

PROGRAMS, '63

**A Guide to Programed Instructional
Materials Available to
Educators by September 1963**

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Editor

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with the assistance of

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in cooperation with the

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Office of Education

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New York 24, New York**

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INTRODUCTION

To assist educators in their selections of programed instruction materials, the Office of Education, in the spring of 1962, commissioned the Center for Programed Instruction to prepare **PROGRAMS '62: A GUIDE TO PROGRAMED INSTRUCTIONAL MATERIALS AVAILABLE TO EDUCATORS BY SEPTEMBER 1962 (OE 34015)**, as the first half of a two-part survey report. The second half, **THE USE OF PROGRAMED INSTRUCTION IN U.S. SCHOOLS (OE 34022)** followed some months later.

This newest edition, **PROGRAMS '63**, is the first part of a similar survey for the current year. It lists all materials which will be available in the fall of 1963. It should be noted that samples to be cataloged were chosen by the publishers themselves. The second part will report on how schools have been using materials which have been available for a year or more.

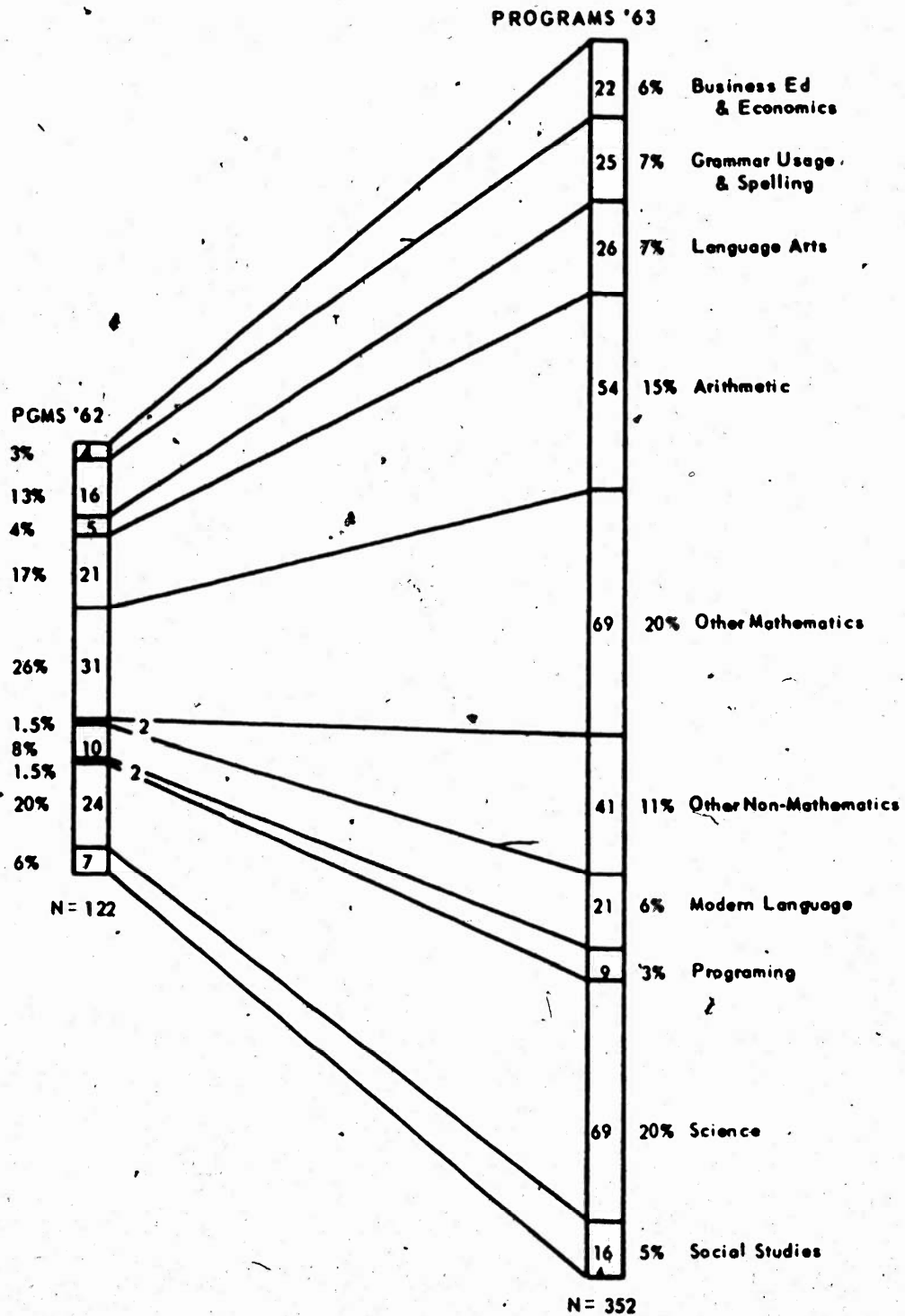
While a "stamp of approval" might be helpful to some in this relatively new field, experience confirms the belief that our present obligation primarily is to indicate the number, variety, and source of available programs. However, the joint committee of the American Educational Research Association, the American Psychological Association, and the Department of Audiovisual Instruction of the National Education Association, with the cooperation and support of the U.S. Office of Education, has expanded the previously published statement of policy on criteria for selection of programed materials. The new statement is included as Appendix B of this volume.

The 1962 average per program cost of \$10 to \$15 remains unchanged. However, more short units or programed segments of courses, representing smaller initial investments are now available and will permit greater experimentation by teachers with limited budgets.

Both the Center for Programed Instruction and the Office of Education will welcome comments on the utility of **PROGRAMS '63**, along with suggestions as to how it might be improved.

Figure 1

SUBJECT AREAS OF PROGRAMS AVAILABLE



STATISTICAL SUMMARY

Since Programs, '62 provided a number of first analyses of programed material available, some of the present statistical data have been related to last year's findings. Trends are, of course, premature, but it was felt that the user would want to see at least "two points on the curve."

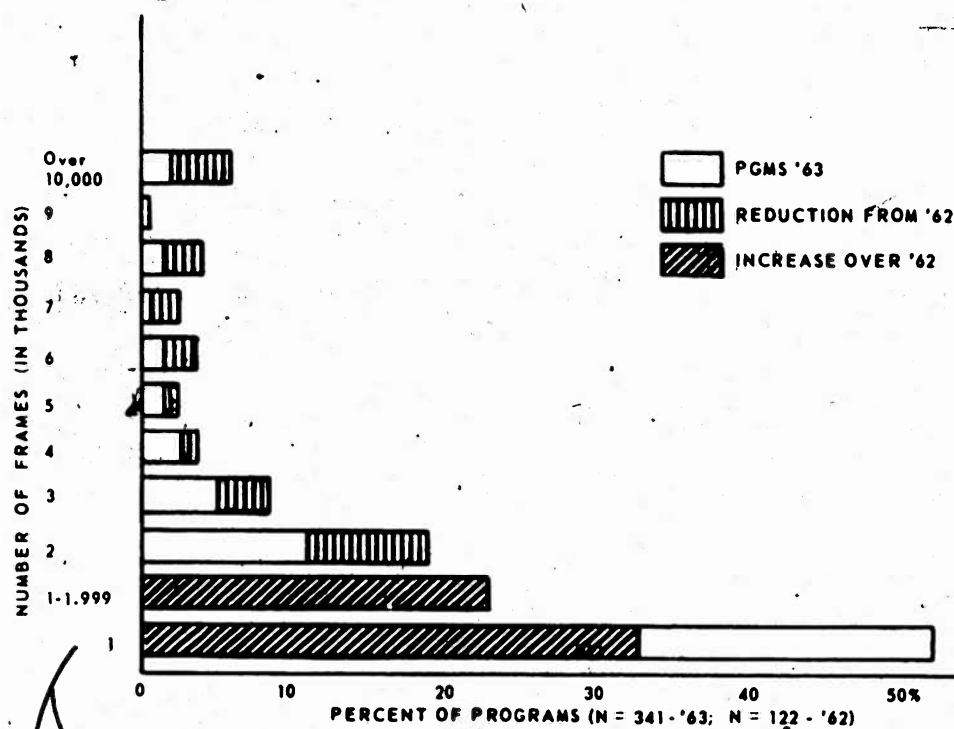
Following the sequence used on the publishers survey form (Appendix A), Figure 1 shows that this year's 352 programs have the same general subject matter distribution as the 122 of 1962, but with a greater spread clearly emerging. Mathematics, while more than doubling in number of programs available (from 53 to 124) has actually dropped from its strong domination of 44% of last year's available programed materials to a lesser but still major share (35%) of this year's materials. With its wide range of inclusive subjects, from arithmetic through logic and computer programs ("Applied Math"), mathematics still represents the largest single category of programed materials available.

The sciences show a similar relative availability, having almost 3 times as many programs listed this year, and maintaining their previous portion (20%) of available materials.

Most interesting changes are the large absolute gains (in numbers) of programs in Business Education, Modern Language and "Other Non-Math" areas.

In continuing last year's observation of short unitary programs (suggestive of many publishing and curricular possibilities), Figure 2 shows an expanded scale of programs under 1000 frames in length. The 300-400 frame unit appears to be emerging as at least one "module of in-

Figure 2
LENGTH OF PROGRAMS AVAILABLE



ADDITIONAL BREAKDOWN - PROGRAMS UNDER 1000 FRAMES

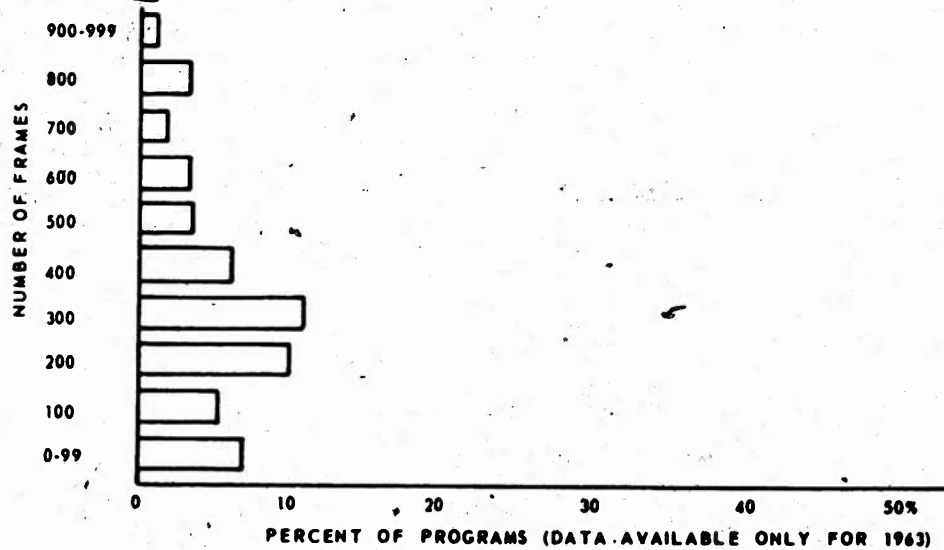
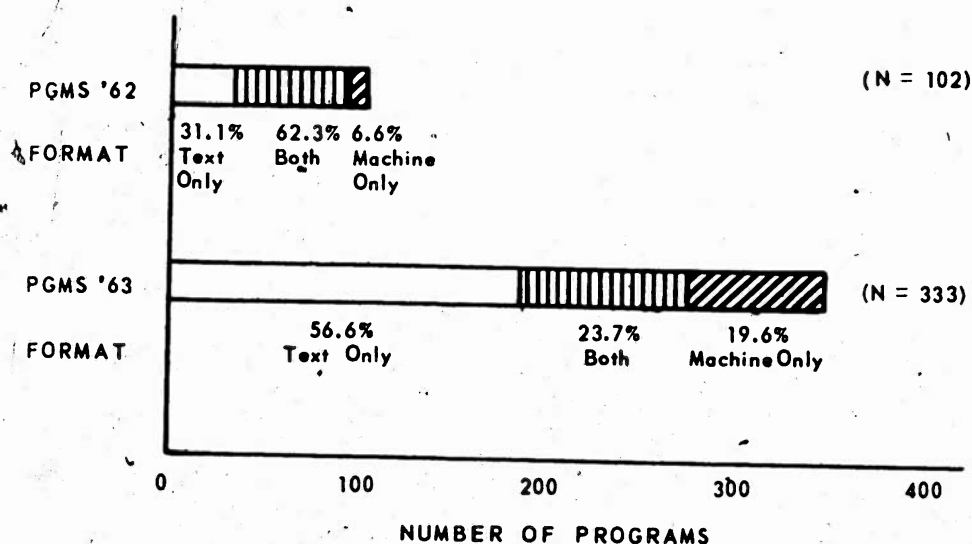


Figure 3
FORMAT AVAILABILITY OF PROGRAMS



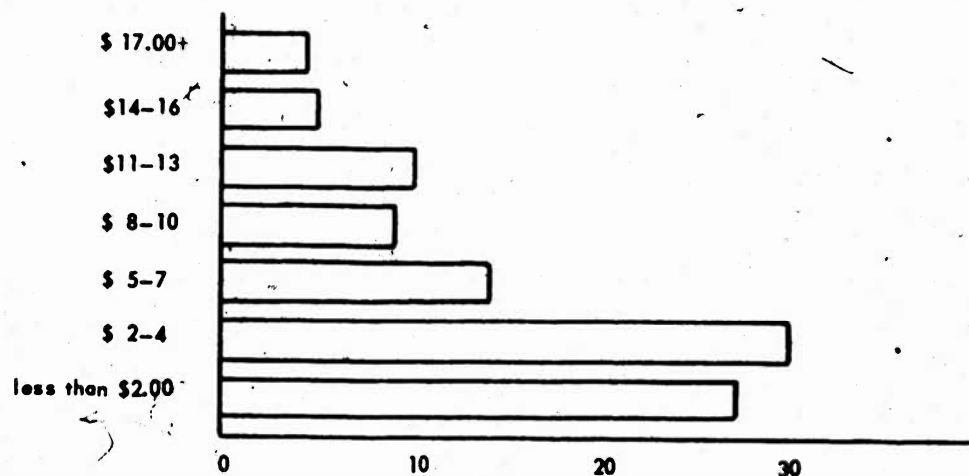
struction," surpassed by no other equally narrow category of program length. For further evidence of this trend to shorter programs, the median length of last year's programs was around 2400 frames; the median length this year is just under 1000 frames.

Figure 3 shows the availability of machine vs. programmed formats, with growth in exclusive use of either format the principal change from last year. A far smaller proportion of programs is produced in both machine and text format. Over three-fourths of this larger crop of programs are available in text form; more than half are available only in text form. A substantial 40% of programs are available in machine format (again almost half of them for machines only), while last year's 62% "Available in Both Forms" has shrunk this year to 22%.

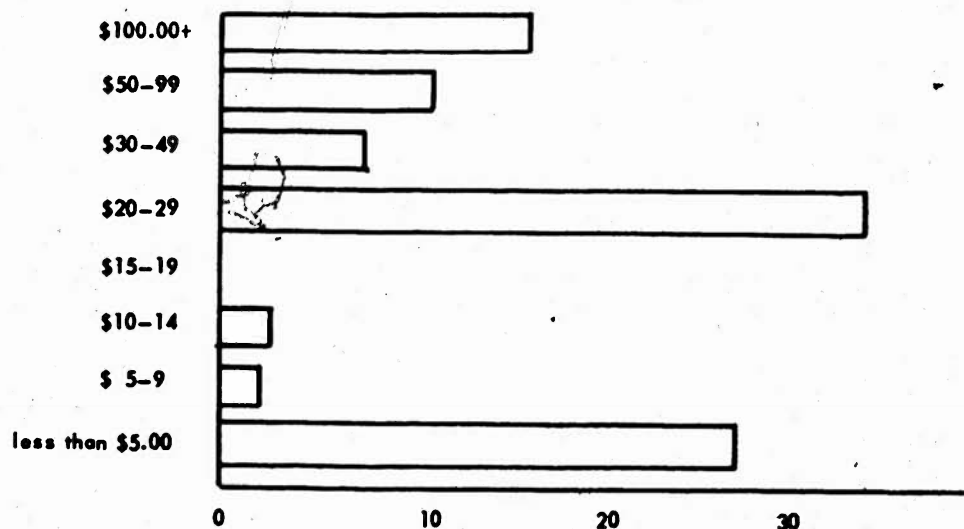
The proportion of programs of all lengths available in unit form has increased slightly; even with the tripling of absolute numbers last year's 20% has now become 23% of programs which are to be available in unit form. (However, 31% of the respondents did not answer this item.)

Figure 4

PROGRAMED TEXT COSTS



MACHINE PROGRAM COSTS



Cost: If one approximates from both length and cost figures, last year's 2500-frame text cost \$12.50; roughly 200 frames for a dollar. This year's 1000-frame program appears to cost just under \$5.00; therefore, the consumers' one-half cent cost per frame of programs appears remarkably stable in an otherwise hectic area of growth. Figure 4 provides a very rough comparison of the program cost.

Table 1

1963 Frequency and Percent Frequency of Response Modes and Branching

Total number of programs = 352

	all	half or more	less than half	none	
a) Constructed Responses are used	101 28.7%	153 43.5%	25 7.1%	73 20.7%	352
b) Multiple-Choice Responses are used	67 19.0%	19 5.4%	156 44.3%	110 31.2%	352
c) Branching is used	38 10.8%	3 0.8%	49 13.9%	262 74.4%	352

xi

1962 Frequency and Percent Frequency of Response Modes and Branching

Total number of programs = 122

	always	usually	sometimes	never	
a) Constructed Responses are used	10 8.2%	63 51.6%	20 16.4%	29 23.8%	122
b) Multiple-Choice Responses are used	31 25.4%	2 1.6%	80 65.6%	9 7.4%	122
c) Branching is used	10 8.2%	3 2.5%	13 10.6%	96 78.7%	122

Types of Response used in programs of either text or machine formats are compared with last year's findings in Table 1. In contrast with the decreasing availability of text or machine formats for the same program, it is here that one may find evidence for a growing flexibility in what were once regarded as hard "schools" of program writing. Constructed Responses have increased in the "always used" category "never" for using Constructed Responses. The use of the Multiple Choice Responses is proportionately less, showing decrease both in the "always," and "never" categories and an increase in the "sometimes" used category. Branching seems to show the most stable proportions of all, being used "always," "never," and "usually" by very nearly the same percentages as last year.

In another matter of format, repeated requests within a program, as in reference use. While 30% of programs make no provision at all for easy references, 10% have both a Table of Contents and an Index.

Units tests are now available for almost 40% of the 1963 programs, final tests are available for 46%, but diagnostic ("pre") tests are acknowledged by only 14% of the program suppliers. It would seem that there still remains some doubt on the part of program producers as to the nature and purpose of diagnostic tests. The fact that claims made for gains as a result of the use of a program may be meaningless without such pretesting of knowledge covered by the program, plus the time saved in diagnosing areas not needed by some students, would seem to make such tests more desirable—and eventually, perhaps, more available.

Grade Level: Still only one program seems to be all that is available for (developed upon) the kindergarten level, but grades 1-6 have helped in the development of 16% of the programs available—many of which eventually are used above this range. Junior High School subject matter still commands the largest attention of the programmers—with 18% of the programs currently developed in these grades. As was true last year, many of these will be found useful above and below grades seven and eight; the vast majority would appear useful for reasonably bright sixth graders. Nine per cent of this year's programs are college developed. Over a third of all the programs indicate that even in early trials they have been used on a greater variety of students than was originally intended. Last year's graph on intended grade usage was compounded of so many

extrapolations that comparison is difficult; however, the general pattern seems to have changed but little. Last year, publishers listed Intended Grade Level—this year we have concentrated on the characteristics of the population upon whom the program was developed and tested. Such data would seem a safer base from which the user may do his own extrapolating, in either direction. As a further encouragement to this use of programs "out of grade," 7% of the programs were actually developed on populations for whom they were intended, and 5% were given to similar student populations, but 9% were given to populations above the intended level, and 13% of the programs were successfully tested on populations completely different from those for whom the programs were developed.

In the matter of size of test populations, 83% of the respondees omitted mention of number of students upon whom the programs were developed and/or tested. Two per cent used less than 15 students, 3% used up to 30, another 3% used up to 100 students and 7% used between 100 and 200 students. Two per cent used over 300 students. At some future time, lest mere numbers seem to contain some magic in program development, we plan to show the number of students used for each testing which resulted in a major program revision. The number of revisions, even if based on only a few students, may prove the more relevant information to relay to users.

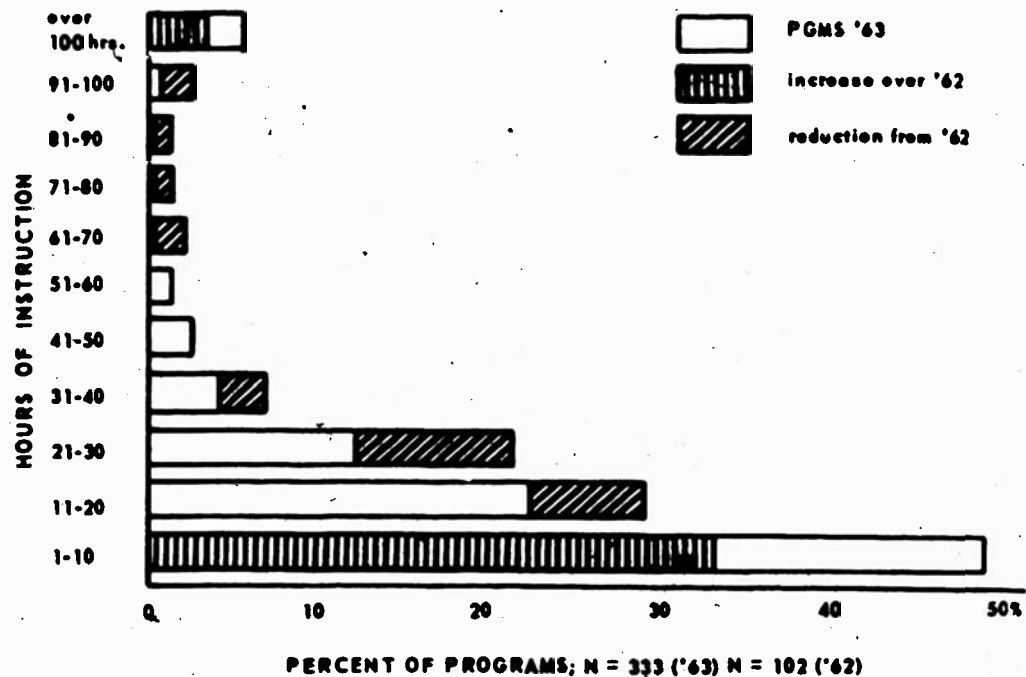
Time to complete each program (Figure 5), while similar to last year's distribution, has apparently dropped an average of almost 10 hours through the middle length programs (note reduction from 1962 of 11-20, 21-30, 31-40 hour percentages). Fifty-four per cent of program data sheets showed time figures to be based "partly on data." Ten per cent admit to guessing, another 11% declare their figures based "entirely on data" but give no standard deviation, while 16% provided a Mean Program Completion Time complete with standard deviation.

With such items we hope to help shape the data supplied by publishers to educators, not in the false notion that any of our indices, like error rate, cannot be manipulated at will, but rather in hope that the most sincere attempts will be made to provide simple, yet precise and meaningful data in the careful development of programmed materials. We would especially encourage thoroughness with which programs are student developed and tested.

Figure 5

INSTRUCTIONAL TIME PER PROGRAM

(from publishers' estimates)



Possibly, in this area alone may come both the most unique as well as the major contribution of programmed instruction to the education of students. The value to teacher education is elsewhere more appropriately discussed, and may even be the larger overall effect, nevertheless, when the student is heard, not in the selection of objectives of teaching, but in determining the teacher's success in achieving objectives, the corrective "feedback" of programs is perhaps unequalled in achieving, measuring and retaining successful communication.

SOME SUGGESTIONS FOR USING "PROGRAMS, '63"

One of the important distinctions a potential user may want to make in connection with programs on this list is whether or not a program is available for use without a teaching machine. In the vast majority of cases this is so. The reader is further directed to check the following items as discriminative clues for machine programs.

