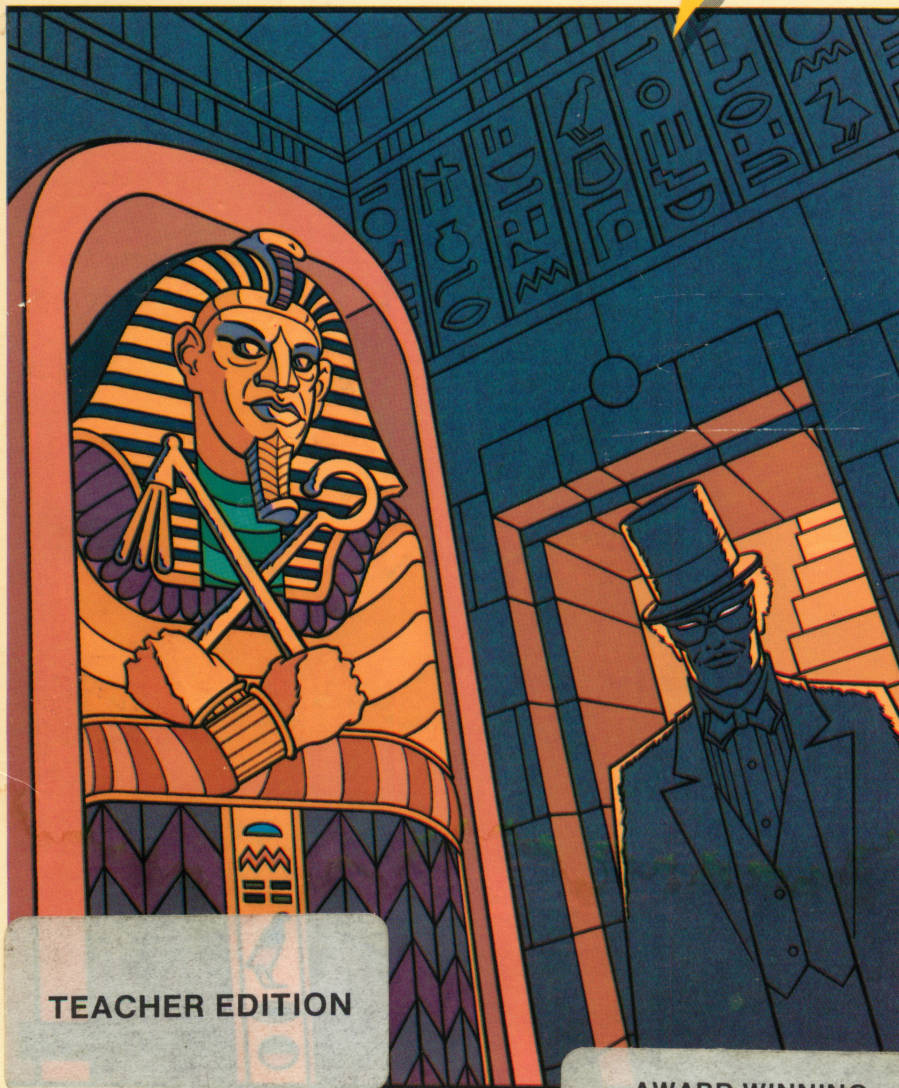


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GETTING STARTED

Read this handbook for clear instructions on how to use each *Microzine* feature.

Equipment You Need

1. TV or monitor
2. 48K Apple® IIPlus, IIe, or IIc
3. Disk drive

Apple is a registered trademark of Apple Computer, Inc.

How to Load *Microzine*

1. Open the disk drive door.
2. Hold the disk with the label end facing you.
3. Insert the disk slowly with the label facing up.
4. Close the drive door.
5. Turn on the computer and monitor (or TV).

NOTE: Never remove or insert a disk while the disk drive's red light is on.

Using the Table of Contents

The Table of Contents is a list of programs, or features, in *Microzine*. Use this list to select the feature you want.

To get this list, follow the instructions on the opening *Microzine* screen to press any key. When the Table of Contents appears on your screen, you'll notice that the first feature is highlighted.

Use the arrow keys to highlight each feature. When the feature you want is highlighted, press **RETURN**. (If the feature you select is on the other side of the disk, you will be told to turn the disk over and press **RETURN**.)

HISTORY MYSTERY

A Twistaplot™ Adventure

What You'll Find

You will search the rooms of the haunted Microville World History Museum for the stolen Babylonian hourglass. There are many ghosts and objects that will help you on your search.

"HISTORY MYSTERY" MAIN MENU

"History Mystery" has three functions, or things you may do. They are Read Part One, Read Part Two, and Instructions.

Helpful Hints

Make a map of the rooms as you move through the museum. Mark the position of the stairways and elevators. Mark what floors the express elevators travel to.

Also, listen to the tape in each room of the museum. Knowing historical facts will help you find the stolen hourglass.

When you enter a room, search the room before you try to get objects. You never know when a ghost will pop up with a useful object.

If you find a museum room blocked by an evil ghost or by Winsome Slugg, try going up to the next floor, then use the down express elevator or a stairway to reach your destination.

LETTER WRITER

What You'll Find

With "Letter Writer" you will write friendly-style letters and business-style letters. You can save, edit, and print out the letters you write.

Data Disk

To use "Letter Writer," you will need a data disk initialized by the "Computer Stuff" feature in *Microzine*. Now is the time to initialize a data disk (see page 32).

Printer

To print your letters, you will need a printer that is compatible with the Apple II Plus, IIe or IIc.

Microzine assumes that you do not have a printer. If you do have a printer, change the printer set-up (see page 31).

"LETTER WRITER" MAIN MENU

"Letter Writer" has five functions, or things you may do. They are Write a letter, Edit a letter, Erase a letter, Print a letter, and Correspondence Course.

Write a Letter

Choose this function to write a letter. A list of ten types of letters will appear on the screen. Each of these types of letters is either a friendly-style letter, or a business-style letter.

Friendly-Style Letter

A friendly-style letter has five parts: the heading, the greeting, the body, the complimentary close, and the signature.

Business-Style Letter

A business-style letter has six parts: the heading, the inside address, the greeting, the body, the complimentary close, and the signature.

