCULATIONS.USER MUST INPUT MOLES OF KNOWN, UNKNOWN COMPOUND&MASS
TEMP. CONVERT.C2	KSH	DT	IS	702	P	P	16	THIS PROGRAM TESTS THE STUDENT ON KELVIN AND CELSIUS TEMPERATURE CONVERSIONS.
TITRATE.C2	KSH	S	S	602	P	P	32	SIMULATION OF A TITRATION EXPERIMENT.
TWENTY QUEST.C2	KSH	G	PJ	220	P	P	16	STUDENT SELECTS AN ITEM FROM A CATEGORY AND PET ASKS QUESTIONS WHICH HAVE BEEN MADE UP BY THE TEACHER.
USPOP.C2	KSH	S	IS	402	P	P6	32	A POPULATION GROWTH SIMULATION.
VERNIER SCALE.C1	KSH	T	JI	942	P	P	16	TEACHES USER HOW TO READ A VERNIER SCALE.
WATER II.C2	KSH	S	IS	612	P	P	32	THIS PROGRAM IS BASED ON WATER RESOURCE MANAGEMENT. STUDENT MUST MAKE DECISIONS REGARDING IRRIGATION.
WAVES 3.C2	KSH	ST	SC	622	P	P	16	A DEMONSTRATION OF THE DOUBLE SLIT LIGHT INFERENCE EXPERIMENT.
WEATHER MAN.C2	KSH	S	S	400	P	P6	16	PROGRAM FINDS HUMIDITY INDEX, WIND CHILL FACTOR, RELATIVE HUMIDITY AND/OR TEMPERATURE CONVERSION.
YOUNG.C1	KSH		I	211	P	P6	16	A SIMULATION OF YOUNG'S DOUBLE SLIT EXPERIMENT.

KTA — TECHNICAL

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
BIG OHM'S LAW.C2	KTA	D	IS	302	P	P6	16	THIS PROGRAM TESTS THE STUDENT'S KNOWLEDGE OF OHM'S LAW.
CIRCUIT 3.C2	KTA	SU	IS	600	P	P6	8	THIS PROGRAM IS AN AID TO CALCULATING D.C. REGISTER WORK.
CIRCUIT 4.C2	KTA	ST	IS	600	P	P6	8	THIS PROGRAM ILLUSTRATES THE DISCHARGING OF A CAPACITOR THROUGH A RESISTOR.
CIRCUITS.C2	KTA	DST	CS	722	P	P6	16	USER EXAMINES DIFFERENT CIRCUITS TO DETERMINE WHETHER THEY WILL LIGHT A LAMP OR NOT, AND WHY.
DFW RESIST.C2	KTA	D	IS	602	P	P6	16	THIS IS A DRILL ON SERIAL AND PARALLEL RESISTORS.
DRIVER EDUCAT.C2	KTA	D	IS	602	P	P6	32	MULTIPLE CHOICE QUIZ BASED ON DRIVER'S HANDBOOK.
ELECTRICAL PR.C1	KTA	D	S	121	P	P6	32	A DRILL ON VARIOUS ELECTRICAL PROBLEMS.
FUSE.C2	KTA	D	SC	302	P	P6	16	USER IS TESTED ON THE RELATIONSHIP BETWEEN POWER RATING AND AMPERES. A RUNNING SCORE IS KEPT.
METER READ.C2	KTA	DT	IS	602	P	P6	16	METER READING IS TAUGHT AND TESTED BY THIS PROGRAM.
MORSE CODE.C2	KTA		NA	201	P	P6	16	THIS PROGRAM SHOWS THE STUDENT A MORSE CODE. THE STUDENT HAS THREE CHANCES TO IDENTIFY THE LETTER.
MORSE.C2	KTA	DT	ISC	330	P	P6	16	A PROGRAM OF MORSE CODE INSTRUCTION AND DRILL.
OHM2.C2	KTA	D	SC		P	P6	16	USER IS TESTED ON OHM'S LAW. A RUNNING SCORE IS KEPT.
PHOTO LOG.C2	KTA	OU	ISC	500	P	P6	16	PROGRAM USES FILES TO ORGANIZE PHOTOGRAPHIC INFORMATION FOR INDIVIDUAL ROLLS OF FILM.

KTB — TECHNICAL

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
RESIST TEST V.C2	KTB	D	IS	602	P	P6	16	A CALCULATOR IS RECOMMENDED FOR THIS RESISTANCE CALCULATION DRILL.
RESISTORS.C1	KTB	OT	S	440	P	P6	32	RESISTORS AND OHM'S LAW ARE REVIEWED AND TESTED IN THIS PROGRAM. A CALCULATOR IS A HELPFUL AID.
SIMULATION.C1	KTB	S	SC	600	P	P6	16	SIMULATION OF HOW A COMPUTER FOLLOWS A FLOW CHART. SHOWS PARTS OF A COMPUTER, SUCH AS MEMORY AND CPU.

KUA — UTILITIES

Name of Program	ID	Cat	Grd	PST	ST	Cmp	Mem	Description
ANALYSIS 2.C2	KUA	U	JIS	000	PC	P6	16	PROCESSES UP TO 500 STUDENT MARKS FOR MEDIAN, AVERAGE, NO. OF ENTRIES, STANDARD DEVIATION, NO. PASSING, ETC
BAIRSTOW NTH.C2	KUA	U	S	000	P	P6	16	SOLVES N'TH ORDER POLYNOMIALS.
CHECK DISK.C2	KUA	U			P	P6	16	THIS PROGRAM VALIDATES THE DISK, CHECKS FOR BAD BLOCKS BY CHECKING EACH BLOCK.
COPY D FILES.C2	KUA	U			P	P6	16	THIS PROGRAM AIDS IN ORGANIZING TRANSFER OF PROGRAMS BETWEEN DISKS.
DISK LISTER.C2	KUA	U			P	P6	32	THIS PROGRAM WILL UPDATE MASTER DIRECTORY, DISPLAY SELECTED DIRECTORY OR DELETE DISK ENTRY FROM MASTER.
DUM 5.0.C2	KUA	U			P	P6	32	THIS PROGRAM ALLOWS USER TO PERFORM OPERATIONS ON DISK AND BY FILE MAINTAINS RECORD OF OPERATIONS DONE .
FEATURES QUIZ.C2	KUA	T	PJIS	202	P	P6	16	LESSONS AND QUIZ CONCERNING THE PET/CBM COMPUTER.
GRAPH PRINT.C2	KUA	U	IS	111	P	P6	8	DRAWS A BAR GRAPH WITH LENGTHS EQUAL TO THE QUANTITIES ENTERED.
GRAPH SUBRTN.C2	KUA	U	S	000	P	P6	16	ESSENTIALLY AN 8K SUBROUTINE THAT DRAWS GRAPHS.(EG. SINE WAVE) IN PET 'HI RES'.
HOME ENERGY.C1	KUA	U	S	311	P	P6	32	THE YEAR ROUND CONSERVATION OF ENERGY BY A HOME IS DETERMINED.
PLOT.C2	KUA	TU	IS	800	P	P6	16	PLOTS POINT ON SCREEN WITHOUT REFERENTS. SINGLE POINT PLOTTING ONLY.
PRGM. LISTER.C2	KUA		PC		P	P6	16	THIS PROGRAM TAKES A LIST. YOU ONE TYPE AND IT PRINTS IT OUT IN ALPHABETICAL ORDER ON A PRINTER.
ANALYSIS 1.C2	KUA	U	JIS	000	PC	P6	16	PROCESSES UP TO 500 STUDENT MARKS FOR MEDIAN, AVERAGE, NO. OF ENTRIES, STANDARD DEVIATION, NO. PASSING, ETC

