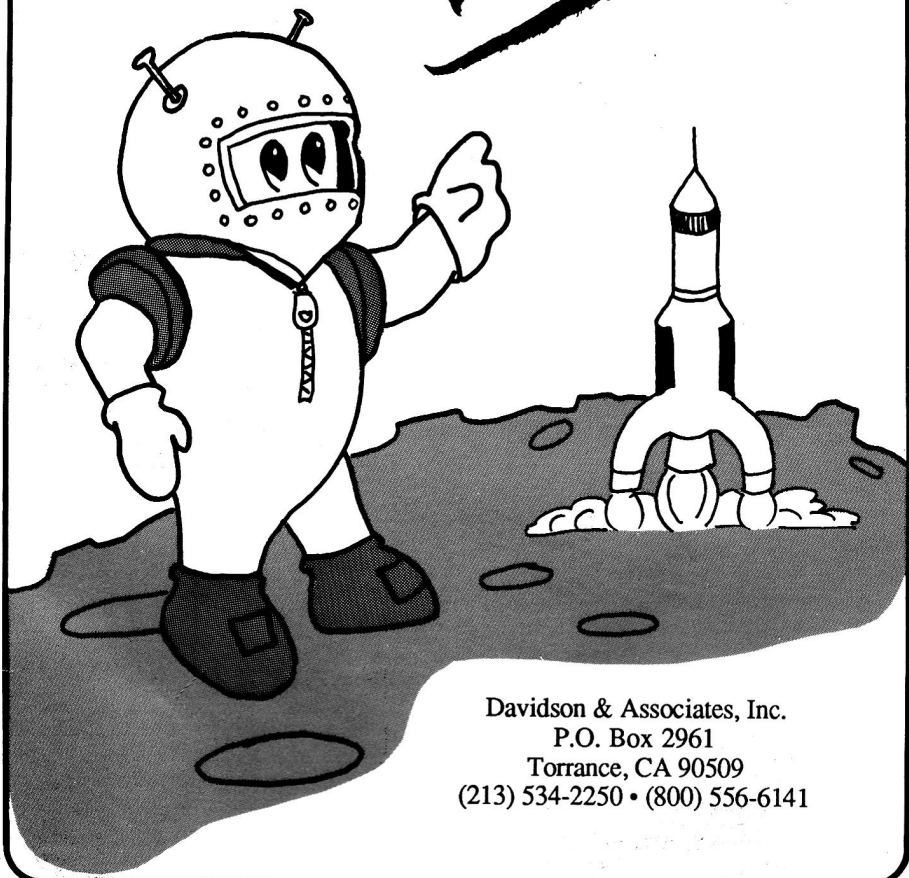


# MATH BLASTER

*Pump!*<sup>TM</sup>



Davidson & Associates, Inc.  
P.O. Box 2961  
Torrance, CA 90509  
(213) 534-2250 • (800) 556-6141

## QUICK START

### Start the Program

#### Apple

- Insert program disk, label side up, in drive 1.
- Turn on computer.

#### IBM

- Boot DOS (2.1 or more).
- Insert program disk, label side up, in drive A.
- At the A>, type MBP.

### Sign In

- Enter your name. Then press <Return> or click OK.
- Use the arrow keys or the mouse to enter the correct month. Press <Return> or click OK. Enter the date and year in the same way.

### Select a Subject

#### Mouse

- Pull down the Subject menu and select a subject.

#### Keyboard

- Press <Esc> to access the menu bar.
- Use the right arrow key to access the Subject menu and the down arrow key to select a subject <Return>.

### Select a Stage

#### Mouse

- Pull down the Stage menu and select a level of difficulty.

#### Keyboard

- Press <Esc> to access the menu bar.
- Use the right arrow key to access the Stage menu and the down arrow key to select a level of difficulty <Return>.

### Select an Activity

#### Mouse

- Click one of the five icons on the Main screen.

#### Keyboard

- Use arrow keys to select an icon; press <Return>.

To stop an activity, select **Stop** from the Activity menu.

**Note: Do not attempt to install MS-DOS version to a hard disk using DOS copy commands. Use procedure on p. 8 only.**

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## NOTICE

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If the program disk is damaged within FIVE YEARS of purchase, Davidson & Associates, Inc. will replace the disk with a functionally equivalent disk within a reasonable period of time, upon receipt of the damaged disk by Davidson & Associates, Inc.

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051190



## INTRODUCTION

Welcome to *Math Blaster Plus*!  
With the help of the Math Blasternaut,  
you are about to turn your computer  
into a powerful tool for building a  
sound foundation in math.



*Math Blaster Plus* will help you or your students master the basic math facts in addition, subtraction, multiplication, division, fractions, decimals, and percents – essential building blocks upon which all other math is based.

Students enjoy the motivating challenges and positive feedback this program offers. Colorful graphic presentations capture students' interest and retain their attention. Math becomes an interesting activity for students of all ages to enjoy as they learn. Learning is a positive experience; math is fun!

*Math Blaster Plus* takes full advantage of the unique benefits of computer instruction. Students work at their own pace, receive positive reinforcement as they progress, and strengthen their areas of weakness. Students learn, practice, and apply math facts. They achieve success as they learn; success builds upon success. Students are successful not only when they are using the software but in other math activities as well.

*Math Blaster Plus* can be used both at home and in the classroom. Teachers find it useful to help reinforce the material they've presented in class. *Math Blaster Plus* supplements math instruction; it doesn't replace it. The program is most effective when it is used *after* a concept has been introduced in class.

For example, after a student understands the concept of multiplication, *Math Blaster Plus* becomes an effective tool for mastering multiplication tables.

Parents find *Math Blaster Plus* valuable as an after-school activity for their children. The program is often recommended to parents by teachers as a supplement to classroom instruction. Because of the extensive material the program covers, different children in the same family can use *Math Blaster Plus* year after year.

*Math Blaster Plus* has many special features which enhance learning and motivate students:

#### Extensive Material

*Math Blaster Plus* covers all the operations students encounter in elementary school. Over 750 math facts are grouped into 30 stages representing various levels of difficulty.

#### Review Lessons

Students may review their math facts with the *Math Blaster Plus* review option. These files contain problems with combinations of inverse operations, i.e., addition *and* subtraction, within the same family of facts. This is an excellent way to review math facts that have already been mastered.

#### Supplementary Workbooks

Students may continue mastering their math facts with Davidson's *Math Blaster* workbooks. Twelve workbooks are available for grades 1 through 4. See the back of the manual for details.

### Multiple Activities

Students master math facts utilizing any or all of five motivating learning activities designed by teachers. Each activity builds upon the previous one, so that the math facts are not only reinforced but used in a variety of ways, and students develop confidence as they learn.

### Davidson Student Desktop Interface

This specially-designed learning environment with pull-down menus allows students to view and select all of the options, subjects, and stages from one screen. The colorful icons on the Main screen represent the five *Math Blaster Plus* learning activities.

### Blasternaut Character

The engaging Blasternaut that appears throughout the program takes center stage in the highly motivating arcade-style Blasternaut game. Students enjoy the action and the challenge of correctly landing the Blasternaut in his space station.

### Certificate of Excellence

As students master their facts and earn a perfect score, they may print a graphic certificate of excellence. This award provides a goal, recognizes their achievement, and reminds them of the fun they had.

### Record Keeping

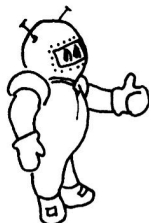
Students, as well as their parents and teachers, can keep track of their progress with the *Math Blaster Plus* record keeping system. Records can be saved to the disk and printed out for further reference.

## Editor

To further extend the life of the product, and customize it to individual students' needs, the easy-to-use Editor allows you to enter your own math problems for use with all five *Math Blaster Plus* activities.

## Test Maker

A special feature of the Editor is a Test Maker which allows you to create and print a math test in hard copy form.



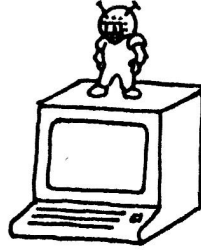
You'll find *Math Blaster Plus* one of the most comprehensive pieces of educational software you'll ever use. And you'll find it one of the most creative examples of what a powerful learning tool your computer can be. Learn and enjoy!

## STARTING MATH BLASTER PLUS

### Included in this Package

Your *Math Blaster Plus* package contains

- the *Math Blaster Plus* disk
- this manual
- a registration card



### Hardware Requirements

*Math Blaster Plus* runs on the following Apple, IBM, and MS DOS computers:

#### Apple IIe, IIc, IIGS

- 128K, 1 or 2 drives
- extended 80 column card
- printer (optional)
- mouse (optional)

#### IBM (and MS DOS computers)

- 256K, 1 or 2 drives
- color/graphics adapter
- printer (optional)
- mouse (optional)

If your computer has a Hercules monochrome graphics card, you must follow the directions below **before** using the program, making the disk self-booting, or copying the program to a hard disk. With the Hercules card, you will be able to print only the **text** certificate.

- Boot the computer using your DOS disk.
- Remove the DOS disk; insert the *Math Blaster Plus* disk.
- At the A>, type **here**
- Select option **1**, indicating the use of a Hercules card.
- At the next A>, type **mbp** to start the program.

## Starting the Program

To start *Math Blaster Plus*, follow the steps for your computer.

### Apple

- Insert program disk, label side up, in drive 1.
- Turn on computer.

### IBM

- Boot DOS (2.1 or higher).
- Insert program disk, label side up, in drive A.
- At the A>, type **MBP**.

## Self-booting Instructions

To make the IBM version self-booting:

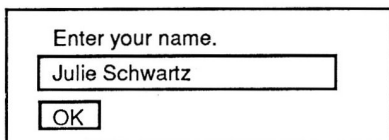
- Boot the DOS disk (2.1 or higher) in drive A.
- If you have 2 drives, insert *Math Blaster Plus* in drive B.
- Type **sys b:** <Return>. Follow the screen prompts. If you have only one drive, insert the MBP disk when prompted for the disk for drive B; insert DOS when asked for the disk for drive A.
- At the next A>, type **copy command.com b:** <Return>.
- When the A> reappears, type **copy graphics.com b:** <Return>.