1. If listed first "For use in _____ machine" (a few publishers appear willing to sell separate units of machine material, and their responses are thus entered).
2. If listed "specifically" or "only for _____ machine."
3. And perhaps the ultimate criterion—if a machine is mentioned under "Additional Material Required." (Cost data were requested, but not always supplied, for this item.)

Each entry consists of the following:

Subject matter—and, where supplied, approximate intended academic level. "Open" simply indicates that the content is the sole determinant of level.

Title, Author, and Publisher;
slightly edited for the format of this publication.

Text description usually has # of frames, cover, # of pages, and page size to give some picture of the nature of the material to be handled.

NOTE: Number of pages, number of frames and all cost figures should be considered only as order-of-magnitude figures; many suppliers so indicated. In supplying the cost of figures, many refused even to estimate; a blank or "?" has been inserted to so indi-

cate (the reader may wish to make his own rough guess from comparisons with similar frame and page count).

Even more than was true last year, many subjects are offered in unit form; in some cases the context, in other cases sheer-bulk, was the decisive factor; in either case such separate units are listed where available. Very often two consecutive programs (Algebra I and II; English 2600 and English 3200) are listed on the same page, although they are usually available as separate units. If in doubt, contact the publisher.

Teacher's Manual and Test availability have been slightly edited for simplest indication to the user; all final availability (here projected as of September) should be ultimately checked with the publisher.

The Form of Response and Use of Branching are the simplest summary we could make of a small chart on the questionnaire, which contained far-from-uniform entries. In the future we hope to develop a form which can be reproduced directly.

Intended Population is indicated at the very top right of the page. New this year—the Developmental and/or Field Test Population(s), upon which the program was developed, or first field tested, is considered a more meaningful guide to potential users. Data for this item will vary widely; our eventual hope is that publishers will shortly include an age group, intelligence level and other distinguishing characteristics of these populations so that users may extrapolate with some confidence to their own student backgrounds and abilities. Ideally, the number of student data based revisions should be more meaningful than mere numbers of students in a field test without revision.

Prerequisites are usually quoted directly. Additional Material Required was intended to bring out the need for anything, other than the programed material itself, necessary to start a student to work (with his own pencil).

The time required to complete programs (Average Time) varies from complete data with standard deviation given through estimates to a simple guess." The few responses with no check at all for this item have been listed as estimated. In the future the plan is to supply more test data. The few complete examples supplied by the present respondents have this year been included in order to encourage this easy and precise additional information.

The final item is simply to indicate the number of sample pages supplied (or selected from in the requested proportion of one page per thousand frames, or one page per 500 "scrambled" pages, per program). The greatest problems were presented by copy supplied by programmers using Branching techniques; the nature of Branching requires turning from one page back or forward as indicated; some samples have been laid out in the hope of showing this feature, even at the expense of partial page extractions.

A last word: the Center is interested in all suggestions aimed at improving future editions. Any suggestions as to the kinds of information that will help the educator to evaluate programs of the type listed in this "guide" are respectfully solicited. The evaluation of programs is largely subjective at present and may remain so for some time to come. (One school system has evolved the ingenious list of questions for salesmen contained in Appendix C.) From the Center's point of view any information which can be supplied to users enabling them to form their own opinions is highly desirable.

L.F.H.

ARITHMETIC

Special Ed.

ADDITION AND SUBTRACTION

A Set of 11 Automated Workbooks

Prepared through the facilities of the Devereux Foundation.

Published by **DEVEREUX TEACHING AIDS**,

Box 717, Devon, Pennsylvania.

Programed workbooks, 1584 frames, paperback, 18 pages each book, 7" x 11". "Available only to special education facilities for exploratory use. For further information contact Dr. Henry Platt, Director of Training, The Devereux Foundation, Devon, Pennsylvania."

For use in **DEVEREUX TEACHING AID - MODEL 50**, \$89.50, program reusable.

Teacher's Manual available, \$1.00.

Table of Contents.

Unit Test(s) available; Coordinated with California Achievement Test, which includes adequate diagnostic profile.

Multiple Choice Responses and Branching always used; no Constructed Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Both within Devereux and other school systems.

Other using population(s): Experimentally in normal grade schools.

Prerequisites: "Most booklets usable with students exhibiting specific reading disabilities though this is naturally not a requirement—neither is ability to write, so physically handicapped can and do use them."

Additional material required: Devereux Teaching Aid - Model 50, \$89.50; some developmental material available on the Graflex Instructor machine.

Average Time: "Depends on IQ and nature of limitations.

Many students go through the book in one hour but require several repetitions on subsequent days."

Next Revision: September, 1963.

(1 sample page)

ARITHMETIC

ADDITION AND SUBTRACTION

Devereux Foundation; DEVEREUX TEACHING AIDS
one sample page:

UNDERSTANDING ADDITION

Turn to number 9

Book II

5 and 7 more are		6 and 7 more are	
12			11
13			12
14			13
7 and 7 more are		7 and 5 more are	
14			12
13			11
12			10
7 and 2 more are		6 and 7 more are	
9			10
10			11
11			12
7 and 0 more are		7 and 1 more are	
8			7
9			8
7			9

ARITHMETIC

Elem.

ELEMENTARY ARITHMETIC

Addition I and Subtraction I

RUTH B. ROSENBERG, Programmer

Published by HONOR PRODUCTS COMPANY,
20 Moulton Street, Cambridge, Mass.

For use in HONOR TEACHING MACHINE, \$20 (approx.)
(including three programs of choice for Subtraction I);
programs reusable, 200 frames each, \$2.00-\$2.50.
(For Addition I, machine may be marketed in retail
channels at this \$20 combination price including 3 or
4 programs.)

Addition I: Constructed Responses usually used; some
Multiple Choice; no Branching.

Subtraction I: Constructed Responses usually used; some
Branching; no Multiple Choice.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Private and public schools."

Prerequisites:

Average Time: 1 1/2-2 hours (est.).

Next Revision:

(2 sample pages)

ARITHMETIC

ELEMENTARY ARITHMETIC

Rosenberg; HONOR PRODUCTS

2 sample pages:

<p>When you subtract, you take away something, and you have less than what you started with.</p> <p>I had four pieces of pie, but then I ate one piece. Now I have less than I started with.</p>	<p>No answer needed</p>
<p>I had 5 doughnuts, but I ate one of them. Now I have 4 doughnuts left.</p> <p>I have:</p> <p>a. more than I started with. b. less than I started with.</p> <p>Press and hold the button of your choice.</p>	<p>a. more than I started with.</p>
<p>Oh, no! If I took one doughnut away by eating it, I have:</p> <p>a. more than I started with. b. less than I started with.</p> <p>Press and hold the button of your choice.</p>	<p>b. less than I started with.</p>
<p>Good work!</p> <p>When I ate the doughnut, I took it away. Then, I had one doughnut less than I started with.</p> <p>The 4 doughnuts that I had left were _____ than what I started with.</p>	<p>less</p>
<p>Study the subtraction story below:</p> <p>$7 - 1 = 6$</p> <p>The above subtraction story may also be written as:</p> <p>6 is one _____ than 7.</p>	<p>less</p>

<p>When you count, you may use counting words. Each counting word stands for the number that you count.</p> <p>Zero, one, two, three, four, five, six, seven, eight, and nine are all counting _____.</p>	<p>words</p>
<p>Each counting word has a counting figure that also stands for the number that you count.</p> <p>Zero, one, two, three, four, five, six, seven, eight, and nine are counting _____.</p> <p>0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 are counting _____.</p>	<p>1. words 2. figures (numbers)</p>
<p>Pictures, too, can show numbers.</p> <p>The Indians in North America used pictures to show numbers.</p> <p>Each sun showed one day; so, three suns showed three _____.</p> <p>(Illustration)</p>	<p>days</p>
<p>You can write counting words and figures to show numbers; so you do not need to draw pictures.</p> <p>Each time you count a number of things, you use the counting words, or the figure; to tell the number that you have counted.</p> <p>The counting word three has a figure, or the number 3, that stands for the number of things that you count.</p>	<p>No answer needed</p>
<p>To show the number that you count, you may use a counting word or a figure.</p> <p>How many kites do you see here?</p> <p>You may write the counting word, or the figure, to stand for the number of kites.</p> <p>(Illustration)</p>	<p>eight (8) (The counting word eight has the figure 8.)</p>

ARITHMETIC

Prim.

**ELEMENTARY ARITHMETIC SERIES: ADDITION
AND SUBTRACTION FACTS**

Using Numbers 1-10

DONALD T. TOSTI

**DONALD BERTHOLOMEY, both of Teaching Materials
Corporation.**

**Published by TEACHING MATERIALS CORPORATION,
575 Lexington Avenue, New York 22, N.Y.**

**Programed text, 1,375 frames, paperback, 303 pp.,
8 1/2" x 11", \$11.00.**

**For use in MIN/MAX machine, \$25.00; program reusable,
\$10.00.**

**Teacher's Manual: General Manual available for all
TMI-Grolier programs.**

Final Test included.

**Constructed Responses always used; no Multiple Choice
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Average age 5.5 years; average school grade: .9."

**Prerequisites: "Ability to identify groups of objects up to
ten, and to be able to recognize the numerals 1
through 10."**

**Average Time: 12-16 hours (based entirely on data);
standard deviation, 4.16 hours.**

Next Revision: December, 1963.

(1 sample page)

ARITHMETIC

ELEMENTARY ARITHMETIC SERIES: ADDITION AND SUBTRACTION FACTS

Using Numbers 1-10

Tosti, Bertholomey; TEACHING MATERIALS CORP.
one sample page:

AUTOSCORE ASTRA CORPORATION 31 CHURCH STREET NEW LONDON, CONNECTICUT			Serial No. 324
Adding by hundreths. Always keep the decimal point lined up vertically.			1.71 in.
1.	$\begin{array}{r} .85 \\ +.86 \\ \hline \end{array}$	How many inches of rain has fallen?	01.7 in.
			171. in.
2.	$.53 + .36$	Two days of rain dumped _____ inches of water.	.89 in.
			89. in.
			8.9 in.
3.	$\begin{array}{r} 1.73 \text{ lbs of butter fat} \\ +.08 \\ \hline \end{array}$	What is the total lbs. of butter fat?	.181 lbs.
			181. lbs.
			1.81 lbs.
4.	$47'' + .38''$	How many inches of rain did we have?	47.38 in.
			.4738 in.
			473.8 in.
5.	$\begin{array}{r} 6.70 \text{ lbs.} \\ +4.38 \text{ lbs.} \\ \hline \end{array}$	How many lbs of butter fat did these two cows give?	11.08 lbs.
			110.8 lbs.
			1.108 lbs.
6.	$\begin{array}{r} 3.84 \text{ in. mo. of June} \\ + 4.60 \text{ in. mo. of July} \\ \hline \end{array}$	How much rain did we have in June and July?	84.4 in.
			.844 in.
			8.44 in.
7.	$\begin{array}{r} 7.63 \text{ oz.} \\ +.42 \text{ oz.} \\ \hline \end{array}$	John mixed these two chemicals together. What was their total weight?	80.5 oz.
			805. oz.
			8.05 oz.
Add the following examples:			402.5
8.	$\begin{array}{r} 39.8 \\ + .45 \\ \hline \end{array}$		40.25
			4.025
9.	$\begin{array}{r} .51 \\ + .65 \\ \hline \end{array}$		1.16
			11.6
			116.
10.	$\begin{array}{r} 4.53 \\ +4.21 \\ \hline \end{array}$		8.74
			87.4
			.874

Copyright 1961, ASTRA Corporation

ARITHMETIC

Elem.

DECIMALS

ASTRA STAFF

Published by ASTRA

19 Burton Avenue, Norwich, Connecticut

For use in AUTOSCORE machine; program reusable, 760 frames, \$15.00

Multiple Choice Responses always used; no Constructed Responses; no Branching

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Other using Populations: Nursing schools.

Prerequisites:

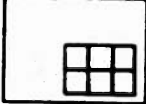

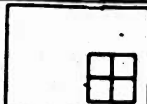



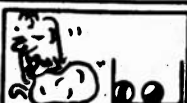
Additional material required: AUTOSCORE machine, \$150.00

Average Time:

Next Revision:

(1 sample page)

DECIMALS

		
$\odot 6 - 2 = 4$ $\blacktriangle 4 = 6 - 2$	$\odot 6 - 2 = 4$ $\square 6 - 3 = 4$	$\blacktriangle 4 = 6 - 2$
37		
$\odot 1 = 3 - 2$ $\blacktriangle 3 - 2 = 1$	$\odot 1 = 3 - 2$ $\square 3 = 1 + 2$	$\blacktriangle 3 - 2 = 1$
38	$4 + 2 =$	
$\odot \text{oooo} + \text{oo}$ $\square = \text{oooooooo}$	$\odot \text{oooo} + \text{oo}$ $= \text{oooooooo}$	$\blacktriangle \text{oooo} + \text{oo}$ $= \text{oooooooo}$
39		
$\odot \begin{matrix} 7+1=8 \\ 8-7=1 \end{matrix}$ $\square \begin{matrix} 4+6=10 \\ 10-4=6 \end{matrix}$ $\blacktriangle \begin{matrix} 10-4=6 \\ 10-6=4 \end{matrix}$	$\odot \begin{matrix} 7+1=8 \\ 8-7=1 \end{matrix}$ $\square \begin{matrix} 4+6=10 \\ 10-4=6 \end{matrix}$	$\blacktriangle \begin{matrix} 10-4=6 \\ 10-6=4 \end{matrix}$
40		
		
$\square \begin{matrix} 6 \\ -4 \end{matrix}$ $\blacktriangle 6-4=2$	$\odot 6-3=2$ $\square \begin{matrix} 6 \\ -4 \end{matrix}$	$\blacktriangle 6-4=2$
41	$18-8$	

ARITHMETIC

6th & 7th grade

DECIMALS AND PERCENT

WILLIAM HAUCK, Mathematics Dept.

J. WILLIAM MOORE, Education Dept.

WENDELL SMITH, Psychology Dept., all of Bucknell University.

Published by **McGRAW-HILL BOOK COMPANY, Inc.**,
330 West 42nd Street, New York City.

Programed text, 1000 frames, \$ ____.

Teacher's Manual available.

Table of Contents.

Constructed Responses always used; some Branching;
no Multiple Choice.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental: 10 sixth grade students. Test: 1 class of sixth grade students; 2 classes of seventh grade students from two junior high schools."

Prerequisites: None

Average Time: 21 hours (est.).

Next Revision: June, 1963.

(1 sample page)

ARITHMETIC

DECIMALS AND PERCENT

Hauck, Moore, Smith; McGRAW-HILL BOOK CO.
one sample page:

(Preliminary Version)

Q13-11 $567 \div 100$

To work the above problem you could move
the decimal point in 567 ? decimal places
to the ? and get ? .

A13-11 two; left; 5.67

Writing Zeros in the Dividend to Divide
by 10, 100, 1000, etc.

Q13-12 Work this problem: $6.1 \div 1000$, by long
division until the remainder is zero.
Show your work.

A13-12
$$\begin{array}{r} .0061 \\ 1000 \overline{) 6.1000} \\ \underline{6 \ 000} \\ 1000 \\ \underline{1000} \end{array}$$

Q13-13 Rather than work this problem: $6.1 \div 1000 =$
.0061 by long division, you could have moved
the decimal point in 6.1, ? decimal
places to the ? to get ? .

A13-13 three; left; .0061

ARITHMETIC

Elem.

DECIMALS AND PER CENTS

M. DANIEL SMITH, Coordinator of Self Instruction,
Earlham College.

Published by **ALLYN AND BACON, Inc.**

150 Tremont St., Boston 11, Massachusetts

Programed text, 1000 frames, paperback, 176 pp., 8-1/4"
x 11", \$ _____.

Teachers Manual.

"Test items included in program at end of each of 8 sections."

Constructed Responses usually used; some Multiple Choice;
some Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental 6 Field test of preliminary edition
ca. 125."

Prerequisites:

Average Time: 10 hours (est.).

Next Revision: Not determined.

(1 sample page)

ARITHMETIC

DECIMALS AND PER CENTS

Smith; ALLYN AND BACON

one sample page:

(Preliminary Version)

Sample Pages, from Section VIII of Decimals and Percents, M. Daniel Smith
Allyn and Bacon

	<p>What percent of nine is eleven?</p> <p>(answer on next page)</p>
<p>What percent of nine is eleven?</p> <p>$\square \cdot 9 = 11$</p>	<p>• (Remember, the "•" means that you should do this item only if you missed the last one)</p> <p>What percent of twelve is ninety-five?</p>
<p>What percent of twenty is thirty-five?</p> <p>$\square \cdot 12 = 95$</p>	<p>Now we will review the solution of equations from Section VII</p> <p>If $\square \cdot 9 = 3$, then $\square =$</p> <p>(don't bother to do the division)</p>
<p>If $\square \cdot 9 = 3$</p> <p>then $\square = \frac{3}{9}$</p> <p>or $\square = \frac{1}{3}$</p>	<p>• (Don't forget that "•" means)</p> <p>If $\square \cdot 42 = 7$, then $\square =$</p>
<p>If $\square \cdot 42 = 7$</p> <p>then $\square = \frac{7}{42}$</p> <p>or $\square = \frac{1}{6}$</p>	<p>Now back to the word problems again: just write the equation, don't solve it.</p> <p>Sixteen is what percent of forty?</p>
<p>Sixteen is what percent of forty?</p> <p>$16 = \square \cdot 40$</p>	<p>• Nine is what percent of twenty? (just write the equation)</p>
<p>Nine is what percent of twenty?</p> <p>$9 = \square \cdot 20$</p>	<p>Now write the equation and solve it for the missing quantity.</p> <p>What percent of five is two?</p> <p>(Remember to change the answer to a percent)</p>
<p>What percent of five is two?</p> <p>$\square \cdot 5 = 2$ $\square = \frac{2}{5}$</p> <p>$5 \overline{) 2.0}$ $.4 = 40\%$</p>	<p>If you are completely confused by the last problem, then ask your teacher for extra help. If you missed it, but think you can get another one like it, do the next item which is marked with a "•". If you solved it correctly, however, go on to some more difficult problems of this type, and then the test series.</p>

ARITHMETIC

Elem.

ELEMENTARY ARITHMETIC SERIES: DECIMAL NUMBERS

POLO C. DE BACA

DONALD T. TOSTI, both of Teaching Materials Corporation.

Published by **TEACHING MATERIALS CORPORATION**,
575 Lexington Avenue, New York 22, N.Y.

Programed text, 2,735 frames, paperback, 564 pp., 8-1/2" x 11", bound in 2 separate volumes, \$13.50.

For use in MIN/MAX II machine, \$25.00; program reusable, \$12.50.

Teacher's Manual: General Manual for all TMI-Grolier programs available.

Table of Contents.

Final Test included.

Constructed Responses always used; no Multiple Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"10 and 11 year old 8th graders. Average IQ 104."


Prerequisites: "Fourth grade reading level plus facility in fundamental arithmetic skills."

Average Time: 15-20 hours (based entirely on data); standard deviation, .868 hours.

Next Revision: February, 1963.

(2 sample pages)

ELEMENTARY ARITHMETIC SERIES: DECIMAL NUMBERS

91	Write the number "sixty-seven hundredths" as a decimal fraction.	
	<p>If you got this right, put a smile on the face.</p> <p>.67</p>	
92	Write the number "forty-five hundredths" as a decimal fraction.	
	<p>.45</p>	
93	<p>Sam rode his bike five-tenths of a mile to school.</p> <p>Then he rode six-tenths of a mile farther to Bill's house.</p> <p>How far did he ride altogether?</p> <p>Use decimal fractions.</p>	
	<p>.5 +.6 1.1 miles</p>	
94	Write the number "ten hundredths" as a decimal fraction.	
	<p>.10</p>	
95	Divide	
	<p>Divide</p> <p>5 $\overline{) 53.35}$</p>	
	<p>10-19</p>	

106	6 places $.000616 = \frac{616}{1000000}$ 6 zeros	5 places $.41234 = \frac{41234}{100000}$ 5 zeros
	100000 See, there are 5 zeros.	()
107	5 places $.14379 = \frac{14379}{100000}$ 5 zeros	4 places $.3179 = \frac{3179}{10000}$ 4 zeros
	How many zeros are here? <input checked="" type="checkbox"/>	()
108	$.214 = \frac{214}{1000}$	$.3161 = \frac{3161}{10000}$
	There were 4 places, so there are zeros in the denominator. <input checked="" type="checkbox"/>	()
109	.23	()
	Circle one.	
TEST	$\frac{23}{10}$	$\frac{23}{100}$
110	.03612	Circle the right fraction.
	$\frac{3612}{100000}$	$\frac{3612}{10000}$

ARITHMETIC

Jr. H.S.

PROBLEMS IN PERCENTAGE

LEWIS J. PEARSALL, Programmer, GPTC

AMARYLLIS D. HUNT, Programmer, GPTC

JACOB REGER, Editor, GPTC

**WAYNE T. ALCOCK, Editor, General Programmed
Teaching Corporation**

**Published by ENCYCLOPAEDIA BRITANNICA PRESS,
425 N. Michigan Avenue, Chicago 11, Illinois**

**Programed text, 1200 frames, paperback, 150 pp.,
8-1/2" x 11", \$_____.**

**Teacher's Manual: "Instructions to teacher included in
preface."**

Table of Contents.

Final test available.

**Constructed Responses usually used; some Multiple
Choice; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"Developmental testing: 5th-8th grade students. Field
testing: 6th-7th grade students."**

Prerequisites: None.

Average Time: 15 hours (based entirely on data).

Next Revision: 1968.

(1 sample page)

ARITHMETIC

PROBLEMS IN PERCENTAGE

Pearsall, Hunt, Reger, Alcock; ENCYCLOPAEDIA
BRITANNICA PRESS

one sample page:

1	What is 3% of 90? Is the answer a decimal number? 3% of 90 = 0.03×90 = 2.7 <input checked="" type="radio"/> Yes <input type="radio"/> No
2	What is 5% of \$40.00? 5% of \$40.00 = $0.05 \times \$40.00$ = \$2.00 Yes No
3	Write the number that is 10% of \$85.00. Is the answer greater than \$85.00? Circle Yes or No. 10% of \$85.00 = $0.10 \times \$85.00$ = \$8.50 Yes No
4	Jim receives an allowance of \$2.00 every week. What is 25% of Jim's allowance? 25% of \$2.00 = $0.25 \times \$2.00$ = \$0.50 25% of \$2.00 =
5	Sue's weekly bus fare is \$4.00. How much is 45% of Sue's bus fare? 45% of \$4.00 = $0.45 \times \$4.00$ = \$1.80

ARITHMETIC

Elem.

ELEMENTARY ARITHMETIC SERIES: FRACTIONS: BASIC CONCEPTS

GAYLA GLASCOCK

JAMES L. EVANS, both of Teaching Materials Corporation

Published by **TEACHING MATERIALS CORPORATION**,

575 Lexington Avenue, New York 22, New York

Programed text, 1,718 frames, paperback, 424 pp., 8-1/2" x 11", bound in 2 separate volumes, \$11.00.

For use in MIN/MAC II machine, \$25.00; program reusable, \$10.00.

Teacher's Manual: General manual for all TMI-Grolier programs available.

Table of Contents.

Unit and Final Test(s) included.

Multiple Choice Responses usually used; some Constructed Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Ages 9 years 3 months to 9 years 7 months, 4th grade students."

Prerequisites: "Third grade reading and arithmetic ability."

Average Time: 15-25 hours (based entirely on data); standard deviation, 2.94 hours.






Next Revision: December, 1963.

(1 sample page)

ARITHMETIC

ELEMENTARY ARITHMETIC SERIES: FRACTIONS: BASIC CONCEPTS

Glascok, Evans; TEACHING MATERIALS CORP.
one sample page:

116		2 of 4 parts are black.	B O T H	2 halves are black.	2 fourths are black.	N E I T H E R
X						
117	4 equal parts which make a whole are called:		B O T H	halves.	fourths.	N E I T H E R
X						
118	Which picture shows 3 fourths black?		B O T H			N E I T H E R
X						
119	How many fourths are black?		B O T H	2	3	N E I T H E R
						
X						
120			B O T H	1 fourth.	3 fourths.	N E I T H E R
X						

ARITHMETIC

6th & 7th grades

FRACTIONS

WILLIAM HAUCK, Mathematics Dept.