The Commodore 64 Maps

by Jim Butterfield

HEX	DECIMAL	DESCRIPTION
0000	0	Chip directional register
0001	1	Chip I/O; memory & tape control
0003-0004	3-4	Float-Fixed vector
0005-0006	5-6	Fixed-Float vector
0007	7	Search character
0008	8	Scan-quotes flag
0009	9	TAB column save
000A	10	0=LOAD, 1=VERIFY
000B	11	Input buffer pointer/# subscrpt
000C	12	Default DIM flag
000D	13	Type: FF=string, 00=numeric
000E	14	Type: 80=integer, 00=floating point
000F	15	DATA scan/LIST quote/memry flag
0010	16	Subscript/FNx flag
0011	17	0=INPUT; $40=GET; $98=READ
0012	18	ATN sign/Comparison eval flag
0013	19	Current I/O prompt flag
0014-0015	20-21	Integer value
0016	22	Pointer: temporary strg stack
0017-0018	23-24	Last temp string vector
0019-0021	25-33	Stack for temporary strings
0022-0025	34-37	Utility pointer area
0026-002A	38-42	Product area for multiplication
002B-002C	43-44	Pointer: Start-of-Basic
002D-002E	45-46	Pointer: Start-of-Variables
002F-0030	47-48	Pointer: Start-of-Arrays
0031-0032	49-50	Pointer: End-of-Arrays
0033-0034	51-52	Pointer: String-storage(moving down)
0035-0036	53-54	Utility string pointer
0037-0038	55-56	Pointer: Limit-of-memory
0039-003A	57-58	Current Basic line number
003B-003C	59-60	Previous Basic line number
003D-003E	61-62	Pointer: Basic statement for CONT
003F-0040	63-64	Current DATA line number
0041-0042	65-66	Current DATA address
0043-0044	67-68	Input vector
0045-0046	69-70	Current variable name
0047-0048	71-72	Current variable address
0049-004A	73-74	Variable pointer for FOR/NEXT
004B-004C	75-76	Y-save; op-save; Basic pointer save
004D	77	Comparison symbol accumulator
004E-0053	78-83	Misc work area, pointers, etc
0054-0056	84-86	Jump vector for functions
0057-0060	87-96	Misc numeric work area

HEX	DECIMAL	DESCRIPTION
0061	97	Accum#1: Exponent
0062-0065	98-101	Accum#1: Mantissa
0066	102	Accum#1: Sign
0067	103	Series evaluation constant pointer
0068	104	Accum#1 hi-order (overflow)
0069-006E	105-110	Accum#2: Exponent, etc.
006F	111	Sign comparison, Acc#1 vs #2
0070	112	Accum#1 lo-order (rounding)
0071-0072	113-114	Cassette buff len/Series pointer
0073-008A	115-138	CHRGET subroutine; get Basic char
007A-007B	122-123	Basic pointer (within subrtn)
008B-008F	139-143	RND seed value
0090	144	Status word ST
0091	145	Keyswitch PIA: STOP and RVS flags
0092	146	Timing constant for tape
0093	147	Load=0, Verify=1
0094	148	Serial output: deferred char flag
0095	149	Serial deferred character
0096	150	Tape EOT received
0097	151	Register save
0098	152	How many open files
0099	153	Input device, normally 0
009A	154	Output CMD device, normally 3
009B	155	Tape character parity
009C	156	Byte-received flag
009D	157	Direct=$80/RUN=0 output control
009E	158	Tp Pass 1 error log/char buffer
009F	159	Tp Pass 2 err log corrected
00A0-00A2	160-162	Jiffy Clock HML
00A3	163	Serial bit count/EOI flag
00A4	164	Cycle count
00A5	165	Countdown,tape write/bit count
00A6	166	Tape buffer pointer
00A7	167	Tp Wrt ldr count/Rd pass/inbit
00A8	168	Tp Wrt new byte/Rd error/inbit cnt
00A9	169	Wrt start bit/Rd bit err/stbit
00AA	170	Tp Scan;Cnt;Ld;End/byte assy
00AB	171	Wr lead length/Rd checksum/parity
00AC-00AD	172-173	Pointer: tape bufr, scrolling
00AE-00AF	174-175	Tape end adds/End of program
00B0-00B1	176-177	Tape timing constants
00B2-00B3	178-179	Pntr: start of tape buffer
00B4	180	1=Tp timer enabled; bit count
00B5	181	Tp EOT/RS232 next bit to send