The IBM version of *Math Blaster Plus* may be copied on a hard disk. For instructions, see page 8.

## Signing In

On the opening screen, you will see a dialog box.

- Enter your name in the dialog box <Return>.  
(IBM - 8 characters or less)



A screenshot of a dialog box with a black border. At the top, it says "Enter your name." Below this is a rectangular input field containing the text "Julie Schwartz". At the bottom left of the dialog box is a button labeled "OK".

- Enter the month. Use the arrow keys on the keyboard or use the mouse to click on the screen arrows. When the correct month shows in the box, press <Return> or click OK. If your computer already has a clock/calendar, you will not be asked to enter the date.
- Enter the date and year in the same way.

Select the year.   ←   →

1988

OK   January 8,

- When the Main screen appears, access the File menu and select **MB+ Setup** (IBM) or **Printer Setup** (Apple). Designate the type of printer; press <Tab>. Change the speed option if you wish; press <Tab>. (Single drive users should change pathnames for records and custom data to A:\)

Note: The program may run too fast on some computers. **Increase** the delay number in the box to **decrease** the speed at which the program will run. If you increase the delay number to 9999, the program may run so slowly that it appears to freeze. For a 10 Mhz processor, set the delay between 1000 and 1200; for an 8 Mhz processor, set the delay between 300 and 500; a 4 Mhz processor should run at the default speed.

## IBM HARD DISK INSTALLATION

**Note:** Do not attempt to install MS-DOS version to a hard disk using DOS copy commands. Use only the steps below.

The IBM version of *Math Blaster Plus* may be installed on a hard disk.

- Start the hard disk (drive C) as usual.
- Put the *Math Blaster Plus* program disk in drive A.
- At the C>, type **a:** (to log on to the drive the disk is in).
- At the A>, type **hinstal c:** and press <Enter>. A subdirectory named mbp will be created and the necessary files copied.  
(Note: Installation is limited to c:\mbp) Make sure the program disk is not write protected.

To remove the program from your hard disk, follow the instructions above, but substitute **uninstal** for **hinstal**.

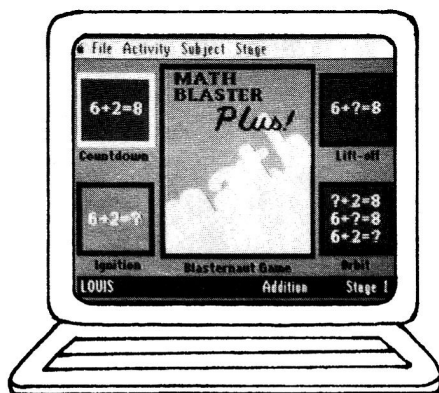
To run *Math Blaster Plus* from your hard disk:

- Start your computer as you normally would, from the hard disk.
- If you plan to print the graphic certificate, at the C>, type **graphics** and press <Enter>. (You probably have this file on your hard disk in a DOS subdirectory; if not, use the file that is on your DOS floppy disk.)
- At the C>, type **cd\mbp** and press <Enter>. (This will access the mbp subdirectory.)
- At the C>, type **mbp** and press <Enter> to start the program.
- Press <Esc> and then the right arrow to access the File menu, select **Setup**, and enter the necessary information; it will be saved to the disk.



## USING THE DAVIDSON STUDENT DESKTOP INTERFACE

*Math Blaster Plus* utilizes the new Davidson Student Desktop Interface which allows you to move from one part of the program to another with ease.



### The Pull-down Menus

At the top of the *Math Blaster Plus* Main screen is a menu bar. You may access the menu bar with either the mouse or the keyboard.

#### Mouse

- To pull down a menu, point to an item on the menu bar and hold down the mouse button.
- Once the menu is pulled down, drag the pointer to the desired item, and release the button to select.

#### Keyboard

- Press <Esc> to access the menu bar.
- Use the right and left arrow keys to pull down a menu.
- Use the down arrow key to highlight the desired item <Return>.

## The Icons

The five *Math Blaster Plus* activities are represented by colorful icons on the Main screen. You may access an activity by selecting an icon with either the mouse or keyboard.

### Mouse


- Double-click one of the five activity icons on the Main screen.

### Keyboard

- Use arrow keys to select an icon; press **<Return>**.

You can also access an activity by highlighting the activity icon and selecting **Start** from the Activity menu.

To leave an activity,

- Press  S (Apple version) or S (IBM version) or select **Stop** from the Activity menu.

## Message and Dialog Boxes

When *Math Blaster Plus* wants you to do something, it will prompt you with a message on the screen. If there is a choice for you to make, or information you need to enter, a dialog box will appear. For example, you will be asked to select a difficulty level when you start the Blasternaut Game. You may do this by using the keyboard or the mouse.

You will find that the new Davidson Student Desktop Interface allows you freedom to move from one part of the program to another quickly and efficiently. It makes using the computer easier than ever before and allows you to focus your attention completely on learning the material.

## USING MATH BLASTER PLUS

Now that you are familiar with the Davidson Student Desktop Interface which *Math Blaster Plus* utilizes, you are ready to focus on mastering the material and reinforcing it in a variety of ways.

### Choosing a Subject, Stage, and Format

Before starting on one of the *Math Blaster Plus* activities, you should first select a subject. There are over 750 math facts covering five subject areas: 1) addition 2) subtraction 3) multiplication 4) division and 5) fractions, decimals, and percents. In addition, there is a review option which contains combinations of facts utilizing inverse operations; for example, problems in addition *and* subtraction are presented for review in Stage 1.

Problems in each subject area and in the review option are divided into six stages of difficulty. You may choose to have problems presented in vertical, horizontal, or mixed (combination of vertical and horizontal) format.

- Pull down the Subject menu on the menu bar, and select a subject: Addition, Subtraction, Multiplication, Division, Fractions (includes decimals and percents) or Review. A check mark will appear in front of your selection.
- Pull down the Stage menu and select a stage (1 through 6).
- Pull down the Stage menu again and select a format (horizontal, vertical, or mixed).

Use this chart to help select a stage on which to begin. The grades listed are those in which the facts are usually introduced. Older students will find all of the stages useful for mastery or review. See Appendix B for a complete listing of problems.

Grade 1	Addition Stages 1, 2, 3	Subtraction Stages 1, 2, 3	Review Stage 1
Grade 2	Addition Stages 4, 5, 6	Subtraction Stages 4, 5, 6	Review Stage 2
Grade 3	Multiplication Stages 1, 2, 3	Division Stages 1, 2, 3	Review Stage 3
Grade 4	Multiplication Stages 4, 5, 6	Division Stages 4, 5, 6	Review Stage 4
Grade 5	Fractions,etc. Stages 1, 2, 3	Review Stage 5	
Grade 6	Fractions,etc. Stages 4, 5, 6	Review Stage 6	

*Note to Teachers*

*Use the Test Maker to create a Pretest or Diagnostic Test using one of the Math Blaster Plus files, or create your own test using the Editor. Use the test in the classroom before students practice on the computers or after the computer lesson to check progress and retention.*

After you go through the various stages of each operation, you may want to select a Review file which covers the problems you have mastered.

### Learning with the Five *Math Blaster Plus* Activities

*Math Blaster Plus* teaches math facts with five highly motivating activities. The activities are represented by icons on the Main screen. Each activity is designed to build upon the previous one, but you may do the activities in any order you wish. You may use the mouse or the keyboard arrow keys to make your selection.

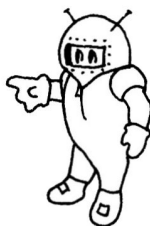
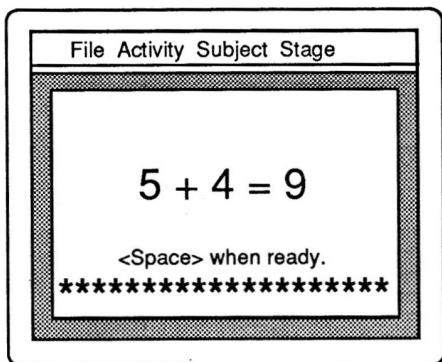
*Note to Teachers*

*If you or your students find the sound in Math Blaster Plus distracting during class activities, the Sound Off option on the File menu may be accessed from the Main menu and most activities.*

#### Activity 1: Countdown

In this interactive tutorial activity, a math fact will appear on the screen. Study the fact until you think you have learned it.

- Press <Space> to make the answer disappear.
- Type the correct answer into the equation <Return>.



If the answer is correct, the second problem will appear. If the answer is incorrect, you will get other opportunities to answer. In this practice activity, there is no scoring or time control. You may proceed at your own pace through the lesson.

*Note to Teachers*

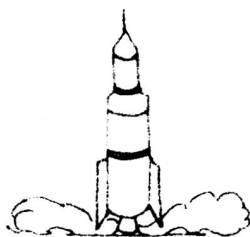
*These are math facts that should be memorized. Students should know them instantly without stopping to calculate. For this reason, answers are entered from left to right.*

### Activity 2: Ignition

The Ignition activity presents a problem with the answer missing.

- As each problem appears, enter an answer <Return>.

Encouraging messages and animation will reward your correct responses.



File	Activity	Subject	Stage
$9 \times 6 = \_ \_$			
Find the product <Return>.			

If your answer is correct, another problem will appear. If the answer is incorrect, you will have an opportunity to "Try again." If this response is

wrong, the correct answer will flash on the screen for you to study; press <Space> to continue. At the end of the lesson, a scoreboard will show the percentage of correct answers. You will then have an opportunity to retake any problems you missed.

