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Colin Hinson

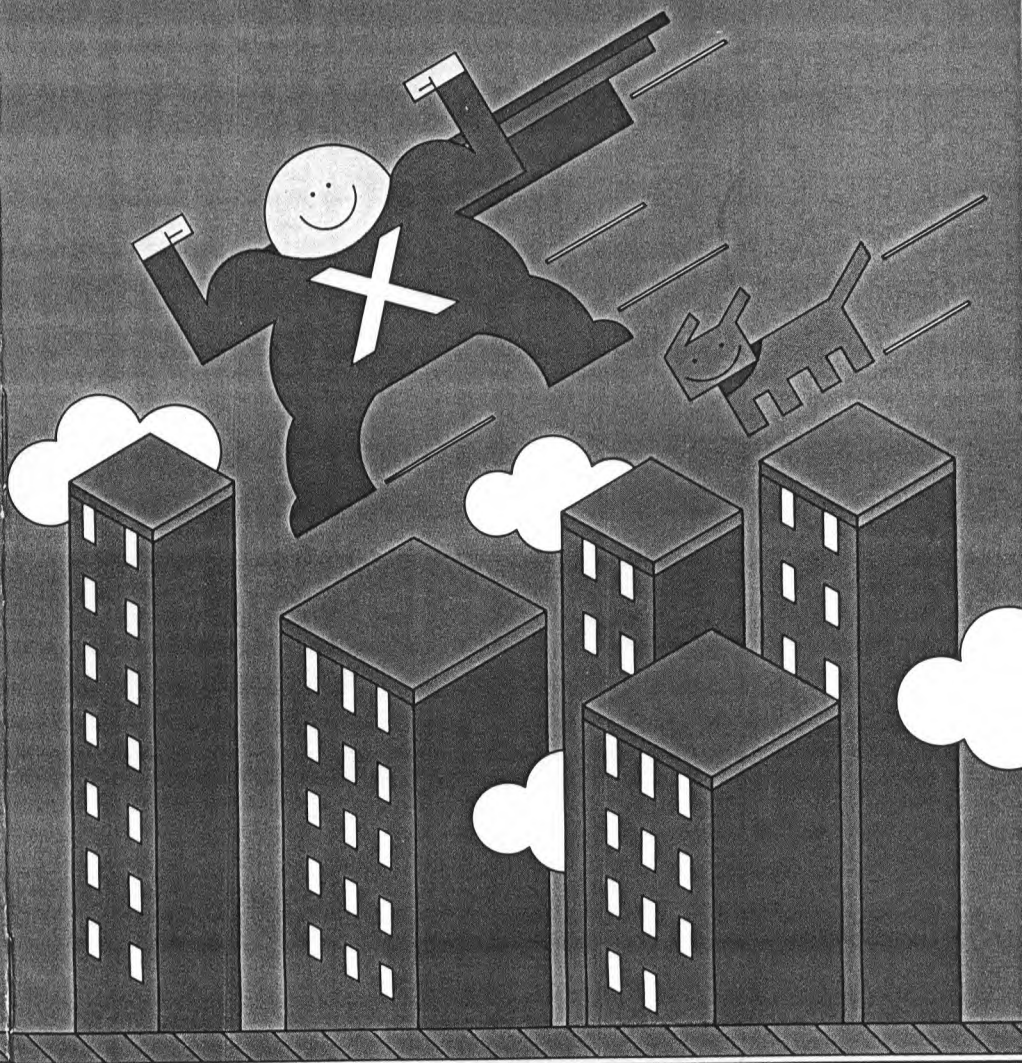
In the village of Blunham, Bedfordshire, UK.

MULTIPLICATION 2

AGES 8-10

MULTIPLICATION WITH RENAMING

For use with the
TI 99/4A microcomputer.