HEX	DECIMAL	DESCRIPTION
00B6	182	Read character error/outbyte buf
00B7	183	# characters in file name
00B8	184	Current logical file
00B9	185	Current secndy address
00BA	186	Current device
00BB-00BC	187-188	Pointer to file name
00BD	189	Wr shift word/Rd input char
00BE	190	# blocks remaining to Wr/Rd
00BF	191	Serial word buffer
00C0	192	Tape motor interlock
00C1-00C2	193-194	I/O start address
00C3-00C4	195-196	Kernel setup pointer
00C5	197	Last key pressed
00C6	198	# chars in keybd buffer
00C7	199	Screen reverse flag
00C8	200	End-of-line for input pointer
00C9-00CA	201-202	Input cursor log (row, column)
00CB	203	Which key: 64 if no key
00CC	204	0=flash cursor
00CD	205	Cursor timing countdown
00CE	206	Character under cursor
00CF	207	Cursor in blink phase
00D0	208	Input from screen/from keyboard
00D1-00D2	209-210	Pointer to screen line
00D3	211	Position of cursor on above line
00D4	212	0=direct cursor, else programmed
00D5	213	Current screen line length
00D6	214	Row where curosr lives
00D7	215	Last inkey/checksum/buffer
00D8	216	# of INSERTs outstanding
00D9-00F2	217-242	Screen line link table
00F3-00F4	243-244	Screen color pointer
00F5-00F6	245-246	Keyboard pointer
00F7-00F8	247-248	RS-232 Rcv pntr
00F9-00FA	249-250	RS-232 Tx pntr
00FF-010A	256-266	Floating to ASCII work area
0100-103E	256-318	Tape error log
0100-01FF	256-511	Processor stack area
0200-0258	512-600	Basic input buffer
0259-0262	601-610	Logical file table
0263-026C	611-620	Device # table
026D-0276	621-630	Sec Adds table
0277-0280	631-640	Keybd buffer
0281-0282	641-642	Start of Basic Memory
0283-0284	643-644	Top of Basic Memory
0285	645	Serial bus timeout flag
0286	646	Current color code
0287	647	Color under cursor
0288	648	Screen memory page
0289	649	Max size of keybd buffer

HEX	DECIMAL	DESCRIPTION	
028A	650	Repeat all keys	
028B	651	Repeat speed counter	
028C	652	Repeat delay counter	
028D	653	Keyboard Shift/Control flag	
028E	654	Last shift pattern	
028F-0290	655-656	Keyboard table setup pointer	
0291	657	Keyboard shift mode	
0292	658	0=scroll enable	
0293	659	RS-232 control reg	
0294	660	RS-232 command reg	
0295-0296	661-662	Bit timing	
0297	663	RS-232 status	
0298	664	# bits to send	
0299-029A	665	RS-232 speed/code	
029B	667	RS232 receive pointer	
029C	668	RS232 input pointer	
029D	669	RS232 transmit pointer	
029E	670	RS232 output pointer	
029F-02A0	671-672	IRQ save during tape I/O	
02A1	673	CIA 2 (NMI) Interrupt Control	
02A2	674	CIA 1 Timer A control log	
02A3	675	CIA 1 Interrupt Log	
02A4	676	CIA 1 Timer A enabled flag	
02A5	677	Screen row marker	
02C0-02FE	704-766	(Sprite 11)	
0300-0301	768-769	Error message link	
0302-0303	770-771	Basic warm start link	
0304-0305	772-773	Crunch Basic tokens link	
0306-0307	774-775	Print tokens link	
0308-0309	776-777	Start new Basic code link	
030A-030B	778-779	Get arithmetic element link	
030C	780	SYS A-reg save	
030D	781	SYS X-reg save	
030E	782	SYS Y-reg save	
030F	783	SYS status reg save	
0310-0312	784-785	USR function jump	(B248)
0314-0315	788-789	Hardware interrupt vector	(EA31)
0316-0317	790-791	Break interrupt vector	(FE66)
0318-0319	792-793	NMI interrupt vector	(FE47)
031A-031B	794-795	OPEN vector	(F34A)
031C-031D	796-797	CLOSE vector	(F291)
031E-031F	798-799	Set-input vector	(F20E)
0320-0321	800-801	Set-output vector	(F250)
0322-0323	802-803	Restore I/O vector	(F333)
0324-0325	804-805	INPUT vector	(F157)
0326-0327	806-807	Output vector	(F1CA)
0328-0329	808-809	Test-STOP vector	(F6ED)
032A-032B	810-811	GET vector	(F13E)
032C-032D	812-813	Abort I/O vector	(F32F)
032E-032F	814-815	Warm start vector	(FE66)