SCOREBOARD	
Name	Jimmy
Date	March 3, 1988
Subject	Addition
Stage	4
Activity	Lift-off
Correct	22
Total	25
Score	88%

Press P to print Scoreboard.  
<Space> to continue.

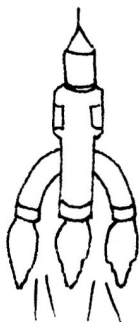
*Note to Teachers*

*Math Blaster Plus is designed to make learning math a positive experience. A student's correct responses are rewarded with encouraging messages and animated graphics. An incorrect answer prompts a message which encourages students to "try again." There is never any negative feedback to scold or embarrass a student for making an incorrect response.*

### Activity 3: Lift-off

In the Lift-off activity, the problem on the screen will have a missing part.

- Determine the value for the missing part.
- Enter the missing part <Return>.



File	Activity	Subject	Stage
$10\% \times \_ = .5$			
Find the missing value <Return>.			

You will have two chances to supply the correct answer. Encouraging messages and animated graphics provide positive reinforcement. The scoreboard will appear at the end of the lesson; you may retake any missed problems. The scoreboard or special certificate may be printed.

#### *Note to Teachers*

*The Lift-off activity builds thinking skills as students apply the facts they have learned. It strengthens their understanding of inverse operations by requiring them to analyze the problem and use the opposite operation to solve for the missing part.*



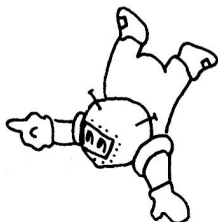
#### Activity 4: Orbit

You will be further challenged by the Orbit activity. Three randomly selected problems from the file will appear together on the screen. One term in each problem will be boxed. Look at each equation and find the boxes which contain errors.

- Select a box using the arrow keys.
- Press <Space> to erase the incorrect number.
- Type in the correct number and press <Return>.
- When all corrections have been entered, press <Return> again.

File	Activity	Subject	Stage
>>	9 - 1	= 7	
	8	- 5 = 3	
	4 - 2	= 1	

Use arrows to select problem.  
<Space> to correct error <Return>.  
<Return> when finished.



Each correct answer will get a star. If you have missed any corrections, you will get a second chance to earn stars. After ten screens, a scoreboard will appear. The scoreboard or a special certificate may be printed out.

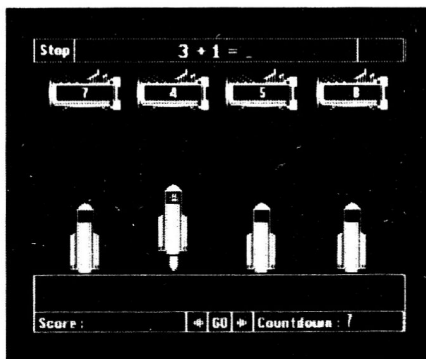
#### *Note to Teachers*

*Orbit is a problem solving activity which requires the student to discriminate between correct and incorrect math facts. Correcting the errors reinforces learning. Students enjoy this chance to "be the teacher."*

### Activity 5: Blasternaut Game

You will find the Blasternaut game a fun-filled way to build speed and accuracy with the math skills you've just mastered. The object of the game is to get the Blasternaut into the rocket aimed at the right answer. A problem appears at the top of the screen. A different answer choice is displayed inside each of four space stations.

- Select a difficulty level for playing. (Beginners should use level 1.)
- Click the screen arrows with the mouse or use the keyboard arrow keys to redirect the Blasternaut to a position directly under the rocket aimed at the correct answer choice.
- Click GO or press <Space> to make the Blasternaut jump in and fire the rocket.



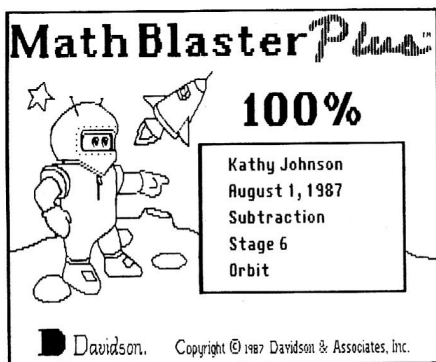
If your choice is correct, the Blasternaut lands successfully on the space station, the correct answer appears in the problem, and you score points. You may choose from three difficulty levels of play. The number of points you score will depend upon the level of play and your speed in answering. Occasionally an astronaut in distress will float across the screen. Help the Blasternaut rescue him and take him safely to a space station. You will earn Bonus Points!

*Note to Teachers*

*The Blasternaut game reinforces learning in an interesting and exciting way. Students build speed and accuracy as they play this game. The more proficient they become, the higher their scores. This game is often used by teachers as a reward for good performance in another activity of the program or on another class assignment. Students learn while they are having fun.*

## Printing a Certificate of Excellence

The Ignition, Lift-off, and Orbit activities offer students a certificate of excellence for a perfect score. The printed certificate of excellence is a special feature which rewards students and reinforces a positive feeling for math. This tangible graphic reward can be given to the student, posted in the classroom, or sent home to parents.



To print your graphic certificate, follow the screen prompts.

Note to Apple users: see Appendix C for a list of printers and directions for Printer Setup. If your printer is not compatible with the graphics used in this special certificate, you may print out a text certificate.

Note to IBM users: If you did not make the program disk self-booting, you must run **graphics.com** prior to starting *Math Blaster Plus* if you wish to print a graphic certificate.

## Keeping Records

Before you create student files, format a blank disk to use as a Records Disk on which to store all students' records. Records may be printed out or viewed on the screen to help parents and teachers evaluate progress and diagnose a student's needs for further practice.

### Apple

- Format a blank disk using ProDOS. See computer owner's manual.
- Name the disk

### MBPRECORDS

### IBM

- Format a disk using DOS 2.1 or higher.
- If using a hard disk, create a subdirectory. See computer owner's manual.
- Select **MB+Setup** from the File menu and indicate the pathname for your Records Disk.

To create and access a Student Record file:

- Type the student's name into the sign-in box at the beginning of the program.
- Access the File menu and select **Record Keeping On**. When the student completes a scored activity (Lift-off, Ignition, Orbit, or Blasternaut Game), the program will ask for the Records Disk.
- Insert the Records Disk you have formatted (or press C to cancel). The program will look on that disk for the student's name as it was typed in at the beginning of the program. If it finds the name, the score will be saved in the student's file. If it does not find the name on the disk, it will automatically create a new file.
- If you wish to add another student, select **New Student** from the File menu.

Select **Record Keeping Off** from the File menu to turn off record keeping.

To view a student's record on the screen:

- Type student's name into the sign-in box on the opening screen.
- Select **See Record** from the File menu.

You will be asked to insert the Records Disk. The student's record file will appear on the screen.

**Note:** If you get a "FILE NOT FOUND" message, catalog the Records Disk (using your DOS disk or System Utilities disk) to look for the filename.

To print a record:

- Select **Print Record** from the File menu.
- Select filename from dialog box.
- Click **OK** or press <Return> to print, <Esc> to cancel.

When the printing is finished, the Main screen will reappear.

Julie Schwartz's record							Page 1
No.	Date	Subject	Stage	Activity	Correct	Total	Score
1	May 10, 1988	Addition	2	Ignition	23	25	92%
2	May 10, 1988	Addition	2	Lift-off	25	25	100%
3	May 11, 1988	Addition	2	Orbit	30	30	100%
4	May 12, 1988	Addition	2	Game			150
5	May 13, 1988	Addition	3	Ignition	20	25	80%
6	May 14, 1988	Addition	3	Ignition	5	5	100%

The *Math Blaster Plus* record keeping system allows you to assess each student's strengths and weaknesses. In the next section, you will learn how to create custom files and mastery tests with the easy-to-use Editor.

## USING THE EDITOR AND TEST MAKER

You may enter your own sets of problems to use with all five learning activities. Before you begin, format a blank disk to use as a Data Disk on which to save the new data files you create.

### Apple

- Format a blank disk using ProDOS. See your computer owner's manual.
- Name the disk

### MBPDATA

### IBM

- Format a blank disk using DOS 2.1 or higher.
- If using a hard disk, create a subdirectory. See computer owner's manual.
- Select a **Setup** from the File menu and indicate pathname for your custom Data Disk. (i.e., A:\)

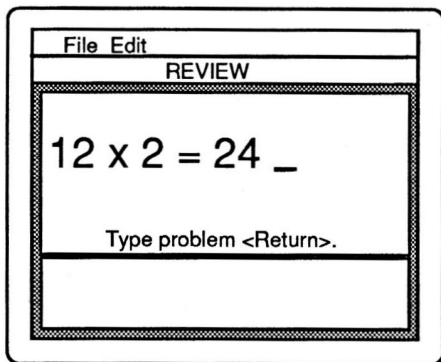
### Creating Your Data File

To create your own set of problems to be used with all five *Math Blaster Plus* activities, access the Editor from the Main screen.

- Select **Editor** from the File menu; the Editor screen will appear.
- From the Editor's File menu, select **New**.
- You will be asked to enter a name for your new file (8 characters or less). It is a good idea to choose short names for your files, i.e., TEST, ADD3, SUB2. They will be easier for students to remember and easier to type in when used with the program.

Now you are ready to enter problems into your newly-created file. Follow the steps that begin on the next page.

**Step 1:** Enter the first problem. (Limit your file to 36 problems.)



- Type the problem (in horizontal format) with the correct answer <Return>. Separate terms and signs with spaces, i.e.,  $2 + 4 = 6$  or  $1 + 3/4 = 1\ 3/4$ . The maximum length for each problem is 15 characters/spaces. Use only these symbols with the program:

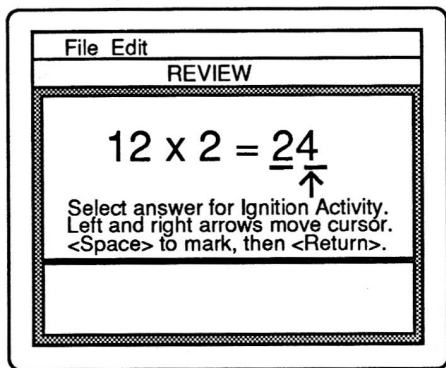
+	(plus)	for addition
-	(hyphen)	for subtraction
:	(colon)	for division
x	(lower case)	for multiplication
%	(percent)	for a percent sign
.	(period)	for a decimal point
/	(slash)	for fractions

Use the <Delete> key to make corrections before pressing <Return>.

