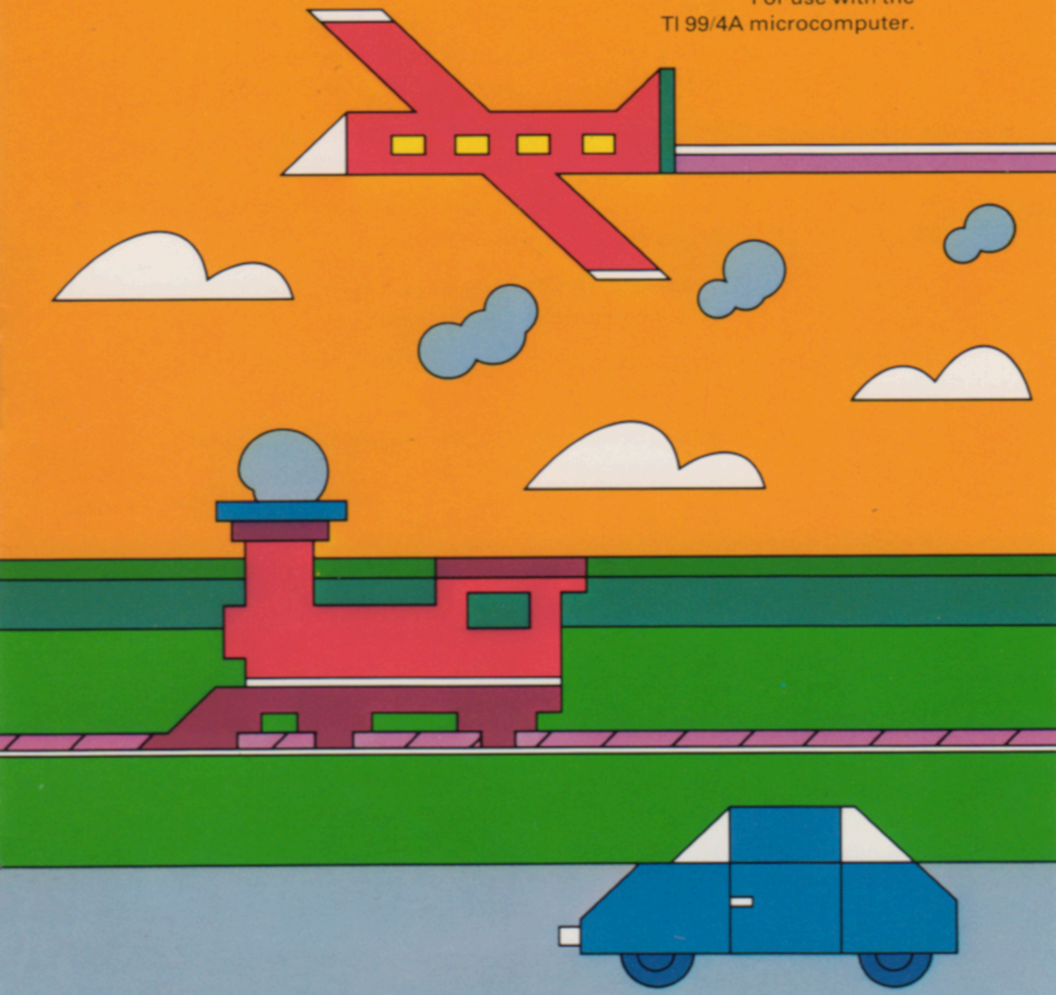
ADDITION AND SUBTRACTION 2

AGES 6-8

BASIC ADDITION AND SUBTRACTION SKILLS

For use with the
TI 99/4A microcomputer.