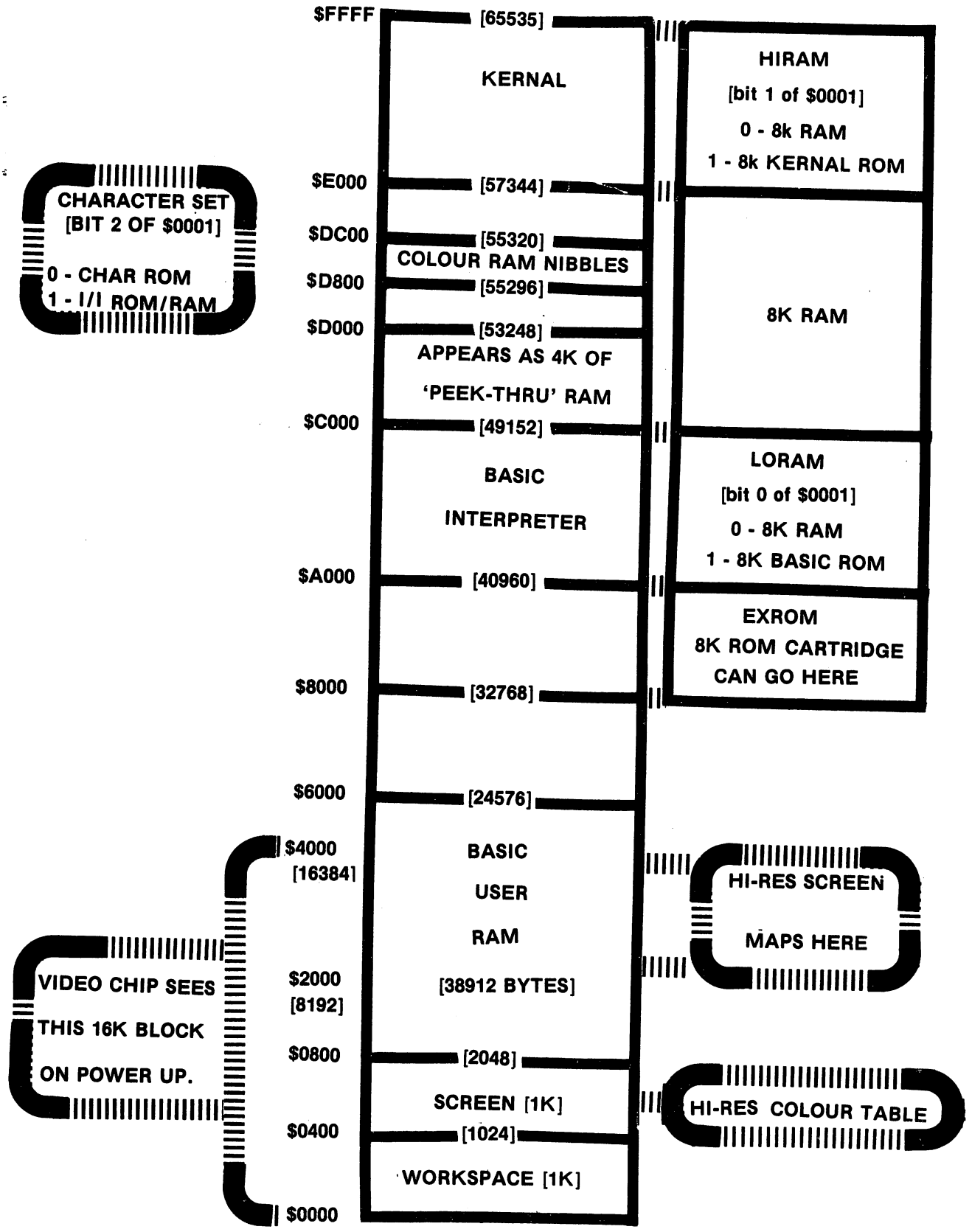
HEX	DECIMAL	DESCRIPTION	
0330-0331	816-817	LOAD link	(F4A5)
0332-0333	818-819	SAVE link	(F5ED)
033C-03FB	828-1019	Cassette buffer	
0340-037E	832-894	(Sprite 13)	
0380-03BE	896-958	(Sprite 14)	
03C0-03FE	960-1022	(Sprite 15)	
0400-07FF	1024-2047	Screen memory	
0800-9FFF	2048-40959	Basic ROM memory	
8000-9FFF	32768-40959	Alternate: ROM plug-in area	
A000-BFFF	40960-49151	ROM: Basic	
A000-BFFF	49060-59151	Alternate: RAM	
C000-CFFF	49152-53247	RAM memory, including alternate	
D000-D02E	53248-53294	Video Chip (6566)	
D400-D41C	54272-54300	Sound Chip (6581 SID)	
D800-DBFF	55296-56319	Color nybble memory	
DC00-DC0F	56320-56335	Interface chip 1, IRQ (6526 CIA)	
DD00-DD0F	56576-56591	Interface chip 2, NMI (6526 CIA)	
D000-DFFF	53248-53294	Alternate: Character set	
E000-FFFF	57344-65535	ROM: Operating System	
E000-FFFF	57344-65535	Alternate: RAM	
FF81-FFF5	65409-65525	Jump Table, Including:	
	FFC6 - Set Input channel		
	FFC9 - Set Output channel		
	FFCC - Restore default I/O channels		
	FFCF - INPUT		
	FFD2 - PRINT		
	FFE1 - Test Stop key		
	FFE4 - GET		

Commodore 64 - ROM memory map

A000; ROM control vectors
A00C; Keyword action vectors
A052; Function vectors
A080; Operator vectors
A09E; Keywords
A19E; Error messages
A328; Error message vectors
A365; Misc messages
A38A; Scan stack for FOR/GOSUB
A3B8; Move memory
A3FB; Check stack depth
A408; Check memory space
A435; 'out of memory'
A437; Error routine
A469; BREAK entry
A474; 'ready.'
A480; Ready for Basic
A49C; Handle new line
A533; Re-chain lines
A560; Receive input line
A579; Crunch tokens
A613; Find Basic line
A642; Perform {NEW}
A65E; Perform {CLR}
A68E; Back up text pointer
A69C; Perform {LIST}
A742; Perform {FOR}
A7ED; Execute statement
A81D; Perform {RESTORE}
A82C; Break
A82F; Perform {STOP}
A831; Perform {END}
A857; Perform {CONT}
A871; Perform {RUN}
A883; Perform {GOSUB}
A8A0; Perform {GOTO}
A8D2; Perform {RETURN}
A8F8; Perform {DATA}
A906; Scan for next statement
A928; Perform {IF}
A93B; Perform {REM}
A94B; Perform {ON}
A96B; Get fixed point number
A9A5; Perform {LET}
AA80; Perform {PRINT#}
AA86; Perform {CMD}
AAA0; Perform {PRINT}
AB1E; Print string from (y.a)
AB3B; Print format character
AB4D; Bad input routine
AB7B; Perform {GET}
ABA5; Perform {INPUT#}
ABBF; Perform {INPUT}
ABF9; Prompt & input
AC06; Perform {READ}
ACFC; Input error messages
AD1E; Perform {NEXT}
AD78; Type match check
AD9E; Evaluate expression
AEA8; Constant - pi
AEF1; Evaluate within brackets
AEF7; ')'
AEFF; comma.
AF08; Syntax error
AF14; Check range
AF28; Search for variable
AFA7; Setup FN reference
AFE6; Perform {OR}
AFE9; Perform {AND}
B016; Compare
B081; Perform {DIM}
B08B; Locate variable
B113; Check alphabetic
B11D; Create variable
B194; Array pointer subrtine
B1A5; Value 32768
B1B2; Float-fixed
B1D1; Set up array
B245; 'bad subscript'
B248; 'illegal quantity'
B34C; Compute array size
B37D; Perform {FRE}
B391; Fix-float
B39E; Perform {POS}
B3A6; Check direct
B3B3; Perform {DEF}
B3E1; Check fn syntax
B3F4; Perform {FN}
B465; Perform {STR$}
B475; Calculate string vector
B487; Set up string
B4F4; Make room for string
B526; Garbage collection
B5BD; Check salvageability
B606; Collect string
B63D; Concatenate
B67A; Build string to memory
B6A3; Discard unwanted string
B6DB; Clean descriptor stack
B6EC; Perform {CHR$}
B700; Perform {LEFT$}
B72C; Perform {RIGHT$}
B737; Perform {MID$}
B761; Pull string parameters
B77C; Perform {LEN}
B782; Exit string-mode
B78B; Perform {ASC}
B79B; Input byte paramter
B7AD; Perform {VAL}
B7EB; Parameters for POKE/WAIT
B7F7; Float-fixed
B80D; Perform {PEEK}
B824; Perform {POKE}
B82D; Perform {WAIT}
B849; Add 0.5
B850; Subtract-from
B853; Perform {subtract}
B86A; Perform {add}
B947; Complement FAC#1
B97E; 'overflow'
B983; Multiply by zero byte
B9EA; Perform {LOG}
BA2B; Perform {multiply}
BA59; Multiply-a-bit
BA8C; Memory to FAC#2
BAB7; Adjust FAC#1/#2
BAD4; Underflow/overflow
BAE2; Multiply by 10
BAF9; +10 in floating pt
BAFE; Divide by 10
BB12; Perform {divide}
BBA2; Memory to FAC#1
BBC7; FAC#1 to memory
BBFC; FAC#2 to FAC#1
BC0C; FAC#1 to FAC#2