Press <Return>; the problem will be centered and a pointer will appear.

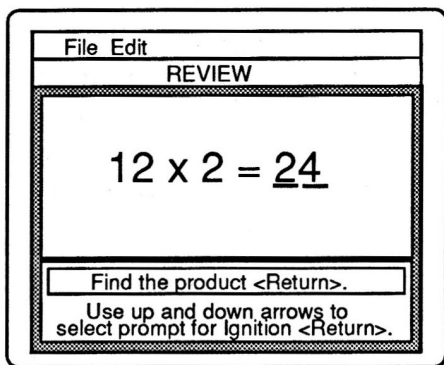


Step 2: Mark the correct answer for the Ignition activity.



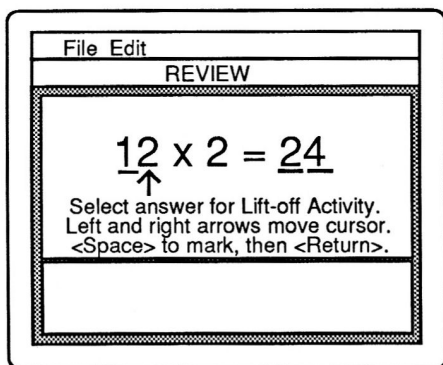
- Use the left and right keyboard arrow keys to move the pointer; press <Space> to underline each consecutive character which is to be a part of the "answer" supplied by the student.
- When all desired characters have been marked, press <Return>.

Step 3: Select directions to appear on the screen during the Ignition activity.



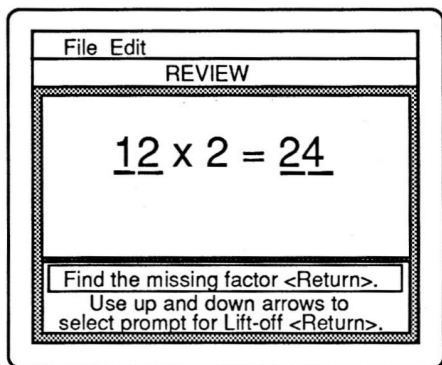
- Use the up and down keyboard arrows to select the directions you wish to appear on the screen <Return>.

**Step 4:** Mark the correct answer for the Lift-off activity.



- Decide which part of the problem on the left side of the equal sign you wish to designate as the "answer" for the Lift-off activity. Move the pointer using the left and right keyboard arrows and press <Space> to underline each character in the answer <Return>. Note: marked characters must be consecutive.

**Step 5:** Select directions for the Lift-off activity.



- Use the up and down keyboard arrows to select the directions you wish to use for this activity <Return>. A new screen for your next problem will appear.

Continue entering problems; repeat the same steps as you type in each problem. When you have typed in all the problems, you are ready to save your file on the data disk you have formatted or a hard disk.

**Step 6:** Save your file.

- Be sure that your new formatted data disk is in the drive.
- Pull down the Edit menu and select **Stop**.
- Pull down the File menu and select **Save**. Your new file will be saved to your formatted data disk or hard disk.

You may return to your file later to edit or correct it; access the Editor, select **Open** from the File menu and type the name of the file you wish to edit.

To view an entire file:

- Open the file you wish to view on the screen.
- Select **View File** from the File menu.
- Leave the View mode by selecting **Stop** from the Edit menu.

To make corrections in a problem:

- Use up and down arrows to get to the problem.
- Select **Delete** from the Edit menu; delete the problem.
- Select **Insert** from the Edit menu; reenter the problem, answer, and the directions that go with that problem; save. (Steps 2-6)

To insert a new problem into a file:

- Use up and down arrows to get to the problem in front of which you wish to insert a new problem.
- Access the Edit menu and select **Insert**.
- Type the new problem(s) and mark the answers and directions that go with it. Problems following the insert will be renumbered.
- To leave the insert mode, select **Stop** from the Edit menu.

To delete a problem from a file:

- Use up and down arrows to get to the problem you wish to delete.
- Access the Edit menu and select **Delete**. The problem will be deleted and subsequent problems will be renumbered.

### Using Your New File with the *Math Blaster Plus* Program

To use your new file with the program, follow the steps below.

- Exit the Editor; access the File menu and select **MB Plus**.
- From the Main screen, select **Your Data** from the Subject menu.
- Type in the name of your data file; select an activity.

### Creating a Test

Any *Math Blaster Plus* file (see Appendix B for file name) or a file you have created and entered using the Editor can be printed out in test form. You may print the problems in file order or random order. See sample below.

To print out a test:

- Open the file you wish to print.
- Select **Print Test** or **Print Random Test** from the File menu.
- Type in the information that you want to appear beneath the name line. You may also specify a title and one line of directions.

Note: Since most printers will not print a division sign character, a colon (:) will be printed instead. A horizontal line may be drawn between the dots, thus creating the proper sign.

Name _____	
Room 14 - Mrs. Johnson	
June 6, 1988	
Multiplication Facts Test	
Write the answers to these multiplication problems.	
1. $3 \times 3 =$	21. $4 \times 9 =$
2. $3 \times 4 =$	22. $5 \times 6 =$
3. $3 \times 5 =$	23. $7 \times 9 =$

You will find the Test Maker useful for creating a pretest or a post-test for your students. It may also be used for additional drill material for students who are not at the computer. In addition to these tests, you may want to supplement the computer activities with one of the *Math Blaster* workbooks.

## APPENDIX A: MENUS

### MAIN SCREEN MENUS

#### File

New Student
-----
Record Keeping On
√ Record Keeping Off
-----
See Record
Print Record
Printer Setup
-----
Editor
Quit

#### File Menu

**New Student** - start a new student  
**Record Keeping On** - keep records  
**Record Keeping Off** - no record made  
**See Record** - view a record on screen  
**Print Record** - make a printout of a record  
**Printer Setup (Apple)** - specify printer  
**M B Plus Setup (IBM)** - designate printer, drives, and adjust program speed  
**Editor** - access editor to create new files  
**Quit** - leave *Math Blaster Plus*

#### Activity

Start
Stop    ⌘ S
-----
√ Sound On
Sound Off

#### Activity Menu

**Start** - start an activity  
**Stop** - end an activity  
**Sound On** - turn on sound  
**Sound Off** - turn off sound

#### Subject

Addition
√ Subtraction
Multiplication
Division
Fractions
Review
-----
Your Data

#### Subject Menu

**Addition**  
**Subtraction** (see Appendix B)  
**Multiplication**  
**Division**  
**Fractions**  
**Review**  
**Your Data** - access user-created files

Stage
Stage 1
Stage 2
√ Stage 3
Stage 4
Stage 5
Stage 6
-----
√ Mixed
Vertical
Horizontal

### Stage Menu

**Stage 1** difficulty levels  
**Stage 2** of problems in  
**Stage 3** each subject area  
**Stage 4** (See Appendix B)  
**Stage 5**  
**Stage 6**  
**Mixed** - problems in combined format  
**Vertical** - problems presented vertically  
**Horizontal** - problems presented horizontally

File
New
Open
Close
Save
-----
View File
Print File
Print Test
Print Random Test
-----
MB Plus
Quit

### EDITOR MENUS

#### File Menu

**New** - create a new data file  
**Open** - open a file  
**Close** - close a file  
**Save** - save a file on a disk  
**View File** - list file on screen  
**Print File** - print out a file  
**Print Test** - problems in file order  
**Print Random Test** - random order problems  
**MB Plus** - return to program  
**Quit** - leave the program

Edit
Undo
Insert
Delete
Stop

#### Edit Menu

**Undo** - undo a deletion just made  
**Insert** - insert a problem into a file  
**Delete** - delete a problem from a file  
**Stop** - stop insert mode

## APPENDIX B: MATH FACTS

### ADDITION STAGE 1

Sums from 2 to 9

$1 + 1 = 2$   
 $2 + 0 = 2$   
 $2 + 1 = 3$   
 $3 + 0 = 3$   
 $3 + 1 = 4$   
 $2 + 2 = 4$   
 $4 + 0 = 4$   
 $4 + 1 = 5$   
 $3 + 2 = 5$   
 $5 + 0 = 5$   
 $5 + 1 = 6$   
 $4 + 2 = 6$   
 $3 + 3 = 6$   
 $6 + 1 = 7$   
 $5 + 2 = 7$   
 $4 + 3 = 7$   
 $7 + 1 = 8$   
 $6 + 2 = 8$   
 $5 + 3 = 8$   
 $4 + 4 = 8$   
 $8 + 1 = 9$   
 $7 + 2 = 9$   
 $6 + 3 = 9$   
 $5 + 4 = 9$   
 $9 + 0 = 9$

### ADDITION STAGE 2

Sums from 10 to 14

$9 + 1 = 10$   
 $8 + 2 = 10$   
 $7 + 3 = 10$   
 $6 + 4 = 10$   
 $5 + 6 = 11$   
 $10 + 1 = 11$   
 $9 + 2 = 11$   
 $8 + 3 = 11$   
 $7 + 4 = 11$   
 $6 + 5 = 11$   
 $10 + 2 = 12$   
 $9 + 3 = 12$   
 $8 + 4 = 12$   
 $7 + 5 = 12$   
 $6 + 6 = 12$   
 $11 + 2 = 13$   
 $10 + 3 = 13$   
 $9 + 4 = 13$   
 $8 + 5 = 13$   
 $7 + 6 = 13$   
 $11 + 3 = 14$   
 $10 + 4 = 14$   
 $9 + 5 = 14$   
 $8 + 6 = 14$   
 $7 + 7 = 14$