There are ten types of letters you may choose to write. The three types of friendly-style letters are:

- Friendly letter: Choose this to write to a friend or family member.
- Thank-you letter: Choose this to thank a friend or family member.
- Invitation: Choose this to invite someone to a party.

The seven types of business-style letters are:

- Fan letter: Choose this to write to someone you admire, like an author or a movie star.
- Business letter: Choose this to write a business letter to a company.
- Consumer letter: Choose this to write to a company about a product you have bought or are interested in.
- Job Application: Choose this to write to a person or a company for a job.
- Information letter: Choose this to write to a person or company for information.
- Government letter: Choose this to write to a government official telling him or her your opinion about a current event.
- *Microzine* Fun letter: Choose this to see a list of 20 addresses you may write to.

CTRL-C for Critter

Press **CTRL-C** for information on the part of the letter that you are writing. A "window" will open on the screen and "P.S." the Mail Critter will appear. He will give you information and letter-writing tips. Press **RETURN** to continue writing your letter.

Writing A Letter

Follow these steps when writing a letter:

Write the heading of your letter by typing your home address, then the date. If you are writing a business-style letter, type the inside address. Press **RETURN** after every line.

***NOTE:** If you don't need the "Other Data" lines, leave them blank. The blank lines will be deleted when you begin writing the body of your letter.*

Complete the greeting of your letter. The word "Dear" will appear with a blinking cursor. Type your greeting, then press **RETURN**.

The cursor will appear two lines below the greeting. You are now ready to write the body of your letter.

Moving the Cursor

Apple II Plus
CTRL-K to move up
CTRL-J to move down
← to move left
→ to move right

Apple IIe/IIc
↑ to move up
↓ to move down
← to move left
→ to move right

New Paragraph

To start a new paragraph, press **RETURN** to move the cursor to where you want to begin the new paragraph.

Each time you press **RETURN**, a small arrow will appear. The arrow means you are beginning a new line. This arrow will not appear when your letter is printed.

Letter Length

Each letter may have up to 38 characters a line, and may be approximately 50 lines long. When your letter is full, the computer will beep and tell you there is no more room (see "What to do when there is no more room in your letter," page 11).

CTRL-E to end

Press CTRL-E when you are ready to end your letter.

The computer will ask, "Are you ready to add a complimentary close to your letter? (Y/N)."

Type Y for yes to type your complimentary close, and then press **RETURN**. If you are writing a business-style letter, the computer will tell you to type your name for the signature, then press **RETURN**. Type N for no to continue writing your letter.

If your letter becomes full while writing a complimentary close, the computer will beep and tell you there is no more room. Follow the steps under "Pressing ESC while Writing a Letter," below, to return to the body of the letter. Then follow the steps under "What to Do When There Is No More Room in Your Letter," on page 11.

Saving a Letter

When you finish your complimentary close, the computer will ask, "Do you want to save this letter? (Y/N)" Type Y for yes to save the letter. The computer will ask you to type the name of the letter, then press **RETURN**. The name can be up to 12 characters long. Type N for no to go to the "Letter Writer" Main Menu.

Pressing ESC While Writing a Letter

If you press **ESC** while writing a letter the computer will ask, "Do you want to save this letter? (Y/N)." If you type Y for yes, you can save the letter (see "Saving a Letter," above).

NOTE: If you save a letter before you have pressed CTRL-E to add a complimentary close, the computer will not automatically ask you if you want to add a complimentary close. You will have to add a complimentary close yourself when you edit that letter, see "Adding a Complimentary Close," page 12.

If you type N for no, the computer will say, "You have not saved this letter. Are you sure you want to quit? (Y/N)."

If you type Y for yes, you will return to the "Letter Writer" Main Menu.

If you type N for no, you will return to the body of the letter.

Microzine Fun Letter

If you choose *Microzine Fun Letter* from the list of letters, you will see a list of 20 addresses, from the President of the United States to Amy McKinley, the editor of *Microzine*.

The first address that will appear will be the President of the United States. Use the ← or → (arrow keys) to page through the list. Press **RETURN** to choose an address. You will then type the heading of your letter.

When you have completed the heading, press **RETURN**. The *Microzine Fun Letter* address that you chose will appear as the inside address. A blinking cursor will appear next to "Dear." Complete the greeting, and then write your letter.

You may want to edit the inside address. For example, if you chose the "CBS-TV star" *Microzine Fun Address*, the words "(CBS-TV Star's Name)" will appear on the first line of the inside address. Move the cursor to the end of the first line and delete the first line. Type the name of the CBS-TV star to whom you are writing. Then move the cursor back to the body of the letter and write your letter.

Edit a Letter

Choose this function to edit a letter saved on a data disk.

Use the arrow keys to choose the letter you want to edit. Edit that letter the same way you did in "Write a Letter" (see page 6) with this exception: You cannot use CTRL-E to add a complimentary close. If you did not add a complimentary close in your original letter, you will have to add one yourself. (See "Adding a Complimentary Close," page 12.)

If your letter becomes full while you are editing, the computer will tell you there is no more room. (See "What to Do When There Is No More Room in Your Letter," below.)

When the letter is edited, press **ESC**. The computer will ask, "Do you want to save this letter? (Y/N)." Type Y for yes or N for no.

If you type Y, the name of the letter will appear. If you want to save your edited letter under the original name, press **RETURN**.

The computer will ask if you're sure you want to replace the original letter with the edited letter. Type Y to replace it. If you want to change the name of the edited letter, move the cursor back to the first letter of the original name. Type the new name, and then press **RETURN**.

What To Do When There Is No More Room in Your Letter

When the computer displays the "There is no more room in your letter" message, it means you cannot add any more text or use CTRL-E to add a complimentary close.

Follow these steps:

1. Delete at least four lines of text in your letter. Then press **ESC** and save the letter.
2. Choose the "Edit a Letter" function, and choose this letter.
3. You can now add up to four lines of text before you will run out of room in your letter.
4. If you didn't add a complimentary close when you first received the "There is no more room in your letter" message, you will have to add one yourself (see "Adding a Complimentary Close," below).

Adding a Complimentary Close

If you pressed **ESC** and saved a letter before you pressed **CTRL-E**, or if you received the "There is no more room in your letter" message before you pressed **CTRL-E**, you will have to add a complimentary close yourself when you edit that letter.

