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It is my hope that you find the file of use to you personally – I know that I would have liked to have found some of these files years ago – they would have saved me a lot of time !

Colin Hinson

In the village of Blunham, Bedfordshire.



TEXAS INSTRUMENTS HOME COMPUTER

NUMERATION 2

EDUCATION

SOLID STATE CARTRIDGE

Optional Solid State Speech™ Synthesizer must be attached to the computer to activate the speech capabilities of the cartridge.

Introduces your child to number concepts such as "greater than" or "less than," rounding, and place value.
Suitable for grades 5 through 7.



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*

ENTER	ENTER	Proceeds to the next display.
SHIFT W (BEGIN)	FCTN 5 (BEGIN)	Returns to the Reading Rally selection list.
SHIFT R (REDO)	FCTN (REDO)	Returns to the beginning of the activity in progress.
SHIFT A (AID)	FCTN 7 (AID)	Returns to a display which helps you answer the question asked in the story.
SHIFT T (ERASE)	FCTN 3 (ERASE)	Moves the cursor to the beginning of the fill-in-blank question, erasing characters.
or	or	
SHIFT C (CLEAR)	FCTN 4 (CLEAR)	
SHIFT Q (QUIT)	FCTN = (QUIT)	Returns to the master title screen.

Numeration 2

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 capabilities of your Home Computer.

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Program and data base contents

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See important warranty information at back of book.

NOTE TO PARENTS

The basic skills that are developed through the study of mathematics establish a strong foundation from which your child's knowledge can grow. Each child develops these skills at a different rate, making it important to provide a full range of material to which he or she can refer. The staffs of Scott, Foresman and Company and Texas Instruments Incorporated have enhanced the educational field by providing an in-depth mathematics series. The Numeration 2 Solid State Cartridge is just one in this series.

Numeration deals with the underlying mathematical relationships in our number system and the skills used to recognize and utilize these relationships. The activities in Numeration 2 take place "At the Carnival" and provide your child with a colorful and exciting way to learn about numbers and how they relate to one another.

The Numeration 2 program contains the following seven activities to expand the concepts introduced in the Numeration 1 program:

- **4-Digit Numbers** presents the concept of place values and the association of a digit with its specific place value.
- **Comparing Numbers** compares two numbers to see which is greater than or less than the other.
- **Rounding Numbers** introduces the concept of rounding numbers.
- **5- and 6-Digits** illustrates the transition of a number from its written form to its standard form.
- **7-, 8-, and 9-Digits** expands the concepts in Activity 4 to include numbers in the millions.
- **Daily Use of Numbers** utilizes the concept of weight to demonstrate rounding to the nearest multiple of 10.
- **Review** incorporates exercises from the previous activities for review.



The Numeration 2 cartridge evaluates your child's progress by automatically comparing the number of problems your child answered correctly to the number answered incorrectly. The program either provides a review of the activity or presents a new activity, depending upon the number of problems your child answers correctly. For example, if there are 10 problems in an activity and your child answers 9 correctly, he or she would advance to a new activity.

In review activities, exercises are provided until your child answers at least 60 percent of the review problems correctly. This allows more practice time for your child before he or she continues to the more difficult activities. The program provides your child with a comfortable and rewarding atmosphere in which to learn mathematics.

With this cartridge, Texas Instruments continues its tradition of applying innovative *Solid State Speech*[™] technology to educational activities. Numeration 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 use 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 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 cartridge contacts. These are recessed in the cartridge 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 the 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 cartridge 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 cartridge can help your child become familiar with computers and their operation. Since computer-enhanced instruction is more common in the classroom every year, this knowledge can give your child an important advantage.



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 11).

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 and the MATHEMATICS COURSEWARE SERIES title screen appears. Next, the NUMERATION 2 title sequence begins automatically. To go on to the NUMERATION 2 selection list, press **ENTER** after the title sequence begins, or wait for the title sequence to end and the selection list appears automatically.

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 11.

A SAMPLE ACTIVITY

After the Numeration 2 title screen appears, a selection list of the seven activities in the cartridge is displayed.

PRESS FOR

- 1 4-DIGIT NUMBERS
- 2 COMPARING NUMBERS
- 3 ROUNDING NUMBERS
- 4 5- AND 6-DIGITS
- 5 7-, 8-, AND 9-DIGITS
- 6 DAILY USE OF NUMBERS
- 7 REVIEW

Your child presses the number corresponding to the activity he or she wants. For this sample activity, press 2 for *Comparing Numbers*.

Next, the activity and "Press For" screens appear. Activity 2 compares numbers using the less-than $<$ or greater-than $>$ sign. The next selection list asks if your child wants to see a tutorial example or go to the practice exercises. For this sample activity, the child presses 1 for "a teaching example."

After you press 1, the teaching example begins. Two "test-your-strength" machines appear on either side of the display. Beside each machine is a column of multiples of 10 ranging from 10 to 100. The gauge on the left "test-your-strength" machine ascends the scale and stops. The number at which it stops appears at the top of the screen. Next, the gauge on the right "test-your-strength" machine ascends the scale and stops. The number at which the gauge stops appears beside the first number at the top of the screen.