### ADDITION STAGE 3

Sums from 15 to 18

$13 + 2 = 15$   
 $12 + 3 = 15$   
 $11 + 4 = 15$   
 $10 + 5 = 15$   
 $9 + 6 = 15$   
 $8 + 7 = 15$   
 $14 + 2 = 16$   
 $13 + 3 = 16$   
 $12 + 4 = 16$   
 $11 + 5 = 16$   
 $10 + 6 = 16$   
 $9 + 7 = 16$   
 $8 + 8 = 16$   
 $14 + 3 = 17$   
 $13 + 4 = 17$   
 $12 + 5 = 17$   
 $11 + 6 = 17$   
 $10 + 7 = 17$   
 $9 + 8 = 17$   
 $14 + 4 = 18$   
 $13 + 5 = 18$   
 $12 + 6 = 18$   
 $11 + 7 = 18$   
 $10 + 8 = 18$   
 $9 + 9 = 18$

File Name:  
/MATH.1/DATA/ADD.1

File Name:  
/MATH.1/DATA/ADD.2

File Name:  
/MATH.1/DATA/ADD.3



**ADDITION  
STAGE 4**Sums from 20 to 100  
in multiples of 10

10 + 10 = 20  
20 + 10 = 30  
30 + 10 = 40  
20 + 20 = 40  
40 + 10 = 50  
30 + 20 = 50  
50 + 10 = 60  
40 + 20 = 60  
30 + 30 = 60  
60 + 10 = 70  
50 + 20 = 70  
40 + 30 = 70  
70 + 10 = 80  
60 + 20 = 80  
50 + 30 = 80  
40 + 40 = 80  
80 + 10 = 90  
70 + 20 = 90  
60 + 30 = 90  
50 + 40 = 90  
90 + 10 = 100  
80 + 20 = 100  
70 + 30 = 100  
60 + 40 = 100  
50 + 50 = 100

File Name:  
/MATH.1/DATA/ADD.4**ADDITION  
STAGE 5**

Sums from 19 to 22

10 + 9 = 19  
11 + 8 = 19  
12 + 7 = 19  
13 + 6 = 19  
14 + 5 = 19  
11 + 9 = 20  
12 + 8 = 20  
13 + 7 = 20  
14 + 6 = 20  
15 + 5 = 20  
11 + 10 = 21  
12 + 9 = 21  
13 + 8 = 21  
14 + 7 = 21  
15 + 6 = 21  
16 + 5 = 21  
17 + 4 = 21  
11 + 11 = 22  
12 + 10 = 22  
13 + 9 = 22  
14 + 8 = 22  
15 + 7 = 22  
16 + 6 = 22  
17 + 5 = 22  
18 + 4 = 22

File Name:  
/MATH.1/DATA/ADD.5**ADDITION  
STAGE 6**

Sums from 23 to 25

10 + 13 = 23  
11 + 12 = 23  
12 + 11 = 23  
13 + 10 = 23  
14 + 9 = 23  
15 + 8 = 23  
16 + 7 = 23  
17 + 6 = 23  
18 + 5 = 23  
11 + 13 = 24  
12 + 12 = 24  
13 + 11 = 24  
14 + 10 = 24  
15 + 9 = 24  
16 + 8 = 24  
17 + 7 = 24  
18 + 6 = 24  
11 + 14 = 25  
12 + 13 = 25  
13 + 12 = 25  
14 + 11 = 25  
15 + 10 = 25  
16 + 9 = 25  
17 + 8 = 25  
18 + 7 = 25

File Name:  
/MATH.1/DATA/ADD.6

**SUBTRACTION  
STAGE 1**Minuends from 8-10,  
subtrahends from 0-9

$$\begin{aligned}8 - 1 &= 7 \\8 - 2 &= 6 \\8 - 3 &= 5 \\8 - 4 &= 4 \\8 - 5 &= 3 \\8 - 6 &= 2 \\8 - 7 &= 1 \\9 - 1 &= 8 \\9 - 2 &= 7 \\9 - 3 &= 6 \\9 - 4 &= 5 \\9 - 5 &= 4 \\9 - 6 &= 3 \\9 - 7 &= 2 \\9 - 8 &= 1 \\10 - 0 &= 10 \\10 - 1 &= 9 \\10 - 2 &= 8 \\10 - 3 &= 7 \\10 - 4 &= 6 \\10 - 5 &= 5 \\10 - 6 &= 4 \\10 - 7 &= 3 \\10 - 8 &= 2 \\10 - 9 &= 1\end{aligned}$$

**SUBTRACTION  
STAGE 2**Minuends from 11-15,  
subtrahends from 1-5

$$\begin{aligned}11 - 1 &= 10 \\11 - 2 &= 9 \\11 - 3 &= 8 \\11 - 4 &= 7 \\11 - 5 &= 6 \\12 - 1 &= 11 \\12 - 2 &= 10 \\12 - 3 &= 9 \\12 - 4 &= 8 \\12 - 5 &= 7 \\13 - 1 &= 12 \\13 - 2 &= 11 \\13 - 3 &= 10 \\13 - 4 &= 9 \\13 - 5 &= 8 \\14 - 1 &= 13 \\14 - 2 &= 12 \\14 - 3 &= 11 \\14 - 4 &= 10 \\14 - 5 &= 9 \\15 - 1 &= 14 \\15 - 2 &= 13 \\15 - 3 &= 12 \\15 - 4 &= 11 \\15 - 5 &= 10\end{aligned}$$

**SUBTRACTION  
STAGE 3**Minuends from 11-15,  
subtrahends from 6-10

$$\begin{aligned}11 - 6 &= 5 \\11 - 7 &= 4 \\11 - 8 &= 3 \\11 - 9 &= 2 \\11 - 10 &= 1 \\12 - 6 &= 6 \\12 - 7 &= 5 \\12 - 8 &= 4 \\12 - 9 &= 3 \\12 - 10 &= 2 \\13 - 6 &= 7 \\13 - 7 &= 6 \\13 - 8 &= 5 \\13 - 9 &= 4 \\14 - 6 &= 8 \\14 - 7 &= 7 \\14 - 8 &= 6 \\14 - 9 &= 5 \\14 - 10 &= 4 \\15 - 6 &= 9 \\15 - 7 &= 8 \\15 - 8 &= 7 \\15 - 9 &= 6 \\15 - 10 &= 5\end{aligned}$$

File Name:  
/MATH.1/DATA/SUB.1File Name:  
/MATH.1/DATA/SUB.2File Name:  
/MATH.1/DATA/SUB.3

**SUBTRACTION  
STAGE 4**Minuends from 60-100  
subtrahends 20- 90

$$\begin{array}{l} 60 - 40 = 20 \\ 60 - 30 = 30 \\ 60 - 20 = 40 \\ 70 - 50 = 20 \\ 70 - 40 = 30 \\ 70 - 30 = 40 \\ 70 - 20 = 50 \\ 80 - 60 = 20 \\ 80 - 50 = 30 \\ 80 - 40 = 40 \\ 80 - 30 = 50 \\ 80 - 20 = 60 \\ 90 - 70 = 20 \\ 90 - 60 = 30 \\ 90 - 50 = 40 \\ 90 - 40 = 50 \\ 90 - 30 = 60 \\ 90 - 20 = 70 \\ 100 - 80 = 20 \\ 100 - 70 = 30 \\ 100 - 60 = 40 \\ 100 - 50 = 50 \\ 100 - 40 = 60 \\ 100 - 30 = 70 \\ 100 - 20 = 80 \end{array}$$

File Name:  
/MATH.1/DATA/SUB.4**SUBTRACTION  
STAGE 5**Minuends from 16-20,  
subtrahends from 0-4

$$\begin{array}{l} 16 - 0 = 16 \\ 16 - 1 = 15 \\ 16 - 2 = 14 \\ 16 - 3 = 13 \\ 16 - 4 = 12 \\ 17 - 0 = 17 \\ 17 - 1 = 16 \\ 17 - 2 = 15 \\ 17 - 3 = 14 \\ 17 - 4 = 13 \\ 18 - 0 = 18 \\ 18 - 1 = 17 \\ 18 - 2 = 16 \\ 18 - 3 = 15 \\ 18 - 4 = 14 \\ 19 - 0 = 19 \\ 19 - 1 = 18 \\ 19 - 2 = 17 \\ 19 - 3 = 16 \\ 19 - 4 = 15 \\ 20 - 0 = 20 \\ 20 - 1 = 19 \\ 20 - 2 = 18 \\ 20 - 3 = 17 \\ 20 - 4 = 16 \end{array}$$

File Name:  
/MATH.1/DATA/SUB.5**SUBTRACTION  
STAGE 6**Minuends from 15-20  
subtrahends from 5-9

$$\begin{array}{l} 15 - 5 = 10 \\ 15 - 6 = 9 \\ 15 - 7 = 8 \\ 15 - 8 = 7 \\ 15 - 9 = 6 \\ 16 - 5 = 11 \\ 16 - 6 = 10 \\ 16 - 7 = 9 \\ 16 - 8 = 8 \\ 16 - 9 = 7 \\ 17 - 5 = 12 \\ 17 - 6 = 11 \\ 17 - 7 = 10 \\ 17 - 8 = 9 \\ 17 - 9 = 8 \\ 18 - 5 = 13 \\ 18 - 6 = 12 \\ 18 - 7 = 11 \\ 18 - 8 = 10 \\ 18 - 9 = 9 \\ 19 - 5 = 14 \\ 19 - 6 = 13 \\ 19 - 7 = 12 \\ 19 - 8 = 11 \\ 20 - 5 = 15 \\ 20 - 6 = 14 \\ 20 - 7 = 13 \\ 20 - 8 = 12 \\ 20 - 9 = 11 \end{array}$$