SCOTT, FORESMAN

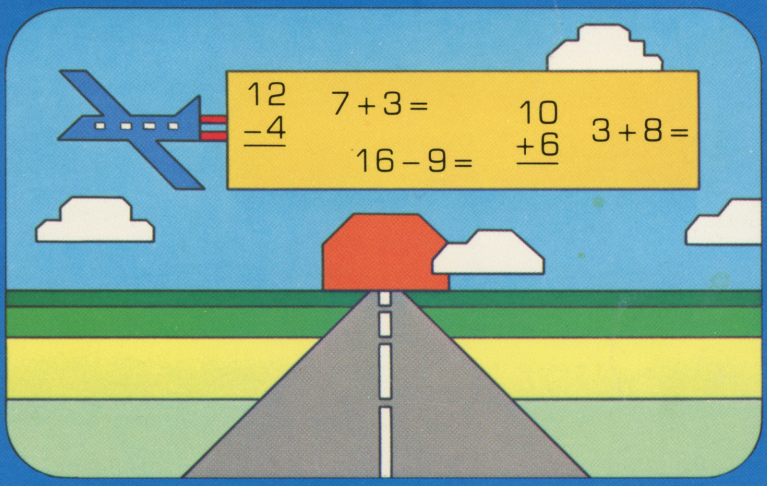
MATHEMATICS COURSEWARE SERIES

Texas Instruments Home Computer

Addition and Subtraction 2

SOLID STATE SOFTWARE™ **COMMAND MODULE**

Guides your child through the addition and subtraction skills for numbers up to 18 with colorful tutorial routines and reinforcing drills.



Quick Reference Guide

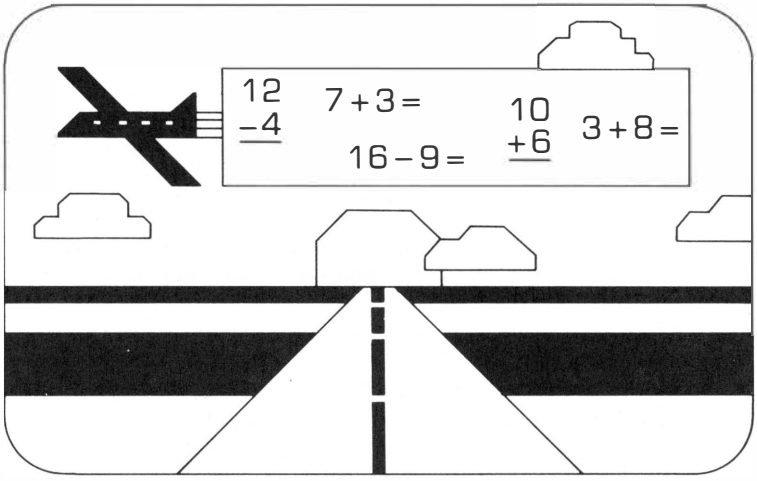
Note that the key sequences required to access special functions depend on the type of computer console you have. Important keystroke sequences are summarized here for your "quick reference."

TI-99/4	*TI-99/4A*	
SHIFT R(REDO) **SHIFT Z(BACK)**	**FCTN 8(REDO)** **FCTN 9(BACK)**	Returns to the beginning of the activity in progress.
SHIFT A(AID)	**FCTN 7(AID)**	Returns to the beginning of the section of the activity in progress. This is appropriate in Activity 1.
SHIFT W(BEGIN)	**FCTN 5(BEGIN)**	Returns to the Addition and Subtraction 2 selection list if pressed while the cursor is flashing.
PERIOD KEY (.)	**PERIOD KEY (.)**	Gives a brief overview of each activity if pressed when the selection list is displayed. When the selected activity is reached, release the key. After you view all activities once, the selection list is displayed again.
ENTER	**ENTER**	Eliminates the pauses after the tutorial routine and after each problem drill. Pressing **ENTER** also bypasses the "Do you want one more?" display between the tutorial routine and the drill.
SPACE BAR	**SPACE BAR**	Stops the program. When it is released, the program continues.
SHIFT C(CLEAR) **SHIFT T(ERASE)** **SHIFT S**	**FCTN 4(CLEAR)** **FCTN 3(ERASE)** **FCTN S**	Moves the cursor one space to the left, erasing the first number of a double-digit answer, when pressed before **ENTER**.
SHIFT Q(QUIT)	**FCTN =(QUIT)**	Returns to the master title screen.

Note: The keys **R**, **Z**, **A**, **C**, **T**, and **S** normally require pressing the **SHIFT** key for the second function. This module, however, does not require **SHIFT** with these keys on either computer. Instead, your child must hold down the key on either computer for several seconds before the appropriate action occurs. Using **SHIFT** with these keys also is accepted on either computer.

TEXAS INSTRUMENTS
HOME COMPUTER

Addition and Subtraction 2



This *Solid State Software*™ Command Module 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.

NOTE TO PARENTS

Children need strong math skills to solve today's and tomorrow's problems. The Addition and Subtraction 2 *Solid State Software*™ Command Module provides the fundamentals that can help your child meet these challenges.