J. WILLIAM MOORE, Education Dept.

WENDELL SMITH, Psychology Dept., all of Bucknell University.

Published by **McGRAW-HILL BOOK COMPANY, Inc.**,
330 West 42nd Street, New York City.

Programed text, 1000 frames, \$ ____.

Teacher's Manual available.

Table of Contents.

Constructed Responses always used; some Branching;
no Multiple Choice Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental: 10 sixth grade students.

Test: 1 class of sixth grade students; 2 classes of
seventh grade students from two junior high schools."

Prerequisites: None

Average Time: 23 hours (est.).

Next Revision: June, 1963.

(1 sample page)

ARITHMETIC

FRACTIONS

Hauck, Moore, Smith; McGRAW-HILL BOOK CO.
one sample page:

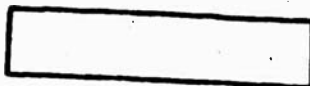
(Preliminary Version)

Q1.

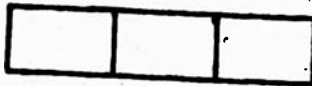
In this section you will learn the meaning of the word fraction.

Q2

This is one rectangle:



Here is one rectangle divided into 3 equal parts.



A2

3

Q3

This is the same rectangle all of which is divided into 3 equal parts. How many of the three parts are shaded (1, 2, or 3)?



A3

1

Q4



If you were to write a note to tell how much of the above rectangle is shaded, you could draw the rectangle on the note and write beneath it:
"One out of three equal parts of this whole rectangle is shaded."

ARITHMETIC

Elem.

FRACTIONS

ASTRA STAFF

Published by ASTRA

19 Burton Avenue, Norwich, Connecticut

For use in AUTOSCORE machine; program reusable, 700 frames, \$15.00.

Multiple Choice Responses always used; no Constructed Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Other using population(s): Schools of nursing.

Prerequisites:

Additional materials required: AUTOSCORE machine, \$150.00.

Average Time:

Next Revision:

(1 sample page)

ARITHMETIC

FRACTIONS

Astra Staff; ASTRA
one sample page:

Inversion Method		457
1. To divide fractions using inversion we invert (flip over) the _____.	division dividend quotient	
2. In the problem $\frac{1}{3} \div \frac{1}{5}$, which is the divisor?	$\frac{1}{5}$ $\frac{1}{3}$ $\frac{1}{15}$	
3. In the problem $\frac{2}{3} \div \frac{1}{2}$, which is the divisor?	$\frac{2}{3}$ $\frac{1}{2}$ $\frac{1}{2}$	
4. $\frac{1}{2}$ inverted becomes _____	$\frac{2}{1}$ $\frac{1}{2}$ 12	
5. $\frac{1}{3} \div \frac{1}{5} =$	$\frac{1}{3} \times \frac{5}{1}$ $\frac{5}{3}$ $\frac{5}{3} \times \frac{1}{5}$	
6. $\frac{1}{3} \div \frac{1}{5} =$	$\frac{5}{3}$ 15 1 $\frac{2}{3}$	
7. $\frac{3}{8} \div \frac{1}{4} =$	$\frac{6}{3} \times \frac{1}{4}$ $\frac{6}{3} \times \frac{1}{4}$ $\frac{3}{8} \times \frac{4}{1}$	
8. $\frac{3}{8} \div \frac{1}{4} =$	2 $\frac{1}{2}$ 3 $\frac{5}{9}$	
9. $\frac{3}{10} \div \frac{5}{8} =$	$\frac{9}{25}$ $\frac{1}{4}$ 2 $\frac{7}{9}$	
10. $\frac{9}{10} \div \frac{3}{20} =$	6 $\frac{27}{200}$ $\frac{1}{6}$	

Copyright 1961. ASTRA Corp.

ARITHMETIC

Elem.

FRACTIONS I & II

FRANK C. GENTRY, Consultant

JAMES V. DEVINE, Programmer, General Programmed
Teaching Corporation

LINDA LUE DORAN, Programmer, GPTC

AMARYLLIS D. HUNT, Programmer, GPTC

WAYNE T. SALCOCK, Editor, GPTC

MARY W. STON, Editor, GPTC

JAMES RUDDLE, Editor, GPTC

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Fractions I: Programed text, 1816 frames, paperback,
365 pp., 8-1/2" x 11", \$

Fractions II: Programed text, 1700 frames, paperback,
340 pp., 8-1/2" x 11", \$

Teacher's Manual: "Instructions to teacher included in
preface."

Table of Contents.

Final test available.

Fractions I: Multiple Choice Responses usually used;
some Constructed Responses; no Branching.

Fractions II: Constructed Responses usually used; some
Multiple Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"4th, 5th, 6th grade students used in developmental
testing at Albuquerque, New Mexico; Elementary
students used in field testing at Roanoke, Virginia."

In addition for Fractions I, "5th grade students used
in field testing at Ventura, California and Hobbs,
New Mexico."

Prerequisites: "4th grade reading level; knowledge of ad-
dition, subtraction, multiplication, division of whole
numbers."

Average Time: Fractions I: 15 hours (based entirely on
data); Fractions II: 12 hours (based entirely on data).

Next Revision: 1968.

(2 sample pages)



ARITHMETIC

FRACTIONS I & II

Gentry, Devine, Doran, Hunt, Alcock, Utton, Ruddle;
ENCYCLOPAEDIA BRITANNICA PRESS

2 sample pages:

1426	Reduce $\frac{2}{4}$ if it is possible to do so.		
		$\frac{2}{4}$	
		Can $\frac{2}{4}$ be reduced?	Yes No
1427	Reduce $\frac{3}{11}$ if it is possible.		
		$\frac{3}{11}$	
		Can it be reduced?	Yes No
1428	Can $\frac{5}{7}$ be reduced?		
		Yes No	$\frac{5}{7}$
1429	Reduce $\frac{4}{8}$ the <u>quick way</u> by dividing with the common factor.		
		$\frac{4}{8}$	
1430	To reduce the <u>quick way</u> , draw lines through the common factors to show that both the numerator and denominator have been _____ by their common factor.		
		added multiplied	
		subtracted divided	

431	Divide	
		$\frac{13}{5} =$
432	Circle the mixed number that represents the number of pies.	
		$3\frac{2}{3}$ $2\frac{3}{4}$
433	Multiply	
		$\frac{3}{4} \times \frac{1}{2} \times \frac{2}{1} =$
434	Circle the mixed number that represents the number of blocks.	
		$2\frac{4}{5}$ $2\frac{1}{4}$ $2\frac{1}{2}$
435	Reduce	
		$\frac{6}{8} =$

ARITHMETIC

Elem.-Jr.H.S.

FRACTIONS

A Basic Course in Arithmetic

BETTY K. FRIEL, U.S.I. Educational Science Division.

Published by DOUBLEDAY & COMPANY, Inc.,
575 Madison Avenue, New York, N.Y.

Programed text, 459 frames, hardcover, 391 pp., 8 1/4" x 5 3/8", \$_____.

A similar program, FRACTIONS, A Review Course, is available in TM format.

Published by EDUCATIONAL SCIENCE DIVISION,
U.S. INDUSTRIES,

250 Park Avenue, New York, N.Y.

For use in AUTOTUTOR MARK I, \$1,250; program reusable, 600 frames, \$65.00.

Table of Contents, programed text and machine program;
Index, programed text.

Unit and Final Test(s) included.

Multiple Choice Responses and Branching always used;
no Constructed Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

Additional material required: Pencil and paper.

Average Time: 8-10 hours (est.).

Next Revision: "Not scheduled."

(1 sample page)

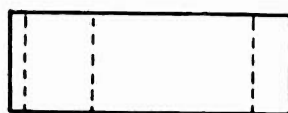
ARITHMETIC

FRACTIONS

Friel; DOUBLEDAY & COMPANY
one sample page:

Sample from Fractions

17



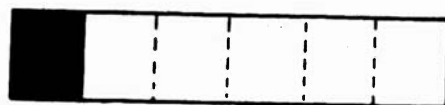
YOUR ANSWER: No, each part is not $\frac{1}{4}$ of the unit.

You are correct. In order to use a fraction, we must have equal parts to describe. When there are two equal parts in a unit, each part is called one-half; when there are five equal parts in a unit, each part is called one-fifth; when there are sixteen equal parts in a unit, each one is called one-sixteenth, and so on.

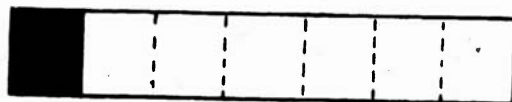
Important Note: Diagrams used on this image and others in this film represent ideas of things; they are not meant to be pictures of things. They are used to help you visualize FRACTIONS. A diagram is a way of showing an idea (abstract) on paper (concrete).

One of these diagrams shows the idea of $\frac{1}{6}$ of a unit.

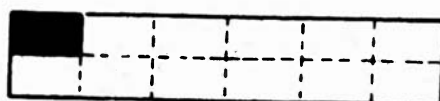
Choose the diagram in which the shaded part is $\frac{1}{6}$ of the unit.



D



C



B

ARITHMETIC

Special Ed.

FRACTIONS

A Set of 14 Automated Workbooks
Prepared through the facilities of the DEVEREUX
FOUNDATION.

Published by DEVEREUX TEACHING AIDS,
Box 717, Devon, Pennsylvania.

Programed workbooks, 2016 frames, paperback, 18 pp.,
each book, 7" x 11". "Available only to special educa-
tion facilities for exploratory use. For further infor-
mation contact Dr. Henry Platt, Director of Training,
The Devereux Foundation, Devon, Pennsylvania.

For use in DEVEREUX TEACHING AID - MODEL 50,
\$89.50; program reusable.

Teacher's Manual available, \$1.00.

Table of Contents.

Unit test(s) available; coordinated with California Achieve-
ment Test, which includes adequate diagnostic profile.

Multiple Choice Responses and Branching usually used;
no Constructed Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Both within Devereux and other school systems.

Other using population(s): Experimentally in normal grade
schools.

Prerequisites: "Most booklets usable with students exhibit-
ing specific reading disabilities though this is naturally
not a requirement--neither is ability to write, so
physically handicapped can and do use them."

Additional material required: Devereux Teaching Aid -
Model 50, \$89.50. Some developmental material avail-
able on the Graflex Instructor machine.

Average Time: "Depends on IQ and nature of limitations.
Many students go through the book in one hour out require
several repetitions on subsequent days."

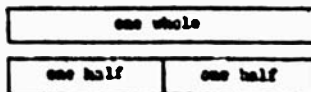
Next Revision: September, 1963.

(1 sample page)

ARITHMETIC

FRACTIONS

Devereux Foundation; DEVEREUX TEACHING AIDS
one sample page:



Set at position 9

Look at the chart at the top of the page. The top strip is

one half

one whole

one fourth

The second strip is divided into ____ equal parts.

four

six

ten

The second strip is divided into

thirds

fourths

halves

The whole is as long as ____ halves.

1

2

3

Two halves are as long as

one whole

two wholes

four wholes

Each part in the bottom strip is

one half

one third

one fourth

How many parts in the bottom strip are shaded?

two

three

one

In the bottom strip ____ is shaded.

$\frac{2}{2}$

$\frac{1}{2}$

ARITHMETIC

Elem.-Jr. H.S.

UNDERSTANDING FRACTIONS

THORWALD ESBENSEN

DONALD HURST

CHARLES JENKS

DAVID SHIER, all of Merit Associates (formerly Educational Development Associates)

Published by **E-Z SORT SYSTEMS, LTD.**,
45 Second Street, San Francisco, California

Programed text, 1100 frames, paperback, 200 pp., 5" x 8",
\$ _____.

"Program fits response device consisting of 15 edge-punched cards—printed educational matter published in pamphlet or text form with required student responses coded to correspond with the response device—a sorter."

Teacher's Manual available, included with program.

Unit test(s) available, included in program.

Multiple Choice Responses usually used; some Constructed Responses; some Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Elementary."

Prerequisites: "Mastery of addition and subtraction facts.

Mastery of easier multiplication and division facts.

Mastery of simple computational processes involving whole numbers.

Additional material required: "Response device described above."

Average time: 20 hours (est.).

Next Revision: "Unknown.

(1 sample page)

ARITHMETIC

UNDERSTANDING FRACTIONS

Esbensen, Hurst, Jenks, Shier; E-Z SORT SYSTEMS
one sample page:

SAMPLE FRAMES: UNDERSTANDING FRACTIONS

2 is what fraction of 4 ?	It is $\frac{1}{2}$.
2 is what fraction of 6 ?	It is $\frac{1}{3}$.
2 is what fraction of 8 ?	It is $\frac{1}{4}$.

Now we see that the fraction changes, using the same number (2), if the number of parts in the group changes.

If you and I baked four cookies and you ate one of them, what fraction would tell what part of the cookies you ate ?

Think what your answer is and then dial a-c to see if you are correct.

Since you ate one of the four cookies in the whole group we baked, the correct fraction would be $\frac{1}{4}$.

In other words, you ate $\frac{1}{4}$, or 1 of the 4 cookies we baked.

Now let's go on and learn about mixed numbers. We have talked before about fractions. We have talked before about whole numbers.

A mixed number is a whole number and a fraction written together.

These are all mixed numbers: $3 \frac{1}{2}$ $2 \frac{5}{8}$ $4 \frac{1}{4}$

Whenever you write any whole number with a fraction, it is a mixed number.

$\frac{1}{4}$ is a fraction.

7 is a whole-number.

$7 \frac{1}{4}$ is a mixed number.

Which of these is a mixed number ?

1-j $\frac{1}{2}$

a-c $13 \frac{1}{2}$

MISCELLANEOUS ARITHMETIC

Elem.

ARITHMETIC I and II
PROFESSOR KRAKOW

MARTIN MEO, New York University
ALEXANDER SCHURE, President, N. Y. Institute of
Technology

Published by CENTRAL SCIENTIFIC Company,
1700 Irving Park Road, Chicago 13, Ill.

For use in CENCO PROGRAMED LEARNER, \$2.95;
program not reusable, 500 frames in I, 500 in II, I or
II included in price of machine.

Constructed Responses usually used; some Multiple Choice
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"Over 200."

Prerequisites: None

Average Time: 3 hours (est.).

Next Revision: "Now available."
(1 sample page)

MISCELLANEOUS ARITHMETIC

ARITHMETIC I and II

Krakow, Meo, Schure; CENTRAL SCIENTIFIC
one sample page:

ARITHMETIC II

31. Let us arrange some fractions in order of sizes.
The largest fraction is on the left, and the smallest
on the right. Fill in the missing fractions.

$\frac{1}{2}, \frac{1}{3}, \quad \frac{1}{5}, \frac{1}{6} \quad \frac{1}{8}, \quad .$
.....
 $\frac{1}{4}, \frac{1}{7}, \frac{1}{9}$

32. $\frac{1}{20}$ is _____ than $\frac{1}{15}$.
 $\frac{1}{17}$ is _____ than $\frac{1}{22}$.
.....
smaller, larger

33. $\frac{1}{9}$ is smaller than $\frac{1}{5}$ because it has a
larger _____.
.....
denominator

34. Because $\frac{1}{4}$ has a _____ denominator than
 $\frac{1}{18}$, it is the _____ fraction.
.....
smaller, larger

MISCELLANEOUS ARITHMETIC

ARITHMETIC 22

R. CLAYTON COURSEY, Education Engineering, Inc.
Published by EDUCATION ENGINEERING, Inc.,
381 West 7th Street, San Pedro, California.

Programed text, 22,780 frames, paperback, 756 pp.,
5" x 7", available in 21 separate units at \$3.75 each.
For use in SPEED machine, program reusable, \$210.00.
Teacher's Manual available, \$4.00 per unit.
Unit, Final, Diagnostic Test(s) available, \$3.75 each.
Multiple Choice Responses, always used; no Constructed
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

Additional material required: SPEED machine, \$700 &
\$850.

Average Time: 50 hours (est.).

Next Revision:

(1 sample page)

MISCELLANEOUS ARITHMETIC

ARITHMETIC 22

Coursey; EDUCATION ENGINEERING

one sample page:

CHANGING DECIMALS TO PER CENTS

Changing a decimal to per cent is just the opposite of changing a per cent to a decimal fraction. We have already done this without developing any rule for it.

Suppose we want to change .65 to per cent. If we know how many hundredths .65 is equivalent to we know its equivalent in per cent. Thus $.65 = \frac{65}{100}$ and therefore equals 65%.

Likewise $.07 = \frac{7}{100} = 7\%$

$2.00 = \frac{200}{100} = 200\%$

$$2 = \frac{200}{100} = 200\%$$

$$.005 = \frac{5}{100} = .5\%$$

By observing these examples the rule can clearly be seen. To change a decimal fraction to per cent, move the decimal point two places to the right. Annex zeros if necessary.

33200-00

Change each of the following decimals to per cents. Then give the sum of each of the five groups of per cents.

1. (a) .45 (b) .00 (c) 2.4 (d) .75

2. (a) .0005 (b) 9 (c) .40 (d) 2.5

3. (a) 0.2 (b) .725 (c) .040 (d) .53

4. (a) .7 (b) 4.5 (c) .340 (d) 11

5. (a) .345 (b) .01 (c) 5.6 (d) .037

ANSWERS

1. 537 6. 307.05

2. 998.5 7. 998.5

3. 1100.05 8. 593.0

4. 405 9. 1684.0

5. 1051.3 10. 632.5

33200-00

MISCELLANEOUS ARITHMETIC

Elem.

ARITHMETIC U-3008

**UNIVERSAL ELECTRONICS LABORATORIES
CORPORATION**

**Published by UNIVERSAL TEACHING MACHINE
INSTITUTE,
510 Hudson Street, Hackensack, New Jersey.**

**For use in UNIVERSAL MODEL U machine, program
reusable, 2160 frames, machine and program, \$25.00
(school discount).**

Table of Contents.

**Constructed Responses usually used; some Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Grade Level - 2-6."

Prerequisites: None.

Average Time: 28 to 32 hours (est.).

Next Revision: August, 1963.

(2 sample pages)

MISCELLANEOUS ARITHMETIC

ARITHMETIC U-3008

Universal Electronics Laboratories Corporation;
UNIVERSAL TEACHING MACHINE INSTITUTE

2 sample pages:



SPECIAL INSTRUCTIONS		
55	This special group has how many dots in it? --- : : : :	10
56	Groups of 10 are very important in our number system. The two figures we use to write the number 10 are 1 and 0.	0
57	The 1 in the number 10 means one group of ten things. How many groups of 10 dots are here? --- : : : :	1
58	The 0 in the number 10 means that we do not have any units left. Here we have just enough dots to make one group of ---. : : : :	10
59	Here are 13 dots. : : : : : The figure 1 in the number 13 tells us that we have one group of ---.	10 or ten
60	: : : : : The 3 in the number 13 tells us that we have 3 units left. The number 13 means we have 1 group of ten with 3 --- left.	units

(Copyright 1964)



121	53 is a number that has 2 places in it. There is a 5 in one place and a _____ in the other place.	3
122	The 5 in the number 53 is in the _____ place.	tens
123	The 3 in the number 53 is in the _____ place.	units
124	In the number 47, the 7 is in the <u>units</u> place. It tells how many _____ are left.	units
125	The 4 in 47 tells how many groups of ten there are. The 4 is in the _____ place.	tens
126	47 is a <u>two</u> -place number. One place is called the <u>tens</u> place and tells how many groups of _____ there are.	ten

MISCELLANEOUS ARITHMETIC

Elem.-Jr.H.S.

ARITHMETIC OF DIRECTED NUMBERS

EUGENE D. NICHOLS

ROBERT KALIN

HENRY GARLAND, all of Florida State University.

**Published by HOLT, RINEHART AND WINSTON,
383 Madison Ave., N.Y. 17, N.Y.**

**Programed text, 413 frames, paperback, 112 pp., 7" x 10",
\$.96.**

Teacher's Manual available, \$.16.

Table of Contents.

Final Test included.

**Constructed Responses usually used, some Multiple
Choice, no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Grades 7 thru 12."

**Prerequisites: "Fundamental operations with whole
numbers and fractions; basic notions of set theory
helpful."**

Average Time: 2-4-1/2 hours (est.).

Next Revision: Unknown.

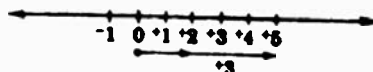
(1 sample page)

MISCELLANEOUS ARITHMETIC

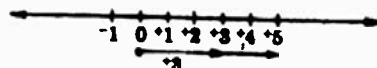
ARITHMETIC OF DIRECTED NUMBERS

Nichols, Kalin, Garland; HOLT, RINEHART AND WINSTON
one sample page:

- 209 Suppose we had the problem $\underline{\quad} + +3 = +5$. If you used the number line to help find the missing directed number, you would be looking for the length and direction of the first arrow, like this:



Or, by the Commutative Law, you could change the problem to $+3 + \underline{\quad} = +5$.



Using either form of the problem, find the missing directed number in $\underline{\quad} + +3 = +5$.

209

+2

- 210 Do the following problems. Draw your own arrows on a picture of the number line only if you need to.

- (a) $+4 + \underline{\quad} = +5$
- (b) $+4 + \underline{\quad} = +1$
- (c) $+4 + \underline{\quad} = 0$
- (d) $+4 + \underline{\quad} = -1$

210

- (a) +1 (b) -3 (c) -4 (d) -5

- 211 Do the following. (Use a number line only if you need to.)

- (a) $-4 + \underline{\quad} = -5$
- (b) $-4 + \underline{\quad} = -1$
- (c) $-4 + \underline{\quad} = 0$
- (d) $-4 + \underline{\quad} = +1$

211

- (a) -1 (b) +3 (c) +4 (d) +5

MISCELLANEOUS ARITHMETIC

Prim. Elem.

390 ARITHMETIC FACTS

ASTRA STAFF

Published by ASTRA

19 Burton Avenue, Norwich, Connecticut

For use in AUTOSCORE machine; program reusable, 2960 frames, \$40.00 (eight separate sections).

Multiple Choice Responses always used; no Constructed Response; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

Additional material required: AUTOSCORE machine, \$150.00.

Average Time:

Next Revision:

(1 sample page)

MISCELLANEOUS ARITHMETIC

390 ARITHMETIC FACTS

Astra Staff; ASTRA

one sample page:

"2's" Table Addition

NAME _____ ASTRA COMPOSITION _____ IN CHARGE _____ STREET _____ NEW LONDON CONNECTICUT _____

7 + 1 =	$\begin{array}{r} 7 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 8 \\ \hline 7 \\ \hline 6 \end{array}$
2 + 6 =	$\begin{array}{r} 2 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \hline 4 \\ \hline 0 \end{array}$
1 + 8 =	$\begin{array}{r} 1 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \hline 6 \\ \hline 9 \end{array}$
3 + 2 =	$\begin{array}{r} 3 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \hline 5 \\ \hline 6 \end{array}$
5 + 1 =	$\begin{array}{r} 5 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \hline 5 \\ \hline 4 \end{array}$
0 + 1 =	$\begin{array}{r} 0 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ \hline 1 \\ \hline 10 \end{array}$
9 + 2 =	$\begin{array}{r} 9 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \hline 18 \\ \hline 11 \end{array}$
1 + 9 =	$\begin{array}{r} 1 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ \hline 19 \\ \hline 9 \end{array}$
3 + 2 =	$\begin{array}{r} 3 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \hline 1 \\ \hline 6 \end{array}$
2 + 7 =	$\begin{array}{r} 2 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \hline 9 \\ \hline 14 \end{array}$

Copyright 1961, ASTRA Corp.

MISCELLANEOUS ARITHMETIC

Jr. H.S.

ARITHMETIC OF THE WHOLE NUMBERS

JAMES A. SMITH, Britannica Center for Studies in Learning

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 1,582 frames, paperback, 335 pp., 8-1/2" x 11-1/2", \$9.75, available in 2 separate units.

For use in TEMAC BINDER \$1.25; program reusable, \$8.50.

Teacher's Manual available, \$.75.

Table of Contents.

"Suggested tests only are available. Non-normed."