BC1B; Round FAC#1
BC2B; Get sign
BC39; Perform {SGN]
BC58; Perform {ABS]
BC5B; Compare FAC#1 to mem
BC9B; Float-fixed
BCCC; Perform {int]
BCF3; String to FAC
BD7E; Get ascii digit
BDC2; Print 'IN..'
BDCD; Print line number
BDDD; Float to ascii
BF16; Decimal constants
BF3A; TI constants
BF71; Perform {SQR]
BF7B; Perform {power]
BFB4; Perform {negative]
BFED; Perform {EXP]
E043; Series eval 1
E059; Series eval 2
E097; Perform {RND]
E0f9; ?? breakpoints ??
E12A; Perform {SYS]
E156; Perform {SAVE]
E165; Perform {VERIFY]
E168; Perform {LOAD]
E1BE; Perform {OPEN]
E1C7; Perform {CLOSE]
E1D4; Parameters for LOAD/SAVE
E206; Check default parameters
E20E; Check for comma
E219; Parameters for open/close
E264; Perform {COS]
E26B; Perform {SIN]
E2b4; Perform {TAN]
E30E; Perform {ATN]
E37B; Warm restart
E394; Initialize
E3A2; CHRGET for zero page
E3BF; Initialize Basic
E447; Vectors for $300
E453; Initialize vectors
E45F; Power-up message
E500; Get I/O address
E505; Get screen size
E50A; Put/get row/column
E518; Initialize I/O
E544; Clear screen
E566; Home cursor
E56C; Set screen pointers
E5A0; Set I/O defaults
E5B4; Input from keyboard
E632; Input from screen
E684; Quote test
E691; Setup screen print
E6B6; Advance cursor
E6ED; Retreat cursor
E701; Back into previous line
E716; Output to screen
E87C; Go to next line
E891; Perform
E8A1; Check line decrement
E8B3; Check line increment
E8CB; Set color code
E8DA; Color code table
E8EA; Scroll screen
E965; Open space on screen
E9C8; Move a screen line
E9E0; Synchronize color transfer
E9F0; Set start-of-line
E9FF; Clear screen line
EA13; Print to screen
EA24; Synchronize color pointer
EA31; Interrupt - clock etc
EA87; Read keyboard
EB79; Keyboard select vectors
EB81; Keyboard 1 - unshifted
EBC2; Keyboard 2 - shifted
EC03; Keyboard 3 - 'comm'
EC44; Graphics/text contrl
EC4F; Set graphics/text mode
EC78; Keyboard 4
ECB9; Video chip setup
ECE7; Shift/run equivalent
ECF0; Screen ln address low
ED09; Send 'talk'
ED0C; Send 'listen'
ED40; Send to serial bus
EDB2; Serial timeout
EDB9; Send listen SA
EDBE; Clear ATN
EDC7; Send talk SA
EDCC; Wait for clock
EDDD; Send serial deferred
EDEF; Send 'untalk'
EDFE; Send 'unlisten'
EE13; Receive from serial bus
EE85; Serial clock on
EE8E; Serial clock off
EE97; Serial output '1'
EEA0; Serial output '0'
EEA9; Get serial in & clock
EEB3; Delay 1 ms
EEBB; RS-232 send
EF06; Send new RS-232 byte
EF2E; No-DSR error
EF31; No-CTS error
EF3B; Disable timer
EF4A; Compute bit count
EF59; RS232 receive
EF7E; Setup to receive
EFC5; Receive parity error
EFCA; Receive overflow
EFCD; Receive break
EFD0; Framing error
EFE1; Submit to RS232
F00D; No-DSR error
F017; Send to RS232 buffer
F04D; Input from RS232
F086; Get from RS232
F0A4; Check serial bus idle
F0BD; Messages
F12B; Print if direct
F13E; Get..
F14E; ..from RS232
F157; Input
F199; Get.. tape/serial/rs232
F1CA; Output..
F1DD; ..to tape
F20E; Set input device
F250; Set output device
F291; Close file
F30F; Find file
F31F; Set file values
F32F; Abort all files
F333; Restore default I/O
F34A; Do file open
F3D5; Send SA
F409; Open RS232
F49E; Load program
F5C1; Print filename
F5D2; 'loading/verifying'
F5DD; Save program
F68F; Print 'saving'
F69B; Bump clock
F6BC; Log PIA key reading
F6DD; Get time
F6E4; Set time
F6ED; Check stop key
F6FB; Output error messages
F72D; Find any tape headr
F76A; Write tape header
F7D0; Get buffer address
F7D7; Set buffer start/end pointers
F7EA; Find specific header
F80D; Bump tape pointer
F817; 'press play..'
F82E; Check tape status
F838; 'press record..'
F841; Initiate tape read
F864; Initiate tape write
F875; Common tape code
F8D0; Check tape stop
F8E2; Set read timing
F92C; Read tape bits
FA60; Store tape chars
FB8E; Reset pointer
FB97; New character setup
FBA6; Send transition to tape
FBC8; Write data to tape
FBCD; IRQ entry point
FC57; Write tape leader
FC93; Restore normal IRQ
FCB8; Set IRQ vector
FCCA; Kill tape motor
FCD1; Check r/w pointer
FCDB; Bump r/w pointer
FCE2; Power reset entry
FD02; Check 8-rom
FD10; 8-rom mask
FD15; Kernal reset
FD1A; Kernal move
FD30; Vectors
FD50; Initialize system constnts
FD9B; IRQ vectors
FDA3; Initialize I/O
FDDD; Enable timer
FDF9; Save filename data
FE00; Save file details
FE07; Get status
FE18; Flag status
FE1C; Set status
FE21; Set timeout
FE25; Read/set top of memory
FE27; Read top of memory
FE2D; Set top of memory
FE34; Read/set bottom of memory
FE43; NMI entry
FE66; Warm start
FEB6; Reset IRQ & exit
FEBC; Interrupt exit
FEC2; RS-232 timing table
FED6; NMI RS-232 in
FF07; NMI RS-232 out
FF43; Fake IRQ
FF48; IRQ entry
FF81; Jumbo jump table
FFFA; Hardware vectors