KEYBOARD GUIDE FOR MULTIPLICATION 2

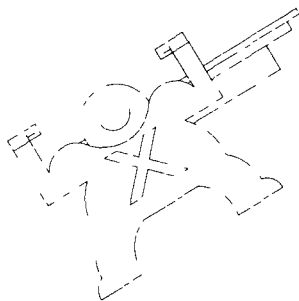
PRESS	TO
ENTER	<ul style="list-style-type: none">■ pass through title screens quickly.■ have the computer accept an answer.■ speed the appearance of the next problem.
Space Bar	<ul style="list-style-type: none">■ move the character, "Mighty," on the screen in Activity 1.■ temporarily freeze a screen. The program continues when the space bar is released.
Period Key (.)	<ul style="list-style-type: none">■ see the beginning of each activity in the module in consecutive order. Start at the main list of activities. Hold the (.) key down until you reach the activity you want.
FCTN 3 (ERASE)	<ul style="list-style-type: none">■ erase the most recently typed number of an answer before the complete answer is typed.
FCTN 4 (CLEAR)	<ul style="list-style-type: none">■ erase all the digits of an answer before the complete answer is typed.
FCTN 5 (BEGIN)	<ul style="list-style-type: none">■ return to the main list of activities at the beginning of the module.
FCTN 6 (PROC'D)	<ul style="list-style-type: none">■ leave the teaching example and begin the practice exercises.
FCTN 7 (AID)	<ul style="list-style-type: none">■ view the teaching example appropriate to the practice exercises being done.
FCTN 8 (REDO)	<ul style="list-style-type: none">■ begin an activity again.
FCTN 9 (BACK)	<ul style="list-style-type: none">■ return to the teaching example/practice exercise choice screen, or, if there is no teaching example, return to the main selection list of activities.
FCTN = (QUIT)	<ul style="list-style-type: none">■ end work on the module.

Scott, Foresman

MULTIPLICATION 2

Thomas P. Hartsig

Director of Computer-Based Instruction
Macomb Intermediate School District
Macomb County, Michigan



This learning module is part of the Mathematics Courseware Series designed to be used with the Texas Instruments 99/4A microcomputer.

The module can be used with or without the Texas Instruments Solid State Speech™ Synthesizer.

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School Materials

A Teacher's Guide for this module is also available. The Guide includes teaching objectives, suggestions for classroom use, and reproducible record-keeping forms and worksheets. For ordering information contact:

Scott, Foresman and Company
Electronic Publishing Division
1900 East Lake Avenue
Glenview, IL 60025

ABOUT THE MODULE

Multiplication 2 is a unique way to practice mathematics. The module uses color, sound, and an animated character, “Mighty,” to bring numbers alive. The practice exercises challenge your child, and at the same time make learning fun. You can be assured that this module will provide a solid foundation in essential multiplication skills.

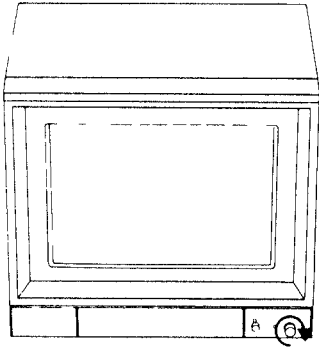
Multiplication 2 begins by teaching multiplying one-digit numbers by 10 and 100 and by their multiples. Other activities teach multiplying two- and three-digit numbers by a one-digit number. Some renaming, or “carrying” is required. The eight activities in **Multiplication 2** follow the same sequence of skill-building that most third- and fourth-grade classroom teachers use and should be done in numerical order.

Look for these special features in the module:

- *simple instructions which allow children to use the module with little or no supervision*
- *teaching examples, practice exercises, and review activities*
- *built-in management that allows children to advance at their own pace and provides additional teaching examples when necessary*
- *musical and graphic rewards for correct answers*
- *color, sound, and animation*
- *voiced reinforcement of directions and correct answers through optional use of a speech synthesizer*
- *numbers which are randomly generated so children receive new problems each time the exercises appear*
- *two chances to answer each exercise correctly before the computer supplies the correct answer*
- *durable hardware and software components with useful keyboard functions programmed into the module*

