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Colin Hinson
In the village of Blunham, Bedfordshire.

# 風 TEXAS INSTRUMENTS HOME COMPUTER 

## ADDISON-WESLEV MATHGAMESVI

## SOLID STATE CARTRIDGE

Five motivating games to help students in grades 1 through 9 reinforce and strengthen math skills. Developed for Texas Instruments by Addison-Wesley Publishing Company.



## Quick Reference Guide

Note that the key sequences required to access special functions depend on the type of computer console you have. If you're using the TI-99/4 console, hold down the SHIFT key while pressing the appropriate letter key. If you're using the TI-99/4A console, hold down the FCTN key while pressing the number or punctuation key. Important keystroke sequences are summarized here for your "quick reference."

TI-99/4 TI-99/4A
$\rightarrow \mathbf{D}, \leftarrow \mathbf{S} \rightarrow \mathbf{D}, \leftarrow \mathbf{S}$ Controls horizontal movement of the cursor.
ENTER ENTER Proceeds to the next display.

SHIFT $Z$ FCTN 9 Returns to the first options list of the current (BACK) (BACK) activity.
SHIFT W FCTN 5 Returns to the initial Computer Math Games VI (BEGIN) (BEGIN) selection list.
SHIFT R FCTN 8 Returns to the list of name options for the (REDO) (REDO) current activity.
SHIFT T FCTN 3 Erases previously typed characters.
(ERASE) (ERASE)
or or
SHIFT C FCTN 4
(CLEAR) (CLEAR)
SHIFT Q FCTN $=$ Returns to the master title screen. (QUIT) (QUIT)

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 Computer Math Games VI

This Solid State Cartridge is designed to be used with the Texas Instruments Home Computer. Its preprogrammed solid-state memory expands the power, versatility, and capability of your Home Computer.

Designed by: Charles Lund
Book developed and written by: Staff members of Texas Instruments Creative Communications.

Copyright © 1982 Texas Instruments Incorporated Solid State Cartridge program and data base contents copyright © 1982 Addison-Wesley Publishing Company See important warranty information at back of book.

## TEXAS INSTRUMENTS HOME COMPUTER

## INTRODUCTION

The importance of mathematics to the world throughout history cannot be overlooked. Math permeates every aspect of our lives - work, relaxation, entertainment. Its importance in the future to us and especially to our children will be even greater. Therefore, it is essential for all of us to know and understand how fundamental mathematics operations are performed.

In order to develop this understanding, students must have the opportunity to practice, for only through practice can they develop strong mathematical skills. The Computer Math Games VI Solid State Cartridge is one of five modules of math games that can help provide this opportunity. The program was designed by Charles Lund, Supervisor of Mathematics for the St. Paul, Minnesota, public schools and the staff of Addison-Wesley Publishing Company in cooperation with the staff of Texas Instruments Incorporated. The games included in the cartridge are both fun and challenging, with an entertaining, motivating format designed to capture and hold attention.

With this cartridge students will be able to
■ develop math skills by playing four different, enjoyable math games using whole numbers, fractions, decimals, and integers.

- have fun while practicing mathematics either alone or with other players or team members.
- develop methods of problem-solving and decision-making.

The cartridge is designed to be versatile. It can be used in the home as well as the classroom. The team-use concept allows the cartridge to be used by large numbers of participants, and yet it is equally valuable to your child working alone at home to supplement lectures and homework.

The cartridge is intended to be a supplementary aid for children from grades two through nine. It is assumed that the students have been exposed to basic math concepts. While even very young students can use the activities covering addition and subtraction of whole numbers, the cartridge can grow in application as your child grows in ability.


## Computer Math Games VI

## USING THE SOLID STATE CARTRIDGE

An automatic reset feature is built into the computer. When a cartridge is inserted into the console, the computer returns to the master title screen. All data or program material you have entered will be erased.

Note: Be sure the cartridge is free of static electricity before inserting it into the computer (see page 9).


1. Turn the computer ON, and wait for the master title screen to appear. Then slide the cartridge into the slot on the console.
2. Press any key to make the master selection list appear. To select the cartridge, press the key corresponding to the number beside Math Games VI on the list.