File Name:  
/MATH.1/DATA/SUB.6

**MULTIPLICATION  
STAGE 1**

Multipliers of 1 and 2

1	x	0	=	0
1	x	1	=	1
1	x	2	=	2
1	x	3	=	3
1	x	4	=	4
1	x	5	=	5
1	x	6	=	6
1	x	7	=	7
1	x	8	=	8
1	x	9	=	9
1	x	10	=	10
2	x	0	=	0
2	x	1	=	2
2	x	2	=	4
2	x	3	=	6
2	x	4	=	8
2	x	5	=	10
2	x	6	=	12
2	x	7	=	14
2	x	8	=	16
2	x	9	=	18
2	x	10	=	20

File Name:  
/MATH.1/DATA/MUL.1**MULTIPLICATION  
STAGE 2**

Multipliers of 3 and 4

3	x	0	=	0
3	x	1	=	3
3	x	2	=	6
3	x	3	=	9
3	x	4	=	12
3	x	5	=	15
3	x	6	=	18
3	x	7	=	21
3	x	8	=	24
3	x	9	=	27
3	x	10	=	30
3	x	11	=	33
3	x	12	=	36
4	x	0	=	0
4	x	1	=	4
4	x	2	=	8
4	x	3	=	12
4	x	4	=	16
4	x	5	=	20
4	x	6	=	24
4	x	7	=	28
4	x	8	=	32
4	x	9	=	36
4	x	10	=	40
4	x	11	=	44
4	x	12	=	48

File Name:  
/MATH.1/DATA/MUL.2**MULTIPLICATION  
STAGE 3**

Multipliers of 5 and 6

5	x	0	=	0
5	x	1	=	5
5	x	2	=	10
5	x	3	=	15
5	x	4	=	20
5	x	5	=	25
5	x	6	=	30
5	x	7	=	35
5	x	8	=	40
5	x	9	=	45
5	x	10	=	50
5	x	11	=	55
5	x	12	=	60
6	x	0	=	0
6	x	1	=	6
6	x	2	=	12
6	x	3	=	18
6	x	4	=	24
6	x	5	=	30
6	x	6	=	36
6	x	7	=	42
6	x	8	=	48
6	x	9	=	54
6	x	10	=	60
6	x	11	=	66
6	x	12	=	72

File Name:  
/MATH.1/DATA/MUL.3

**MULTIPLICATION  
STAGE 4**

Multipliers of 7-8

7	x	0	=	0
7	x	1	=	7
7	x	2	=	14
7	x	3	=	21
7	x	4	=	28
7	x	5	=	35
7	x	6	=	42
7	x	7	=	49
7	x	8	=	56
7	x	9	=	63
7	x	10	=	70
7	x	11	=	77
7	x	12	=	84
8	x	0	=	0
8	x	1	=	8
8	x	2	=	16
8	x	3	=	24
8	x	4	=	32
8	x	5	=	40
8	x	6	=	48
8	x	7	=	56
8	x	8	=	64
8	x	9	=	72
8	x	10	=	80
8	x	11	=	88
8	x	12	=	96

File Name:  
/MATH.1/DATA/MUL.4**MULTIPLICATION  
STAGE 5**

Multipliers of 9-10

9	x	0	=	0
9	x	1	=	9
9	x	2	=	18
9	x	3	=	27
9	x	4	=	36
9	x	5	=	45
9	x	6	=	54
9	x	7	=	63
9	x	8	=	72
9	x	9	=	81
9	x	10	=	90
9	x	11	=	99
9	x	12	=	108
10	x	0	=	0
10	x	1	=	10
10	x	2	=	20
10	x	3	=	30
10	x	4	=	40
10	x	5	=	50
10	x	6	=	60
10	x	7	=	70
10	x	8	=	80
10	x	9	=	90
10	x	10	=	100
10	x	11	=	110
10	x	12	=	120

File Name:  
/MATH.1/DATA/MUL.5**MULTIPLICATION  
STAGE 6**

Multipliers of 11-12

11	x	0	=	0
11	x	1	=	11
11	x	2	=	22
11	x	3	=	33
11	x	4	=	44
11	x	5	=	55
11	x	6	=	66
11	x	7	=	77
11	x	8	=	88
11	x	9	=	99
11	x	10	=	110
11	x	11	=	121
11	x	12	=	132
12	x	0	=	0
12	x	1	=	12
12	x	2	=	24
12	x	3	=	36
12	x	4	=	48
12	x	5	=	60
12	x	6	=	72
12	x	7	=	84
12	x	8	=	96
12	x	9	=	108
12	x	10	=	120
12	x	11	=	132
12	x	12	=	144

File Name:  
/MATH.1/DATA/MUL.6

**DIVISION  
STAGE 1**

Divisors of 1 and 2

$$\begin{aligned}0 \div 1 &= 0 \\1 \div 1 &= 1 \\2 \div 1 &= 2 \\3 \div 1 &= 3 \\4 \div 1 &= 4 \\5 \div 1 &= 5 \\6 \div 1 &= 6 \\7 \div 1 &= 7 \\8 \div 1 &= 8 \\9 \div 1 &= 9 \\10 \div 1 &= 10 \\0 \div 2 &= 0 \\2 \div 2 &= 1 \\4 \div 2 &= 2 \\6 \div 2 &= 3 \\8 \div 2 &= 4 \\10 \div 2 &= 5 \\12 \div 2 &= 6 \\14 \div 2 &= 7 \\16 \div 2 &= 8 \\18 \div 2 &= 9 \\20 \div 2 &= 10\end{aligned}$$

File Name:  
/MATH.1/DATA/DIV.1**DIVISION  
STAGE 2**

Divisors of 3 and 4

$$\begin{aligned}0 \div 3 &= 0 \\3 \div 3 &= 1 \\6 \div 3 &= 2 \\9 \div 3 &= 3 \\12 \div 3 &= 4 \\15 \div 3 &= 5 \\18 \div 3 &= 6 \\21 \div 3 &= 7 \\24 \div 3 &= 8 \\27 \div 3 &= 9 \\30 \div 3 &= 10 \\33 \div 3 &= 11 \\36 \div 3 &= 12 \\0 \div 4 &= 0 \\4 \div 4 &= 1 \\8 \div 4 &= 2 \\12 \div 4 &= 3 \\16 \div 4 &= 4 \\20 \div 4 &= 5 \\24 \div 4 &= 6 \\28 \div 4 &= 7 \\32 \div 4 &= 8 \\36 \div 4 &= 9 \\40 \div 4 &= 10 \\44 \div 4 &= 11 \\48 \div 4 &= 12\end{aligned}$$

File Name:  
/MATH.1/DATA/DIV.2**DIVISION  
STAGE 3**

Divisors of 5 and 6

$$\begin{aligned}0 \div 5 &= 0 \\5 \div 5 &= 1 \\10 \div 5 &= 2 \\15 \div 5 &= 3 \\20 \div 5 &= 4 \\25 \div 5 &= 5 \\30 \div 5 &= 6 \\35 \div 5 &= 7 \\40 \div 5 &= 8 \\45 \div 5 &= 9 \\50 \div 5 &= 10 \\55 \div 5 &= 11 \\60 \div 5 &= 12 \\0 \div 6 &= 0 \\6 \div 6 &= 1 \\12 \div 6 &= 2 \\18 \div 6 &= 3 \\24 \div 6 &= 4 \\30 \div 6 &= 5 \\36 \div 6 &= 6 \\42 \div 6 &= 7 \\48 \div 6 &= 8 \\54 \div 6 &= 9 \\60 \div 6 &= 10 \\66 \div 6 &= 11 \\72 \div 6 &= 12\end{aligned}$$

File Name:  
/MATH.1/DATA/DIV.3

**DIVISION  
STAGE 4**

Divisors of 7 and 8

$$\begin{aligned}0 \div 7 &= 0 \\7 \div 7 &= 1 \\14 \div 7 &= 2 \\21 \div 7 &= 3 \\28 \div 7 &= 4 \\35 \div 7 &= 5 \\42 \div 7 &= 6 \\49 \div 7 &= 7 \\56 \div 7 &= 8 \\63 \div 7 &= 9 \\70 \div 7 &= 10 \\77 \div 7 &= 11 \\84 \div 7 &= 12 \\0 \div 8 &= 0 \\8 \div 8 &= 1 \\16 \div 8 &= 2 \\24 \div 8 &= 3 \\32 \div 8 &= 4 \\40 \div 8 &= 5 \\48 \div 8 &= 6 \\56 \div 8 &= 7 \\64 \div 8 &= 8 \\72 \div 8 &= 9 \\80 \div 8 &= 10 \\88 \div 8 &= 11 \\96 \div 8 &= 12\end{aligned}$$

File Name:  
/MATH.1/DATA/DIV.4**DIVISION  
STAGE 5**

Divisors of 9 and 10

$$\begin{aligned}0 \div 9 &= 0 \\9 \div 9 &= 1 \\18 \div 9 &= 2 \\27 \div 9 &= 3 \\36 \div 9 &= 4 \\45 \div 9 &= 5 \\54 \div 9 &= 6 \\63 \div 9 &= 7 \\72 \div 9 &= 8 \\81 \div 9 &= 9 \\90 \div 9 &= 10 \\99 \div 9 &= 11 \\108 \div 9 &= 12 \\0 \div 10 &= 0 \\10 \div 10 &= 1 \\20 \div 10 &= 2 \\30 \div 10 &= 3 \\40 \div 10 &= 4 \\50 \div 10 &= 5 \\60 \div 10 &= 6 \\70 \div 10 &= 7 \\80 \div 10 &= 8 \\90 \div 10 &= 9 \\100 \div 10 &= 10 \\110 \div 10 &= 11 \\120 \div 10 &= 12\end{aligned}$$