Constructed Responses always used; no Multiple Choice; no Branching.

DEVELOPMENTAL POPULATION(S): "The student population of the eighth grade at Roanoke City Public Schools."

Prerequisites: None

Average Time: 20 hours (est.).

No Revision.

(1 sample page)

MISCELLANEOUS ARITHMETIC

ARITHMETIC OF THE WHOLE NUMBERS Smith; ENCYCLOPAEDIA BRITANNICA PRESS one sample page:

22. The expression, $18 \div 6$, represents the number which is obtained when the _____ 18 is divided by the whole number _____.
whole number
6
23. The symbols $+$, $-$, \times , and \div indicate four operations which can be performed with whole numbers. These operations are addition, _____, and division.
subtraction; multiplication
24. When numbers are added, the result is called the *sum* of the numbers that are added. For example, 6 is the _____ of 2 and 4.
sum
25. _____ is the sum of 8 and 4.
12
26. 62 is the _____ of 75 and 7.
sum
27. We often use small letters, such as a , b , c , ..., x , y , and z , to refer to whole numbers. Thus, if a and b are whole numbers, $a + b$ is the sum of _____ and _____.
 a ; b
28. Let x and y be whole numbers. Then $x + y$ is the _____ of the numbers x and y .
sum
29. 15 is the sum of 8 and _____.
7
30. 23 is the _____ of 12 and 11.
sum
31. When numbers are multiplied, the result is called the *product* of the numbers that are multiplied. For example, 14 is the _____ of 7 and 2.
product
32. _____ is the product of 4 and 5.
20
33. 15 is the _____ of 3 and 5.
product

ARITHMETIC OF THE WHOLE NUMBERS

MISCELLANEOUS ARITHMETIC

Jr. H. S.

BASES AND NUMERALS

An Introduction to Numeration

VERNON L. DAUSCH, Millburn Junior H. S.

MARTIN M. MOSKOWITZ, Mathematics Department,
Vailsburg H. S.

ERNEST R. RANUCCI, Newark State College

MORTON SELTZER, Mathematics Department, Weequahic
H.S.

EDWARD J. ZOLL, Newark State College

Published by THE MACMILLAN COMPANY, 60 Fifth Avenue,
New York 11, New York

Programed text, 600 frames, paperback, 144 pp., 8-1/4"
x 11", \$1.50.

For optional use in FLEXITAB BINDER, \$1.67 per copy,
program can be reusable.

Teacher's Manual in preparation.

Table of Contents.

Unit and Final Test(s) included.

Constructed Responses usually used; some Multiple
Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Average 7th and 8th grade students. Some testing
of students in Grades 5 and 6."

Prerequisites: "Programs will fit in with both "modern"
and traditional backgrounds."

Average Time: 15-18 hours (est.)

Next Revision:

(1 sample page)

MISCELLANEOUS ARITHMETIC

BASES AND NUMERALS

Dausch, Moskowitz, Ranucci, Seltzer, Zoll;
THE MACMILLAN COMPANY

one sample page:

34. In base five $200_{\text{five}} + 30_{\text{five}} = \underline{\hspace{2cm}}_{\text{five}}$ 230

35. And $320_{\text{five}} + 4_{\text{five}} = \underline{\hspace{2cm}}_{\text{five}}$ 324

36. Fill in the sums in each of the following.

1. $220_{\text{five}} + 3_{\text{five}} = \underline{\hspace{2cm}}_{\text{five}}$ 223

2. $40_{\text{six}} + 5_{\text{six}} = \underline{\hspace{2cm}}_{\text{six}}$ 45

3. $1000_{\text{eight}} + 300_{\text{eight}} + 10_{\text{eight}} = \underline{\hspace{2cm}}_{\text{eight}}$ 1310

4. $2000_{\text{nine}} + 100_{\text{nine}} + 30_{\text{nine}} + 6_{\text{nine}} = \underline{\hspace{2cm}}_{\text{nine}}$ 2136

5. $1000_{\text{ten}} + 400_{\text{ten}} + 20_{\text{ten}} + 8_{\text{ten}} = \underline{\hspace{2cm}}_{\text{ten}}$ 1428

37. In base seven, 41_{seven} means seven(s) and one(s). 4, 1

And 2_{seven} means one(s). 2

38. Then, $41_{\text{seven}} + 2_{\text{seven}}$ means seven(s) and one(s) 4, 1

plus one(s). 2

39. Altogether, then, there are seven(s) and one(s). 4, 3

40. So $41_{\text{seven}} + 2_{\text{seven}} = \underline{\hspace{2cm}}_{\text{seven}}$ 43

MISCELLANEOUS ARITHMETIC

Elem.

DIVISION BY ZERO—IMPOSSIBLE!

JOAQUIN BUSTOZ, Programmer, Learning, Inc.

Published by LEARNING INCORPORATED,

1317 West Eighth Street, Tempe, Arizona.

Programed text, 32 frames, \$15.

**Constructed Responses usually used; some Multiple
Choice; no Branching.**

DEVELOPMENTAL POPULATION(S): Grades 3-7.

**Prerequisites: "Mastery of basic multiplication and
division facts."**

**Average Time: 18.7 minutes (based entirely on data);
standard deviation, 3.3 minutes.**

**Next Revision: "The program is the final revision."
(1 sample page)**

MISCELLANEOUS ARITHMETIC

DIVISION BY ZERO—IMPOSSIBLE! Bustoz; LEARNING INCORPORATED one sample page:

Division By Zero—Impossible

1. $4 \times 0 = 0$
 $93 \times 0 = 0$

Any times zero equals zero.
number

2. Any number zero equals zero.
times (x)

3. No matter what number we multiply by zero, the answer is always zero.

$$0 \times 0 = \underline{\quad}$$

$$0 \times 0 = 0$$

4. Any number \times zero = .

zero (0)

5. To check the division $\frac{6}{4/20}$ we multiply $4 \times 5 = \underline{\quad}$.

$$4 \times 5 = 20$$

6. We can always check our division by ing.
multiplying

7. To check the division $\frac{7}{9/43}$ we multiply $9 \times 7 = 63$. To check the division $\frac{7}{8/56}$ we multiply \times = .

$$8 \times 7 = 56$$

8. To check a division we multiply the divisor by the quotient. If the division is correct then the divisor times the quotient equals the dividend. For example, to check the division $\frac{6}{9/72}$ we would multiply \times = .

$$9 \times 8 = 72$$

9. We know the division $\frac{6}{9/36}$ is correct because $9 \times \underline{\quad} = 36$.

$$9 \times 4 = 36$$

10. If a division is wrong, then the divisor times the quotient does not equal the dividend. For example, in the division $\frac{6}{8/42}$, 8 times 6 does not equal 42. So the division is .

wrong

MISCELLANEOUS ARITHMETIC

Prim.

**ELEMENTARY ARITHMETIC SERIES: INTRODUCTION
TO NUMBERS**

LLOYD E. HOMME

DONALD BERTHOLOMEY, Teaching Materials Corporation.

**Published by TEACHING MATERIALS CORPORATION,
575 Lexington Avenue, New York 22, N.Y.**

**Programed text, 615 frames, paperback, 133 pp., 8-1/2" x
11", \$8.50.**

**For use in MIN/MAX II machine, \$25.00; program re-
usable, \$7.50.**

**Teacher's Manual: General Manual available for all
TMI-Grolier programs.**

Final Test included.

**Multiple Choice Responses always used; no Constructed
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"Pre-school students ages: 4 years 6 months to
6 years."**

**Prerequisites: "About 15 minutes of adult assistance at
the beginning of the program."**

**Average Time: 3-6 hours (based entirely on data);
standard deviation, .149 hours.**





Next Revision: June, 1964.

(1 sample page)

MISCELLANEOUS ARITHMETIC

ELEMENTARY ARITHMETIC SERIES: INTRODUCTION TO NUMBERS

Homme, Bertholomey; TEACHING MATERIALS CORP.
one sample page:

1	"See the mark at the top? It is a number one. Find the one at the bottom and draw a circle around it."	
"This tells you that you were right."		<div style="display: flex; justify-content: space-around;"> <div>▲ </div> <div>° 2</div> <div>□ 3</div> <div>▲ 1</div> </div>
2	"This is a hand with one finger sticking up. It means for you to find the one at the bottom."	<div style="display: flex; justify-content: space-around;"> <div>▲ </div> <div>° 3</div> <div>□ 1</div> <div>▲ 2</div> </div>
"Were you right?"		<div style="display: flex; justify-content: space-around;"> <div>□ </div> <div>° 3</div> <div>□ 1</div> <div>▲ 2</div> </div>
3	"Here is one ball. It means you should pick the number at the bottom that means one."	<div style="display: flex; justify-content: space-around;"> <div>● </div> <div>° 1</div> <div>□ 2</div> <div>▲ 3</div> </div>
4 "What should you do here?"		<div style="display: flex; justify-content: space-around;"> <div>▲ 3</div> <div>° 3</div> <div>□</div> <div>▲ 3</div> </div>
5 "Here is a box with one ball. It is marked one (point). Which one at the bottom is just the same?"		<div style="display: flex; justify-content: space-around;"> <div>▲ 3</div> <div>° 3</div> <div>□</div> <div>▲ 3</div> </div>
● "You forgot to look at the mark." □ "You forgot to count the balls." ▲ "That's right, one ball and marked 'one'."		<div style="display: flex; justify-content: space-around;"> <div>  </div> <div>  </div> <div>  </div> <div>  </div> </div>

MISCELLANEOUS ARITHMETIC

Prim.

**ELEMENTARY ARITHMETIC SERIES: TIME TELLING
DONALD T. TOSTI**

POLO C. DE BACA, both of Teaching Materials Corporation.

**Published by TEACHING MATERIALS CORPORATION,
575 Lexington Avenue, New York 22, N.Y.**

Programed text, 440 frames, paperback, 97 pp., 8-1/2" x 11", \$8.50.

For use in MIN/MAX II machine, \$25.00; program reusable, \$7.50.

Teacher's Manual: General Manual for all TMI-Grolier programs available.

Final Test included.

Constructed Responses always used; no Multiple Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Average age 8.4; average school grade 3.4."

Prerequisites: "Minimum vocabulary of 46 words, list provided."

Average Time: 1-1/2 - 3-1/2 hours (based entirely on data); standard deviation, .4 hours.

Next Revision: December, 1964.

(1 sample page)

MISCELLANEOUS ARITHMETIC

ELEMENTARY ARITHMETIC SERIES: TIME TELLING
Tosti, De Baca; TEACHING MATERIALS CORPORATION
 one sample page:

306 Which clock says 2:25?

307 Which clock says 6:40?

308 The time is ().

309 The time is ().

300 The time is ().

MISCELLANEOUS ARITHMETIC

Jr. H.S.

FINITE ARITHMETICS

MILDRED REIGH, Mathematics Dept.

J. WILLIAM MOORE, Education Dept.

**WENDELL SMITH, Psychology Dept. all of Bucknell
University.**

**Published by McGRAW-HILL BOOK COMPANY, Inc.,
330 West 42nd Street, New York City.**

Programed text, 1000 frames, \$ ____.

Teacher's Manual available.

Table of Contents.

Unit and Final Test(s) available.

**Constructed Responses always used; some Branching;
no Multiple Choice.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"Developmental: 12 eighth grade students drawn
from upper half of class. Test: 50 eighth grade
students enrolled in general mathematics."**

**Prerequisites: "Knowledge of arithmetic including
fractions."**

Average Time: 23 hours (est.).

Next Revision: June, 1963.

(1 sample page)

MISCELLANEOUS ARITHMETIC

FINITE ARITHMETICS

Reigh, Moore, Smith; MCGRAW-HILL BOOK COMPANY
one sample page:

(Preliminary Version)

35. Because of being able to have any one of a variety of numbers for a modulus, we call this whole process "modular arithmetic." If there are 6 numbers in an arithmetic we can say "the modulus is 6" or "this particular arithmetic is modulo 6."

What is the modulus of an arithmetic that has 10 objects in it? _____

Modulo 10 or 10

36. The arithmetic that has a dozen objects in it is _____ 12.

modulo

37. The numbers on the dial on a clock face would be modulo _____

12

38. The days of the week would be modulo _____

7

39. The months of the year would be modulo _____

12

MISCELLANEOUS ARITHMETIC

Elem.+

GENERAL MATHEMATICS 40

R. CLAYTON COURSEY, Education Engineering, Inc.

Published by EDUCATION ENGINEERING, Inc.,

381 West 7th Street, San Pedro, California.

Programed text, 57,160 frames, paperback, 1872 pp.,

5" x 7", available in 52 separate units at \$3.75 each.

For use in SPEED machine, program reusable, \$520.00.

Teacher's Manual available, \$4.00 per unit.

Unit, Final, Diagnostic Test(s) available at \$3.75 each.

Multiple Choice Responses always used; no Constructed Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

Additional material required: SPEED machine, \$700 & \$800.

Average Time: 125 hours (est.).

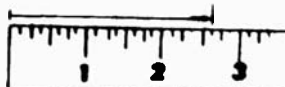
Next Revision:

(1 sample page)

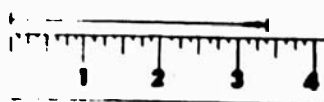
MISCELLANEOUS ARITHMETIC

GENERAL MATHEMATICS 40 Coursey; EDUCATION ENGINEERING one sample page:

CHANGING A MIXED NUMBER TO AN IMPROPER FRACTION



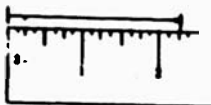
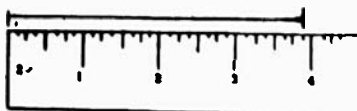
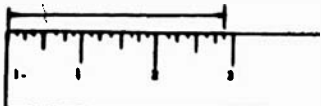
Suppose that an object measured $3\frac{3}{8}$ inches as shown on the scale above. If we should desire to change this mixed number to an improper fraction, a study of the scale will show that this measurement could also be shown as $\frac{27}{8}$ inches or $\frac{33}{8}$ inches.



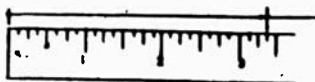
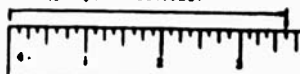
Likewise, the measurement above is, instead of being called $3\frac{3}{8}$ inches could be called $8 \times 8 \div 3$ inches or $\frac{33}{8}$ inches.

22503 - 07

Determine the following measurements as mixed numbers.



Determine the following measurements as improper fractions.



ANSWERS

- | | |
|-------------------|--------------------|
| 1. $1\frac{3}{4}$ | 6. $\frac{25}{8}$ |
| 2. $2\frac{1}{2}$ | 7. $3\frac{1}{2}$ |
| 3. $1\frac{1}{2}$ | 8. $2\frac{1}{2}$ |
| 4. $1\frac{3}{4}$ | 9. $2\frac{1}{4}$ |
| 5. $2\frac{1}{2}$ | 10. $2\frac{3}{4}$ |

22503 - 07

MISCELLANEOUS ARITHMETIC

Special Ed.

LOWER PRIMARY ARITHMETIC

A Set of 10 Automated Workbooks.

Prepared through the facilities of The Devereux Foundation.

Published by DEVEREUX TEACHING AIDS,

Box 717, Devon, Penna.

Programed workbooks, 1440 frames, paperback, 7" x 11".

"Available only to special education facilities for exploratory use. For further information contact Dr. Henry Platt, Director of Training, The Devereux Foundation, Devon, Pennsylvania.

For use in DEVEREUX TEACHING AID - MODEL 50, \$89.50, program reusable.

Teacher's Manual available, \$1.00.

Table of Contents.

Unit test(s) available. Coordinated with California Achievement Test, which includes adequate diagnostic profile.

Multiple Choice Responses and Branching always used; no Constructed Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Both within Devereux and other school systems.

Other using population(s): Experimentally in normal grade schools.

Prerequisites: "Most booklets usable with students exhibiting specific reading disabilities though this is naturally not a requirement—neither is ability to write, so physically handicapped can and do use them."

Additional material required: DEVEREUX TEACHING AID - MODEL 50, \$89.50. Some developmental material available for the Graflex Instructor machine.

Average Time: "Dependent on IQ and other factors; IQ of 70 and CA of 16 will usually finish a workbook in an hour."

Next Revision: September, 1963.

(1 sample page)

MISCELLANEOUS ARITHMETIC

LOWER PRIMARY ARITHMETIC


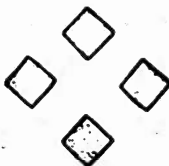






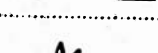




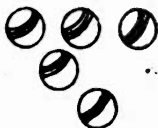



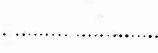
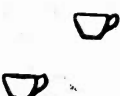
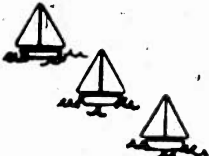
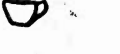

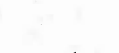

The Devereux Foundation; DEVEREUX TEACHING AIDS
one sample page:

PICTURE SYMBOL ASSOCIATION

1 to 5

Turn to number 2

How many?

1			4
2			3
3			5
3			0
4			1
5			2
0			3
2			4
1			5
1			3
2			4
0			2

MISCELLANEOUS ARITHMETIC

Elem.

NUMBER FACTS

PART I: Addition & Subtraction; PART II: Multiplication & Division

THORWALD ESBENSEN

DONALD HURST

CHARLES JENKS

DAVID SHIER, all of Merit Associates (formerly Educational Development Associates)

**Published by : E-Z SORT SYSTEMS, LTD.,
45 Second Street, San Francisco, California**

**Programed text, 540 frames in each part, paperback,
75 pp. in each part, 5" x 8", \$7.85 each part.**

"Program fits response device consisting of 15 edge-punched cards—printed educational matter published in pamphlet or text form with required student responses coded to correspond with the response device—a sorter."

**Teacher's Manual available, included with program.
Multiple Choice Responses always used; no Constructed Responses; no Branching.**

**DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"Elementary."**

Prerequisites: None

Additional material required: "Response device described above."

Average Time: 20 hours (est.).

Next Revision: "Unknown."

(1 sample page)

MISCELLANEOUS ARITHMETIC

NUMBER FACTS

Esbensen, Hurst, Jenks, Shier; E-Z SORT SYSTEMS
one sample page:

SAMPLE FRAMES: NUMBER FACTS

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

$9+3=$ <input type="text"/> (A-C)	$9+1=$ <input type="text"/> (B-D)	$9+5=$ <input type="text"/> (F-J)
$9+6=$ <input type="text"/> (F-H)	$9+9=$ <input type="text"/> (C-R)	$9+4=$ <input type="text"/> (D-M)
$9+8=$ <input type="text"/> (A-K)	$9+2=$ <input type="text"/> (B-L)	$9+7=$ <input type="text"/> (S-T)

MISCELLANEOUS ARITHMETIC

Jr. H.S.

RATIOS & PROPORTIONS

FRANK C. GENTRY, Consultant

EDWARD J. RICKERT, Programmer, General Programmed
Teaching Corporation

JAMES V. DEVINE, Programmer, GPTC

EDNA M. MORGAN, Programmer, GPTC

LEWIS PEARSALL, Programmer, GPTC

BETTY LOU C. DUBOIS, Editor, GPTC

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 1344 frames, paperback, 268 pp.,
8-1/2" x 11", \$_____.

Teacher's Manual: "Instructions to teacher included in
preface."

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Elementary students ranging from 5th through 9th
grades. Developmental testing in Albuquerque, New
Mexico; field testing in Albuquerque, New Mexico;
Roanoke, Virginia; Princess Anne, Virginia."

Prerequisites: "5th grade reading level; knowledge of
arithmetic."

Average Time: 8 hours (based entirely on data).

Next Revision: 1968.

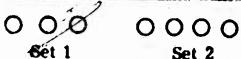


(1 sample page)

MISCELLANEOUS ARITHMETIC

RATIOS & PROPORTIONS

Gentry, Rickert, Devine, Morgan, Pearsall, Dubois;
ENCYCLOPAEDIA BRITANNICA PRESS

one sample page:

97)	3 to 16 can mean 3 divided by 16.	True / False	
98)	The symbol : is a colon. Copy it.		
99)	Circle the colon.	: : . .	
100)	 Set 1 Set 2 Compare the number of balls in Set 1 to the number in Set 2.	to	
101)	 Set 1 Set 2 When the number of boxes in Set 2 is compared to the number of boxes in Set 1, do we write 6 to 3?	Yes No	
102)	Make a colon.		
103)	 Set 1 Set 2 Compare Set 1 to Set 2 by division. Use the word <u>to</u> and the ÷ sign.		
104)	When sets are compared by division, the colon sign may be used in place of to or in place of the division sign (÷). Which sign can be used to compare sets by division?	&	

MISCELLANEOUS ARITHMETIC

Prim.+

SELF-TEACHING ARITHMETIC BOOKS

Knowledge Master Books

JOHN W. STUDEBAKER

GORDON STUDEBAKER, both of Scholastic Magazines, Inc.

Published by SCHOLASTIC MAGAZINES, Inc.

50 West 44th Street, New York 36, New York.

Programed text, 350 frames, hardcover, 72 pp., 9" x 12",
\$4.95 (single copy), \$3.95 (classroom quantity).

Teacher's Manual available, \$.25.

Table of Contents.

Unit Test(s) included.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Tested in 40 elementary classrooms in Iowa."

Prerequisites: None

Additional material required: "Magic slate" .10 each.

Average Time: 3 hours (est.).

Next Revision:

(1 sample page)

MISCELLANEOUS ARITHMETIC

SELF-TEACHING ARITHMETIC BOOKS

Studebaker, Studebaker; SCHOLASTIC MAGAZINES
one sample page:

LESSON 3

PRACTICE PAGE

WHAT TO DO: 1 - Look at the facts on this page. The little red numbers in the windows are the right answers. Study the facts and the answers.

2 - Then put a piece of paper or a Magic Slate under this page. Write your answers under the facts, through the windows.

$$\begin{array}{r} 5 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ -4 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ +4 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ -3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ -6 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ +3 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ -4 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ -4 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ +5 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ -2 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ +4 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ +3 \\ \hline \end{array}$$

3 - Now check your work. Put your paper or Magic Slate under page 8. See if your answers are the same as the little red numbers in the windows.

NOTE:

The blue numbers outside the boxes have nothing to do with the facts on this page.

MISCELLANEOUS ARITHMETIC

Special Ed.

UPPER PRIMARY ARITHMETIC

A Set of 13 Automated Workbooks

Prepared through the facilities of the DEVEREUX
FOUNDATION.

Published by DEVEREUX TEACHING AIDS,
Box 717, Devon, Pennsylvania.

Programed workbooks, 1872 frames, paperback, 7" x 11".

Available only to special education facilities for
exploratory use. For further information contact
Dr. Henry Platt, Director of Training, The Devereux
Foundation, Devon, Pennsylvania.

For use with the DEVEREUX TEACHING AID - MODEL 50,
\$89.50; program reusable.

Teacher's Manual available, \$1.00.

Table of Contents.

Unit Test(s) available. Coordinated with California
Achievement Test, which includes adequate diagnostic
profile.

Multiple Choice Responses and Branching always used;
no Constructed Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Both within Devereux and other school systems.

Other using population(s): Experimentally in normal grade
schools.

Prerequisites: "Most booklets usable with students exhibit-
ing specific reading disabilities though this is naturally
not a requirement—neither is ability to write, so
physically handicapped can and do use them."

Additional material required: Devereux Teaching Aid -
Model 50, \$89.50. Some developmental material
available on the Graflex Instructor machine.

Average Time: "Dependent on IQ and nature of limitations.

Many students go through the book in one hour, but
require several repetitions on subsequent days."

Next Revision: September, 1963.

(1 sample page)

MISCELLANEOUS ARITHMETIC

UPPER PRIMARY ARITHMETIC

Devereux Foundation; DEVEREUX TEACHING AIDS
one sample page:

COINS AND MAKING CHANGE

Page 11

Set knob at position 2.