A box appears between the two numbers containing either a greater-than $>$ or a less-than $<$ sign. These signs indicate that the first number is greater than or less than the second number. In the center of the screen, a sentence explaining the problem also appears. Next, the two numbers change places, causing the signs to change. The sentence in the center of the screen then explains that when you reverse the numbers in the statement, the greater-than or less-than sign also reverses.



After one teaching example, your child is asked if he or she wishes to view another one. If your child wants another example, press **1** for "Yes." If he or she is ready to try the practice exercises, press **2** for "No." When your child finishes a desired activity, press **BEGIN** to 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, your child 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 a visual reward, accompanied by a short melody. 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 unthreatening. If your child presses an incorrect answer, a red "X" appears over the response, and an electronic sound indicates that he or she has selected an incorrect response. Then, the incorrect response and the "X" disappears. Next, the computer tells your child to "Try again," and the cursor flashes on the screen. If the second response is correct, your child receives a visual and musical reward. If the second response is incorrect, a red "X" appears over the response, and the computer supplies the correct answer. (*Note:* In Activity 2, your child has only one chance to choose the correct answer.)

Remediation

If two problems in a row are answered incorrectly, the computer provides the answer to the problem. (*Note:* Since your child has only one chance to answer a problem correctly in Activity 2, the computer supplies the correct answer if a problem is answered incorrectly.) If your child does not score 60 percent or better, a review of the activity is given.

Time Out

If no response is given in 20 seconds, the computer gives a short beep and the message "Your turn" is displayed on the screen. After 15 more seconds, the computer beeps again and the message "What is the answer?" appears. If no response is given after 10 more seconds, the computer automatically provides the answer to the problem.

NUMERATION 2 ACTIVITIES

The Numeration 2 program contains seven activities designed to expand your child's numeration skills. These activities include exercises in place values, comparing and identifying numbers, and rounding numbers. Activities 1, 2, 3, 4, and 5 allow your child to learn from a teaching example or progress to the practice exercises. However, Activity 6 goes directly to the practice exercises. View the teaching examples for each activity and read this section completely so that you can help your child select the appropriate starting activity.

Activity 1: 4-Digit Numbers

Activity 1 introduces numbers in the thousands. The practice exercises display a number in the standard form and the message on the screen asks what digit has the indicated place value—ones, tens, hundreds, or thousands.



Activity 2: Comparing Numbers

Activity 2 expands the carnival theme by including exercises using two “test-your-strength” machines. Multiples of ten (10 through 100) appear in a column beside each machine. The gauge on each machine moves up the scale and then stops. The number at which it stops appears at the top of the screen. Your child must indicate if the first number is less than or greater than the second number by typing $<$ or $>$.

The second portion of Activity 2 demonstrates how to compare two numbers by comparing equal place values. Again, your child must indicate if the first number is less than or greater than the second number and enter the correct sign $<$ or $>$.

Activity 3: Rounding Numbers

This activity introduces the concept of rounding numbers. When rounding numbers, a value of five or greater rounds to the next larger number. In the first exercise, a pinwheel moves along a number line and then stops above a number. Your child must enter the appropriate rounded number.

The second exercise displays five numbers in a column. Beside each number is an arrow that points to a box to the right. Your child must enter the correct rounded number in the box.

Activity 4: 5- and 6-Digits

The fourth activity illustrates how to read a number in its written form and then how to write that number using digits. The first exercise in this activity displays a number in word form and then asks for the corresponding number in the standard digit form.

In the second exercise, a number appears in the center of the screen. A bow and arrow appear below the number. Your child is asked to indicate which digit is in the indicated place value. Press the **SPACE BAR** to position the bow and arrow so that the arrow is pointing to the digit in the correct place value. When the bow and arrow are in position, your child presses **ENTER** to fire the arrow. If the arrow points to the correct digit, it is released. If it is not the correct digit, the arrow does not fire and your child must try again.

Activity 5: 7-, 8-, and 9-Digits

This activity introduces 7-, 8-, and 9-digit numbers. In the first practice exercise, a written number appears, and your child is asked to give the standard form of the number.

In the second exercise, a number appears in the center of the screen. A bow and arrow appear below the number. Your child is asked to determine which digit is in the indicated place value. Answers are entered by pressing the **SPACE BAR** to position the bow and arrow. When the bow and arrow point to the desired digit, your child presses **ENTER** to fire the arrow. If the arrow points to the correct digit, it is released. If it does not point to the correct digit, the arrow does not fire and your child must try again.

Activity 6: Daily Use of Numbers

In this activity, a weight scale is used to practice rounding numbers to the nearest multiple of ten. A random amount of fruit appears on the scale. Your child is asked to give the weight of the fruit in ounces. The number of ounces must be rounded to the nearest multiple of ten.

Activity 7: Review

Activity 7 is a review of the previous six activities and contains exercises from each of the activities. Your child is given three problems for each objective covered in the previous activities. If your child does not answer a problem correctly on the first try, the computer supplies the correct answer. At the end of the review activity, your child is given a list of the activities that he or she needs to study.



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 desk lamp, 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 **MATHEMATICS COURSEWARE SERIES** title 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 the **NUMERATION 2** 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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