Building on the skills introduced in Addition and Subtraction 1, the Addition and Subtraction 2 module was developed by the staff of Scott, Foresman and Company in cooperation with the Texas Instruments Learning Center. The activities are designed not only to challenge your child with colorful, interesting practices, but also to present the concepts of addition and subtraction in a dynamic, exciting way. Each instructional activity begins with a tutorial segment that demonstrates the concept, followed by the option of continuing the tutorial exercises or progressing to the practice drills. This method allows children to gain confidence and proceed at their own self-determined paces.

The module contains nine addition and subtraction activities.

- COUNTING TO 10 begins the module with a review of the counting numbers 0 (zero) to 10.
- NUMBERS FROM 10 TO 18 provides an introduction to the counting numbers 10 to 18.
- ADDITION FACTS explains addition in the horizontal format.
- ADD ANOTHER WAY provides your child with a smooth and logical transition into vertical addition problems.
- ADD THREE NUMBERS uses number bars to explain the horizontal addition of three numbers.
- ADD IN A COLUMN changes the three-addend horizontal problem to the vertical format.
- SUBTRACTION FACTS demonstrates subtracting a single-digit number from a double-digit number.
- SUBTRACT ANOTHER WAY shows your child the subtraction process in the vertical structure.
- REVIEW THE FACTS gives your child an oppportunity to practice all of the skills taught in the module. Also included in this activity is an EXTRA FOR EXPERTS for the child who answers 20 or more review problems correctly.

Addition and Subtraction 2

The Addition and Subtraction 2 module advances your child to more difficult drills according to the number of correct responses given in each activity. The computer automatically advances to the next activity if your child answers 80 percent of the drill problems correctly. If less than 60 percent of the problems are answered correctly, the computer returns to the appropriate activity, providing your child with more practice. This automation helps alleviate anxieties caused by consistently incorrect responses, making the learning of mathematical skills a pleasurable and rewarding experience.

With this module, Texas Instruments continues its tradition of applying innovative *Solid State Speech*™ technology to educational activities. Addition and Subtraction 2 is designed to work with or without the Texas Instruments *Solid State Speech*™ Synthesizer (sold separately). However, the Speech Synthesizer must be attached to activate the voice of the computer. The computer's voice then gives directions, reads the equations, and encourages your child to "Try again" when he or she gives an incorrect answer. The addition of speech strengthens the learning process since your child can hear, as well as see, the correct answers.

YOUR CHILD AND THE COMPUTER

The Texas Instruments Home Computer is a rugged, durable device designed for easy use and care. Teach your child to give the computer the same good care and respect he or she would give a television set, record player, radio, or any other piece of electronic equipment:

1. Keep snacks and beverages away from the console.
2. Don't hammer on the keyboard or place heavy objects on it.
3. Don't touch the module contacts. These are recessed in the module to help prevent accidental soiling and/or damage.

The letters and numbers on the keyboard are arranged in the same order found on standard typewriter keyboards. If your child is not familiar with a typewriter or has not used your Home Computer before, take a few minutes to acquaint him or her with the keyboard. Point out the row of number keys at the top and the rows of letter keys below. Show your child how to insert the module and select the activities. This brief "tour" of the computer will help reinforce correct procedures and instill confidence as your child enters a new world of computers.

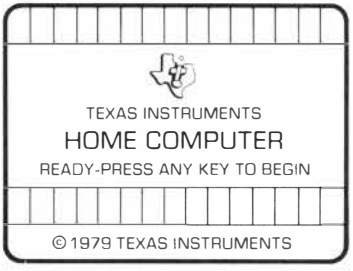
Today, computers are involved in almost every aspect of life. Working with this module can help your child become familiar with computers and their operation. Since computer-aided instruction is more common in the classroom every year, this knowledge can give your child an important advantage.

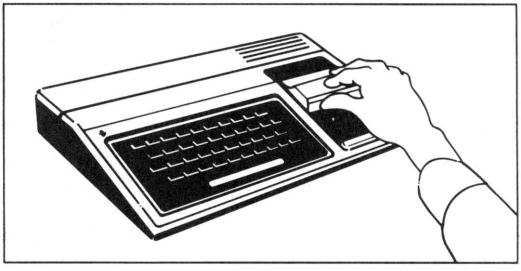
USING THE *SOLID STATE SOFTWARE*™ COMMAND MODULE

To utilize the speech capability of the module, be sure to attach the Texas Instruments Speech Synthesizer to your Home Computer when you use the Addition and Subtraction 2 module. (See the Speech Synthesizer owner's manual for complete information on handling, installing, and caring for the speech unit.)