<u>25 cents could be</u> 1 nickel 1 dime 1 quarter	<u>25 cents could be</u> 1 dime and 3 nickels 2 dimes and 2 nickels 2 dimes and 5 nickels
<u>25 cents could be</u> 1 penny 10 pennies 25 pennies	<u>25 cents could be</u> 1 dime and 5 pennies 2 dimes and 5 pennies 1 dime and 5 nickels
<u>25 cents could be</u> 5 pennies 5 nickels 5 dimes	<u>25 cents could be</u> 1 nickel and 5 pennies 1 nickel and 1 dime 1 nickel and 20 pennies
<u>25 cents could be</u> 1 dime and 1 nickel 2 dimes and 1 nickel 3 dimes and 1 nickel	<u>25 cents could be</u> 1 dime and 15 pennies 2 dimes and 15 pennies 2 dimes and 25 pennies

MISCELLANEOUS ARITHMETIC

Jr. H.S.

WHOLE NUMBERS AND NUMERALS

JAMES A. SMITH, Britannica Center for Studies in Learning

Published by: **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 North Michigan Avenue, Chicago 11, Illinois

Programed text, 2,397 frames, paperback, 370 pp.,
8 1/2" x 11 1/2"; \$9.75. Bound in 2 separate
volumes.

For use in **TEMAC BINDER**, \$1.25; program reusable,
\$8.50

Teacher's Manual available, \$1.25

Table of Contents

"Sample tests available, non-normed, included in Teacher's
Manual."

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Individual students at Britannica Center, Palo Alto,
Calif. Classroom use and final testing at Roanoke
City Schools."

Other using population(s): "Any persons reviewing the
field of modern mathematics for the first time."

Prerequisites: None

Average Time: 45-50 classroom hours (est.).

No Revision.

(1 sample page)

MISCELLANEOUS ARITHMETIC

WHOLE NUMBERS AND NUMERALS

Smith; ENCYCLOPAEDIA BRITANNICA PRESS

one sample page:

17. In other ancient countries, people wrote _____ numerals
for whole numbers in other ways. That is, they used a system
of numeration which was different from the Roman system
of _____ numeration
18. We still learn to write Roman _____ numerals
as I, II, V, X.
19. Although we still study the Roman system of numeration,
we do not use their system of numeration. When we do problems
in arithmetic, we have a much easier system of _____ numeration
20. We do not ordinarily use the Roman system of _____ numeration
but use a much easier _____ numeration system
of our own.
21. When we use our system of numeration, we write numerals
like 0, 1, 2, 5, 8 to represent _____ whole numbers.
22. Our numerals are quite different from those used by the Romans.
That is, they used their Roman _____ system of numeration
while we use a different system of _____ numeration
23. Both their system and our system are called systems of
numeration because any system for writing numerals for numbers
is called a system of _____ numeration
24. Our system of _____ numeration is a very easy one. We
start with the ten numerals 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and can
form a numeral for any whole _____ number by using these.
25. We will often refer to each of these numerals 0, 1, 2, 3, 4, 5,
6, 7, 8, 9 as a digit. We will speak of the digit 3 or the digit 5.
We also refer to 7 as a _____ digit

WHOLE NUMBERS AND NUMERALS

ARITHMETIC

Prim. +

**ELEMENTARY ARITHMETIC SERIES: MULTIPLICATION
& DIVISION FACTS**

(1 through 100)

JAMES L. EVANS

DONALD T. TOSTI, both of Teaching Materials Corporation.

Published by **TEACHING MATERIALS CORPORATION**,
575 Lexington Avenue, New York 22, N.Y.

Programed text, 2,099 frames, paperback, 441 pp.,
8-1/2" x 11", bound in 2 separate volumes, \$11.00.

For use in MIN/MAX II machine, \$25.00; program reusable; \$10.00.

Teacher's Manual: General Manual available for all
TMI-Grolier Programs.

Final Test included.

Constructed Responses always used; no Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"8 year olds in 3rd grade. IQ range 96-116."

Prerequisites: "Third grade reading ability and knowledge
of addition and subtraction are required."

Average Time: 25-30 hours (based entirely on data);
standard deviation, 9.62 hours.

Next Revision: February, 1963.









(2 sample pages)

ARITHMETIC

ELEMENTARY ARITHMETIC SERIES: MULTIPLICATION & DIVISION FACTS

Evans, Tosti; TEACHING MATERIALS CORPORATION
2 sample pages:

21	Let's count by 6's.													
36	42	<table border="1"> <tr> <td>by 6's</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7 times</td> </tr> <tr> <td></td> <td>18</td> <td>24</td> <td>30</td> <td>()</td> <td>()</td> </tr> </table>	by 6's	3	4	5	6	7 times		18	24	30	()	()
by 6's	3	4	5	6	7 times									
	18	24	30	()	()									
22	Count by 6's 7 times and get 42.													
		<table border="1"> <tr> <td>by 6's</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7 times</td> </tr> <tr> <td></td> <td>18</td> <td>24</td> <td>30</td> <td>36</td> <td>42</td> </tr> </table>	by 6's	3	4	5	6	7 times		18	24	30	36	42
by 6's	3	4	5	6	7 times									
	18	24	30	36	42									
42	42	7 times 6 is () $7 \times 6 = ()$												
23	How many 6's are in 42?													
		<table border="1"> <tr> <td>by 6's</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> </tr> <tr> <td></td> <td>18</td> <td>24</td> <td>30</td> <td>36</td> <td>42</td> </tr> </table>	by 6's	3	4	5	6	7		18	24	30	36	42
by 6's	3	4	5	6	7									
	18	24	30	36	42									
7	7	There are () 6's in 42. $42 \div 6 = ()$												
24	$42 \div 6 = ()$													
7		()												
25	$5 + 5 + 5 + 5 + 5 = 25$													
	Here are 5 5's.													
25		$5 \times 5 = ()$												
	3-5													

61	3 multiplied by 2 = ()	
62	<p>2 equal groups</p>  <p>There are 4 balls in each group.</p>	<p>4 equal groups</p>  <p>There are () balls in each group.</p>
63	<p>6 balls can be <u>DIVIDED</u> into 3 equal groups.</p> 	<p>Copy and <u>DIVIDE</u> these into 3 equal groups.</p> 
		
64	<p>6 balls have been divided into 2 equal groups. There are 4 balls in each group.</p> 	<p>6 balls have been divided into () equal groups. How many balls in each group? ()</p> 
65	<p>6 cats divided into 2's give () equal groups of cats.</p> 	
3	1-13	

ARITHMETIC

Elem.

FOUNDATIONS OF MULTIPLICATION & DIVISION
JEROME WHITE, Programmer, General Programmed
Teaching Corporation

JACOB REGER, Programmer, GPTC

SHIRLEY BITTERLICH, Programmer, GPTC

BETTY LOU DUBOIS, Editor, GPTC

ARTHUR STEGER, Consultant

Published by ENCYCLOPAEDIA BRITANNICA PRESS,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 1800 frames, paperback, 360 pp.,
8-1/2" x 11", \$_____.

Teacher's Manual: "Instructions to teacher included in
preface."

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental testing: 3rd and 4th grade students.

Field testing: 3rd grade students."

Prerequisites: None.

Average Time: 20 hours (est.).

Next Revision: 1968.

(1 sample page)

ARITHMETIC

FOUNDATIONS OF MULTIPLICATION & DIVISION White, Reger, Bitterlich, Dubois, Steger; ENCYCLO- PAEDIA BRITANNICA PRESS

one sample page:

91	Do the arrays have the same number of elements in all?	
	<input checked="" type="radio"/> Yes <input type="radio"/> No	
92	Circle the array with the same number of rows as	
93	Circle the array with the same number of elements in each row as	
94	Circle the array with the same number of elements in all as	
95	How many rows does each array have?	

ARITHMETIC

Elem.

MULTIPLICATION BOX

Developing Automated Response to Multiplication Facts
JEROME BINDER, Reading Consultant and
JOSEPH MILLMAN, Supervisor of Instruction, B-M Educational Productions

Published by B-M EDUCATIONAL PRODUCTIONS,
132 Lexington Street, Westbury, New York

Program available on 50 cards, 5" x 8", boxed, \$14.95.

"Multiplication Box consists of 39 plastic cards with
11 pre-tests."

Teacher's Manual included.

Table of Contents.

Final test included.

Constructed Responses always used; no Multiple Choice
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developed with two students. Developed and revised
with 10 students. Tested on student population of city
schools and suburban schools."

Other using population(s): "Used remediation technique,
based on students needs."

Prerequisites: "Teacher development of multiplication
facts."

Average Time: "2 minutes each unit—78 units selective
program based upon individual needs." (est.).

Next Revision: June, 1963.

(1 sample page)

ARITHMETIC

MULTIPLICATION BOX

Binder, Millman; B-M EDUCATIONAL PRODUCTIONS
one sample page:

DIRECTIONS FOR STUDENTS

Read each part carefully. Fill in all of the blank spaces. After you have filled in the answer, look at the right side of the card. If your answer is not the same as the answer that is given, change your answer and go on to the next part.

1.	Place eight dots in <u>each</u> box. The total number of dots are 48 .	1.
2.	You could say that .. Six boxes with <u>eight</u> candies in each box are equal to 48 candies.	2.
3.	Six boxes with _____ candies in each box are equal to 48 candies.	3. eight
4.	48 candies are equal to six boxes with _____ candies in each box.	4. eight
5.	etc.	

ARITHMETIC

Special Ed.

MULTIPLICATION AND DIVISION

A Set of 9 Automated Workbooks

Prepared through the facilities of THE DEVEREUX
FOUNDATION

Published by DEVEREUX TEACHING AIDS,
Box 717, Devon, Pennsylvania

Programed workbooks; 1296 frames, paperback, 18 pp.
each book, 7" x 11". "Available only to special educa-
tion facilities for exploratory use. For further
information contact Dr. Henry Platt, Director of
Training, The Devereux Foundation, Devon, Penn-
sylvania."

For use in DEVEREUX TEACHING AID - MODEL 50
machine, \$89.50, program reusable.

Teacher's Manual available, \$1.00.

Table of Contents.

Unit Test(s) available. Coordinated with California Achieve-
ment Test, which includes adequate diagnostic profile.

Multiple Choice Responses and Branching always used;
no Constructed Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Both within Devereux and other school systems.

Other using population(s): Experimentally in normal
grade schools.

Prerequisites: "Most booklets usable with students
exhibiting specific reading disabilities though this is
naturally not a requirement—neither is ability to
write, so physically handicapped can and do use them."

Additional material required: Devereux Teaching Aid -
Model 50, \$89.50. Some developmental material
available on the Graflex Instructor machine.

Average Time: "Depends on IQ and nature of limitations.

Many students go through the book in one hour but
require several repetitions on subsequent days."

Next Revision: September, 1963.

(1 sample page)

ARITHMETIC

MULTIPLICATION AND DIVISION

Devereux Foundation; DEVEREUX TEACHING AIDS
one sample page:

UNDERSTANDING MULTIPLICATION

Turn to number 2

Book I

To increase is to make larger.
When we multiply, we _____
the amount.

decrease

subtract

increase

Increasing the number by the
same amount more than once is
to _____.

subtract

divide

multiply

Multiplying is increasing a
number by the _____ more
than once.

adding number

same amount

subtracting number

You can add a column of the same
sized amounts and get a correct
answer. It is shorter if you

subtract

multiply

divide

The shorter way to increase an
amount by multiples is to _____.

multiply

add

subtract

The multiplicand is the size of
the increase which happened
more than once. The size of the
multiple increase is a number
called the _____.

multiplicand

The multiplicand is written
at the top. The top number
is the _____.

multiplicand

addend

multiplicand

The size of the multiple in-
crease is written at the
_____ of the problem.

top

bottom

side

BUSINESS EDUCATION & ECONOMICS

Adult

THE ACCOUNTING PROCESS

A Programmed Text

GERALD O. WENTHWORTH

A. THOMPSON MONTGOMERY

JAMES A. GOWEN

THOMAS W. HARRELL, all of Stanford School of Business.

**Published by: MCGRAW-HILL BOOK CO., Inc.,
330 West 42nd Street, New York City.**

**Programed text, 1205 frames, hard and papercover, 225 pp.,
6" x 9", \$_____.**

For use in Koncept-O-Graph, \$39.00, program reusable, \$9.95.

Table of Contents, Indexed Glossary.

Unit Test(s) included.

**Constructed Responses always used; no Multiple Choice
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"Original version tested by IBM. Subsequent version
in various representative universities."**

Prerequisites: High school education or equivalent.

**Additional equipment required: Scratch paper & pencil
only.**

Average Time: 20 hours (est.).

Next Revision: 1965.

(1 sample page)

BUSINESS EDUCATION & ECONOMICS

THE ACCOUNTING PROCESS

Wentworth, Montgomery, Gowen, Harrell; McGRAW-HILL BOOK CO.

one sample page:

In order to be meaningful, the dollar amounts listed on the Balance Sheet and the Income Statement are classified by accounts. When you refer to these outputs, you will see such classifications as Cash, Inventory, Sales, and Cost of Goods Sold. These classifications are called _____.

accounts

Cash and Inventory are examples of accounts shown on the Balance Sheet. Sales and Cost of Goods Sold are examples of _____ shown on the Income Statement.

accounts

The total amount remaining in any account is called the balance. For instance, the dollar amount listed after Cash on the Balance Sheet is the _____ in the Cash account.

balance

The dollar amounts are listed on the Balance Sheet and the Income Statement according to meaningful classifications called _____.

accounts

The total amount in any account listed on the Balance Sheet or the Income Statement is called the _____ of that account.

balance

For instance, if you saw on the Balance Sheet the listing "Cash \$2,000," you would know that the _____ account had a balance of \$_____.

Cash
\$2,000

If you saw the listing "Inventory \$5,000," you would know that the Inventory _____ had a _____ of \$5,000.

account
balance

BUSINESS EDUCATION & ECONOMICS

H.S.-Coll.

PRINCIPLES OF ACCOUNTING

**WILLIAM VENTOLO, Associated Programed Learning,
Inc.**

**Published by EDUCATIONAL METHODS, Inc.,
612 North Michigan Avenue, Chicago, Illinois.**

**Programed text, 5,000 frames, paperback, 800 pp.,
7" x 10", available in about 5 separate volumes,
\$2.50-\$5.00 each; all five volumes \$12.00-\$25.00.**

Table of Contents, Index.

Unit and Final Test(s) available.

**Constructed Responses always used; no Multiple Choice
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites: None.

Average Time: 50-60 hours (est.).

Next Revision: September, 1963.

(3 sample pages)

BUSINESS EDUCATION & ECONOMICS

PRINCIPLES OF ACCOUNTING Ventolo; EDUCATIONAL METHODS 3 sample pages:

40

debit
credit
(Either order is correct.)

230. Double-entry bookkeeping requires a _____ and
a _____ entry for each transaction.

Yes

231. Must the debit and credit amounts of each
transaction be equal?

balance

232. The basic principle of double-entry bookkeeping
is the principle of balance. Double-entry means
that at least two entries are made in recording
each transaction. This system causes one entry
to _____ against the other.

income

233. An inflow of assets other than from owners of
a business is called income.

Thus, a sale of merchandise or services (for
cash or on credit) creates _____ for a business.

stockholders' equity

234. Income has the effect of increasing stockholders'
equity and could, therefore, be credited to
Retained Earnings. Instead, a separate account
is provided for each kind of income.

Such income accounts are called temporary &
_____ accounts.

temporary stockholders'
equity

235. Income accounts are called income
_____ accounts.

236.

Stockholders'		
Equity Account		Income Account
Increase		Increase

An increase in the stockholders' equity is entered
on the credit side of the account. Since income
has the effect of increasing the stockholders'
equity, an increase in an income account is also
entered on the _____ side of the account.

credit

increasing

237. Income has the effect of _____ (increasing/decreasing)
the stockholders' equity.

credit

Debit
credit

	Cash
1000	
	Service Income
	1000

expense

stockholders' equity

Income
expenseincreasing
decreasing

debit

238. Since income (temporary stockholders' equity) accounts will contain entries that really represent increases in stockholders' equity, an increase in an income account will be entered on the _____ side of the account.

239. Transaction: Cash is received for services rendered to a customer.
The debit and credit involved are as follows.
_____ Cash; _____ Service Income.

240. Transaction: Cash is received for services rendered to a customer, \$1000.
Prepare simple T-accounts and make the entries. The accounts involved are Cash and Service Income.

241. An outflow of cash, other than to owners of a business, is called an expense.

Thus, if salaries are paid to employees, an _____ is incurred by the business.

242. Expenses have the effect of reducing stockholders' equity and could, therefore, be debited to Retained Earnings. Instead, a separate account is provided for each kind of expense. Such expense accounts, like income accounts, are called temporary _____ accounts.

243. _____ and _____ accounts are called temporary stockholders' equity accounts.

244. Income has the effect of _____ the stockholders' equity, and expenses have the effect of _____ the stockholders' equity.

245. Since an increase in an expense is really a decrease in stockholders' equity, an increase in an expense account is always entered on the _____ side of the account.

Debit
credit

Salaries Expense	
1000	
Cash	
	1000

increasing
decreasing

246. Transaction: Salaries are paid in cash.

The debit and credit involved are as follows.

_____ Salaries Expense; _____ Cash.

247. Transaction: Salaries are paid in cash, \$1000.

Prepare simple T-accounts and make the entries.
The accounts involved are Cash and Salaries Expense.

248. Since income accounts have a(n) _____ effect, and expense accounts have a(n) _____ effect on the stockholders' equity, the balance-sheet, Assets = liabilities + stockholders' equity, can be expanded in this manner:

$$A = L + SE + I - E$$

249. If we put the expanded balance-sheet equation in T-account form, showing increases (+) and decreases (-) on the proper debit and credit sides, it would look like this:

$$\begin{array}{c} + \\ \hline \end{array} \begin{array}{c} - \\ \hline \end{array} = \begin{array}{c} - \\ \hline \end{array} \begin{array}{c} + \\ \hline \end{array} \begin{array}{c} - \\ \hline \end{array} \begin{array}{c} + \\ \hline \end{array} \begin{array}{c} - \\ \hline \end{array} \begin{array}{c} + \\ \hline \end{array} \begin{array}{c} - \\ \hline \end{array}$$

By carefully observing this equation, we can see that debit indicates an increase or a decrease in the following accounts.

- 2) decrease
- 3) decrease
- 4) decrease
- 5) increase

Account	Debit
1) Asset	increase
2) liability	?
3) Stockholders' equity	?
4) income	?
5) expense	?

BUSINESS EDUCATION & ECONOMICS

**Bank teller
trainees**

**BANK TELLER TRAINING COURSE
RICHARD MORRIS**

**Published by EDUCATIONAL METHODS, INC.,
612 North Michigan Avenue, Chicago, Illinois.**

**Programed text, 750 frames, binder, 300 pp., 8 1/2" x 11",
\$____, available in 5 separate units.**

Separate answer sheets available.

Table of Contents, Index.

**Constructed Responses always used; no Multiple Choice;
no Branching.**

**DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"50 bank tellers and trainees in 8 banks across the
country."**

Prerequisites:

Average time: 6 hours (est.).

Next revision: "April, 1963."

(1 sample page)

BUSINESS EDUCATION & ECONOMICS

BANK TELLER TRAINING COURSE **Morris; EDUCATIONAL METHODS** one sample page:

BANK TELLER COURSE TYPES OF ENDORSEMENTS

14. When June Gates wrote and signed the check below, it became the property of Olive Hanson. If now Miss Hanson wishes her friend, Polly Jordan, to have the \$15.50, she may transfer ownership or title to the check to Miss Jordan. She does this by endorsing it on the back with the words, "Pay to the order of Polly Jordan," and signing her name. Do this on the back of the check at left below.

	Feb. 22, 1962
	Olive Hanson \$15.50
	Fifteen and 50/100 ----- Dollars
	<i>June Gates</i>

A14 Pay to the order of Polly Jordan.
Olive Hanson

15. We note that the endorsement in the preceding item ownership or title to the check from Olive Hanson to Polly Jordan. This illustrates a third function of an endorsement; to transfer title to the check.

A15 transferred

16. Thus, we have now studied three functions of an endorsement on a check:
- a) to guarantee the _____ of the check,
 - b) to guarantee the previous _____ on the back of the check, and
 - c) to _____ ownership or title to the check.

A16 genuineness
endorsements
transfer

Please go on to the next page

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612 North Michigan Avenue, Chicago, Ill.

BUSINESS EDUCATION & ECONOMICS

H.S. & Adult Ed.

BEGINNING BOOKKEEPING

FREDERICK G. COMSTOCK, Subject Matter Expert

ROBERT M. CHAPLIN, Programmer, General Programmed Teaching Corporation

ANNE BEACH, Editor, General Programmed Teaching Corporation

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 2010 frames, paperback, 456 pp.,
8-1/2" x 11", \$_____.

Teacher's Manual: "Instructions to teacher included in preface."

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental testing: High school students.

Field testing: High school students."

Prerequisites: None.

Average Time: 28 hours (est.).

Next Revision: 1968.

(2 sample pages)

BUSINESS EDUCATION & ECONOMICS

BEGINNING BOOKKEEPING

Comstock, Chaplin, Beach; ENCYCLOPAEDIA BRITANNICA
PRESS

2 sample pages:

710	When completed, the total of column 3 and the total of column 4 on the worksheet _____.	
	<div>A. must be equal B. cannot be equal if the number of accounts credited exceed the number debited</div>	
711	When an adjustment must be made to an account whose title and number do not already appear on the worksheet, the title and number of the account to be adjusted are _____.	
	<div>A. entered on the line following account numbers and titles already listed B. omitted from the worksheet, but the account is adjusted anyway.</div>	
712	Any error in the adjustments must be corrected before the bookkeeper can proceed. If the totals of column 3 and 4 are not equal, this indicates _____.	
713	To locate an error, recheck the column totals. If this does not eliminate the error, each adjustment must be rechecked to insure that debit and credit amounts are equal and that they have been placed in the proper worksheet columns.	
	True	False
714	Completing adjustments for previously unrecorded income and expense items results in a _____ accurate picture of financial transactions of the accounting period.	
	more	less

715

What is the heading of columns 5 and 6 on the worksheet illustrated in Figure 25?

(5)

(6)

716

Worksheet columns 5 and 6 consist of an adjusted _____

717

To complete the adjusted trial balance, the bookkeeper combines the amounts entered on the same lines in columns 1, 2, 3, and 4 and extends them to columns 5 and 6, the Adjusted _____ columns.

718

Amounts in the Adjusted Trial Balance columns represent balances in the accounts _____ the adjustments for accrued and deferred items have been made.

before

after

719

If an account having a debit balance in column 1 on the worksheet is adjusted with a debit in column 3, the amounts are _____ when the balance is extended to column 5.

added

subtracted

BUSINESS EDUCATION & ECONOMICS

H.S.-Coll.+

BUSINESS LAW

JOHN R. FONSECA, Director of Educational Programs,
Hamilton Research Associates.

Published by **HAMILTON RESEARCH ASSOCIATES, Inc.**,
Seneca Turnpike, New Hartford, N. Y.

Programed text, 6500 frames, paperback, 800 pp., 8 1/2" x
11", \$____.

Teacher's Manual available.

Table of Contents, Index.

Unit and Final Test(s) available.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"College students and high school students."

Prerequisites: None.

Average time: 60-75 hours (est.).

Next Revision:

(1 sample page)

BUSINESS EDUCATION & ECONOMICS

BUSINESS LAW

Fonseca; HAMILTON RESEARCH ASSOCIATES
one sample page:

Business Law

REQUIREMENTS OF NEGOTIABILITY	1. The Negotiable Instruments Law sets forth the definition and requirements of negotiability. In order to understand these requirements one must learn the _____
1. Negotiable Instruments Law	2. The two main instruments referred to in the Negotiable Instruments Law are checks and promissory notes. We are then to discuss primarily the definition and requirements of of the negotiability of _____ and _____
2. checks, promissory notes	3. In general, the term "negotiable" refers to the quality of checks and promissory notes that makes them transferable from one person to another. When checks and promissory notes are transferable from one person to another they are termed to be _____ instruments.
3. negotiable	4. There are certain exact requirements that must be met before an instrument can be negotiable. These requirements are set forth in the _____ Law.
4. Negotiable Instruments	5. We see then that the Negotiable Instruments Law (N. I. L.) outlines the necessary requirements that negotiable instruments such as _____ and _____ must have before they can be transferred or _____

BUSINESS EDUCATION & ECONOMICS Coll.