Follow these rules when adding a complimentary close yourself:

1. Move the cursor to the end of the last sentence of the last paragraph, then press **RETURN** three times. The cursor will be three lines below the last paragraph of your letter.
2. Make sure the cursor is all the way over to the left side of the screen, then press the **SPACE BAR** 13 times. Now type your complimentary close.
3. If you are writing a Friendly-Style letter, press **ESC** and save your letter.

If you are writing a Business-Style letter, press **RETURN** four times. Then press the **SPACE BAR** 13 times again. The cursor will be four lines below the first character of the complimentary close. Now type your name. Then press **ESC** and save your letter.

Erase a Letter

Choose this function to erase a letter saved on a data disk. Use the arrow keys to choose the letter you want to erase. The computer will ask if you are sure you want to erase the letter. Type Y for yes or N for no.

Print a Letter

Choose this function to print a letter saved on a data disk. Use the arrow keys to choose the letter you want to print.

If your letter is more than one page long the computer will ask, "Should the printer pause at the end of each page? (Y/N)." If you are printing your letter on single sheets of paper, type Y for yes. If you are printing on computer-form paper, type N for no.

The computer will then ask, "Is your printer turned on and your paper aligned?" Type Y or N.

The computer will then tell you to press **RETURN** to start printing.

Press **ESC** if you want to stop the printer before the letter is finished.

If you told the computer to pause after each page, when each page is finished the computer will tell you to insert a new piece of paper, and press **RETURN** to continue printing.

When your letter is finished, the computer will ask if you want to print another copy. Type Y or N.

Correspondence Course

Choose this function to learn more information about how to write letters. The computer will ask you to type your home address. "P.S." will then write you a letter that will appear on your screen.

SCHOLASTICALC

What You'll Find

"ScholastiCalc" is a simple electronic spreadsheet. It can calculate numbers or formulas, and help you make predictions or "forecast" what will happen if you change any of the numbers in the spreadsheet. You can save, edit, and print your spreadsheets.

Data Disk

To use "ScholastiCalc" you will need a data disk initialized by the "Computer Stuff" feature in *Microzine*. Now is the time to initialize a data disk (see page 32).

NOTE: You may want to use your data disk only for "ScholastiCalc." Then, if you expand your spreadsheets, there is less chance you will run out of room on the data disk.

Printer

To print your "ScholastiCalc" spreadsheets, you'll need a printer that is compatible with the Apple II Plus, IIe, or IIc.

"SCHOLASTICALC" MAIN MENU

"ScholastiCalc" has five functions, or things you may do. They are Make a Spreadsheet, Edit a Spreadsheet, Erase a Spreadsheet, Print a Spreadsheet, and Introduction.

Make a Spreadsheet

Choose this function from the Main Menu to make a spreadsheet. A blank spreadsheet will appear.

Row

A row is a line of cells (see "Cell" on page 15) that goes across the spreadsheet horizontally. You may use up to 16 rows in your spreadsheet. The rows are numbered from 1 to 16.

Column

A column is a line of cells (see "Cell" on page 15) that goes across the spreadsheet vertically. You may use up to 26 columns in your spreadsheet. The columns are labeled from A to Z.

Cell

A cell is the intersection of a row and a column. For example, in the spreadsheet above, the cursor (see "CURSOR" below) is on cell A1. The "A" means that the cell is in column A. The "1" means that the cell is in row 1. The cells are always labeled by column and row.

Options

The options, or things you may do to one cell, or to the entire spreadsheet, are listed at the bottom of the screen.

Cursor

The cursor is the highlighted box on the screen. Move it to any cell on the spreadsheet to enter, edit, erase, or duplicate information.

Moving the Cursor

Use these keys to move the cursor on the spreadsheet. You may also use the "G(oto)" option to move the cursor (see "G(oto)," page 18).

Apple II Plus	Apple IIe/IIc
I to move up	↑ to move up
M to move down	↓ to move down
J, or ← to move left	← to move left
K, or → to move right	→ to move right

Correcting Mistakes

Use the ← (left arrow) key, or the DELETE key (on the IIe and IIc) to correct typing mistakes.

E(dit)

Type E to enter or edit information in a cell. A "?" will appear in the upper-left corner of the spreadsheet.

You may enter a label, number, or formula in the cell (see "LABEL", "NUMBER", or "FORMULA", below). The information you type in will appear in front of the "?."

If you are editing information that is already in a cell, that information will appear automatically in front of the "?."

Press **RETURN** when you are done entering or editing the information in a cell.

Label

A label is any information that does not begin with the digits 0-9, or the characters +, -, ., (, or @. For example, a label could be the words "January," "Total," or "Clothes." A label could also be a letter, like "A," or a combination of letters, numbers, and characters, like "Jan.1st."

A label may be up to 39 characters long. If the label is longer than 8 characters, it will overwrite the next column(s). You may enter a label in the overwritten column. That label will be displayed, and the first label will only show its first 8 characters, however, if you move the cursor over the first label, the entire label will be displayed in the upper left corner of the screen. "ScholastiCalc" will "compute" or calculate a label as zero (0) (see "C(ompute)," page 18).

Number

A number is one or more digits. The digits "9", "-9" and ".09" are all numbers. "ScholastiCalc" will "compute" or calculate a number (see "C(ompute)," page 18).

Formula

A formula is a mathematical equation that begins with the character +, -, ., (, or @.

For example, if you wanted to compute all of the numbers in a column, you would enter a formula, or equation, to have "ScholastiCalc" do the computing for you.

You may enter a formula to do one or more of the following operations: add, subtract, multiply, and divide. You may also enter formulas to find the absolute value, integer part, square root, and exponential value of a number (see "Mathematical Operations and Features," page 20).

You must begin some formulas with the "@" sign to tell "ScholastiCalc" that you are entering a formula (see "ADD," page 20, and "MULTIPLY," page 22).

"ScholastiCalc" will "compute" or calculate a formula (see "C(ompute)," page 18).

!!!!!!!

Each cell can display up to 8 characters. If you enter a number that is longer than 8 characters, or if the result of a formula is longer than 8 characters, the program will display 8 exclamation marks.