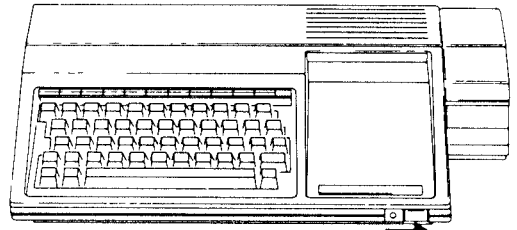
GETTING STARTED

1. Turn switches on.



MONITOR

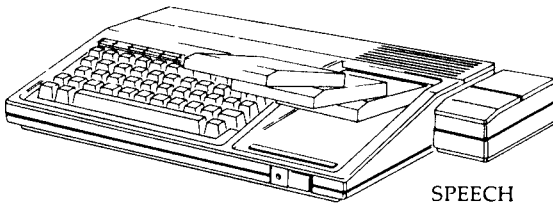
ON



COMPUTER KEYBOARD

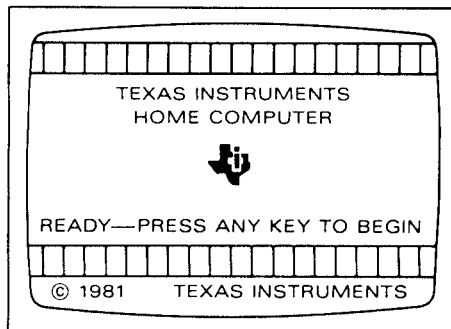
ON

2. Insert module.



SPEECH
SYNTHESIZER

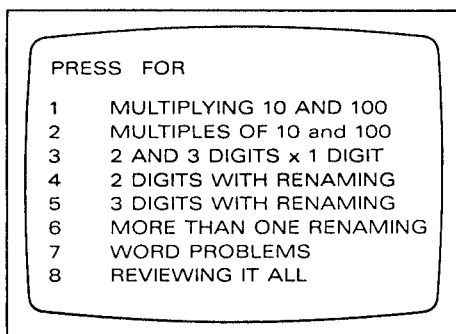
3. Wait for this screen to appear.



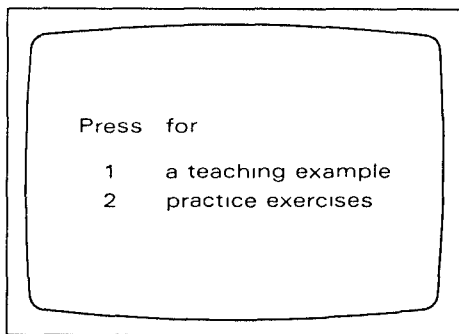
4. If you do not see the Texas Instruments title screen, check to see if:
 - *the computer keyboard and monitor are plugged in.*
 - *the cable connecting the keyboard and monitor is properly connected.*
 - *both the computer and monitor are turned on.*
 - *the module is properly inserted.*

Press any key. The Scott, Foresman copyright screen and the **Multiplication 2** title screen are displayed.

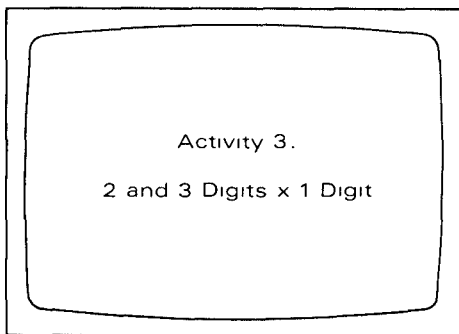
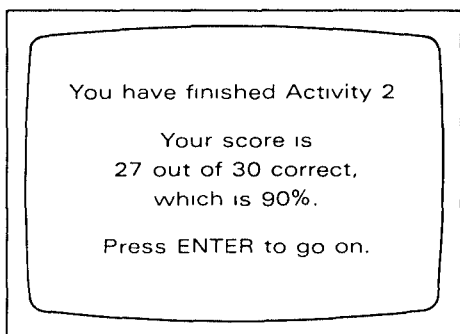
Next you will see the main selection list of activities:



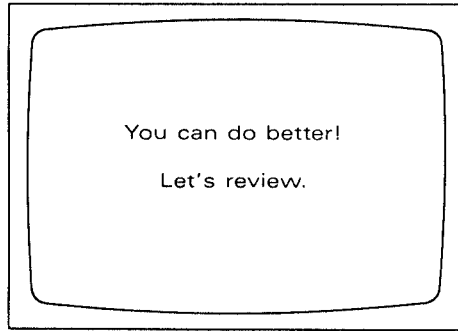
The activities should be done in order since each activity is more advanced than the one before it. If you are working on the module for the first time, press 1 to go to the first activity. If you have worked with the module before, press the number of the next activity you want to do. When you press a number the activity title screen will appear. In every activity except Activity 7, Word Problems, and Activity 8, the Review, the computer will ask you to make a choice.



Press 1 to see a teaching example. You may see as many examples as you want before doing the practice exercises. Press 2 to go directly to the practice exercises. Follow the directions on the screen for each activity. As you do the exercises, the computer keeps track of how you are doing. If your score is 80% or higher you can go on to the next activity.



If, however, your score is less than 60%, you will see the following screen, and a sample problem will be shown. You can see as many sample problems as you want before a new set of practice exercises is given.



If your score is between 60% and 80% the computer will continue giving problems until your score falls below 60% or goes above 80%.

You can use the special function keys to return to the list of activities at the beginning of the module, to start an activity over again, or to get help with the activity you are working on. See the inside front cover of this book for an explanation of these and other special functions built into **Multiplication 2**.

When you are finished working on the module, press **FCTN = (QUIT)**. The Texas Instruments title screen will reappear and you may safely remove the module.

ABOUT THE ACTIVITIES

1. Multiplying 10 and 100

Two teaching sections use pictures to illustrate how to multiply a one-digit number by 10 and 100. In the practice exercises multiplication problems appear in the center of the screen. Children use the space bar to move “Mighty” to the correct multiple of 10 or 100.



$$3 \times 10 = 30$$

2. Multiples of 10 and 100

The teaching section emphasizes using basic multiplication facts to do multiplication involving multiples of 10 or 100. In the practice section children must complete problems in a chart where they are required to multiply a one-digit number by another one-digit number, by the second number's multiple of ten, and by the second number's multiple of 100.

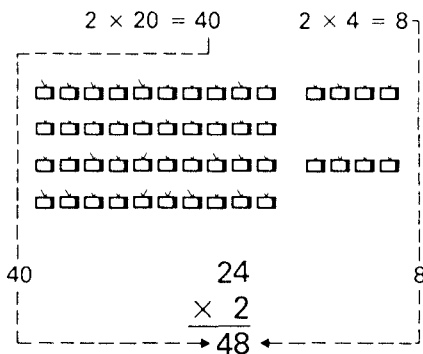
$$4 \times 6 = 24$$

$$4 \times 60 = 240$$

$$4 \times 600 = 2400$$

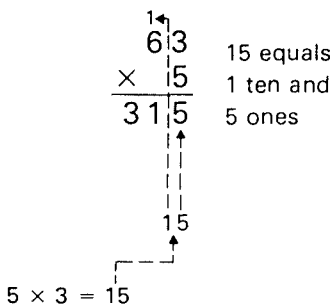
3. 2 and 3 Digits x 1 Digit

The teaching examples use pictures and words to explain the process of multiplying a two- or three-digit number by a one-digit number. Each digit's place value is emphasized. Multiplication problems with two- or three-digit numbers are given in the practice exercises.



4. 2 Digits with Renaming

The teaching section shows the step-by-step process of multiplying a two-digit number by a one-digit number when one renaming, or "carrying," is necessary. Multiplication problems which require "carrying" are given in the practice exercises.



5. 3 Digits with Renaming

The teaching section shows the process of multiplying a three-digit number by a one-digit number when one renaming (carrying a number) is necessary.