Note: To remove the cartridge, first return the computer to the master title screen by pressing QUIT. Then remove the cartridge from the slot. If you have any problem inserting the cartridge, or if it is accidentally removed from the slot while in use, please see "In Case of Difficulty" on page 9.

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## COMPUTER MATH GAMES VI ACTIVITIES

The Computer Math Games VI cartridge contains four games or activities designed to help students in grades two through nine develop and improve basic math skills. The activities are designed for one to three players or teams at a time and are flexible enough to be used at several skill levels and in various teaching situations.

When you select Computer Math Games VI, the title screen appears. You can press any key to cause the activity selection list to appear, or you can wait for the title sequence to end and the activity selection list to appear automatically. Then press the number of the math game you wish to play.

If you wish to change an answer before it is entered, use the left-arrow key to backspace. Then type in the desired numbers and press ENTER. You may also use CLEAR or ERASE to change previously typed characters.

## Activity I - Math Asteroids

The Math Asteroids game helps your child understand the concepts of inequality and equality with the options of using whole numbers, decimals, integers or fractions. It is designed for two or three players, although one player may play alone simply by taking all of the turns. The mission is to destroy as many asteroids as possible. The game is suggested for grades four through nine.

After selecting Math Asteroids, type the number of players and press ENTER. Next type the names of the players one at a time, pressing ENTER after each name. Names can be up to nine letters in length. Then select the option you wish to play and the number of rounds you wish to play. The computer then asks the players if they have flown before (played this game). Each player should press $\mathbf{Y}$ for yes or $\mathbf{N}$ for no and then press ENTER. If $\mathbf{Y}$ is entered, the computer then asks each player

## Computer Math Games VI

to enter the number of his or her rank established at the end of the last flight. If the player has not flown before and $\mathbf{N}$ was entered, the computer considers that player to be a pilot trainee. After this information is entered, the game begins immediately.

On the screen a space scene appears with a spaceship in the center and three asteroids moving from right to left across the screen. Near the bottom of the screen are two numbers with a question mark between them. Each asteroid has one of these three symbols - < (less than), > (greater than), and = (equals) - in its center.

To destroy an asteroid the players must decide whether the number on the left is less than, greater than, or equal to the number on the right and then blast the asteroid with the correct symbol. To aim at an asteroid, press $\mathbf{S}$ to make the ship rotate to the left or $\mathbf{D}$ to rotate it to the right. Press the period (.) key to fire. Each player has only one shot per turn and must fire before the asteroid on the left goes off the screen.

When the game is over, the computer displays medals with the players' names and the rank that the computer assigns each player based on his or her number of hits. Press ENTER and the computer asks if the players would like to play again or return to the menu (activity selection list). Press the appropriate number for your desired activity.

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## Activity II - Around the Schoolyard

Around the Schoolyard provides practice in addition, subtraction, multiplication, or division of whole numbers.

After selecting this activity, type the number of players or teams and press ENTER. Then enter the names of the players or teams, and the screen displays markers identifying the participants. Finally, enter the option you elect, either addition, subtraction, multiplication, or division. The object of the game is to move your marker around the schoolyard faster than any of the other players.

At the beginning of the game, a schoolyard is displayed on the screen with a schoolhouse in the center. Starting at lower right and going counter-clockwise, you see a basketball court, a bike rack, a hopscotch game, a sandbox, and a swing set. A mathematical problem, based upon the option chosen, is displayed. Type the answer and then press ENTER. If a player answers incorrectly, the computer displays the correct answer, and the player's turn is over. If a player enters the correct answer, the player's or the team's marker is advanced to the next area of the schoolyard if, and only if, the answer appears in that area. The first player or team to advance its marker around the schoolyard to the swing set is the winer.

After the game is over, the players can choose to play again or choose a new activity.

## Activity III - Math Baseball

Math Baseball is a game which gives children practice with basic addition, subtraction, multiplication, and division. It is designed for two players or teams, and the object is to score the most runs in one to five innings. Players or teams score by correctly answering basic math problems.

After selecting Math Baseball, type the names of players or teams and press ENTER. Next type the number of innings to play and press ENTER. Then select either addition, subtraction, multiplication, or division of whole numbers from the list of options. Your TI Home Computer then generates problems and keeps score.