To see the entire number, move the cursor over the exclamation marks. The number will appear in the upper-left corner of the screen.

If you enter a label or formula that is longer than 8 characters, the label or formula will over-write the column(s) next to it (see "LABEL," page 16).

D(uplicate)

Type D to duplicate, or copy, information from one cell to another.

For example, if you wanted to duplicate the information from cell A2 to D4, you would move the cursor to cell A2. Type D to duplicate.

The program will ask: "Enter column (A-Z)." Type D (the letter of the column where you want the information duplicated), then press **RETURN**.

The program will ask: "Enter row (1-16)." Type 4 (the number of the row where you want the information duplicated), then press **RETURN**.

The information in cell A2 will be duplicated in cell D4. The cursor will also move to the cell where the information was duplicated.

S(ave)

Type S to save your spreadsheet.

The program will ask you to type in the name of the spreadsheet. The name may be up to 20 characters long. You cannot use numbers in the name of your spreadsheet.

Type in the name of the spreadsheet, then press **RETURN**. The program will ask you to put an initialized data disk in the drive. Put the data disk in the drive, then press **RETURN**.

Your spreadsheet will be saved on the data disk. The program will display the spreadsheet on the screen again. You may continue to work on your spreadsheet.

C(ompute)

Type C to compute, or calculate, the numbers and formulas on your spreadsheet. You may type C at any time to update the information in the cells.

The word "Calculating" will flash in the upper-left corner of the screen. When "ScholastiCalc" has finished computing the numbers and formulas, the newly-computed information in each cell will appear on the spreadsheet.

G(oto)

Type G to move the cursor to ("goto") any cell on the spreadsheet.

The program will ask: "Enter column (A-Z)." Type the letter of the column where you want to move the cursor, then press **RETURN**. The program will ask: "Enter row (1-16)." Type the number of the row where you want to move the cursor, then press **RETURN**.

The cursor will move to that cell.

B(lank)

Type B to erase, or blank out, the information in a cell.

Move the cursor to the cell. When you type B, the program will ask, "Erase this cell? Y/N." Type Y for yes, or N for no, then press **RETURN**.

F(ormat)

Type F to change the format (number of decimal places) you wish to have displayed in a cell.

The program will ask: "How many decimal places? (0-6)?" Type a number from 0-6, then press **RETURN**.

For example, if you moved the cursor to a cell with the number "24.25" in it, you could change that number to display three decimal places. The new number in the cell would be "24.250."

"ScholastiCalc" will always display numbers with two decimal places (like 24.00) until you change the format for the cell.

NOTE: If you add enough decimal places so that the number is longer than 8 characters (for example, 12345.00), the number will be displayed as exclamation marks ("!") in the cell. (see "!!!!!!!", page 17).

Q(uit)

Type Q to quit using a spreadsheet. If you have not saved your spreadsheet, the program will say: "You have not saved this spreadsheet. Are you sure you want to quit? Y/N."

Type Y to quit. The program will tell you to put the *Microzine* disk in the drive, and then press **RETURN**. The "ScholastiCalc" Main Menu will appear on the screen. Type N to continue using the spreadsheet, then press **RETURN**.

H(elp)

Type H to see a list of the options you may use when making or editing a spreadsheet.

Mathematical Operations and Features

"ScholastiCalc" can perform several mathematical operations. It can add, subtract, multiply, and divide numbers. It can also find the absolute value, integer part, square root, and exponential value of numbers.

Add

Follow these rules to add numbers with "ScholastiCalc":

- *To add numbers in one cell:* Move the cursor to the cell where you want to add numbers. Type a number, then a "+" sign, then the other number(s) you want to add, then press **RETURN**. For example: 4+2 or 4+2+3.

"ScholastiCalc" will add the numbers and display the answer in the cell.

- *To enter a formula to add numbers in one column:* Move the cursor to the cell where you want the total displayed. Type the "@" sign first. That tells "ScholastiCalc" that you are going to enter a formula.

Then type the word "sum," and the formula in parentheses. To add the numbers in cells A2, A3, and A4, and put the answer in cell A5, you would:

1. Move the cursor to cell A5
2. Type E to enter the formula
3. Type @sum(A2..A4)
4. Press **RETURN**

The formula will add the numbers in cells A2 through A4, and print the answer in cell A5 (the cell where the cursor was positioned).

- *To enter a formula to add numbers in one row:* Move the cursor to the cell where you want the total displayed. Type the "@" sign first. That tells "ScholastiCalc" that you are going to enter a formula.

Then type the word "sum," and the formula in parentheses.

To add the numbers in row 3, in columns A, B, and C, and put the answer in cell D3, you would:

1. Move the cursor to cell D3
2. Type E to enter the formula
3. Type @sum(A3..C3)
4. Press **RETURN**

The formula will add the numbers in columns A, B, and C, in row 3, and print the answer in cell D3 (the cell where the cursor was positioned).

If you change the information in a cell that would affect other cells, you must type C to re-calculate the numbers and formulas in the spreadsheet (see "Re-calculating," page 23).

Subtract

Follow these rules to subtract numbers with "ScholastiCalc":

- *To subtract numbers in one cell:* Move the cursor to the cell where you want to subtract numbers. Type a number, then a "-" sign, then the other number(s) you want to subtract. Then press **RETURN**, (for example 4-2 or 4-2-3).

"ScholastiCalc" will subtract the number(s) and display the answer in the cell.

- *To enter a formula to subtract numbers in several cells:* Move the cursor to the cell where you want the total displayed. Type the column and row of the first cell, then a "-" sign, then the other column and row number of the other cell(s) you want to subtract. Then press **RETURN**, (for example A2–A4 or A2–B4–C6).

The formula A2–A4 will subtract the number in cell A2 from the number in A4, and print the answer in the cell where the cursor was positioned.

If you change the information in a cell that would affect other cells, you must type C to re–calculate the numbers and formulas in the spreadsheet (see "Re-calculating," page 23).

Multiply

Follow these rules to multiply numbers with "ScholastiCalc."

- *To multiply numbers in one cell:* Move the cursor to the cell where you want to multiply numbers. Type a number, then a "*" sign, then the other number(s) you want to multiply. Then press **RETURN**, (for example 4*2 or 4*2*3).