File Name:  
/MATH.1/DATA/DIV.5**DIVISION  
STAGE 6**

Divisors of 11 and 12

$$\begin{aligned}0 \div 11 &= 0 \\11 \div 11 &= 1 \\22 \div 11 &= 2 \\33 \div 11 &= 3 \\44 \div 11 &= 4 \\55 \div 11 &= 5 \\66 \div 11 &= 6 \\77 \div 11 &= 7 \\88 \div 11 &= 8 \\99 \div 11 &= 9 \\110 \div 11 &= 10 \\121 \div 11 &= 11 \\132 \div 11 &= 12 \\0 \div 12 &= 0 \\12 \div 12 &= 1 \\24 \div 12 &= 2 \\36 \div 12 &= 3 \\48 \div 12 &= 4 \\60 \div 12 &= 5 \\72 \div 12 &= 6 \\84 \div 12 &= 7 \\96 \div 12 &= 8 \\108 \div 12 &= 9 \\120 \div 12 &= 10 \\132 \div 12 &= 11 \\144 \div 12 &= 12\end{aligned}$$

File Name:  
/MATH.1/DATA/DIV.6

**FRACTIONS  
STAGE 1**Reducing common  
fractions

$$\begin{aligned} 2/12 &= 1/6 \\ 2/16 &= 1/8 \\ 2/18 &= 1/9 \\ 3/9 &= 1/3 \\ 3/12 &= 1/4 \\ 4/6 &= 2/3 \\ 4/8 &= 1/2 \\ 4/12 &= 1/3 \\ 4/16 &= 1/4 \\ 4/18 &= 2/9 \\ 6/8 &= 3/4 \\ 6/9 &= 2/3 \\ 6/12 &= 1/2 \\ 6/16 &= 3/8 \\ 6/18 &= 1/3 \\ 8/12 &= 2/3 \\ 8/16 &= 1/2 \\ 8/18 &= 4/9 \\ 9/12 &= 3/4 \\ 9/18 &= 1/2 \\ 10/12 &= 5/6 \\ 10/16 &= 5/8 \\ 10/18 &= 5/9 \\ 12/16 &= 3/4 \\ 12/18 &= 2/3 \end{aligned}$$

File Name:  
/MATH.1/DATA/FRA.1**FRACTIONS  
STAGE 2**Renaming improper  
fractions

$$\begin{aligned} 3/2 &= 1 \frac{1}{2} \\ 4/2 &= 2 \\ 5/2 &= 2 \frac{1}{2} \\ 3/3 &= 1 \\ 4/3 &= 1 \frac{1}{3} \\ 5/3 &= 1 \frac{2}{3} \\ 6/3 &= 2 \\ 4/4 &= 1 \\ 5/4 &= 1 \frac{1}{4} \\ 7/4 &= 1 \frac{3}{4} \\ 8/4 &= 2 \\ 5/5 &= 1 \\ 6/5 &= 1 \frac{1}{5} \\ 7/5 &= 1 \frac{2}{5} \\ 8/5 &= 1 \frac{3}{5} \\ 9/5 &= 1 \frac{4}{5} \\ 10/5 &= 2 \\ 6/6 &= 1 \\ 7/6 &= 1 \frac{1}{6} \\ 11/6 &= 1 \frac{5}{6} \\ 8/8 &= 1 \\ 9/8 &= 1 \frac{1}{8} \\ 11/8 &= 1 \frac{3}{8} \\ 13/8 &= 1 \frac{5}{8} \\ 15/8 &= 1 \frac{7}{8} \end{aligned}$$

File Name:  
/MATH.1/DATA/FRA.2**FRACTIONS  
STAGE 3**Adding and subtracting  
fractions

$$\begin{aligned} 1/3 + 1/3 &= 2/3 \\ 1/5 + 3/5 &= 4/5 \\ 1/4 + 1/4 &= 1/2 \\ 1/6 + 1/6 &= 1/3 \\ 3/8 + 1/8 &= 1/2 \\ 5/8 + 1/8 &= 3/4 \\ 1/8 + 1/8 &= 1/4 \\ 2/9 + 1/9 &= 1/3 \\ 2/9 + 4/9 &= 2/3 \\ 1/3 + 2/3 &= 1 \\ 5/8 + 3/8 &= 1 \\ 3/5 - 2/5 &= 1/5 \\ 7/9 - 5/9 &= 2/9 \\ 3/4 - 1/4 &= 1/2 \\ 5/6 - 1/6 &= 2/3 \\ 7/8 - 1/8 &= 3/4 \\ 7/8 - 3/8 &= 1/2 \\ 5/8 - 3/8 &= 1/4 \\ 8/9 - 2/9 &= 2/3 \\ 7/9 - 4/9 &= 1/3 \\ 1 - 1/2 &= 1/2 \\ 1 - 1/3 &= 2/3 \\ 1 - 3/4 &= 1/4 \\ 1 - 2/5 &= 3/5 \\ 1 - 5/8 &= 3/8 \end{aligned}$$

File Name:  
/MATH.1/DATA/FRA.3



**FRACTIONS  
STAGE 4**

Multiplying decimals

10	x	.1	=	1
10	x	.3	=	3
10	x	.9	=	9
10	x	.01	=	.1
10	x	.03	=	.3
10	x	.09	=	.9
10	x	.11	=	1.1
10	x	.13	=	1.3
10	x	.001	=	.01
10	x	.003	=	.03
10	x	.009	=	.09
10	x	.011	=	.11
10	x	.013	=	.13
100	x	.1	=	10
100	x	.3	=	30
100	x	.9	=	90
100	x	.01	=	1
100	x	.03	=	3
100	x	.09	=	9
100	x	.11	=	11
100	x	.13	=	13
100	x	.001	=	.1
100	x	.003	=	.3
100	x	.009	=	.9
100	x	.011	=	1.1
100	x	.013	=	1.3

File Name:  
/MATH.1/DATA/FRA.4

**FRACTIONS  
STAGE 5**

Finding percentages

10%	x	130	=	13
10%	x	110	=	11
10%	x	90	=	9
10%	x	30	=	3
10%	x	10	=	1
10%	x	13	=	1.3
10%	x	11	=	1.1
10%	x	9	=	.9
10%	x	3	=	.3
10%	x	1	=	.1
10%	x	1.3	=	.13
10%	x	1.1	=	.11
10%	x	.9	=	.09
10%	x	.3	=	.03
10%	x	.1	=	.01
1%	x	130	=	1.3
1%	x	110	=	1.1
1%	x	90	=	.9
1%	x	30	=	.3
1%	x	10	=	.1
1%	x	13	=	.13
1%	x	11	=	.11
1%	x	9	=	.09
1%	x	3	=	.03
1%	x	1	=	.01

File Name:  
/MATH.1/DATA/FRA.5

**FRACTIONS  
STAGE 6**

Fraction/percentage  
equivalents

1/100	=	1%
1/50	=	2%
1/25	=	4%
1/20	=	5%
1/12	=	8 1/3%
1/10	=	10%
3/10	=	30%
7/10	=	70%
9/10	=	90%
1/8	=	12 1/2%
3/8	=	37 1/2%
5/8	=	62 1/2%
7/8	=	87 1/2%
1/6	=	16 2/3%
5/6	=	83 1/3%
1/5	=	20%
2/5	=	40%
3/5	=	60%
4/5	=	80%
1/4	=	25%
3/4	=	75%
1/3	=	33 1/3%
2/3	=	66 2/3%
1/2	=	50%
1	=	100%

File Name:  
/MATH.1/DATA/FRA.6

**REVIEW  
STAGE 1**Addition and  
Subtraction

$$\begin{aligned}2 + 1 &= 3 \\5 + 0 &= 5 \\7 + 1 &= 8 \\6 + 3 &= 9 \\8 + 2 &= 10 \\6 + 5 &= 11 \\10 + 2 &= 12 \\9 + 5 &= 14 \\12 + 3 &= 15 \\10 + 6 &= 16 \\13 + 4 &= 17 \\9 + 9 &= 18 \\8 - 4 &= 4 \\9 - 5 &= 4 \\10 - 7 &= 3 \\11 - 1 &= 10 \\12 - 3 &= 9 \\13 - 5 &= 8 \\14 - 3 &= 11 \\15 - 2 &= 13 \\11 - 8 &= 3 \\12 - 7 &= 5 \\13 - 9 &= 4 \\14 - 8 &= 6 \\15 - 6 &= 9\end{aligned}$$

File Name:

/MATH.1/DATA/REV.1

**REVIEW  
STAGE 2**Addition and  
Subtraction

$$\begin{aligned}11 + 8 &= 19 \\14 + 5 &= 19 \\13 + 7 &= 20 \\15 + 6 &= 21 \\12 + 10 &= 22 \\18 + 4 &= 22 \\11 + 12 &= 23 \\15 + 8 &= 23 \\12 + 12 &= 24 \\15 + 9 &= 24 \\13 + 12 &= 25 \\16 + 9 &= 25 \\17 + 8 &= 25 \\16 - 0 &= 16 \\17 - 2 &= 15 \\18 - 4 &= 14 \\19 - 1 &= 18 \\19 - 4 &= 15 \\20 - 3 &= 17 \\15 - 8 &= 7 \\16 - 5 &= 11 \\17 - 6 &= 11 \\18 - 7 &= 11 \\19 - 6 &= 13 \\20 - 9 &= 11\end{aligned}$$

File Name:

/MATH.1/DATA/REV.2

**REVIEW  
STAGE 3**Multiplication and  
Division

$$\begin{aligned}1 \times 0 &= 0 \\1 \times 3 &= 3 \\1 \times 6 &= 6 \\2 \times 2 &= 4 \\2 \times 4 &= 8 \\2 \times 9 &= 18 \\3 \times 3 &= 9 \\3 \times 7 &= 21 \\3 \times 11 &= 33 \\4 \times 5 &= 20 \\4 \times 8 &= 32 \\4 \times 12 &= 48 \\2 \div 1 &= 2 \\5 \div 1 &= 5 \\9 \div 1 &= 9 \\6 \div 2 &= 3 \\10 \div 2 &= 5 \\14 \div 2 &= 7 \\0 \div 3 &= 0 \\12 \div 3 &= 4 \\18 \div 3 &= 6 \\27 \div 3 &= 9 \\16 \div 4 &= 4 \\28 \div 4 &= 7 \\40 \div 4 &= 10\end{aligned}$$