The computer presents the first team with a problem. Type the answer and press ENTER. If the problem is solved correctly, the result yields an out, a single, a double, a triple, or a home run. The larger the answer to a problem, the greater the hit. The center of the diamond tells how large a result must be to score a certain hit. An incorrect answer is an automatic strikeout, and each team has three outs per inning. After an incorrect answer, the computer displays the problem answered correctly.

With each correct answer, an animated player runs the appropriate number of bases unless the team at bat gets an out. The score appears at the bottom of the screen. After three outs the blue baseball diamond and screen figures turn green, signalling team 2 to come to bat and go through the series. The team with the highest score at the end of the selected number of innings wins.

When the game is over, the computer asks if the players wish to play again or return to the menu (activity selection list). Press the number of the desired activity.

## Activity IV - Math Triangles

Math Triangles offers addition, subtraction, multiplication, and division practice not only with whole numbers, but also with decimals and integers. It is designed for two teams or players.

After selecting Math Triangles, enter the names of the participants and select from the list of options. The option list is two screens in length. Players must press ENTER after viewing the first screen and go on to the second screen to type and enter the number of the desired option. If it is necessary to view the first half of the option list again, press REDO and the first screen appears.

The object of the game is to make triangles by solving math problems displayed in circles. If the answers are correct, the computer joins the circles by a line. The players take turns solving problems in each of two circles until a triangle is completed by joining three circles. The player completing the third side of a triangle wins that triangle and makes a score. Play continues until all possible triangles are drawn.

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After the players choose options, the computer asks the first player to select the circles he or she wishes to join. Simply type the letters and press ENTER. For example, if you want to join circle A and circle B for one side of a triangle, type AB and press ENTER. The computer immediately asks you to solve the problem in circle A. Type the result and press ENTER. Now you have to solve the problem in circle B. If both problems are solved correctly, the computer automatically joins the circles with a line. If a player answers incorrectly, the computer tells which problem or problems were answered incorrectly, and the player loses his or her turn. After a player's turn is over, the next player must press ENTER to initiate his or her turn.

When all of the triangles have been drawn, the computer announces the winner and asks if you wish to play again or return to the menu (activity selection list) to choose one of the other games.

## SPECIAL FEATURES

## Rewards

Each time your child gives a correct answer in an activity, the computer displays the word "Correct." At the end of an activity, the computer displays the name of the winner or displays "It's a tie." Three of the activities play short tunes at the beginning and end of the game.

## Error Signals

If an incorrect answer is entered, the computer displays the word "Incorrect" along with the correct answer. If your child fails to respond within the time limit of a time-limit game, the computer responds with "Your time is up" or "You must be quicker."

## CARING FOR THE CARTRIDGE

These cartridges are durable devices, but they should be handled with the same care you would give any other piece of electronic equipment. Keep the cartridge clean and dry, and don't touch the recessed contacts.

> CAUTION:

The contents of a Solid State Cartridge can be damaged by static electricity discharges.

Static electricity build-ups are more likely to occur when the natural humidity of the air is low (during winter or in areas with dry climates). To avoid damaging the cartridge, just touch any metal object (a doorknob, a desklamp, etc.) before handling the cartridge.

If static electricity is a problem where you live, you may want to buy a special carpet treatment that reduces static build-up. These commercial preparations are usually available from local hardware and office supply stores.

## IN CASE OF DIFFICULTY

If the cartridge activities do not appear to be operating properly, return to the master title screen by pressing QuIT. Withdraw the cartridge, align it with the cartridge opening, and reinsert it carefully. Then press any key to make the master selection screen appear. (Note: In some instances, it may be necessary to turn the computer off, wait several seconds, and then turn it on again.)

If the cartridge is accidentally removed from the slot while the cartridge contents are being used, the computer may behave erratically. To restore the computer to normal operation, turn the computer console off, and wait a few seconds. Then reinsert the cartridge, and turn the computer on again.

If you have any difficulty with your computer or cartridge, please contact the dealer from whom you purchased the unit and/or cartridge for service directions.

Additional information concerning use and service can be found in your User's Reference Guide.

Texas Instruments invented the integrated circuit, the microprocessor, and the microcomputer.

Being first is our tradition.


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