"ScholastiCalc" will multiply the numbers and display the answer in the cell.

Divide

Follow these rules to divide numbers with "ScholastiCalc":

- *To divide numbers in one cell :* Move the cursor to the cell where you want to divide numbers. Type a number, then a "/" sign, then the other number(s) you want to divide. Then press **RETURN**, (for example 4/2 or 16/4/2).

"ScholastiCalc" will divide the numbers and display the answer in the cell.

- *To enter a formula to divide numbers in several cells:*
Move the cursor to the cell where you want the total displayed. Type the column and row of the first cell, then a "/" sign, then the other column and row number of the other cell(s) you want to divide. Then press **RETURN**, (for example A2/A4 or A2/B4/C6).

The formula A2/A4 will divide the number in cell A4 into the number in A2, and display the answer in the cell where the cursor was positioned.

If you change the information in a cell that would affect other cells, you must type C to re-calculate the numbers and formulas in the spreadsheet (see "Re-calculating," below).

Re-calculating

If you change the information in a cell that would affect other cells, you must type C to re-calculate the numbers and formulas in the spreadsheet.

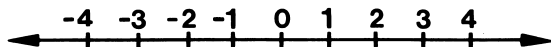
For example, enter the formula "@sum(A2..A4)" in cell A5. This formula will add the numbers in the cells in column A. Type C to compute. The answer will be displayed in cell A5.

If you changed the number in cell A3, the number in cell A5 (the sum) would be wrong.

To correct this, you would type C to re-calculate the numbers.

Absolute Value

The absolute value of a number is the distance the number is from zero on a number line.



For example, the number 3 is 3 units from zero on a number line. The number -3 is also three units from zero on a number line. The absolute value of both 3 and -3 is 3. To find the absolute value of numbers with "ScholastiCalc," move the cursor to the cell where you want the absolute value displayed. Type the "@" sign first. That tells "ScholastiCalc" that you are going to enter a formula.

Type the word ABS and the number inside parentheses, then press **RETURN**.

For example, if you wanted to find the absolute value of the number -2, you would type "@ABS(-2)".

If you wanted to find the absolute value of the number in cell A2, you would type "@ABS(A2)".

Finding the absolute value of a number can be very useful. If you wanted to learn the distance, or spread, between two numbers, you would want the absolute value of the distance.

For example, if you wanted to know the distance, or spread, between the numbers 16 and 1,606, you would subtract those numbers. The answer would be -1590, but the distance can't be a negative number. By using absolute value, "ScholastiCalc" would tell you that the distance was 1590.

Integer Part

An integer is a whole number, such as 12 or -2. The number 12.2 is not an integer, because of the decimal.

The integer part of a number is the part that is an integer. For example, the integer part of 12.2 is 12, because 12 is an integer.

To find the integer part of numbers with "ScholastiCalc," move the cursor to the cell where you want the integer part of the number displayed. Type the "@" first. That tells "ScholastiCalc" that you are going to enter a formula.

Type the word **INT**, and the number inside parentheses. Then press **RETURN**.

For example, if you wanted to find the integer part of the number 123.43, you would type "**@INT(123.43)**."

If you wanted to find the integer part of the number in cell A2, you would type "**@INT(A2)**."

Finding the integer part of a number can be very helpful. If you wanted to calculate numbers, and were only interested in seeing numbers that were rounded-off by removing any decimal places, you would want to find the integer part of the numbers.

For example, if you wanted to divide 143 by 16, "ScholastiCalc" would divide the numbers for you, and tell you that the answer is 8.9375. If you wanted the number to be rounded-off, you would ask for the integer part of the answer. "ScholastiCalc" would then tell you that the answer is 8.

Using a spreadsheet can make these types of calculations easier for you.

Square Root

A square root is a factor of a number that, when multiplied by itself, gives the number. For example, the square root of 16 is 4, because $4 \times 4 = 16$.

Follow these rules to find the square root of a number with "ScholastiCalc."

Type the "**@**" sign first. That tells "ScholastiCalc" that you are going to enter a formula.

Then type the word **sqrt** (for square root), and the number in parentheses.

For example, to find the square root of 144, you would:

1. Move the cursor to the cell where you want the square root of 144 to appear
2. Type E to enter the formula
3. Type @sqrt(144)
4. Press **RETURN**

The answer will appear in the cell.

Exponents

An exponent is a number that appears above and to the right of a number to indicate how many times the first number is to be multiplied by itself. For example, the exponent 2 next to the 3^2 means that the number 3 is to be multiplied by itself two times (3×3).

Follow these rules to find the exponential value of numbers with "ScholastiCalc:"

Type a number, then a "^" sign, then the exponent. For example, to compute 5 to the 7th power, you would:

1. Move the cursor to the cell where you want the answer to appear
2. Type E to enter the formula
3. Type 5^7
4. Press **RETURN**. The answer will appear in the cell.

Edit a Spreadsheet

Choose this function to edit a spreadsheet saved on a data disk. The program will tell you to insert a data disk in the drive, and then press **RETURN**.

Use the arrow keys to choose the spreadsheet you want to edit.

Edit the spreadsheet the way you did in "Make a Spreadsheet" (see "Make a Spreadsheet," page 14).

Erase a Spreadsheet

Choose this function to erase a spreadsheet saved on a data disk. The program will tell you to insert a data disk in the drive, and then press **RETURN**.

Use the arrow keys to choose the spreadsheet you want to erase.

IMPORTANT: The program will not ask you if you are sure you want to erase the spreadsheet. If you choose a spreadsheet to erase, then press RETURN, the spreadsheet will be permanently erased from your data disk.

Print a Spreadsheet

Choose this function to print a spreadsheet saved on a data disk.

If you have not "told" the *Microzine* disk that you have a printer, the program will say "There is no printer to print with!" Choose the "Computer Stuff" feature from the *Microzine* Table of Contents, then choose Change disk drive/printer setup and follow the instructions.

If you have "told" the *Microzine* disk that you have a printer, the program will tell you to insert a data disk in the drive, and then press **RETURN**.

Use the arrow keys to choose the spreadsheet you want to print.