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

Note: Be sure the module is free of static electricity before inserting it into the computer (see page 11).



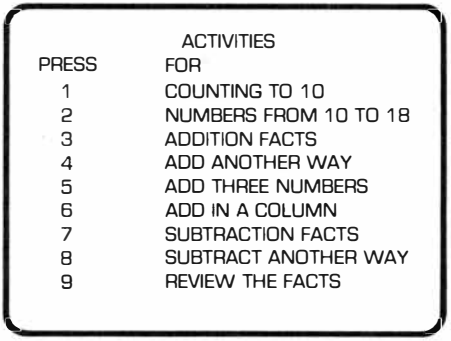


1. Turn the computer ON, and wait for the master title screen to appear. Then slide the module into the slot on the console.
2. Press any key, and the MATHEMATICS COURSEWARE SERIES title screen appears. Next, the ADDITION AND SUBTRACTION 2 title sequence begins. To go to the ADDITION AND SUBTRACTION 2 selection list, press the **ENTER** key within two seconds after the title sequence begins, or wait for the title sequence to end and the list appears automatically.

Note: To remove the module, *first* return the computer to the master title screen by pressing **QUIT**. *Then* remove the module from the slot. If you have any problem inserting the module, or if it is accidentally removed from the slot while in use, please see "In Case of Difficulty" on page 11.

SAMPLE ACTIVITY

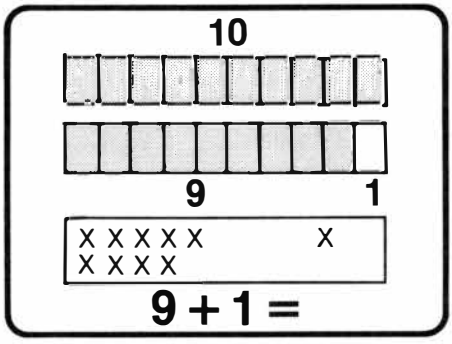
After the Addition and Subtraction 2 title screen appears, the computer automatically displays a selection list of the nine activities included in the module.



Your child presses the number corresponding to the activity he or she wants to try. For this sample activity, press **3** for *Addition Facts*. (We'll assume that the Speech Synthesizer is attached for this example.)

After the activity title screen, the tutorial segment begins. Two sets of objects in two different colors appear on a divided display. Identifying numbers are printed below each group.

Next, the objects from the groups move up, forming a tens number bar in the middle of the display. Then, as the tens bar and the number 10 appear at the top of the screen, the open addition sentence forms at the bottom.



The number 10 now travels to the right across the top of the display, and then moves down into the answer block.

The second example, when the sum of the addends is greater than 10, follows automatically. The objects move up to form the number bar. Next, the tens bar, the number 10, the corresponding units bar, and that number are displayed. The number 10 then moves across and adds the units to itself, and the total moves down into the answer block.

The next display asks your child if he or she would like to see another example. If your child wants another example, press **1** for "Yes." If he or she is ready to go to the drill, press **2** for "No." For now, press **2**. Then press **BEGIN** to leave the drill and return to the activity selection list.

SPECIAL FEATURES

"Cursor"

The "cursor" is displayed as a white box with a flashing red border. It prompts your child to respond. When the cursor is flashing, you may answer a problem or change displays.

Rewards

Each time your child gives a correct answer on the first or second try, the computer responds with one of three visual rewards accompanied by a short tune. These rewards reinforce correct answers and help motivate your child to continue.

Error Signals

Special care has been taken to make the response to incorrect answers low-key and unintimidating. If your child presses an incorrect answer, a red "X" appears over the response, and an "uh-oh" sound tells your child that he or she has selected an incorrect response. Then, the incorrect response and the "X" are erased. Next, the computer tells your child to "Try again," and the cursor flashes again on the display. If the second response is correct, your child gets the visual and musical reward for that activity. If the second response is incorrect, a red "X" appears over the response, and the computer supplies the correct answer.

Remediation

In Activities 1 and 2, your child must identify each number correctly before advancing to the next activity. If, in Activities 3, 5, 6, 7, and 8, two consecutive errors are made, the module assists your child with a visual example of the problem. If, in Activity 4, two consecutive errors are made on a vertical problem, that problem appears in the horizontal format. The computer supplies the answer if an incorrect response is given in the horizontal format. Activity 9 allows only one try, with the computer supplying the correct answer if an incorrect response is given.