**Part I, Student Workbook to Accompany CHALLENGE TO
THE AMERICAN ECONOMY**

**RENDIGS FELS, Department of Economics, Vanderbilt
University**

DENNIS STARLEAF, Instructor, Vanderbilt University

MARJORIE CHURCHILL

**Published by ALLYN AND BACON, Inc.,
150 Tremont Street, Boston 11, Massachusetts**

**Programed workbook, 299 frames, paperback, 116 pro-
gramed pp. (286 pp. total), 8-1/2" x 11", \$3.95.**

Table of Contents.

**Constructed Responses always used; no Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"Tested on approximately 200 students at Vanderbilt
University under the directorship of Rendigs Fels."**

Prerequisites: None.

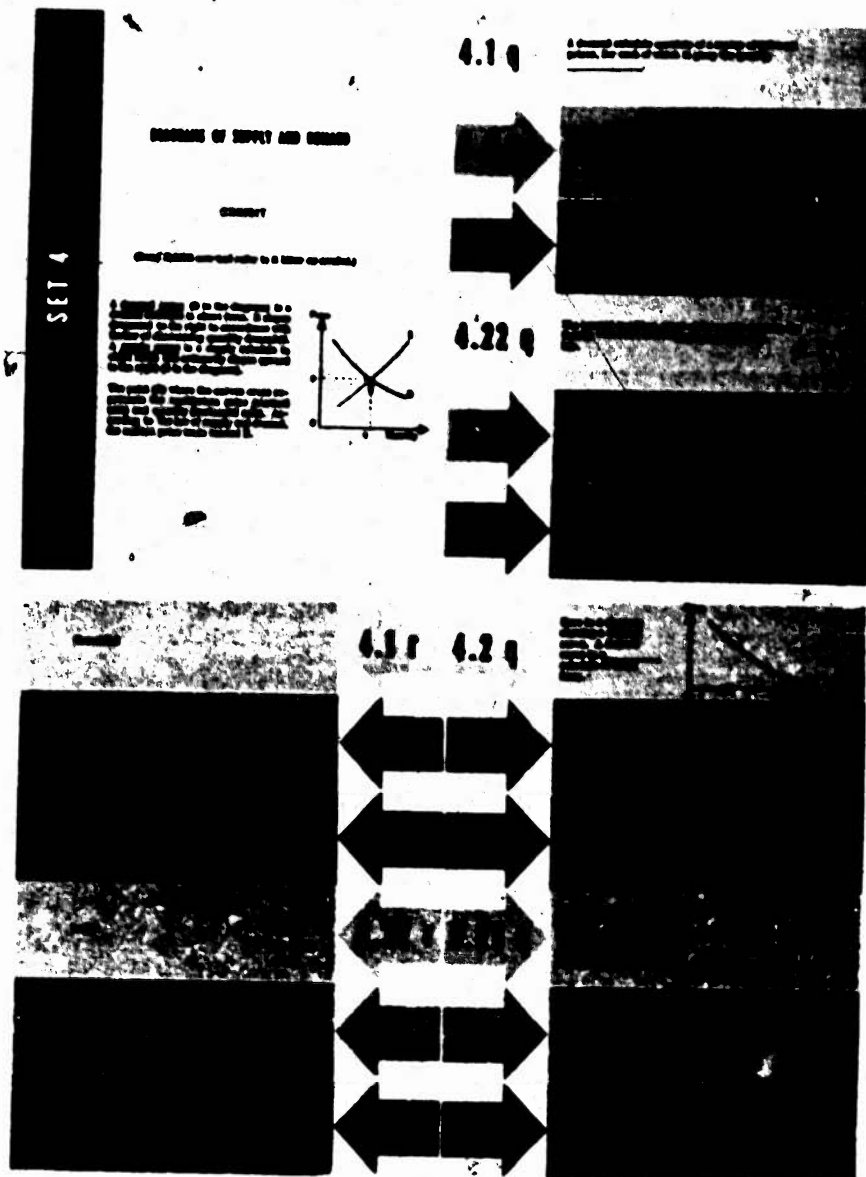
Average Time: 4 hours (est.).

Next Revision: "Unknown."

(1 sample page)

BUSINESS EDUCATION & ECONOMICS

CHALLENGE TO THE AMERICAN ECONOMY Fels, Starleaf, Churchill; ALLYN AND BACON one sample page:



1962 Allyn & Bacon, Inc. Boston.
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publisher.

BUSINESS EDUCATION & ECONOMICS

Coll.

CONDUCTING AN INTERVIEW

(Number Five in the Management Skills Series)

WILLIAM PAUL

SCOTT B. PARRY, both of Scott B. Parry & Associates

Published by **LORD PRODUCTS INC.**,

28 West 22nd Street, New York 10, N.Y.

Programed text, 300 frames, paperback, 155 pp., 4" x 11",
\$6.95.

Table of Contents.

Final Test included.

Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION:

"College undergraduates, male and female."

Prerequisites: High school verbal ability.

Average Time: 4 hours (est.).

Next Revision: "Unknown."

(1 sample page)

BUSINESS EDUCATION & ECONOMICS

CONDUCTING AN INTERVIEW

Paul, Parry; LORD PRODUCTS

one sample page:

1. Interviewing, like all communication skills, is a two-way process involving at least _____ persons (and usually no more).	two
2. In most forms of communication, these two parties are known as sender and _____.	receiver
3. In interviewing, however, the two parties are known as <u>respondent</u> and <u>interviewer</u> . As you can gather from the title, this booklet puts you in the shoes of the _____.	interviewer
4. "Interviewing" is another word for _____, the term we shall use throughout this program.	respondent
5. Whether the person whom you interview is seeking employment, receiving an on-the-job evaluation, or being polled for his opinions, we'll still refer to him as the _____ and to you as the _____.	respondent interviewer
6. Recall that the communication process is a two-way process. This means that as interviewer you are (a) a sender of information (b) a receiver of information (c) both (a) and (b) Ans: _____	(c)
7. As an interviewer, you have information to convey and to _____. Similarly, the _____ has information to _____ and to receive.	receive (get) respondent convey (give)
8. The techniques you employ in the interview situation will, of course, depend on the <u>purpose</u> of the interview. The checking of credentials and references, for example, would apply only to an (a) applicant seeking a job with your company. (b) old employee receiving his annual evaluation. Ans: _____	(a)
9. There are, of course, basic principles of good interviewing that apply in every type of interview situation. Let's examine some of these _____ before turning to specific techniques that depend more upon the _____ of the interview.	basic principles purpose (nature)
10. First, there is the matter of objectives. It is not always self-evident to both the _____ and the _____ what the _____ of the interview are.	respondent interviewer (either order) objectives

BUSINESS EDUCATION & ECONOMICS

H.S.-Adult

CONSUMER FINANCE

Credit Judgment

MARSHALL ARKY, et al., Roto Vue

**Published by MODEL PUBLISHING Company,
1602-08 Hodiamont St., St. Louis, Missouri**

**Programed text, 800 frames, paperback, 150 pp., 8 1/2"x11",
available in 3 separate units at \$5.00 each.**

Answer Sheets included.

Unit and Diagnostic Test(s) available.

**Constructed Responses always used; no Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Employees in eight branch offices for development.

**Controlled field test involving over fifty employees in
three dozen offices of nationwide finance company."**

Prerequisites: High school graduate.

Average Time: 7 hours (est.).

Next Revision: June, 1963.

(1 sample page)

BUSINESS EDUCATION & ECONOMICS

CONSUMER FINANCE

Arky; MODEL PUBLISHING

one sample page:

91. Three facts tell us whether the person is able to pay. One of these is his Net Income, another is his Total Indebtedness, and the third is his Monthly Expenses. Whether or not a person is able to pay can be determined by analyzing his total indebtedness, his monthly expenses and his net _____.

income

92. A person's total indebtedness and fixed expenses are only important when judged in the light of his net income. You must determine if the applicant's net income is large enough to make payments on a new loan, in addition to all of his present obligations and fixed expenses. A person can have good paying ability for a new loan only if his net income is large enough to handle all of his present debts and fixed _____.

expenses

93. The ability to pay is determined by examining the Applicant's total indebtedness and fixed monthly expenses in relation to his net income. A person's total indebtedness and fixed monthly expenses are important only when judged in relation to his net monthly _____.

income

94. A person whose present installment payments total \$200, whose food, rent, and clothing cost approximately \$300 a month, and whose monthly net income is \$600, should have a balance of \$100 with which he could make payments on a new loan. An applicant who has monthly installment payments of \$100, fixed monthly expenses of \$300, and a net monthly income of \$400 (should, or should not) _____ be able to handle payments on a new loan.

should not

95. Net income includes, of course, income from all sources in addition to an applicant's salary. His wife may be employed, or he may receive rent from property he owns. Such income must be added to his salary to find the net income. Net income includes all of any income in addition to the applicant's _____.

salary

CUTTING OFFICE COSTS THROUGH WORK SIMPLIFICATION

(Number Four in the Management Skills Series)

ELMER V. GRILLO, New York University; Staff Assistant, Metropolitan Life Insurance Co.

Published by **LORD PRODUCTS, Inc.**,
28 West 22nd Street, New York 10, N.Y.

Programed text, 320 frames, paperback, 165 pp., 4" x 11",
\$6.95.

Table of Contents.

Final Test included.

Constructed Responses usually used; some Multiple Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATIONS(S):

"Employees in two national business organizations."

Prerequisites: High school graduate.

Average Time: 3-1/2 hours (est.).

Next Revision: "Unknown."

(1 sample page)

BUSINESS EDUCATION & ECONOMICS

CUTTING OFFICE COSTS THROUGH WORK SIMPLIFICATION

Grillo; LORD PRODUCTS

one sample page:

1. Mark Twain once said that there are two times in a man's life when he should not speculate: first, when he can't afford it, and second, when he can afford it! Evidently Mark Twain didn't believe in _____.	speculating (speculation)
2. Another word for speculation is <u>guesswork</u> . In the business world today, no one can afford to _____ about costs when it is possible to get actual facts and figures.	guess
3. If you are a busy office Supervisor, your most precious commodity is probably time - your own and that of your work-force. This program should help you answer the question: where does the _____ go, and what do we get for it?	time
4. Everything worth doing costs something - in time, money, or effort. We do not begrudge costs that "pay off." We call them <u>productive costs</u> because they _____ the things we want or need.	produce
5. What we do begrudge is spending time, money, or effort on things that are unnecessary, things that do not fill a need. These costs are <u>non-productive</u> and should be _____.	productive eliminated (reduced, etc.)
6. For instance, your work-force probably uses a battery of machines: typewriters, calculators, and duplicating equipment, to name a few. You can figure the cost of an idle employee, but let's not overlook the cost of an _____.	idle machine
7. If you work in a typical business office, you are regularly faced with mountains of paperwork. Have you ever sat down to figure out the actual _____ of time spent in filling out forms and writing reports? _____ (not amount)	cost
8. This program will suggest ways to make reliable estimates of the _____ now spent on various office operations. By simplifying or eliminating procedures whenever possible, you should be able to reduce or completely _____ your non-productive costs.	time eliminate
9. If you haven't already gathered from the title, this program is a brief course on cutting non-productive office _____ through work _____.	costs simplification
10. Very well. Where do we start? Cost reduction in the office starts with a state of mind. Like the first line of an old popular song, "You've got to accentuate the positive." You've got to adopt an attitude which will: (a) stop defending all of your present practices (b) consider other ways of doing the work (c) be willing to question the obvious (d) be ready to criticize your own pet ideas (e) all of the above	(e) (of course...and we're off to a good start)

BUSINESS EDUCATION & ECONOMICS

Adult

EFFECTIVE EXECUTIVE PRACTICES

**NEELY D. GARDNER, Deputy Director of Water
Resources in Calif.**

**Published by: DOUBLEDAY & COMPANY, Inc.,
575 Madison Avenue, New York City**

**Programed text, 354 frames, 362 pp., hard cover,
8 1/4" x 5 3/8", \$4.95.**

**(A similar program, A SHORT COURSE IN EFFECTIVE
EXECUTIVE PRACTICES, is available in TM format
from: EDUCATIONAL SCIENCE DIV.,
U.S. INDUSTRIES, Inc.,
250 Park Avenue, New York City.**

**For use in AUTOTUTOR MARK II, \$1,250; program
reusable, \$95.00.)**

**Teacher's Manual available, free, for machine program.
Table of Contents, both programs; Index, programed text.
Unit Test(s) available, machine program.
No Constructed Responses, Multiple Choice Responses
and Branching always used.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"California state administrators at middle and upper
supervisory levels; middle and upper management,
various defense firms."**

**Prerequisite: "High school education; some management
experience."**

**Average Time: 5-7 hours (est.), programed text; 3-6
hours (est.), machine.**

**Next Revision: Undetermined.
(1 sample page)**

BUSINESS EDUCATION & ECONOMICS

EFFECTIVE EXECUTIVE PRACTICES

Gardner; DOUBLEDAY & COMPANY

one sample page:

Sample from Effective Executive Practices

30
(from page 26)

YOUR ANSWER: The best approach to regular communication with subordinates is to hold staff meetings regularly, even when the entire group cannot be present. See people individually at times.

By all means, this is the thing to do. Staff meetings are an excellent vehicle for communications and control. Some business is conducted better in a group. Staff meetings avoid some of the meetings that otherwise would be necessary on an individual basis.

Group meetings should be used when common purposes and objectives make them worth while. Individual talks should be held when the business at hand applies to one or two people.

All managers should receive formal training in conference leadership. Executives who lead conferences "by ear" often are not able to detect the sour notes.

Now, here's another problem. How about that mountain of paper in your "IN basket." What is the most effective action you can take here? Choose the best answer.

At the beginning of each day, sort everything into "urgent," "important," and "do later" piles.

Decide which urgent matters can be acted upon.

Then go to work on them.

page 36

Sit down with your secretary and take care of all dictation. Handle other "IN basket" material when you have time.

page 39

Follow this rule: Handle only once any letter, document, report, or other piece of paper that you find in your "IN basket."

page 41

BUSINESS EDUCATION & ECONOMICS

H.S.+

FUNDAMENTALS OF FINANCE AND INVESTMENT

TECHNICAL STAFF, General Education, Inc.

Published by GENERAL EDUCATION, Inc.,

96 Mount Auburn Street, Cambridge 38, Mass.

**For use in SELF-TUTOR machine, program reusable,
3000 frames, \$30.00 (machine and program)**

Teacher's Manual available, free.

Table of Contents.

Unit Test(s) available, free.

**Constructed Responses usually used; some Multiple
Choice; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"Potential applicants for the National Association of
Securities Dealers qualifying examination were used
as subjects. Approximately 15 were used as subjects.
Testing was administered with cheat-proof teaching
machines under supervised conditions. The program
was revised until terminal behavior questions could
be answered correctly and until a negligible error
rate was achieved. Program is accompanied by a set
of 600 terminal behavior questions which may be used
to evaluate the program and to assess student progress."**

Prerequisites: None.

Average Time: 30 hours (est.).

Next Revision: "None planned at present."

(3 sample pages)

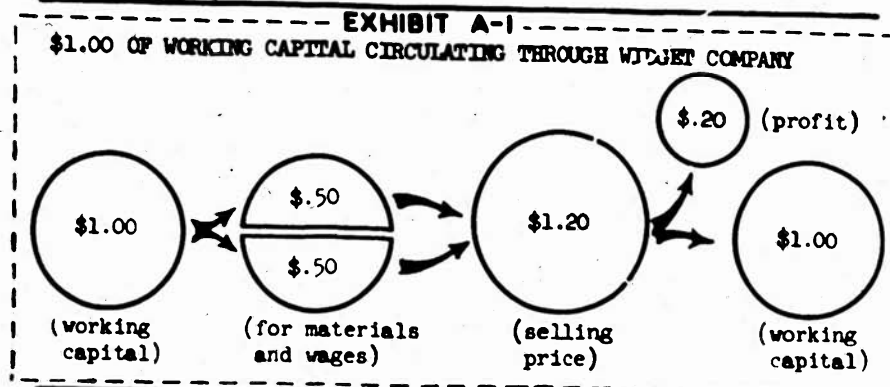
BUSINESS EDUCATION & ECONOMICS

FUNDAMENTALS OF FINANCE AND INVESTMENT Technical Staff; GENERAL EDUCATION 3 sample pages:

Excerpt from

Section A: CORPORATE FINANCE I

(132 frames)



- | | |
|--|--------------------------------|
| <p>A7. Mr. Edison needs <u>working capital</u> -- the capital needed day by day, week by week, to keep his plant working until he is paid for the widgets he is making. Working capital is money needed to buy . . . (a new factory/a swimming pool for Mr. Edison's wife, materials and pay wages).</p> | <p>materials and pay wages</p> |
| <p>A8. Exhibit A-1 shows the circulation of \$1 of working capital through Widget Co. 50¢ is spent on _____ and 50¢ on _____ to make a widget. The \$1 of working capital . . . (is/is not) used up to make a widget.</p> | <p>materials; wages; is</p> |
| <p>A9. The widget made with this \$1.00 of working capital sells for \$_____. Widget Co. . . . (has/does not have) its \$1.00 of working capital back now, plus a 20¢ profit.</p> | <p>\$1.20; has</p> |

Excerpt from
Section I: SECURITIES EXCHANGES
 (193 frames)

EXHIBIT I-2

- (a) GM 54 1/4
- (b) X 5s57
- (c) PA 2000s25
- (d) CRR.III Pr 53
- (e) GM Pr 3 3/4 2s99 1/2

166. Exhibit I-2 consists of reports of transactions as they would be printed on the tape. The price at which a security sold is printed in points . . . (above/below) the coded name of the security.	below
167. In Exhibit I-2 (a), GM means General Motors common stock. At what price did General Motors common trade as reported in Exhibit I-2 (a)? (answer in points)	54 1/4
168. Only round lot transaction are reported on the tape. Odd lot transactions . . . (are/are not) reported on the ticker tape.	are not

Excerpt from

Section P: INTRODUCTION TO INVESTMENT COMPANIES

(194 frames)

P107. An investment company may be described in terms of its investment purpose, as well as in terms of the class of securities in its portfolio. That is, funds . . . (vary/are the same) in what they try to accomplish for their investors.	vary
P108. An investment company generally invests its capital to seek either <u>capital appreciation</u> or for current income.	(No Answer Required)
P109. A fund which hopes to produce high . . . (current income/capital appreciation) for its investors would invest in high-yielding securities, whether these are bonds, preferred stocks, or common stocks.	current income
P110. The high-yielding securities in the portfolio of an "income fund" . . . (must/need not) be common stocks.	need not
P111. An income fund would probably invest in . . . (high-yielding/low-yielding) securities.	high-yielding

BUSINESS EDUCATION & ECONOMICS Coll. +

IMPROVING YOUR WRITTEN COMMUNICATIONS

(Number one in the Management Skills Series)

SCOTT B. PARRY, President, Scott B. Parry & Associates

Published by **LORD PRODUCTS, Inc.**,

28 West 22nd Street, New York 10, N. Y.

Programed text, 310 frames, paperback, 160 pp., 4" x 11",
\$6.95.

Table of Contents.

Final test included.

Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Employees of three selected industries, faculty members of leading college offering communications program of study, students of same."

Prerequisites: High school equivalency in verbal ability.

Average Time: 4-1/2 hours (based entirely on data);
standard deviation "not calculated, since range was
too limited to warrant."

Next Revision: "Unknown."
(1 sample page)

BUSINESS EDUCATION & ECONOMICS

IMPROVING YOUR WRITTEN COMMUNICATIONS Parry; LORD PRODUCTS one sample page:

<p>148. Our third Guidpost to better writing is conciseness. Consider two messages. One rambles on and on. The other is direct, to the point, <u>striking</u>.</p> <p>The concise message is (<u>less</u> / <u>more</u>) likely to be boring; it is also (<u>less</u> / <u>more</u>) likely to be misunderstood.</p>	<p>less less</p>
<p>149. A <u>boring</u> message loses the reader's interest, and a misunderstood message fails to get the desired action. You can avoid both these dangers by keeping your message direct and to the point, or _____.</p>	<p>concise</p>
<p>150. The two main reasons for keeping your written messages concise, then, are that brevity minimizes the chance that your reader will become _____ or will _____ the message.</p>	<p>bored (disinterested) misunderstand (misinterpret)</p>
<p>151. "Friends, we have in our midst a man who needs no introduction...a man who is near and dear to each and every one of us...you are all, I'm sure, as anxious to hear him as I am, and so, without further comment from me, let me say that it is indeed a rare privilege and honor for me to present your friend and mine, Bill Jones." (applause)</p> <p>Have you ever suffered through a speech introduction that went something like the above?</p> <p style="text-align: center;">(yes or no)</p>	<p>(we bet you have)</p>
<p>152. What has the speaker said? Words. "Patty" words with little if any message. Now let's <u>trim the fat</u>:</p> <p>"Friends, our speaker is known to all of you. He needs no introduction - and so he gets none! Let's welcome to the platform Bill Jones."</p> <p>One way to get conciseness is to _____.</p>	<p>trim the fat</p>
<p>153. Here's another way to keep your message concise: use <u>plenty of periods</u>. You've noticed how the extemporaneous speaker often rambles on until his sentences crumble under their own weight. Long, gawling sentences are more common to _____ than to writers.</p>	<p>speakers</p>
<p>154. This is important to remember when you are dictating a letter. Although you are speaking the letter to a secretary, it will be received and read in writing. Keep these sentences short. Don't ramble. Remember this pithy point:</p> <p style="text-align: center;">pepper your paragraphs with _____</p>	<p>periods</p>
<p>155. Another secret to conciseness is word length: use the shorter word when there is a choice. For example, don't say "it is our <u>intention</u> to <u>utilize</u> our own <u>manpower</u> on the job" when you can express the same idea by saying, "We _____ to _____ our own _____ on the job."</p>	<p>plan (intend) use men</p>

BUSINESS EDUCATION & ECONOMICS

Coll.+

INCREASING PRODUCTIVITY THROUGH THE SUPERVISOR
(Number Three in the Management Skills Series)

M. BERNSTEIN, Senior Programmer, Scott B. Parry & Associates

Published by **LORD PRODUCTS, Inc.**

28 West 22nd Street, New York 10, N.Y.

Programed text, 300 frames, paperback, 155 pp., 4" x 11",
\$6.95.

Table of Contents.

Final Test included.

Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Not yet field tested, (college males for developmental)."

Prerequisites: High school verbal ability.

Average Time: 4-1/2 hours (est.).

Next Revision: "Unknown."

(1 sample page)

BUSINESS EDUCATION & ECONOMICS

INCREASING PRODUCTIVITY THROUGH THE SUPERVISOR

Bernstein; LORD PRODUCTS
one sample page:

101. Of the five job simplification techniques we have now reviewed, PROCESS ANALYSIS is by far the most powerful. It shows up the wasted operations in a process and thus generates ideas for improving the _____ as a whole.	process
102. Operations that can simply be eliminated do not need further study. The Supervisor will save time and effort; therefore, if he analyzes a process (before / after) he analyzes the individual operations that enter into it.	before
103. Process , here, means an oft-repeated cycle of operations involved in making a product or providing a service. Its importance lies in the fact that it is not a one-time activity but is _____ many times in a day or week.	repeated
104. One useless action in a production process can cost thousands of unnecessary dollars a year. Consider the Supervisor who discovers a way to cut 10¢ from the cost of a process repeated 100 times a day. He has saved his company \$ _____ a week, or about \$ _____ a year.	\$50 \$2500
105. Experienced managers often focus a process analysis on some particular material that enters the department for processing. The process studied, then, is the total of all operations performed in the department on that particular _____.	material
106. A process can be thought of as one large, unified operation made up of many separate, smaller _____. The Supervisor must observe and evaluate them all when he makes his process _____.	operations analysis
107. As you learned earlier in this program, all production work can be broken down into six kinds or classes of activity (including non-activity). These classes were called work _____ and you were given the shorthand or _____ by which each one is usually designated.	elements symbol
108. To refresh your memory, see if you can match the work elements and their symbols listed below. If you miss two or more, better go back and review Lesson Three.	
<p>WORK ELEMENT</p> <p>1. make-ready and put-away.</p> <p>2. "do" (the value-adding element).</p> <p>3. inspection.</p> <p>4. delay (accidental, unplanned).</p> <p>5. storage (a planned delay).</p> <p>6. transportation.</p> <p>:(O, →, ●, Δ, D, □)</p>	<p>SYMBOL</p> <p>1. O</p> <p>2. →</p> <p>3. ●</p> <p>4. Δ</p> <p>5. D</p> <p>6. □</p>

BUSINESS EDUCATION & ECONOMICS

INSURANCE PREMIUM FINANCING

Published by EDUCATION ENGINEERING, Inc.,
381 West 7th Street, San Pedro, California.