Multiplication problems which require “carrying” are given in the practice exercises.

$$\begin{array}{r}
 ^1 \\
 536 \\
 \times 2 \\
 \hline
 1072
 \end{array}$$

$2 \times 3 \text{ tens} = 6 \text{ tens}$
 $6 \text{ tens} + 1 \text{ ten} = 7 \text{ tens}$
 $2 \times 5 \text{ hundreds} = 10 \text{ hundreds}$

6. More Than One Renaming

The teaching section shows the process of multiplying a three-digit number by a one-digit number when more than one renaming (carrying more than once in a problem) is necessary. Multiplication problems which require “carrying” are given in the practice exercises.

$$\begin{array}{r}
 ^6^4 \\
 386 \\
 \times 7 \\
 \hline
 2702
 \end{array}$$

$7 \times 3 \text{ hundreds} = 21 \text{ hundreds}$
 $21 \text{ hundreds} + 6 \text{ hundreds} =$
 27 hundreds

7. Word Problems

Two types of problems are given for practice, problems about the character, "Mighty," and story problems. In each exercise, children must set up the multiplication problem and then complete the multiplication.

Mighty traveled 45 miles per hour for 7 hours. How many miles did Mighty go?

$$\begin{array}{r}
 \boxed{} \text{ miles per hour} \\
 \times \boxed{} \text{ hours} \\
 \hline
 \boxed{} \text{ miles}
 \end{array}$$

Set up the problem.

8. Reviewing It All

Problems are given from each of the first seven activities. Only one opportunity is given to answer each problem correctly. At the end of the activity a percent score is given, and the computer lists those activities that require further practice.

MODULES IN THE SERIES

Other mathematics modules in the Scott, Foresman Mathematics Courseware Series for the Texas Instruments Home Computer include:

TITLE	CONTENT	AGES
Addition & Subtraction 1	Introductory addition and subtraction skills	5-7
Addition & Subtraction 2	Basic addition and subtraction skills	6-8
Addition & Subtraction 3	Addition and subtraction with renaming (carrying and borrowing)	7-9
Numeration 1	Number concepts with 1-, 2-, and 3-digit numbers	5-8
Numeration 2	Number concepts with large numbers	7-11
Multiplication 1	Basic multiplication skills	7-9
Multiplication 2	Multiplication with renaming (carrying)	8-10
Division 1	Basic division skills	8-11
Fractions 1	Introductory fractions concepts	9-11
Fractions 2	Addition and subtraction of fractions	9-11
Decimals 1	Introductory decimals concepts; addition and subtraction of decimals	9-11
Decimals 2	Multiplication of decimals	10-11

Contact Scott, Foresman Electronic Publishing for information about these and other Scott, Foresman courseware packages. Special teacher materials are also available.

PROGRESS CHART

Put an X in a box when you start an activity.

When the computer shows that you have finished an activity, write your score and percent in the boxes.

1 MULTIPLYING 10 AND 100

--	--	--	--

SCORE

	Out of			%
--	--------	--	--	---

2 MULTIPLES OF 10 AND 100

--	--	--	--

SCORE

	Out of			%
--	--------	--	--	---

3 2 AND 3 DIGITS \times 1 DIGIT

--	--	--	--

SCORE

	Out of			%
--	--------	--	--	---

4 2 DIGITS WITH RENAMING

--	--	--	--

SCORE

	Out of			%
--	--------	--	--	---

5 3 DIGITS WITH RENAMING

--	--	--	--

SCORE

	Out of			%
--	--------	--	--	---

6 MORE THAN ONE RENAMING

--	--	--	--

SCORE

	Out of			%
--	--------	--	--	---

7 WORD PROBLEMS

--	--	--	--

SCORE

	Out of			%
--	--------	--	--	---

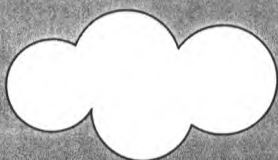
8 REVIEWING IT ALL

--	--	--	--

SCORE

	Out of			%
--	--------	--	--	---

List the activities you need to review:



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