COMMODORE - 64 MEMORY MAP



SID [6581] Commodore 64

V1	V2	V3		V1	V2	V3
D400	D407	D40E	FREQUENCY L	54272	54279	54286
D401	D408	D40F	FREQUENCY H	54273	54280	54287
D402	D409	D410	PULSE WIDTH L	54274	54281	54288
D403	D40A	D411	0 0 0 0 PULSE WIDTH H	54275	54282	54289
D404	D40B	D412	VOICE TYPE: NSE PUL SAW TRI KEY	54276	54283	54290
D405	D40C	D413	ATTACK TIME (2 ms - 8 sec) / DECAY TIME (6ms - 24 sec)	54277	54284	54291
D406	D40D	D414	SUSTAIN LEVEL / RELEASE TIME (6ms - 24 sec)	54278	54285	54292

VOICES
[Write Only]

D415	0 0 0 0 0 FILTER FREQUENCY L	54293
D416	FILTER FREQUENCY H	54294
D417	RESONANCE / FILTER VOICES EXT V3 V2 V1	54295
D418	V3 off / PASSBAND Hi Bd Lo / MASTER VOLUME	54296

FILTER & VOLUME
[Write Only]

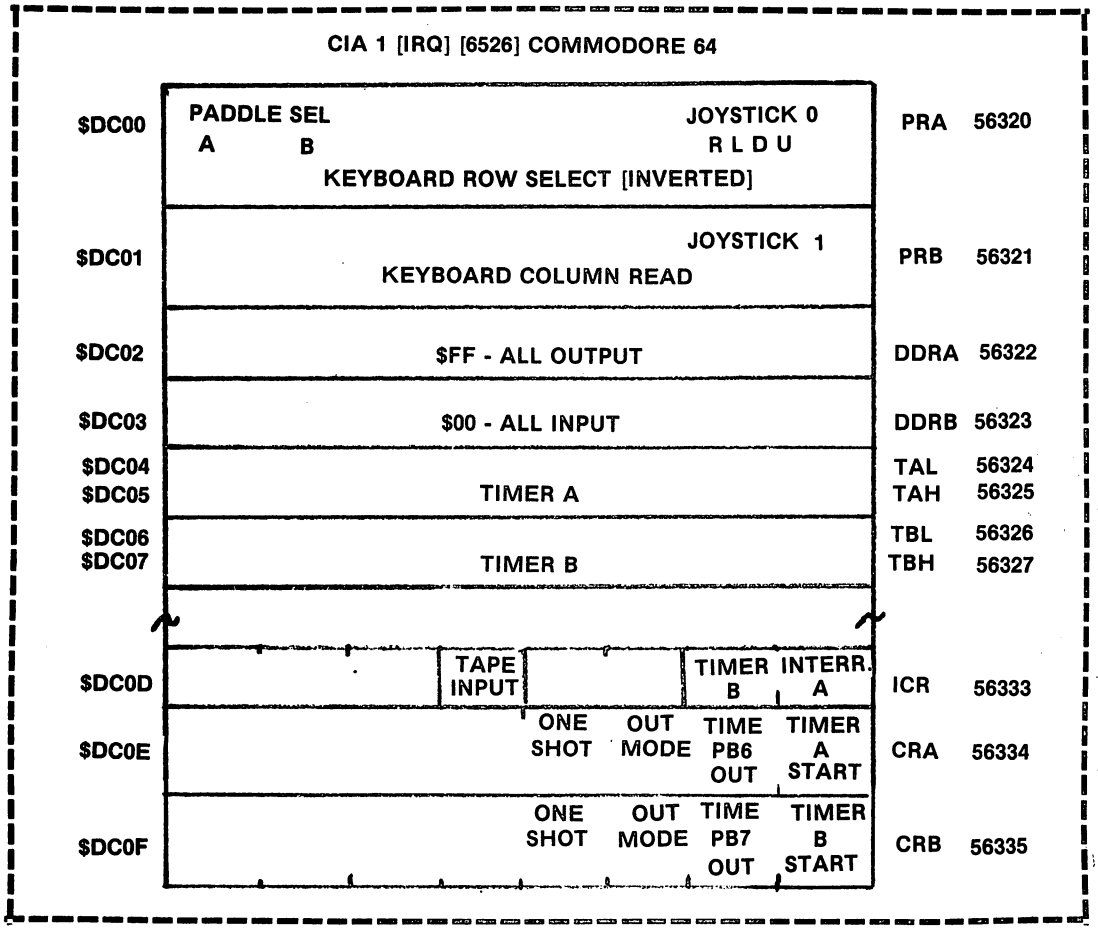
D419	PADDLE X	54297
D41A	PADDLE Y	54298
D41B	NOISE 3 [Random]	54299
D41C	ENVELOPE 3	54300