Programed text, 3240 frames, paperback, 108 pp.,
5" x 7", available in 3 separate units at \$3.75 each.
For use in SPEED machine, program reusable, \$30.00.
Teacher's Manual available, \$4.00 per unit.
Unit, Final, Diagnostic Test(s) available at \$3.75 each.
Multiple Choice Responses always used; no Constructed
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

Additional material required: SPEED machine, \$700 and
\$850.

Average Time: 5 hours (est.).

Next Revision:

(2 sample pages)

BUSINESS EDUCATION & ECONOMICS

INSURANCE PREMIUM FINANCING EDUCATION ENGINEERING

2 sample pages:

GOVERNING REGULATIONS (continued)

On monthly notes, the first installment is due within 30 days of the date of the policy, which should bear the same date as the note.

If the premium is financed on a policy which is more than 30 days old, collect the down payment plus all installments due at the time the note is signed.

The entire premium should be paid to the company or agent upon receipt of the signed endorsement. If a blanket agreement is in effect, payment should be made at once.

NOTE: A charge of 1¢ per dollar is made on late installments.

CB-T-1-01-814

- | | |
|--|--------------------------------|
| 1. An insurance premium is to be financed on a policy that is 35 days old. The down payment is \$47.00 and the monthly payments are \$23.50. How much money should be collected when the note is signed? | 1. 0 |
| 2. On monthly notes, the first installment is due within _____ days of the date of the policy. | 2. signed endorsement, at once |
| 3. The date of the policy and the date of the note should be within _____ days of each other. | 3. \$70.50 |
| 4. The entire premium should be paid to the company or agent upon receipt of the _____. If a blanket agreement is in effect, payment should be made _____. | 4. 30 |
| 5. What charge should be made for a late installment of \$69.00? | 5. 10 |
| | 6. \$94.00 |
| | 7. signed note, immediately |
| | 8. \$3.45 |
| | 9. 20 |
| | 10. \$2.07 |

CB-T-1-01-064

BLANKET AGREEMENTS (continued)

Blanket agreements will contain a provision that the insurance company will, when requested by the bank, cancel the policy on a pro-rata basis, rather than the normal short-rate basis. The entire unearned premium will then be returned to the bank.

Since the blanket agreement can not cover the data on individual policies financed under it, a special endorsement will be used for each note to show the bank's interest in the policies or their proceeds.

All blanket agreements will be kept on file by the installment loan administration. Each time an office requests approval of a new loan, installment loan administration will ascertain the existence of a blanket agreement.

CB-T-1-01-S12

- | | |
|---|---|
| 1. Blanket agreements will stipulate that policies cancelled by the bank will be on a _____ basis. | 1. When approval of a new loan is requested. |
| 2. If the policy cancelled was on a _____ basis the bank would not get all of the unearned premium back. | 2. short-rate |
| 3. Why is a special endorsement required on each note to show the bank's interest in the policies and their proceeds? | 3. installment loan administration |
| 4. Blanket agreements are kept on file by the _____. | 4. Because individual policies can not cover the data on individual blanket agreements. |
| 5. When is the existence of a blanket agreement determined? | 5. insurance division |
| | 6. Blanket agreements can not cover the data on individual policies. |
| | 7. When the premium is sent to the insurance company. |
| | 8. When the policy goes into effect. |
| | 9. pro-rata |
| | 10. Because blanket agreements only guarantee cancellation conditions. |

CB-T-1-01-Q12

BUSINESS EDUCATION & ECONOMICS

H.S.+

PROGRAMMED BUSINESS MATHEMATICS: CONCEPTS, SKILLS, & APPLICATIONS. Parts I, II, III, and IV.
HARRY HUFFMAN, Professor of Business Education.
Published by GREGG PUBLISHING DIVISION, MCGRAW-HILL BOOK COMPANY, 330 West 42nd St., New York 36, N.Y.

Programed texts; Part I, 1,011 Frames; Part II, 767 Frames; Part III, 820 Frames; Part IV, 864 Frames; paperbacks; Part I, 214 pp.; Part II, 208 pp.; Part III, 224 pp.; Part IV, 208 pp.; 8-1/2" x 11", \$2.25 each part.

Teacher's Manual available, \$1.75.

Table of Contents.

Unit and Final Test(s) available.

Constructed Responses usually used; some Multiple Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Individual testing—age 16 and up, I.Q. 95-110

Group testing—High school graduates enrolled in business colleges."

Prerequisites: "Senior in High School or high school graduate."

Average Time: 90-110 hours (est.).

Next Revision:

(3 sample pages)

BUSINESS EDUCATION & ECONOMICS

PROGRAMMED BUSINESS MATHEMATICS: CONCEPTS, SKILLS, & APPLICATIONS Huffman; GREGG PUBLISHING DIVISION, MCGRAW-HILL 3 sample pages:

76 What are two methods of ensuring accuracy in addition?

(1)

(2)

Any two of these: reverse addition, angular addition,
subtotal addition, the estimation procedure.

HORIZONTAL ADDITION TO INCREASE SPEED



77 Amounts horizontally arranged require skill in horizontal addition.
Without recopying, add the ten amounts below.

.47	.23	.50	.65	.75	.96	.84	.23	.47	.86
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

 = _____ Total

This method of addition is known as _____ addition.

5.96 horizontal

78 What term is applied to horizontal addition when it is first done from left to right and then done from right to left?

Reverse addition

79 The special skill in horizontal addition involves care in avoiding confusion in the units, tens, hundreds, and other places. Without recopying, add these two numbers.

$$75,475 + 86,498 =$$

Can you use the procedure of reverse addition here? _____

161,973 yes

80 Without recopying, add these two numbers horizontally.

$$\$147,650.90 + \$237,486.45 = \$$$

Verify by adding again horizontally.

$$\text{Total} = \$$$

\$385,137.35 \$385,137.35

THE USE OF ALGEBRAIC SYMBOLS



- 63 p , b , and r are called *algebraic symbols*.

What branch of mathematics deals with *algebraic symbols*? _____

algebra

- 64 **Business rule:** Wages equal hours worked times pay rate.
Stevens worked 37 hours and he earns \$2.25 per hour.
Show how his wages are figured, but do not figure them.

$$w = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}$$

$$w = 37 \times 2.25$$

- 65 **Rule:** Wages earned equal hours worked times pay rate.

Use the algebraic symbol w for wages earned, h for hours worked, and r for the pay rate. Now write the rule using the algebraic symbols.

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}$$

$$w = h \times r$$

- 66 Ragan designates the goods available for sale in his Men's Shop as g .

$$g = \text{beginning inventory} + \text{purchases}$$

How does Ragan calculate g ? _____

By adding the beginning inventory to purchases

- 67 **Rule:** The sum of the beginning inventory and the purchases equals the goods available for sale.

$$\text{beginning inventory} = b$$

$$\text{purchases} = p$$

$$\text{goods available for sale} = g$$

Now write the rule using algebraic symbols. _____

$$g = b + p$$

- 87 Smith is paid overtime on a weekly basis. He works 90 hours. His regular pay rate is \$1.90 an hour and his overtime pay rate is \$2.25 an hour.

Regular hours _____ Regular pay \$ _____
 Overtime hours _____ Overtime pay \$ _____
 Gross pay \$ _____

Figure Smith's hours and his pay.

Regular hours, 40 Regular pay, \$60.00
 Overtime hours, 10 Overtime pay, \$22.50
 Gross pay, \$82.50

- 88 Marion Darby is paid overtime on a weekly basis. She is employed 6 days a week, and last week she worked 8 hours, 10 hours, 8 hours, 11 hours, 8 hours, and 5 hours. Regular pay is \$2 an hour and overtime rate of pay \$3 an hour. Figure her hours and pay.

Regular hours _____ Regular pay \$ _____
 Overtime hours _____ Overtime pay \$ _____
 Gross pay \$ _____

Regular, 40 Regular pay, \$80.00
 Overtime, 10 Overtime pay, \$30.00
 Gross pay, \$110.00

- 89 Martha Nelson is paid overtime on a weekly basis. The regular rate is \$1.20; the overtime rate is \$1.60. Complete this payroll register.

Employee	M	T	W	Th	F	S	Reg. Hrs.	O.T. Hrs.	Reg. Pay	O.T. Pay	Gross Pay
M. Nelson	9	7 $\frac{1}{2}$	8 $\frac{1}{2}$	10 $\frac{1}{2}$	8	4 $\frac{1}{2}$					

Reg. Hrs. O.T. Hrs. Reg. Pay O.T. Pay Gross Pay
 40 8 \$48.00 \$14.40 \$62.40

- 90 Sometimes overtime is paid on a daily basis. In this case, overtime pay is given for all time worked over 8 hours. Smith works for a company which pays overtime on a daily basis. If he works 10 hours, he is paid at the regular rate for the first _____ hours and the overtime rate for the next _____ hours.

8 2.

BUSINESS EDUCATION & ECONOMICS

Coll.+

PROGRAMMED INSTRUCTION IN PERT AND CPM

DAVID E. MACKENZIE, PERT Project Manager

ALBERT E. HICKEY, President

**SANFORD M. AUTOR, Director of Programming,
ENTELEK, Inc.**

**Published by ENTELEK INCORPORATED,
42 Pleasant Street, Newburyport, Massachusetts**

**Programed text, 700 frames (approx.), paperback in vinyl
portfolio, 235 pp., 2 program sections at \$17.50,
Reference Section, \$5.00, Vinyl Portfolio, \$5.00.**

Table of Contents.

Final test available, \$.75 (includes grading).

**Constructed Responses usually used; some Multiple
Choice; no Branching.**

**DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"Industrial and military settings."**

Prerequisites: None

Average Time: 15 hours (est.).

Next Revision: 1964.

✓ **(1 sample page)**

BUSINESS EDUCATION & ECONOMICS

PROGRAMMED INSTRUCTION IN PERT AND CPM MacKenzie, Hickey, Autor; ENTELEK INCORPORATED one sample page:

Now that we have the expected time for each individual activity in the project, let's calculate how long it will take to accomplish the entire _____.



project

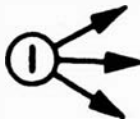


Turn to page R12. It's the same network at R10, we've just cleaned it up a little. To get total project time, begin with event _____, by finding earliest event time (T_E).

1

No time has been expended prior to event 1, so indicate at event 1 that T_E is 0.

$T_E = 0$



The time to reach event 2 is the expected time to complete activity 1,2, or _____ days.

2

BUSINESS EDUCATION & ECONOMICS Coll.+

PUTTING PUBLIC RELATIONS TO WORK

(Number two in the Management Skills Series)

EDWARD J. ROBINSON, Chairman, Communications
Research Center; President, New England Consultants,
Inc.

Published by **LORD PRODUCTS, Inc.**

28 West 22nd Street, New York, New York

Programed text, 285 frames, paperback, 148 pp., 4" x 11",
\$6.95.

Table of Contents.

Final Test included.

Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Students (96) in Boston University, selected faculty
at same."

Prerequisites: High school graduate.

Average Time: 4 hours (est.).

Next Revision: "Unknown."


(1 sample page)

BUSINESS EDUCATION & ECONOMICS

PUTTING PUBLIC RELATIONS TO WORK

Robinson; LORD PRODUCTS

one sample page:

<p>5. Let's begin with the word "publics." For our purposes, a public is a group of people who share a <u>common interest</u>. The employees of your company are an example of a _____.</p>	<p>public</p>
<p>6. Good pay, working conditions, and opportunity for advancement are a few of the <u>interests</u> shared by all members of your company's employees.</p>	<p>interests public</p>
<p>7. Some publics, such as employees, are part of the organization. These are called <u>internal</u> publics. In contrast, customers would be an example of an _____ public.</p>	<p>external</p>
<p>8.  This diagram shows the major publics of a typical manufacturing company. The employees are an _____ public; most of the publics are _____.</p>	<p>internal external</p>
<p>9. Of course, publics will differ from one kind of organization to another. For example, if you were the public relations director of a hospital, your publics would include: <u>doctors</u> _____ (name several) <u>patients</u> _____ <u>visitors</u> _____ <u>volunteers</u> _____ <u>staff</u> _____ <u>community</u> _____ (and others)</p>	<p>doctors patients visitors volunteers staff community (and others)</p>
<p>10. List two internal publics and three external publics of a university: <u>Internal</u> _____ _____ <u>Internal</u> _____ _____ <u>External</u> _____ _____ <u>External</u> _____ _____ <u>External</u> _____</p>	<p><u>Internal:</u> faculty undergrads grad students employees, non-faculty <u>External:</u> alumni, parents, applicants, community, foundations, employers</p>
<p>11. Why distinguish between publics? Why not lump them all together? Because the interests of one public are often not <u>common</u> to the _____ of the other _____.</p>	<p>interests publics</p>
<p>12. This brings us to a fundamental principle of communications: as the sender of a message, your interest must have something in _____ with the receiver's _____ if the message is to be effective in producing action.</p>	<p>common interests</p>
<p>13. Let's extend this principle: the more your message has in common with the interests and needs of your receivers, or publics, the more _____ your message will be in producing the desired _____.</p>	<p>effective action (behavior, results, etc.)</p>

BUSINESS EDUCATION & ECONOMICS

H.S.+

THE SALESMAN'S CALL REPORT

How and Why It Should Be Completed Accurately.

TECHNICAL STAFF, General Education, Inc.

Published by GENERAL EDUCATION, Inc.,

96 Mount Auburn Street, Cambridge 38, Mass.

**For use in a cardboard Machine supplied with program,
program reusable, 190 frames. \$5.00.**

**Constructed Responses usually used, some Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Persons with a high school reading level."

Prerequisites: None.

Average Time: 1 3/4 hours (est.)

Next Revision: "None planned."

(1 sample page)

BUSINESS EDUCATION & ECONOMICS

THE SALESMAN'S CALL REPORT Technical Staff; GENERAL EDUCATION one sample page:

18. Let's see why and to whom call reports are important. First of all call reports are important to you. Do you agree?	(Any answer is O.K.)
19. Maybe you said "Like hell! I don't agree!" Well, is money important to you?	(If you answered "No", you're sick, man, sick.)
20. The amount of money you make could be related to the quality of your call reports. So if money is important to you, c_____r_____ are _____ to you, too.	<u>call reports;</u> <u>important</u>
21. Don't scoff. Doesn't the amount of money you make depend upon how well you service your customers and, therefore, how willing they are to pay for your ser_____ and your co_____s products?	<u>services;</u> <u>company's</u>
22. Well, the cooperation you get from the home office is a vital part of your ability to service your accounts, which, when well serviced, help you to make money. So coop_____ from the home office helps you to make m_____.	<u>cooperation;</u> <u>money</u>
23. The cooperation you get often depends on the quality of your call reports. It's not surprising that . . . (good/poor) call reports get you more cooperation than . . . (good/poor) call reports.	good; poor

BUSINESS EDUCATION & ECONOMICS

SHORTHAND 33

AUDREY V. BOYD, Programmer

**Published by EDUCATION ENGINEERING, Inc.,
381 West 7th Street, San Pedro, California.**

**Programed text, 10,800 frames, paperback, 360 pp.,
5" x 7", available in 10 separate units at \$3.75 each.**

For use in SPEED machine, program reusable, \$100.00.

Teacher's Manual available, \$4.00 per unit.

Unit, Final, Diagnostic Test(s) available, \$3.75 each.

**Multiple Choice Responses always used; no Constructed
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

**Additional material required: SPEED teaching machine,
\$700 & \$850.**

Average Time: 12 hours (est.).

Next Revision:

(1 sample page)

BUSINESS EDUCATION & ECONOMICS

SHORTHAND 33 Boyd; EDUCATION ENGINEERING one sample page:

In shorthand we omit all silent letters and write only those letters which are heard. For example: say--ee, easy--ee, see--ee.

First, we shall introduce five letters and show the shorthand strokes which represent them.

o o . e e . e g . i j . v)

The shorthand outlines for o and v are about the size of the circle in the letters o and e. Also notice the three different lengths for e i j v)

In the following words, watch how the circles are joined to the other strokes

Shorthand outline	Letters used	Word
	f s e	face
	v s e	vase
	s s i	safe
	s s v e	save
	s s v	save
	f s e	free
	e s e	ease
	e s i	easy
	s e	see
	s e s	see

33801-01-07-13

WORD

1. vase
2. save
3. free
4. easy
5. see

SHORTHAND OUTLINE

- 1.
- 2.
- 3.
- 4.
- 5.

33801-01-07-13

BUSINESS EDUCATION & ECONOMICS

H.S.+

STENOSPEED, AN "ABC" SHORTHAND
JAMES L. EVANS

PAUL H. CARLSON, both of Teaching Materials Corp.
Published by TEACHING MATERIALS CORPORATION,
575 Lexington Avenue, New York 22, N.Y.

Programed text, 3,075 frames, paperback, 632 pp.,
8 1/2" x 11", bound in 3 separate volumes, \$13.50.
For use in MIN/MAX II machine, \$25.00; program reusable,
\$12.50.

Teacher's Manual: General Manual available for all TMI-
Grolier programs.

Final Test included.

Constructed Responses always used; no Multiple Choice
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"Adults with no prior training in subject."

Prerequisites:

Average Time: 45-55 hours (based entirely on data);
standard deviation, 6.09 hours.

Next Revision: May, 1963.
(3 sample pages)

BUSINESS EDUCATION & ECONOMICS

STENOSPEED, AN "ABC" SHORTHAND Evans, Carlson; TEACHING MATERIALS CORPORATION 3 sample pages:

106	The final <u>y</u> is made <u>y</u> by is written <u>ay</u> A simple curved downstroke is used for the final <u>y</u> . Write a final <u>y</u> .	
107	The outline for <u>baby</u> is <u>bab</u> lady*** battery*** Practice these forms 15 times.	
108	yoke*** by*** write*** yellow*** Initial <u>y</u> is made in standard form. Practice these forms 15 times.	
109	The sound of double <u>o</u> (oo) is expressed by a circle within a circle: <u>o</u> prove*** Practice these forms 15 times.	
110	groove*** vote*** loop*** Initial <u>g</u> is made in standard form. Practice these forms 15 times.	

501	<p>The brief form for <u>are</u>, <u>our</u> and <u>hour</u> is <u>a</u></p> <p>We are good. ***</p> <p>This is our money. ***</p>
Practice the form for <u>are</u> , <u>our</u> and <u>hour</u> 15 times.	
502	He will be here in an hour. ***
503	It is about an hour from now. ***
504	***
	It is our good luck.
505	Are you with him? ***
1-101	

951		
Dear Sir:		
952	I am not at all sure that the exhaust is not working well.	
953	I received your letter today which says that the exhaust on your car is not working well.	
	I am not at all sure that the exhaust is not working well.	
954	We can make an adjustment for you if you will allow us to come by in the next few days to fix it.	
	I am not at all sure that the exhaust is not working well.	
955	If we can find a defect in the making of the exhaust,	
	the labor and materials will not cost you anything.	

BUSINESS EDUCATION & ECONOMICS

Adult

VALUE CONTROL

Value Engineering; Value Analysis

JAC D. MEACHAM, Publications Editor

CHARLES M. KEYS, Technical Publications Specialist

DALE BALL, Engineering Writer

CHOCK WAGERS, Engineering Writer

Published by GENERAL DYNAMICS, CONVAIR,

P.O. Box 1950, San Diego, California

Programed text, 350 frames, paperback, 333 pp.
(5 books), 5 1/2" x 8", \$15.00 for all 5 books,
Book 1 available for \$10.00.

Teacher's Manual available, free.

Table of Contents.

Unit and Final test included in each program.

Branching usually used; some Constructed Responses;
some Multiple Choice Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Management, engineers, procurement, factory
personnel, administrators...writers and editors and
miscellaneous interested parties."

Prerequisites: None

Additional material required: "Workshop seminar at
individual business or company facility to supplement
instruction."

Average Time: 8 hours (est.).

Next Revision: "Currently being revised."

(1 sample page)

BUSINESS EDUCATION & ECONOMICS

VALUE CONTROL

Meacham, Keys, Ball, Wagers; GENERAL DYNAMICS,
CONVAIR

one sample page:

PI-2-4

SELF-TEST (CONT)

10. When selecting the best ideas is there a limit to the number that can be selected?

☐ Yes

☐ No

11. Which of the following is used to make the first selection of best ideas?

- a. Design information.
- b. Knowledge and good judgment.
- c. Manufacturing capabilities.
- d. Specialty Vendor.

12. When gathering data to make a comparison for the purpose of selecting the best idea from the usable category, which of the following areas must be researched?

- a. Engineering.
- b. All areas affected by the project.
- c. Manufacturing.
- d. Specialty Vendor.
- e. Quality Control.

13. What two factors must be present in a quality product?

- a. M _____
- b. R _____

14. Final selection of the best idea is made by
C _____.

63

GAMES

Open

BRIDGE

JAMES L. EVANS

EDWARD RICKERT, both of Teaching Materials Corporation.

Published by **TEACHING MATERIALS CORPORATION**,
575 Lexington Avenue, New York 22, N.Y.

Programed text, 1,451 frames, paperback, 362 pp.,
8 1/2" x 11", \$11.00.

For use in MIN/MAX II machine, \$25.00; program reusable,
\$10.00.

Teacher's Manual: General Manual for all TMI-Grolier
programs available.

Table of Contents.

Unit and Final Test(s) included.

Multiple Choice Responses usually used; some Constructed
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"9th and 10th graders and adults who had no prior
knowledge of the subject."

Prerequisites:

Average Time: 15-20 hours (based entirely on data);
standard deviation, 7.11 hours.

Next Revision:

(1 sample page)

GAMES

BRIDGE

Evans, Rickert; TEACHING MATERIALS CORPORATION
one sample page:

22. Spades are trumps. Who takes this trick?			1			
23. Which of the following shows suits ranked in descending (highest to lowest) order?			3			
24. Clubs are trumps and W leads. Who takes this trick?			4			
25. If W leads and E takes the trick, what can you conclude?			6			
26. To follow suit is to play a card in the suit that is led. If Hearts are led, which card would you play?			5			
27. You must follow suit if you can. If Spades are led and you have ♠5 and ♠2, which one must you play? (♠5/♠2)			2			
28. If Clubs are trumps and the ♠2 takes this trick, who led?			7			
1 SELF CHECK	2 ♠2	3 B	4 S	5 A	6 Hearts were trumps.	7 W
				2-4		

GAMES

H.S. - Adult

ELEMENTS OF BRIDGE

CHARLES H. GOREN, U. S. Bridge Authority
Published by DOUBLEDAY & COMPANY, Inc.
575 Madison Avenue, New York, New York

Programed text, 395 frames, hard cover, 417 pp.,
8-1/4" x 5-3/8", \$4.95.

Table of Contents, Index.

Program available in Swedish.

Multiple Choice Responses and Branching always used;
no Constructed Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites: "High school education or high school level
reading ability."

Average Time: 10-12 hours (est.).

Next Revision: "Dependent on publisher's sales require-
ments."

(1 sample page)

GAMES

ELEMENTS OF BRIDGE **Goren; DOUBLEDAY & COMPANY** one sample page:

Sample from The Elements of Bridge

1

We will begin at the beginning — by assuming that you are a stranger to a deck of cards.

A new deck normally contains fifty-four cards, fifty-two of which are used in bridge. The two cards not used are the two Jokers, which should be set aside.

It is customary in bridge to use two decks of cards, preferably with contrasting backs to keep them from becoming intermixed. While one deck is being dealt, or passed out for play, the other deck is being shuffled, or mixed, for future play. This saves time in the handling of cards and speeds up the game. Only one deck of cards is in play at a time.