The program will say "Please make sure that your printer is on." Turn on your printer. Then the program will ask: "Print spreadsheet values ('v') or formulas ('f')?"

Type **V**, then press **RETURN** to print your spreadsheet with the values (numbers) displayed.

Type **F**, then press **RETURN** to print your spreadsheet with the formulas displayed.

The spreadsheet will print out only the amount of the spreadsheet that you have filled in. For example, if the last cell in which you entered information was cell G3, the spreadsheet will stop printing when it prints the value or formula in cell G3. The spreadsheet will print out in "pieces" horizontally across the page, as follows:

Columns A-H
Columns I-P
Columns Q-X
Columns Y and Z

Press **ESC** if you want to stop the printer before the spreadsheet is finished.

Syntax Error

If you make a mistake when entering information in a cell, the computer will beep and display this message: **CALCULATOR: SYNTAX ERROR. PRESS RETURN TO CONTINUE.**

Press **RETURN**, and look carefully at what you typed in. Read "Mathematical Operations and Features," on page 20, for information on how to enter formulas, and information into cells.

Introduction

Choose this function to learn more about "ScholastiCalc."

ROSE AND CALUMNY

What You'll Find

"Rose and Calumny" is a series of spreadsheet puzzles, based on "ScholastiCalc." If you are familiar with "ScholastiCalc," you will find it easier to solve the puzzles.

"ROSE AND CALUMNY" MAIN MENU

"Rose and Calumny" has two functions, or things you may do. They are Rescue Rose and read the Instructions.

Rescue Rose

Choose this function to read the story, and rescue Rose. The witch Calumny will give you three puzzles to solve. Each puzzle is set up on a "ScholastiCalc" spreadsheet. The instructions for the puzzles are at the bottom of the spreadsheet.

Puzzles

Each of the three puzzles uses columns A-F on the spreadsheet. Move the cursor over to column F so that you can see the entire puzzle.

Target Values and Formulas

To solve each puzzle, you must fill in the blank cells so that the totals for each row and column match their target values.

Move the cursor over a cell in the "Total" column. A formula will appear in the upper-left corner of the screen.

Use the formula to decide which number should go into each cell to match the row or column's target value.

For example, if the formula for row 2 is $A2 + B2 + C2$, and the target value for row 2 is 50, then the sum of all of the numbers in row 2 must add up to 50.

If the formula for column B is $A2 + A3 + A4$, and the target value for column B is 57, then the sum of all of the numbers in column B must add up to 57. The formulas and target values will be different for each puzzle. Type E to enter the numbers that you think will correctly solve the puzzle.

Solving the Puzzle

When you have solved the puzzle, type C to compute the numbers. Then type Q to quit. The program will ask if you are sure you want to quit. Type Y for yes or N for no.

If you solved the puzzle correctly, you will continue with the story. If you did not solve the puzzle, the story will end. You may try again to rescue Rose!

Instructions

Choose this function to learn more about "Rose & Calumny."

Hints

- Always solve a puzzle by first filling in a row or column where only one cell is left blank. For example, if you know that you needed to add cells A1, A2, and A3 together to add up to 50, and if $A1 = 10$, and $A2 = 25$, you would know that the number in cell A3 must be 15, because $10 + 25 + 15 = 50$.
- Before you start to solve a puzzle, move the cursor over any cell in column F. Write down the target values for each row. Then move the cursor over any cell in column E. That way, you will see the entire puzzle on the screen at once, and it will be easier to solve.
- Type C to compute as often as you want. The *Microzine* editors found it easiest to solve the puzzle if they typed C after they entered each number in the puzzle.

COMPUTER STUFF

"Computer Stuff" has two functions, or things you may do. They are Change disk drive/printer setup, and Initialize a data disk.

Changing Number of Disk Drives

Microzine assumes you have one disk drive. If you have two, choose Change disk drive/printer setup. Then follow the instructions given.

The advantage of having two drives is that when you need to use a data disk you will be able to put it in the second drive. You will not have to take the *Microzine* disk out of its drive.

If *Microzine* has been changed to assume two drives and you have only one, choose Change disk drive/printer setup and change back to one drive. You don't have to change the number of drives each time you use *Microzine*. It remembers.

Changing Printer Setup

Microzine assumes that you do not have a printer. If you have a printer, *Microzine* assumes it is connected to slot 1.

If you have a printer, choose Change disk drive/printer setup. Then follow the instructions.

If you do not know what slot number your printer is connected to, ask somebody who does know, or just press **RETURN**. The computer will then assume the answer is slot 1.

You don't have to change the printer setup each time you use *Microzine*—it remembers.

Initializing a Data Disk

A data disk is a blank disk (or one that you don't mind erasing) that has been initialized by *Microzine*.

To initialize the disk, choose the second function on the Main Menu. The computer will tell you that you need a blank disk, or one you don't mind erasing. Press **RETURN** and the computer will tell you to put the disk in the drive. If you're set up for one drive, take the *Microzine* disk out of the drive and put in your disk. If you're set up for two drives, just put your disk in the second drive. Then press **RETURN**.

The computer will tell you that the disk will be erased. It asks, "Do you want to go ahead? (Y/N)." Type Y if you do and then press **RETURN**. Type N and press **RETURN** if you don't want to go ahead.