Time-Out

The computer says and displays "Your turn" at the beginning of each drill activity. If no response is given in ten seconds, the computer gives a short beep and says, "Your turn." After five more seconds, the computer beeps again and says "What is the number?" If there still is no response, the computer automatically provides more tutorial review or the answer to the problem. If the Speech Synthesizer is not attached, the computer gives a short beep and displays either "Your turn" or "What is the number?"

ADDITION AND SUBTRACTION 2 ACTIVITIES

The nine activities in the Addition and Subtraction 2 module are designed to strengthen your child's addition and subtraction skills. Activities 1 through 8 begin with a tutorial routine, followed by a drill. Each tutorial example, except in Activity 1, gives your child the option of viewing more or progressing to the drill. (Activity 1 advances to the drill automatically.) We suggest that you read through this section completely so that you can help your child select the appropriate starting activity.

Activity 1: Counting to 10

This activity reviews the counting skills of numbers 0 (zero) to 10. In the first section, a line bar with stacks of boxes representing the numbers 0 (zero) to 5 appears on the display. The computer counts the boxes, displays the number, and then erases the numbers. When the red cursor flashes, your child is asked to press the number key corresponding to the number of bars above the cursor. Your child must correctly recognize the numbers 0 (zero) to 5 before the module advances to the second section of this activity. The same format is presented in this section, but this time the line bar displays the numbers 6 through 10. Again, your child must correctly recognize these numbers before the module advances to the next activity.

Activity 2: Numbers from 10 to 18

Activity 2 introduces the concept of grouping numbers into tens. To achieve a number greater than 10, one group of 10 is added to a group of units. Bars or objects appear on the display. As they move together (bringing the tens and units together), the newly formed number and the corresponding word are displayed. The drill asks your child to identify the number of bars or objects that appear on the display.

Activity 3: Addition Facts

Addition Facts presents two sets of objects with corresponding numbers under each group. The objects move upward and form a number bar in the middle of the display. As the objects reappear in their original position on the display, corresponding numbers also appear and form an addition sentence. The signs "+" and "=" and the answer are displayed to complete the sentence. With the help of bars or objects, the drill asks your child to complete the addition sentence.

Activity 4: Add Another Way

This activity moves the horizontal addition sentence to form the vertical sentence. All the problems in the drill are presented in the vertical format. Your child is asked to type the correct answer to the problems.

Activity 5: Add Three Numbers
Add Three Numbers extends the concept of horizontal addition to include three numbers. It also introduces the associative property of addition: $(3+5)+4=3+(5+4)$. To help your child recognize this property, a box is drawn around the combined addends in the addition sentence. The drill asks your child to enter the sum of the three numbers.

Activity 6: Add in a Column
Activity 6 continues the skill of adding three numbers by presenting the numbers in a column. The boxes drawn around the combined numbers and objects visually reinforce the associative property of addition in the vertical format. The exercises in the drill appear in this format. The correct answer is to be entered under the three numbers.

Activity 7: Subtraction Facts
This activity subtracts a single-digit number from a double-digit number with the visual assistance of "X-ing" out train engines. Ten to 18 train engines appear on the display. A random number of train engines are "X-ed" out and then disappear. Next, the corresponding horizontal subtraction sentence appears. The drill displays a subtraction sentence and asks your child to complete it with the correct answer. If an incorrect response is given, train engines appear and are "X-ed" out to assist your child with the next response.

Activity 8: Subtract Another Way
Subtract Another Way demonstrates the concept of taking a smaller number from a larger one by crossing out a number of bars from a large group of bars and then having them disappear. All the problems in the drill appear in the vertical format. If an incorrect answer is given, appropriate counting bars appear to assist your child with the second response.

Activity 9: Review the Facts
The review presents a variety of 24 problems, utilizing the skills represented in the module. Only one try is allowed, with an incorrect response resulting in a computer-supplied answer. For the child who answers 20 or more of the problems correctly, the module automatically provides an EXTRA FOR EXPERTS. This ten-problem activity displays one of the addends and the sum of the addition problem. Your child is asked to fill in the missing addend.

CARING FOR THE MODULE

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

CAUTION:
The contents of a Command Module 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 module, just touch any metal object (a doorknob, a desklamp, etc.) before handling the module.

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 module activities do not appear to be operating properly, return to the master title screen by pressing **QUIT**. Withdraw the module, align it with the module opening, and reinsert it carefully. Then press any key to make the module selection list 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 module is accidentally removed from the slot while the module 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 module, and turn the computer on again.