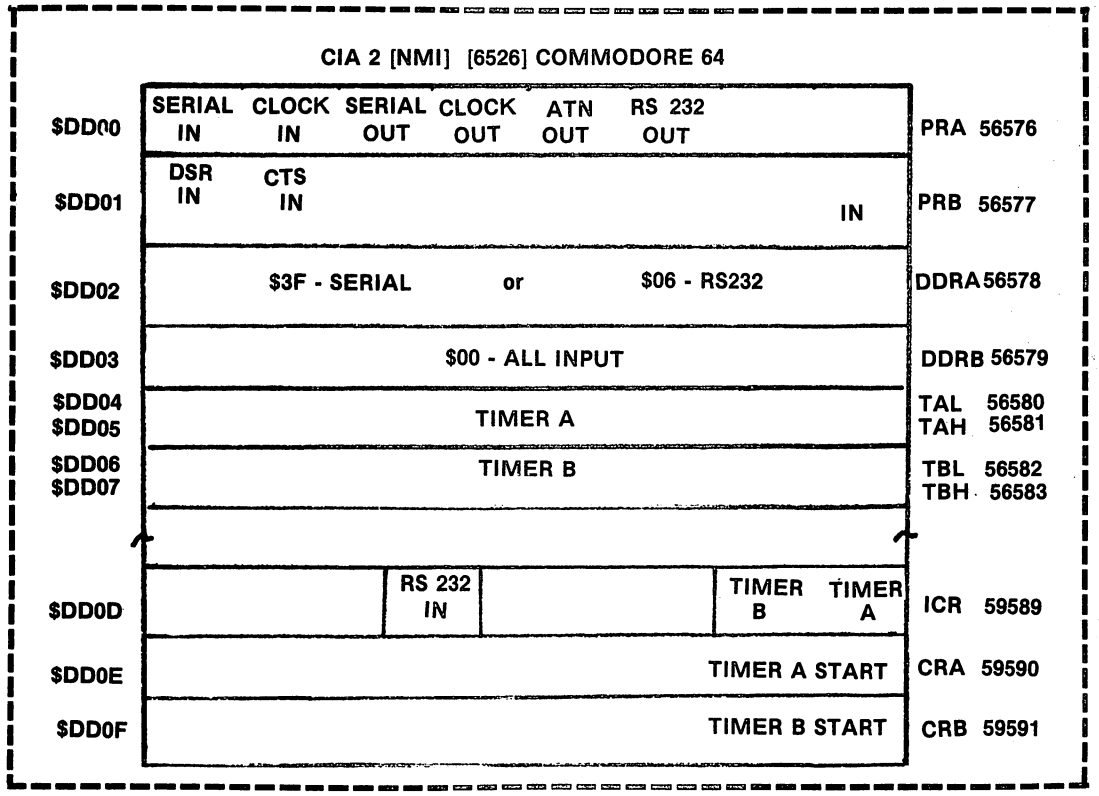
SENSE
[Read Only]

Special voice features [TEST, RING MOD, SYNC] are omitted from the above diagram.

PROCESSOR I/O PORT [6510] COMMODORE 64

$0000	IN	IN	OUT	IN	OUT	OUT	OUT	OUT	DDR 0
$0001			TAPE MOTOR	TAPE SENSE	TAPE WRITE	D-ROM SWITCH	EFRAM SWITCH	ABRAM SWITCH	PR 1


CIA 1 [IRQ] [6526] COMMODORE 64
$DC00
PADDLE SEL
A B
JOYSTICK 0
R L D U
KEYBOARD ROW SELECT [INVERTED]
PRA 56320
$DC01
JOYSTICK 1
KEYBOARD COLUMN READ
PRB 56321
$DC02
$FF - ALL OUTPUT
DDRA 56322
$DC03
$00 - ALL INPUT
DDRB 56323
$DC04
$DC05
TIMER A
TAL 56324
TAH 56325
$DC06
$DC07
TIMER B
TBL 56326
TBH 56327
$DC0D
TAPE INPUT
TIMER B
INTERR. A
ICR 56333
$DC0E
ONE SHOT
OUT MODE
TIME PB6 OUT
TIMER A START
CRA 56334
$DC0F
ONE SHOT
OUT MODE
TIME PB7 OUT
TIMER B START
CRB 56335


CIA 2 [NMI] [6526] COMMODORE 64
$DD00
SERIAL IN
CLOCK IN
SERIAL OUT
CLOCK OUT
ATN OUT
RS 232 OUT
PRA 56576
$DD01
DSR IN
CTS IN
IN
PRB 56577
$DD02
$3F - SERIAL
or
$06 - RS232
DDRA 56578
$DD03
$00 - ALL INPUT
DDRB 56579
$DD04
$DD05
TIMER A
TAL 56580
TAH 56581
$DD06
$DD07
TIMER B
TBL 56582
TBH 56583
$DD0D
RS 232 IN
TIMER B
TIMER A
ICR 59589
$DD0E
TIMER A START
CRA 59590
$DD0F
TIMER B START
CRB 59591

Secretary's Report

by

Chris Bennett

CLUB DISKS

To order club disks via the mail, just send $10 for each 4040/2031/1540/1541 disk and $12 for each 8050/8250 disk (payable in advance). This includes the price of the diskette, the labour involved to copy them and all postage and packaging charges. Do not send us any diskettes. The mailing address is:

TORONTO PET USERS GROUP
c/o Chris Bennett
381 Lawrence Avenue West
Toronto, Ontario, Canada
M5M 1B9

Do not try to order any disk whose directory listing has not yet appeared in any issue of the TORPET. Most of the directory listings can be found in issue #12 (August/82) of this years' TORPET with updates printed in each new TORPET. Please INCLUDE YOUR MEMBERSHIP NUMBER AND RETURN ADDRESS with all orders.

Chris Bennett

CLUB TAPES

The procedure for ordering club tapes. To order tapes, send $6.00 for each tape needed to:

Richvale Telecommunications
Att. Peter Smith
10610 Bayview Plaza, Unit #18
Richmond Hill, Ontario
Canada L4C 3N8

Make all cheques or money orders payable to 'Richvale Telecommunications' and please INCLUDE YOUR MEMBERSHIP NUMBER AND RETURN ADDRESS.

Richvale now has most of the disk library transfered to tape. Most disks require two tapes to hold all the programs. Each tape costs $6.00, payable in advance, and includes the cost of the tape, mailing and handling. The contents of the tapes will be similar to the contents shown on the disk listings in the TORPET. Disks that do NOT require two tapes are V1, V2, V3,G8, G9 and N2. Send $6.00 for these volumes. For all other volumes, send $12 for the two tapes required to hold all the information kept on disk.

Do not try to order any tape whose directory listing has not yet appeared in any issue of the TORPET. Most of the directory listings can be found in issue #12 (August/82) of this years' TORPET.

Chris Bennett

HOW TO SUBMIT PROGRAMS

Programs can be sent to us either on disk or tape. The disk/tape will be returned to you as long as you have enclosed your name and address. It is also a good idea to put your membership number on the tape/disk just in case we misplace the letter or envelope that it came with.