File Name:

/MATH.1/DATA/REV.3

**REVIEW  
STAGE 4****Multiplication and  
Division**

$$\begin{aligned}5 \times 4 &= 20 \\5 \times 9 &= 45 \\6 \times 2 &= 12 \\6 \times 3 &= 18 \\6 \times 5 &= 30 \\6 \times 8 &= 48 \\7 \times 2 &= 14 \\7 \times 5 &= 35 \\7 \times 8 &= 56 \\7 \times 12 &= 84 \\8 \times 3 &= 24 \\8 \times 8 &= 64 \\8 \times 11 &= 88 \\15 \div 5 &= 3 \\30 \div 5 &= 6 \\60 \div 5 &= 12 \\24 \div 6 &= 4 \\42 \div 6 &= 7 \\66 \div 6 &= 11 \\7 \div 7 &= 1 \\49 \div 7 &= 7 \\63 \div 7 &= 9 \\16 \div 8 &= 2 \\40 \div 8 &= 5 \\48 \div 8 &= 6\end{aligned}$$

**REVIEW  
STAGE 5****Multiplication and  
Division**

$$\begin{aligned}9 \times 6 &= 54 \\9 \times 8 &= 72 \\9 \times 9 &= 81 \\10 \times 3 &= 30 \\10 \times 7 &= 70 \\10 \times 11 &= 110 \\11 \times 5 &= 55 \\11 \times 7 &= 77 \\11 \times 9 &= 99 \\12 \times 3 &= 36 \\12 \times 6 &= 72 \\12 \times 9 &= 108 \\12 \times 12 &= 144 \\27 \div 9 &= 3 \\36 \div 9 &= 4 \\108 \div 9 &= 12 \\60 \div 10 &= 6 \\80 \div 10 &= 8 \\120 \div 10 &= 12 \\44 \div 11 &= 4 \\121 \div 11 &= 11 \\132 \div 11 &= 12 \\24 \div 12 &= 2 \\96 \div 12 &= 8 \\132 \div 12 &= 11\end{aligned}$$

**REVIEW  
STAGE 6****Fractions**

$$\begin{aligned}2/16 &= 1/8 \\3/9 &= 1/3 \\4/8 &= 1/2 \\6/12 &= 1/2 \\8/12 &= 2/3 \\9/18 &= 1/2 \\10/16 &= 5/8 \\12/16 &= 3/4 \\3/2 &= 1 \frac{1}{2} \\5/2 &= 2 \frac{1}{2} \\6/3 &= 2 \\7/4 &= 1 \frac{3}{4} \\9/5 &= 1 \frac{4}{5} \\11/16 &= 1 \frac{5}{16} \\8/8 &= 1 \\13/8 &= 1 \frac{5}{8} \\1/5 + 3/5 &= 4/5 \\1/6 + 1/6 &= 1/3 \\5/8 + 1/8 &= 3/4 \\2/9 + 4/9 &= 2/3 \\7/9 - 5/9 &= 2/9 \\7/8 - 1/8 &= 3/4 \\8/9 - 2/9 &= 2/3 \\1 - 1/3 &= 2/3 \\1 - 5/8 &= 3/8\end{aligned}$$

File Name:  
/MATH.1/DATA/REV.4File Name:  
/MATH.1/DATA/REV.5File Name:  
/MATH.1/DATA/REV.6

## APPENDIX C: PRINTER SETUP (Apple Version)

Before printing the graphic Certificate of Excellence, access the File menu from the Main screen, select **Printer Setup**, and answer these questions.

Printer category:	A	(A-U)
Interface category:	A	(A-Y)
Line feed:	Y	(Y-N)
Slot Number:	1	(1-7)

- Scan the following lists to find the category of the printer you're using; enter the appropriate letter.
- Find the category for the interface card your printer uses; enter its letter.
- Choose **Y** (Yes) for Line Feed. Print out a sample certificate to see if this choice is correct for your printer. (If there is a blank line between each line of graphics, change the Yes to No.)
- Enter the slot number for your printer card (most often slot 1).
- Save these choices to the disk. They may be changed and saved again if necessary.

You may print out a sample graphic certificate if you wish. If your printer is unable to print the graphics, you can print out a text certificate when a student earns 100% on an activity. On the following pages are a list of printers and a list of printer interface cards supported by the Apple version of *Math Blaster Plus*.

The *Math Blaster Plus* graphic certificate may be printed only if you have one of the following printers and interface cards listed on the next pages.

**Note:** After printing a graphic certificate, you may need to reinitialize (turn off, and then on again) your Imagewriter printer.

## PRINTERS

- |  |  |
|--|--|
| A. Anadex DP-9000/9500 *   | K. Mannesmann Tally 160/180                                  |
| B. Anadex DP-9001/9501 *<br>Datsouth 180   | L. Okidata Microline 82A/83A****                             |
| C. Apple Dot Matrix **   | M. Okidata Microline 92/93<br>Okidata Microline 84           |
| D. Apple Scribe  | N. C. Itoh Prowriter<br>C. Itoh Prowriter II                 |
| E. Brother M-1009<br>Epson FX-80<br>Epson FX-85<br>Epson JX-80<br>Epson LX-80<br>Panasonic KX-P1091/1092 | C. Itoh 7500<br>C. Itoh 8510<br>NEC PC-8023/8025             |
| F. Epson MX-70   | O. Smith Corona D100/200/300                                 |
| G. Epson MX-100<br>Epson MX-80 with Graftrax<br>HP Thinkjet ***<br>Panasonic KX-P1090                    | P. Blue Chip M120/10<br>Mannesmann Tally Spirit 80           |
| H. Epson RX-80<br>Epson LQ-800   | Q. Star Delta 10/15<br>Star Gemini 10/15<br>Star Radix 10/15 |
| I. Apple Imagewriter<br>Apple Imagewriter II<br>Epson AP-80  | R. TRS-80 DMP-105<br>TRS-80 DMP-400                          |
| J. Malibu 200  | S. Transtar 315<br>T. Okidata Microline 192/193              |
|  | U. Legend 1385<br>IBM Compatibles                            |

\* Option R (2K buffer expansion) is required for printing graphics.

\*\* Set dip switches as follows: O = Open C = Closed

SW1	SW2
1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8
O O O O O O O O	C O O O C C O

\*\*\* Switch 5 must be **up** to set the alternate mode (Epson compatible).

\*\*\*\* Must be equipped with the Okigraph graphics option.

## PRINTER INTERFACE CARDS

- A. Apple Communications
    - SSM-AIO-II Serial
    - SSM-ASIO
    - Versacard Serial
  - B. Apple IIc Serial Port
  - C. Apple Centronics Parallel
    - Apple Parallel
    - Apricorn Parallel
    - Epson APL
    - Graphicard
    - Microsystems MSE 1022
    - Microtek RV-611C
    - MPC-AP-80
    - MPC-AP-Graph
    - Omnigraph
    - Printer Pro
    - Printerface
    - Printmax
    - SSM-Appic
    - Tymac
    - Versacard Parallel
    - Wizard-IPI
    - Wizard-BPO
  - D. Apple Serial
  - E. CCS 7720 Parallel
  - F. CCS 7728 Parallel
  - G. Dispatcher
    - Dual-Comm Plus
    - Franklin Dual Port
    - Printermate
  - H. Dumpling 64
  - I. Dumpling GX
  - J. Fingerprint+ Parallel
    - Grappler+
  - K. Grafstar
  - N. Mountain Comp Serial
  - O. Micro Buffer II
  - P. Apricorn Serial
    - MPC AP-SIO
    - MPC Graphwriter
  - Q. PKASO or PKASO/U
  - R. Quadram-Apic
  - S. K-T Parallel
    - SSM-AIO-II Parallel
    - SSM-APIO
  - T. Apple Super Serial
    - Fingerprint+ Serial
    - Microtek SV-622C
    - Videx PSIO Serial
  - U. Videx Uniprint
  - V. Fingerprint
  - W. Transtar Pics
  - X. AppleShare Network IIe
  - Y. Apple Firmware (GS)
-

## ABOUT THE AUTHORS

*Math Blaster Plus* was developed by a team of educators and programmers at Davidson & Associates, Inc. The team was directed by Dr. Jan Davidson, former teacher, founder and president of Davidson & Associates, Inc. and Mike Albanese, programming manager.

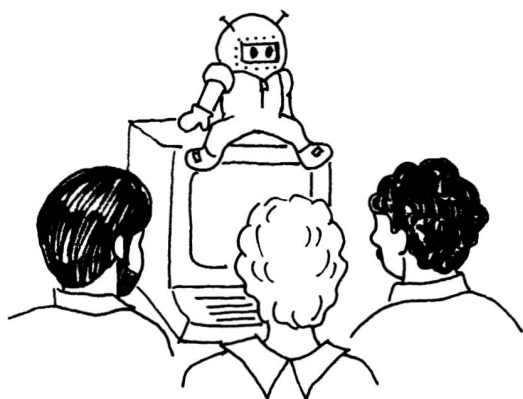
The *Math Blaster Plus* team:

**Louis X. Savain** programmed the Apple version in FORTH and assembly languages;

**James Densmore** and **Louis X. Savain** developed the IBM version;

**Cathy Johnson** wrote the data files and manual and offered valuable educational expertise in the product's design.

The *Math Blaster Plus* team received an abundance of enthusiastic support and assistance from all of the associates at Davidson. Game graphics were designed by Tim Nixon; manual art was drawn by Marilyn Marr.



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Grade 1 Add. & Sub.

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Grade 3 Subtraction  
Grade 3 Add. & Sub.

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Grade 2 Subtraction  
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