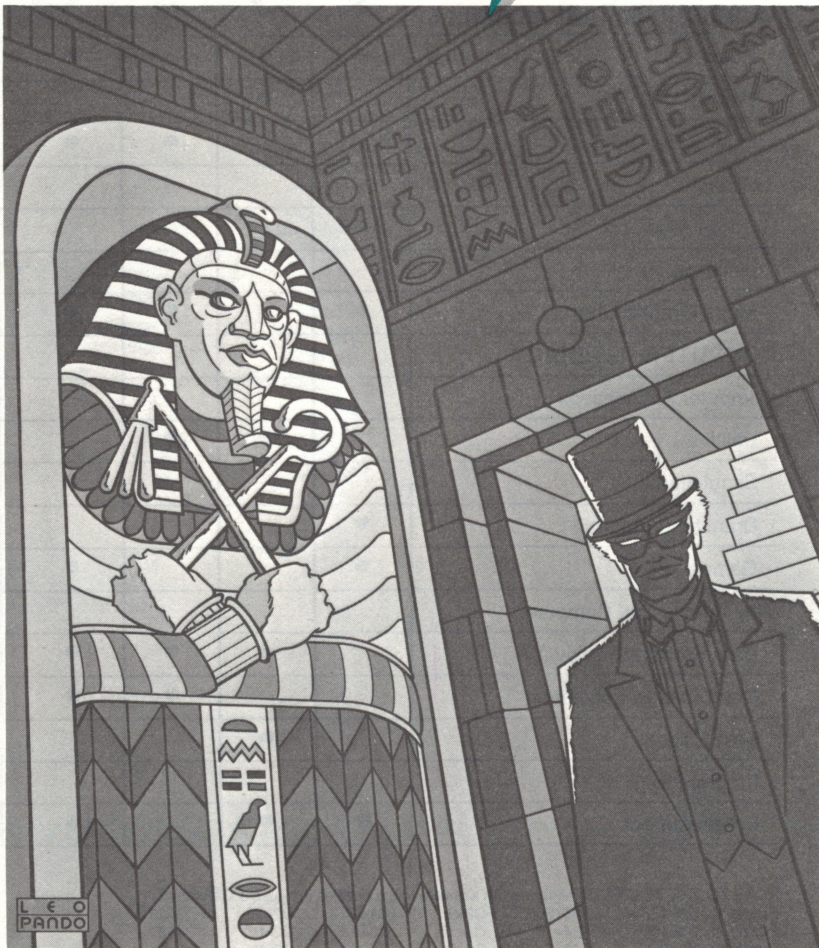
The computer will tell you when the disk has been initialized. Press **RETURN**, then put *Microzine* back in the drive. Press **RETURN** again and you will be sent back to the menu. Press **ESC** to get back to the *Microzine* Table of Contents. You now have a data disk. Use it for "Letter Writer," "ScholastiCalc," or any *Microzine* feature that requires a data disk.

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MICROZINE SCOPE AND SEQUENCE CHART

CURRICULUM AREAS/SKILLS	History	Mystery	Letter Writer	Scholastic	Rose and Calumny
Reading	•	•		•	
Writing		•			
Math			•	•	
Science					
Social Studies	•				
Fine Arts					
Maps/Graphs/Charts	•		•	•	
COMPUTER LITERACY					
Computer Applications					
Utilities		•	•		
Simulations					•
Branching Stories	•				
Games	•				•
Why People Use Computers					
Data Storage/Retrieval		•	•	•	
Computation/Estimation			•	•	
Text Editing		•			
Programming					
Entertainment	•	•			•

NOTE TO THE TEACHER: Here are the answers to the puzzles in "Rose & Calumny":

Puzzle 1: B3=12, B4=20, C2=0, C4=2, D2=25, D3=26
 Puzzle 2: B3=10, B4=15, C2=10, C5=8, D2=0, D4=5
 Puzzle 3: B2=2, B5=5, C3=3, C4=1, D3=3, D5=5

HISTORY MYSTERY

A Twistaplot™

VOCABULARY PREVIEW: extinct, hieroglyphics, linen, philosophy, myth, mosaic, chivalry, berserk, adobe, enlightenment, souvenir, chute, automat, notorious, frescoes

School Activities

TIME LINES: Point out to students that the floor plan of the History Mystery Museum is like a time line. Have students make a separate time line for each floor in the museum and one large time line using each room in the museum. Then have students locate an important event within each age, such as when the telephone was invented, or when Babe Ruth hit his 714th home run. Students should locate and verify these dates in an encyclopedia or almanac.

RESEARCH: Have the class compile a Who's Who in History using the historical figures who appear in the History Mystery, and others you want to add. Have each student do research and write an entry on one figure. Entries should include the date and place of birth, education, major achievements, and any other interesting facts or anecdotes the student uncovers. Once the entries are written, have students form teams and play "20 Questions," using these people in history.

Home Activities

Take students to an art museum if you have one nearby. They might enjoy finding exhibition rooms that are similar to the ones in History Mystery.

If students like the idea of time travel, suggest they read a book such as *The Time Garden*, by Edward Eager, or see the movie *Back to the Future*. *From the Mixed-Up Files of Mrs. Basil E. Frankweiler* by E. L. Konigsburg is another museum mystery.

LETTER WRITER

VOCABULARY PREVIEW: heading, inside address, greeting, body, complimentary close, signature

School Activities

Writing: Have students choose an issue that they have studied in current events. Suggest they write to a U.S. senator or member of Congress, expressing their feelings about the issue. They can use the form for the government letter. Addresses for the Senate and House are in the *Microzine Fun Letter* file.

- Cut out the help-wanted section of the newspaper and post it on the bulletin board. Suggest students find a job that sounds interesting and write a fictional application letter. Remind them to include experiences they have had that would make them more eligible for the job.
- Students can practice narrative writing by writing a letter to a friend that gives an eyewitness account of an historical event. Have them choose an event they have studied, such as the signing of the Declaration of Independence, or the first running of the steam engine. Remind them to describe the setting, the key characters, and the action.

Home Activities

Help students correspond with a pen pal. In the first letter, students should introduce themselves, and describe where they live and go to school. They should try to think of things they might have in common with their pen pals and talk about their interests and activities. They should also ask questions their pen pals can respond to in their return letters.

Students can use the thank-you letter to write letters thanking friends or relatives for a present or a visit.

SCHOLASTICALC

VOCABULARY PREVIEW: cell, format, spreadsheet, row, column

School Activities

EXPLAINING THE BASIC PRINCIPLE: Before students begin working with ScholastiCalc, discuss the ideas that lie behind all electronic spreadsheets. Show them how each cell within a spreadsheet has a relationship with the other cells, and why when a value in one cell changes, values in other cells may change too. Try comparing spreadsheets to dominoes, or to an engine made up of many gears. Each domino and each gear moves after being "prompted" by another domino or gear.

A BLACKBOARD SPREADSHEET: Students might understand the principles behind spreadsheets if they act out being a spreadsheet themselves. Have several students stand at the blackboard. One student should represent cell A1. That student's neighbor should represent B1, with a value that is dependent on the value in cell A1 (for example, $A1+10$). The student representing C1 would show a value that is dependent on the value in B1 (for example, $B1*2$) and so on down the line. Then give A1 a value, and have all of the students compute the value in their respective cell.