Send all programs to:

Toronto Pet Users Group
c/o Chris Bennett
381 Lawrence Ave West
Toronto, Ontario, Canada
M5M 1B9

TORPET BACKISSUES

Backissues of the TORPET are available for $2.00 each (except for issues #1, #2, and #3 which are $1.00). Issues #1, #2 and #3 are 4 pages long. Issue #4 is 8 pages long. Issue #5 is 16 pages long. Issues #6 and #10 are 32 pages long and issues #7, #8, #9, #11 and #12 are 48 pages long. If you wish to order any of these old TORPETs, please send your cheque or money order to:

TORONTO PET USERS GROUP
c/o Chris Bennett
381 Lawrence Avenue West
Toronto, Ontario, Canada. M5M 1B9

Please INCLUDE YOUR MEMBERSHIP NUMBER WITH ALL ORDERS.

Chris Bennett

MEMBERSHIP REPORT

It is now the end of September and the membership is over 2300. Of this, 1050 are in the Toronto area and attend meetings. This leaves about 1250 members who live out of town and benefit from the TORPET and club library. Also, we have 1550 Canadian members, 715 members in the U.S.A. and 35 members overseas.

At this time I would like to clarify the membership fees for TPUG. The fees are paid on an annual basis. This means that if you join in February of 1982, your membership for next year will be due at the END of February of 1983. This is going to help us at renewal time since all the members will not become due at the same time as they did in September last year.

The membership fees are as follows:

Canadian Associate members $20.
U.S. Associate members $20 in U.S. funds.
Overseas Associate members $30 in U.S. funds.
Canadian Student members $20.
Canadian Regular members $30.

Chris Bennett

New Club Releases

TJ - JUN/82

COPY/ALL
FILE RETRIEVER
5TH SCOTTE.INST
5TH SCOTTE
TEDDY-APRIL82
DAISY-APRIL82
TEDDY.INSTR
DAISY.INSTR
TINY FORTH NOTES
TINY 4TH TCHR4.0
TINY.PILOT.INSTR
TINY.PILOT.OBJ
TEDDY.RENUM
-DAVE WILLIAMS--
DOUBLEPROG REL
ML STOPKEY
SEQ-PRG/MERGE
DYNALOGIC
FUNCTION GRAPH
EQUATION SOLVER
COMPUDATE
STRUCTURE BASIC
RELATION SKETCH
RELATION GRAPH
---
lister (SuperPET)
PHONE NUMBERS
TAPE PHONO-PHILE
DISK PHONO-PHILE
TABLE MATH
DATA GENERATOR
diskliat.apl (SuperPET)

TK - SEPT/82

-BASIC 4.0 F40-
INVADERS 4.0
FAST INVADRS 4.0
ACROBAT F40
CAR RACE F40
MISSION IMP F40
NIGHT DRIVER F40
BACKGAMMON F40
--- SEPT 82 ---
DISK MASTER V2
5TH SCOTTE.INST
5TH SCOTTE
STRING THING
TAPE PHONO-PHILE
DISK PHONO-PHILE
PHONE NUMBERS
VIC TAPE INDEX
MASTER TAPE LIBR
WWV
WWVI
WWVII
WWVIII
WWIX
WW WORD LIST
CMPR MOSER SRCE
STRING THING 64
SUPERSPEED SORT
MARKSCALER
FIXFILE
POINTER SORT
FILE
ML DATA MAKER
WWI
WWII
WWIII
WWIV
SUPERMON64.V1
COMM64

TL - OCT/82

COPY/ALL
HOLYHALTER 2
TERMINAL.SERIAL
TERM.SERIAL
VIC KEYSORT
VIC SORT.DEMO1
VIC SORT.DEMO2
RELREAD
SOUP
SPACEWAR 1
SPACEWAR 2
VIC JASPER
VIC COLOR ROOS
VIC POOKY
VIC GARFIELD
DEMONSTRATIE.HI
VIC TRSHY PIC
VIC DESIGN
VIC DESIGN 2
VIC DESIGN 3
VIC DESIGN 4
VIC VIC
DIGICLOCK
HIRESFOURIER
USA SONG
SWAP 16/32K
SWAP 8K
MOCKINGBIRD HILL
FINANCE 1.4
GASSER
TIMETABLE(8032)
BUTTERFIELD
MUSIC LESSON
MUSIC LESSON 2
40 ELEMENT QUIZZ
80 ELEMENT QUIZZ
VIC AID4.REL
VICMUSIC$1201
V 76TROMBONES
V ENTERTAINER
V WONDERLAND
STRING THING 64
BRKOUT.PADL
64 MEMORY CHART
COPY-ALL64
NOS TRANSLATOR3

Copy Tree

For anyone wishing information about the copy tree, please contact Bonnar Beach at the following address or phone:

Bonnar Beach
Horning's Mills, Ontario
Canada L0N 1J0
Phone 519/925-6035

CLASSIFIED ADS

5 cents per word with $1.00 Minimum. payment in advance to:

Chris Bennett
381 Lawrence Avenue West
Toronto, Ontario
M5M 1B9

FOR SALE

An excellent Data Base called File Cabinet $35.00 to TPUG members only at that price. MFS-2 Interface $68.00 par version $82.00 serial version. Products reviewed in the Midnight. Progress computer 7073 LynneTree Way Citrus Heights CA 95610 (9)

16K PRT model 2001 Professional series. Includes many games and Utility programs. Call Richard at 416/884-2941 after 4:00.

>PET 4032 (Fat Forty)- 2040 Dual Disk Drive upgraded - 2022 Printer - Visicalc and Power included. Many tapes and some disks. Many PET computer manuals also available. Asking $3500. Write L. Montgomery Box 299 Onaping, Ont. or phone (705) 966-2369.

8023P Printer, hardly used. $1000. Call 1-519-271-8669,after5p.m.

Catalogs

PET/CBMADD-ONSFREECATALOG.ECXCOMPUTER COMPANY has over 20 new ad-on circuits and software for your PET/CBM computer and peripherals. For a FREE CATALOG send a self addressed stamped envelope to: ECX COMPUTER COMPANY 2678 North Main St. Walnut Creek. California,94596(8)

ForTrade

WISHING to trade computer games on tape between other VIC-20 owners. Please call: 312-355-6822

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