If you have any difficulty with your computer or the ADDITION AND SUBTRACTION 2 module, please contact the dealer from whom you purchased the unit and/or module for service directions.

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

THREE-MONTH LIMITED WARRANTY
HOME COMPUTER SOFTWARE MODULE
Texas Instruments Incorporated extends this consumer warranty only to the original consumer purchaser.

WARRANTY COVERAGE
This warranty covers the electronic and case components of the software module. These components include all semiconductor chips and devices, plastics, boards, wiring and all other hardware contained in this module ("the Hardware"). This limited warranty does not extend to the programs contained in the software module and in the accompanying book materials ("the Programs").

The Hardware is warranted against malfunction due to defective materials or construction. **THIS WARRANTY IS VOID IF THE HARDWARE HAS BEEN DAMAGED BY ACCIDENT, UNREASONABLE USE, NEGLECT, IMPROPER SERVICE OR OTHER CAUSES NOT ARISING OUT OF DEFECTS IN MATERIALS OR WORKMANSHIP.**

WARRANTY DURATION
The Hardware is warranted for a period of three months from the date of the original purchase by the consumer.

WARRANTY DISCLAIMERS
ANY IMPLIED WARRANTIES ARISING OUT OF THIS SALE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE ABOVE THREE-MONTH PERIOD. TEXAS INSTRUMENTS SHALL NOT BE LIABLE FOR LOSS OF USE OF THE HARDWARE OR OTHER INCIDENTAL OR CONSEQUENTIAL COSTS, EXPENSES, OR DAMAGES INCURRED BY THE CONSUMER OR ANY OTHER USER.
Some states do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations or exclusions may not apply to you in those states.

LEGAL REMEDIES
This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

PERFORMANCE BY TI UNDER WARRANTY
During the above three-month warranty period, defective Hardware will be replaced when it is returned postage prepaid to a Texas Instruments Service Facility listed below. The replacement Hardware will be warranted for three months from date of replacement. Other than the postage requirement, no charge will be made for replacement.

TI strongly recommends that you insure the Hardware for value prior to mailing.

TEXAS INSTRUMENTS CONSUMER SERVICE FACILITIES

Texas Instruments Service Facility
P.O. Box 2500
Lubbock, Texas 79408

Geophysical Services Incorporated
41 Shelley Road
Richmond Hill, Ontario, Canada L4C5G4

Consumers in California and Oregon may contact the following Texas Instruments offices for additional assistance or information.

Texas Instruments Consumer Service
831 South Douglas Street
El Segundo, California 90245
(213)973-1803

Texas Instruments Consumer Service
6700 Southwest 105th
Kristin Square, Suite 110
Beaverton, Oregon 97005
(503)643-6758

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The following should be read and understood *before* purchasing and/or using the software module.

TI does not warrant that the Programs will be free from error or will meet the specific requirements of the consumer. The consumer assumes complete responsibility for any decision made or actions taken based on information obtained using the Programs. Any statements made concerning the utility of the Programs are not to be construed as express or implied warranties.

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Some states do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations or exclusions may not apply to you in those states.

The Addition and Subtraction 2 module extends the fundamentals of these two skills to include numbers up to 18. The activities have been designed not only to challenge your child, but also to present the concepts in a dynamic, exciting way. With Addition and Subtraction 2, Texas Instruments is continuing its tradition of applying innovative *Solid State Speech*™ technology to educational activities. The optional *Solid State Speech*™ Synthesizer (sold separately) adds the feature of computer speech to the color graphics and musical sounds of your computer. Your child can now hear, as well as see, the instructions and problems in the module.

Addition and Subtraction 2 module activities include:

- ***Counting to 10*** and ***Numbers from 10 to 18*** — Introduce the concept of counting.
- ***Addition Facts*** and ***Subtraction Facts*** — Introduce horizontal problems for addition and subtraction.
- ***Add Another Way*** and ***Subtract Another Way*** — Provide a smooth transition into the vertical format.
- ***Add Three Numbers*** and ***Add in a Column*** — Explain the addition of three numbers in the horizontal and vertical formats.
- ***Review the Facts*** — Gives your child an opportunity to practice the skills presented in the module.

Adds 18K bytes of active memory with stored program to your TI Home Computer.

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INCORPORATED
DALLAS, TEXAS

Printed in U.S.A.

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