Set up two competing human "spreadsheets" operating on separate blackboards. Have the two "spreadsheets" race each other to come up with the right value in the last cell.

A TEACHER'S TOOL: ScholastiCalc is a simple but powerful spreadsheet. It can compute exponents, integer parts, square roots, and absolute numbers. Though you may never expose your students to some of these capabilities, they're there for you to use. Turn to the documentation for more information.

Home Activities

PLAYING "EXPLORER": Spreadsheets can be used for activities that have nothing to do with numbers. Here's just one suggestion for an alternative game.

In "Explorer," the top of the spreadsheet is the ground, and the rows represent feet below the surface. One player "hides" veins of gold or silver in several different places within this 16x26 inch tract of "land." This is done by typing in the word Gold or Silver in each cell where a mineral is to be found. (Some veins might be especially rich, with five or six cells in a chunk.)

The other player does the same on another computer or with pencil and paper (using the same 16x26 grid) Each player then takes turns calling out cells he or she would like to "drill" towards: "Column F - Row 12," for example. If the drill hits a mineral, that player gets another turn. Play continues until one explorer has uncovered all of the minerals in his or her opponent's tract of land.

HOME ACCOUNTING: Spreadsheets can also be used as simple accounting tablets—for example, to keep track of expenses and income through an allowance. One column would be used for dates; the adjoining column for entries (for example, "Popcorn"); the next column for amounts, and the next one for totals. Students might use the accounting tablet as a way to show how responsible they are with money (and why they feel they must have an increase in their allowance).

Letter Writer Activity Page

WRITE TO THE EDITORS

Use "Letter Writer" to send a letter to us—the *Microzine* editors. Choose the *Microzine* Fun Letters, then choose "Amy McKinley."

Write down your thoughts and answers to the questions below. Then put those ideas into the letter you write to us. We promise we'll write back!

1. What did you think of "P.S." the Mail Critter? Did you like his name?
2. How long have you been using *Microzine*?
3. What is your all-time favorite program?
4. If you were going to make a *Microzine* of "Greatest Hits"—a collection of the best programs ever—what would they be?
5. Tell us about yourself: What's your favorite color? What are your hobbies? What do you think of lima beans, scratchy sweaters, and homework?
6. What would you like to know about us? (We can tell you right now that we all hate lima beans.)

ScholastiCalc Activity Page

SPREADSHEET STARTER KIT

Here is a sample print-out of a blank spreadsheet. Make several photocopies of it to plan your spreadsheets before you enter them with "ScholastiCalc." We've included some labels below to help you think of uses for your spreadsheets.

Money earned
Entertainment
Gifts

Money spent
Books
Etc.

Allowance
Food
Monthly Total

Part-time job
Clothes
Grand Total

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City _____ State _____ Zip _____

Where do you get *Microzine*? Home _____ School _____



RATE EACH PROGRAM IN THIS ISSUE.

1 = Terrific! 2 = Good 3 = Okay 4 = Not So Hot

_____ History Mystery _____ ScholastiCalc

_____ Letter Writer _____ Rose & Calumny

1. Who was your favorite ghost in "History Mystery"? Why?
2. What did you like best about "Letter Writer"? Write a letter to let us know!
3. Were you able to rescue Rose? Were Calumny's puzzles too hard or too easy?

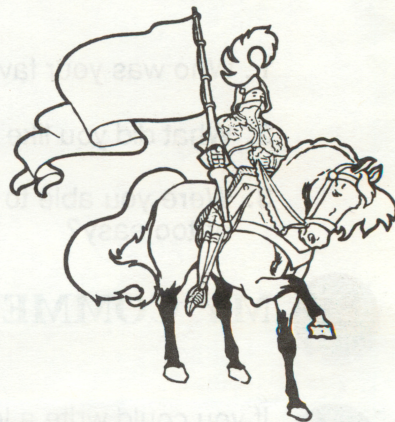
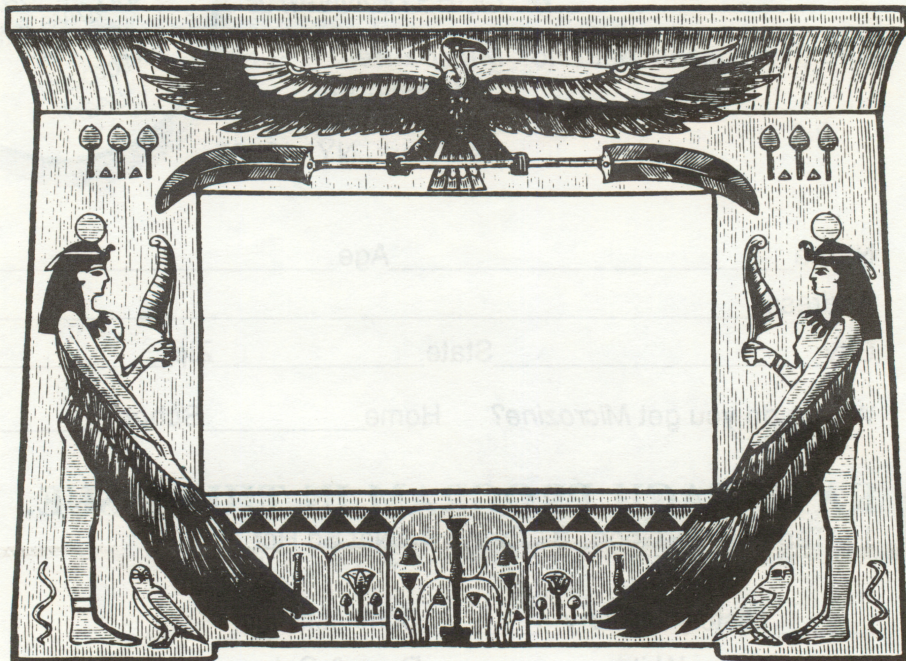


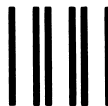
MY COMMENTS AND OPINIONS (write on the back, too)



If you could write a letter to anyone, real or imaginary, past, present, or future, to whom would you write? What would you write about?

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