The fifty-two cards used in playing bridge consist of four distinct suits, or sets, of thirteen cards each. There are

13 Spades	♠
13 Hearts	♥
13 Diamonds	♦
13 Clubs	♣

Spades and Clubs are the black suits, and Hearts and Diamonds are the red suits.

Now you are ready for the first question. Choose the answer that you think is correct and turn to the page number indicated after the answer you choose.

The game of bridge is played with:

Fifty-two cards in four suits and two Jokers.

page 6

Fifty-two cards in four suits.

page 11

GAMES

H.S.-Adult Ed.

CONTRACT BRIDGE FOR BEGINNERS

SHIRLEY B. BITTERLICH, Programmer, General Programmed Teaching Corporation

ANNE BEACH, Editor, GPTC

JAMES E. LYNN, Subject Matter Expert

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 1866 frames, paperback, 373 pp., 8-1/2" x 11", \$_____.

Teacher's Manual: "Instructions to teacher included in preface."

Table of Contents.

Constructed Responses usually used; some Multiple Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental testing: Teenage and adult.

Field Testing: Adult."

Prerequisites: None

Additional material required: "Deck of playing cards."

Average Time: 17 hours (based entirely on data).

Next Revision:

(1 sample page)

GAMES

CONTRACT BRIDGE FOR BEGINNERS

Bitterlich, Beach, Lynn; ENCYCLOPAEDIA BRITANNICA PRESS

one sample page:

27	The opening bid is one No Trump. A response of three in a suit shows an unbalanced hand containing at least 10 high card points and a good suit of at least five cards. This bid shows a _____ hand than a bid of two in a suit.	
	stronger	stronger weaker
28	<p>a) A response of two in a suit shows <u>(how many)</u> high card points.</p> <p>b) A response of three in a suit shows <u>(how many)</u> high card points.</p>	
	<p>a) less than 9</p> <p>b) 10 or more</p>	<p>a)</p> <p>b)</p>
29	How many high card points are needed for the responder to raise an opening bid of one No Trump to three No Trump?	
30	If the responder bids three in a suit, he does not have enough high card points to bid three No Trump.	
	(He must have at least 10 high card points.)	True False
31	The opening bid is one No Trump. If the responder has a balanced hand containing at least 10 high card points, he responds with a bid of _____.	
	three No Trump	

GAMES

Open

HOW TO SCORE BOWLING

BARRY BARNES, Programmer, GPTC

JEANNE K. DAVIS, Programmer, GPTC

PETER M. CABRINKA, GPTC

BETTY LOU C. DUBOIS, Editor, General Programmed Teaching Corporation

Published by **GENERAL PROGRAMMED TEACHING CORPORATION, 1719 Girard, N. E., Albuquerque, New Mexico.**

Programed text, 180 frames, paperback, 30 pp., 8-1/2" x 11", \$1.00.

Table of Contents.

Constructed Responses usually used; some Multiple Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Those who do not know how to score bowling."

Prerequisites: None

Average Time: 1 hour (based entirely on data).

Next Revision:

(1 sample page)

GAMES

HOW TO SCORE BOWLING



Barnes, Davis, Cabrinka, Dubois; GENERAL PROGRAMMED TEACHING CORPORATION

one sample page:

53

F's first ball in the ninth frame knocked down 6 pins, but left a split. He fouled while delivering his second ball.

Mark F's score in the ninth frame.



F							
		10	10	10	10	10	10
		39	48				

First Ball

Second Ball

54

The diagrams show what happened to the setup in G's ninth frame. Score the ninth frame for G.



G							
		10	10	10	10	10	10
		30	38				

First Ball

Second Ball

55

The diagrams indicate that E has finished his 10th frame. Record his score.

E							
		10	10	10	10	10	10
		53	55				

First Ball

Second Ball

GAMES

Open

BEGINNING CHESS

CARL CHENEY, Programmer, Learning, Incorporated
GEORGE KOLTANOWSKI, International Chess Master
Published by **UNIVERSITY MICROFILMS, INC.**,
313 North First Street, Ann Arbor, Michigan

For use in MICRO-AID and KONCEPT-O-GRAPH
machines, 420 frames.

Table of Contents.

Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL POPULATION(S): Grade 4 to adult.

Prerequisites: Grade 7 reading level.

Additional Material Required: "Chess Board and pieces."

Average Time: 4 hours 47 minutes (based entirely on
data); standard deviation, 27 minutes.

Next Revision:

(1 sample page)

GAMES

BEGINNING CHESS

Cheney, Koltanowski; UNIVERSITY MICROFILMS
one sample page:

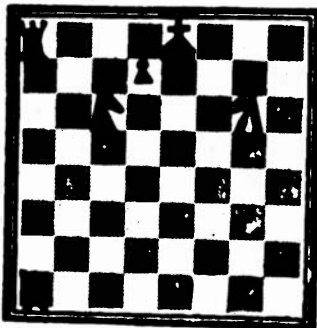
6-27 The three conditions necessary for castling are:

- 1 - Neither the King or Rook may have _____.
- 2 - The squares between the Rook and King must be _____.
- 3 - The King may not move into, out of, or through _____.

moved; empty; check

6-28 This King _____ (may/may not) castle.

may



6-29 The King and Rook in diagram (#) _____ may castle on the King-side.

3



1



2



3



4

GAMES

Jr. H.S.-Adult

HOW TO WATCH A FOOTBALL GAME

SHEILA LEVINSKY, Programmer, Learning, Inc.

FRANK KUSH, Head Football Coach, Arizona State
University

Published by **LEARNING INCORPORATED**,
1317 West Eighth Street, Tempe, Arizona

Programed text, 140 frames, paperback, 43 pp., 8-1/2" x
11", \$1.75.

Table of Contents.

Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental population: Adults. Field testing:
High School students."

Prerequisites: Grade 7 reading level.

Average Time: 1 hour (est.).

Next Revision: "The program is the final revision."
(1 sample page)

GAMES

HOW TO WATCH A FOOTBALL GAME Levinsky, Kush; LEARNING INCORPORATED one sample page:

22. There are three main ways for a team to score: the touchdown, the safety and the field goal. A team gets six points for a touchdown, three points for a _____ and two points for a safety.

field goal

23. Two ways to get a touchdown are:
A player can run with the ball past the opponent's goal line, or he can catch and run into the end zone (or already be there when he catches it). A touchdown occurs when the ball is in possession and past the _____.

goal line

24. When the ball is carried past the opponent's goal line by running or passing, your team has scored a _____.

touchdown (TD)

25. A touchdown gets the ball past the goal line. For a field goal, the ball has to be kicked over the crossbar between the _____.

goal posts

26. When a player has the ball he can run with it, pass it, or kick it. A team gets a field goal when its player _____ the ball between the goal posts, and a touchdown when he _____ with or _____ the ball to a teammate, getting it past the opponent's goal line.

kicks: runs: passes

27. If a Tiger runs the ball past the Braves' goal line, or a Tiger receives a teammate's pass and crosses the Braves' goal line, then the Tigers have scored a _____.

touchdown (TD)

28. If a Tiger place-kicks the ball between the Braves' goal posts, the Tigers have gotten a _____.

field goal

29. A touchdown gets the ball past the opponent's _____ . A field goal gets the ball between the opponent's _____.

goal line: goal posts

GAMES

Jr. H.S.+

NUMISMATICS

A Guide for Coin Collectors

JAC D. MEACHAM, programmer

M. H. MONROE, numismatist

Published by GRAFICROLL SYSTEMS, Inc.,
4215 Calavo Drive, La Mesa, California

Programed text, 670 frames, paperback, 150 pp.,
5 1/2" x 8", \$4.95.

For use in DISCOVERY COLUMBUS machine, \$38.95;
program reusable, \$15.00.

For use in EXECUTUTOR machine, \$29.95; program
reusable, \$15.00.

For use in RHEEM CALIFONE device.

Table of Contents.

Final Test available.

Constructed Responses usually used; some Multiple
Choice; some Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Old and new collectors of coins 12 years old and up."

Prerequisites: None

Additional material required: "A Guide book of U.S. coins
by Whitman publishers."

Average Time: 4 hours (est.).

Next Revision: March, 1963.

(1 sample page)

GAMES

NUMISMATICS

Meacham, Monroe; GRAFICROLL SYSTEMS
one sample page:

NUMISMATICS

Grading of Coins

	1- Coins are graded according to their condition, which are compared to a freshly minted coin from the mint. There are eight (8) accepted grades for coin collectors. Coins are graded by their _____.
1- condition	2- The _____ (six, four, eight) grades of coins are derived from the condition of the coin.
2- eight	3- The PROOF coin is the very highest grade a coin can have. A proof coin has a high luster, mirror-like finish produced by striking a polished die into the metal. _____ coins are the highest grade a coin can have.
3- proof	4- Proof coins are highly regarded by collectors and require extreme care to protect their _____-like finish.
	42

GAMES

Third Grade

ROLLER SKATING SAFETY

DARLENE HARING, Programmer, Learning, Inc.

**Published by LEARNING INCORPORATED,
1317 West Eighth Street, Tempe, Arizona.**

Programed text, 20 frames, \$.15.

**Constructed Responses always used; no Multiple Choice;
no Branching.**

DEVELOPMENTAL POPULATION(S): Grade 3.

Prerequisites: "Grade 3 reading level."

Average Time: 8-15 minutes (est.).

**Next Revision: "The program is the final revision."
(1 sample page)**

GAMES

ROLLER SKATING SAFETY Haring; LEARNING INCORPORATED one sample page:

1. Always take off your skates to cross a busy street. street
2. To be safe, take off your skates before you cross the street. cross, street
3. Don't fall on the stairs. You should take off your skates to go up and down the stairs. down
4. Before you go up and down stairs, take your skates off. off
5. Take your skates off before you go up and down the stairs, and before you cross the street. stairs, street
6. When we skate, it's better to be Safe Sam than Sorry Sally. Safety rules help us to be safe. safe
7. Remember these skating safety rules. Skate on the sidewalk, not on the street. street
8. Always watch for cars. cars
9. Take off your skates before you cross the street and before you go up and down the stairs. cross, street, stairs
10. These safety rules can help you be like Safe Sam, not like Sorry Sally. Safe, Sorry

Draw Safe Sam.

Draw Sorry Sally.

GRAMMAR & USAGE

BASIC ENGLISH 37

GEORGE M. SNYDER, Programmer

**Published by EDUCATION ENGINEERING, Inc.,
381 West 7th Street, San Pedro, California.**

**Programed text, 16,200 frames, paperback, 540 pp.,
5" x 7", available in 15 separate units at \$3.75 each.**

For use in SPEED machine, program reusable, \$150.00.

Teacher's Manual available, \$4.00 per unit.

Unit, Final, Diagnostic Test(s) available, \$3.75 each.

**Multiple Choice Responses always used; no Constructed
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

**Additional material required: SPEED teaching machine,
\$700 & \$850.**

Average Time: 25 hours (est.).

Next Revision:

(1 sample page)

GRAMMAR & USAGE

BASIC ENGLISH 37

Snyder; EDUCATION ENGINEERING
one sample page:

In SOME of the "demons" THERE is
the temptation to omit certain
letters.

COULD
OF/TEN
NONE
HALF
ANSWER

In addition to the temptation to
omit letters, THERE is the question
of meaning WHICH may confuse

EXAMPLES

I KNEW the lesson so well that I did
not have to GUESS.

I had an HOURLY left to BUY the gifts
at the store.

He can talk for a WHOLE evening
and his voice will not be HOARSE.

X10801 - 00

QUESTIONS

1. Of we miss none of the
questions.
2. He of the questions he
c id not answer.
3. He now the subject so
thoroughly that he did not have
to use.
4. I can save enough money in an
 our to y our lunch.
5. His voice was so ho ree that
he took a hole week to
recover.

ANSWERS

1. f and y
2. f and w
3. k and u
4. t and e
5. l and ou
6. a and w
7. h and a
8. u and w
9. h and u
10. k and o

X10901 - 00

GRAMMER & USAGE

Elem. +

ENGLISH I and II

EMANUEL BIERMAN, programmer, assistant principal,
Queens, N. Y.

ALEXANDER SCHURE, President, N. Y. Institute of
Technology

Published by **CENTRAL/SCIENTIFIC Company**,
1700 Irving Park Road, Chicago 13, Ill.

For use in **CENCO PROGRAMED LEARNER**, \$2.95;
program not reusable, 500 frames in I, 500 in II, I or
II included in price of machine.

Constructed Responses usually used; some Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"Over 200."

Prerequisites: None

Average Time: 3 hours (est.).

Next Revision: "Now available."
(1 sample page)

GRAMMAR & USAGE

ENGLISH I and II

Bierman, Schure; CENTRAL SCIENTIFIC COMPANY
one sample page:

ENGLISH II

34. A compound sentence can be divided into two simple sentences, each with a _____ and a _____.

.....
subject, predicate

35. We place the comma before the _____ in a compound sentence.

.....
conjunction

36. In a compound sentence, there is a subject and predicate both _____ and _____ the conjunction.

.....
before, after

37. A compound sentence is made up of two or more simple sentences which are closely related in thought.

a) Jones scored the touchdown, and he kicked the extra point.

b) Mary writes well, and her hair is brown.

In which sentence do the ideas fit better together.

Sentence a

GRAMMAR AND USAGE

ENGLISH 2600, REVISED EDITION
A Programed Course in Grammar
and Usage

Grades 9 & 10

ENGLISH 3200

Grades 11 & 12

JOSEPH C. BLUMENTHAL, former
Head of English Dept., Mackenzie High School,
Detroit, Michigan.

Published by HARCOURT, BRACE & WORLD, Inc.,
750 Third Avenue, New York 17, New York.

2600: programed text, 2632 frames, paperback and cloth
cover, 448 pp., 6 3/8" x 9", \$2.88 (paperback),
\$3.88 (cloth cover). *

3200: programed text, 3208 frames, hardcover and paper-
back, 544 pp., 6 1/4" x 9", \$3.36 (paperback),
\$4.36 (hardcover). *

Teacher's Manual available; 2600: available without charge
on class orders; 3200: \$.60.

Table of Contents (both volumes).

Unit, Final, Diagnostic Test(s) available (both volumes).

2600: Constructed and Multiple Choice Responses usually
used; no Branching.

3200: Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

2600: "Tested in many school districts throughout the
country." 3200: "Three classes in New York City
high schools."

Other using population(s): 2600: Grades 7-12. 3200: Col-
lege freshmen, also grades 9 and 10.

Prerequisites: 2600: "None other than grade 9 reading
level." 3200: "1 to 4 years of study of correct
English."

Average Time: 2600: 8 to 14 hours (based entirely on data).
3200: 13-30 hours, average 22 hours (est.).

Next Revision: 3200: 1966.
(2 sample pages)

* A kit of forms for English 2600 and English 3200
"For Controlling Paper Work" is available from
Developmental Corporation of America, 83 Clover Ave.,
Floral Park, N.Y.

GRAMMAR & USAGE

ENGLISH 2600, REVISED EDITION

ENGLISH 3200

Blumenthal; HARCOURT, BRACE & WORLD

2 sample pages:

dropped	All my friends go to church. Which word would change if you changed this sentence from present to past? _____	119	120
subject complement	10 Review Recognizing Basic Sentence Patterns	339	
more	The weather is <u>cold</u> . The weather is <u>very cold</u> . In both sentences, the adjective <u>cold</u> modifies the noun _____	559	560
verb	Prepositional phrases, too, can be used as adverbs. WHEN? Pete awoke in the morning. The prepositional phrase in the morning tells when Pete _____	779	780
adjective	He drove around the block. He looked for a place to park. He drove around the block, looking for a place to park. To change the second sentence to an -ing word group, drop the subject He, and change the verb looked to _____	999	1000
take	take The simple past form of this verb is took. The form that must be used with have, has, or had is (took, taken).	1219	1220

page 229

<p>chairman</p> <p>134</p>	<p><u>Henry is happy.</u></p> <p><u>Henry was the chairman.</u></p> <p>A verb like <u>is</u> or <u>was</u> is called a linking verb because it <i>links</i> a noun, pronoun, or adjective that follows it with the _____ of the sentence.</p> <p>135</p>
<p>semicolon</p> <p>402</p>	<p>When might we use a semicolon in preference to a conjunction? If there are too many <i>and</i>'s in a sentence, we may get rid of one by substituting a semicolon.</p> <p>The patient asked for steak and potatoes, and the doctors and nurses were astonished.</p> <p>How many <i>and</i>'s are there in this sentence? _____</p> <p>403</p>
<p>Roxanne made a rude remark for which there was no excuse.</p> <p>670</p>	<p>My sister works for Dr. Mack, and his office is downtown.</p> <p>_____</p> <p>_____</p> <p>671</p>
<p>We are planning a pageant to dramatize the history of our town.</p> <p>938</p>	<p>25 Subordination by Appositives</p>
<p>a</p> <p>1206</p>	<p>The food was expensive and poor.</p> <p>Supply the missing words to complete the "not only . . . but also" device:</p> <p>Not only _____</p> <p>but _____</p> <p>1207</p>
<p>R-S</p> <p>1474</p>	<p>S, F, or R-S?</p> <p>The only-one in our family who plays a musical instrument.</p> <p>_____</p> <p>1475</p> <p>page 269</p>

GRAMMAR & USAGE

ENGLISH GRAMMAR 28

GEORGE M. SNYDER, Programmer

**Published by EDUCATION ENGINEERING, Inc.,
381 West 7th Street, San Pedro, California.**

Programed text, 6480 frames, paperback, 216 pp.,

5" x 7", available in 6 separate units at \$3.75 each.

For use in SPEED machine, program reusable, \$60.00.

Teacher's Manual available, \$4.00 per unit.

Unit, Final, Diagnostic Test(s) available, \$3.75 each.

**Multiple Choice Responses always used; no Constructed
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

**Additional material required: SPEED teaching machine,
\$700 & \$850.**

Average Time: 12 hours (est.).

Next Revision:

(1 sample page)

GRAMMAR & USAGE

ENGLISH GRAMMAR 28 Snyder; EDUCATION ENGINEERING one sample page:

PROMOUN

A pronoun takes the place of a noun. It is a substitute for a noun. A noun for which a pronoun stands is called an antecedent (that which goes before).

EXAMPLES

1. Jan is intelligent, but she is not pretty.
Jan is the antecedent. She is the pronoun.
2. The man bought a car, but he did not like it.
Man is the antecedent of he. Car is the antecedent of it.

3. Who wrote a poem from the reader?

Who is the pronoun. There is no antecedent in this sentence.

Some Pronouns: I, me, you, he, him, she, her, it, we, us, they, them, who, which, that, what, this, that, those, those, all, any, both, each, none, some.

ISBN - 00

QUESTIONS

In these sentences select (p) pronoun and (a) antecedent (if any).

1. In Washington, Congress passed the bill and sent it to the president.
2. William and Mary applied for the job but both were disappointed.
3. Who is coming to the party?
4. The tickets were bought by Steve, but he did not receive them.
5. I oppose the resolution which they proposed.

ANSWERS

1. bill (p) Washington (a)
2. I (p), which (p) resolution (a), they (p)
3. job (p) both (a)
4. who (p) party (a)
5. who (p)
6. tickets (p) Steve (a), he (p) receive (a)
7. he (p) Steve (a), them (p) tickets (a)
8. it (p) bill (a)
9. resolution (p) oppose (a)
10. both (p) William-Mary (a)

GRAMMAR & USAGE

Elem.-Jr. H.S.

ENGLISH GRAMMAR U-3003

**UNIVERSAL ELECTRONICS LABORATORIES
CORPORATION**

**Published by UNIVERSAL TEACHING MACHINE
INSTITUTE,
510 Hudson Street, Hackensack, New Jersey.**

**For use in UNIVERSAL MODEL U machine, program re-
usable, 2160 frames, machine and program, \$25.00
(school discount).**

Table of Contents.

**Constructed Responses usually used; some Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Grade Level - 5-9."

Other using population(s): "High school students and adults."

Prerequisites: None.

Average Time: 28 to 34 hours (est.).

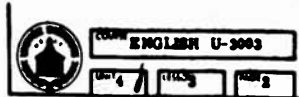
Next Revision: August, 1963.

(2 sample pages) .

GRAMMAR & USAGE

ENGLISH GRAMMAR U-3003

Universal Electronics Laboratories Corporation;
UNIVERSAL TEACHING MACHINE INSTITUTE
2 sample pages:



SPECIAL INSTRUCTIONS		
619	This mark (.) is called a period. A period is used at the _____ of a statement.	end
620	A sentence that asks something is called a question, and it has this mark (?) after it. Are you going to the movies? This sentence (is / is not) a question.	is
631	Please write the correct mark needed after this sentence: Did you see Mary ()	?
632	Many errors are made when the words was and were are used. Was is used in speaking about one person or thing. _____ the girl with John?	Was
633	John _____ the one we saw.	was
634	Mary (was/were) the person who received all "A's."	was

<p>637 Come sometimes needs a helping word, such as <u>has</u>, <u>had</u>, or <u>have</u>.</p> <p>How many children _____ come to the park?</p> <p>What helping word does <u>come</u> need in this sentence?</p>		<p>have</p> <p>have</p>
<p>638 Mary (has/have) come to find leaves. Write the correct helping word.</p>		<p>has</p>
<p>639 The children (have/has) come to the woods.</p>		<p>have</p>
<p>640 A word that does <u>not</u> need a helping word is <u>came</u>.</p> <p>She _____ to the party.</p>		<p>came</p>
<p>641 October (came/come) with red and yellow leaves.</p>		<p>came</p>
<p>642 Sometimes (come/came) needs a helping word.</p>		<p>come</p>

GRAMMAR & USAGE

Elem.-Jr. H.S.

ENGLISH USAGE

THORWALD ESBENSEN

DONALD HURST

CHARLES JENKS

DAVID SHIER, all of Merit Associates (formerly Educational Development Associates)

Published by E-Z SORT SYSTEMS, LTD.,

45 Second Street, San Francisco, California

**Programed text, 600 frames, paperback, 120 pp., 5" x 8",
\$7.85 (includes response device).**

"Program fits response device consisting of 15 edge-punched cards—printed educational matter published in pamphlet or text form with required student responses coded to correspond with the response device—a sorter."

Teacher's Manual available, included with program.

Unit test(s) available, included in program.

Multiple Choice Responses usually used; some Constructed Responses; some Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Average third-grade class."

Prerequisites: "Ability to read at third grade level."

Additional material required: "Response device described above."

Average Time: 10 hours (est.).

Next Revision: "Unknown."

(1 sample page)

GRAMMAR & USAGE

ENGLISH USAGE

Esbensen, Hurst, Jenks, Shier; E-Z SORT SYSTEMS, LTD.
one sample page:

SAMPLE FRAMES: ENGLISH USAGE

THERE-THEIR-THEY'RE

This lesson will help you learn the correct ways to use the words there, their, and they're.

THINK: If you mean they are, use they're.
To show ownership (somebody owns something),
use their.
Otherwise, use there.

Say this sentence to yourself, filling the blank with the correct word.

? too busy to go now.

5-20 Their
1-3 They're
7-12 There

Did you remember the rules?

They're too busy to go now is correct.

They're means they are.

Their shows ownership.

In other cases, use there.

Now, let's try picking the correct word for the blank in another sentence.

They say ? building a house.

14-27 there
1-9 their
9-17 they're

You are doing fine. Let's see how well you do on this one.

They want to go in ? car.

9-10 they're
23-26 their
6-13 there

GRAMMAR & USAGE

H.S.

FIGURES OF SPEECH

WINIFRED NEAL, Programmer, Learning Incorporated
JOSEPH P. COLLIGNON, English Dept. Arcadia High
School, Scottsdale, Arizona.

Published by CORONET INSTRUCTIONAL FILMS,
65 E. So. Water Street, Chicago 1, Illinois.

Programed text, 308 frames, paperback, 59 pp., 7" x 10",
\$1.20.

Teacher's Manual included.

Test Set included.

Constructed Responses usually used: some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"...Small representative samplings at appropriate grade levels tested informally on one-to-one basis with programmer. Small representative samplings under controlled conditions (Dukane Redi-tutor using 35 mm. film) for each revision of program. Program has been through 8 complete revisions, each revision based on data obtained from formal machine testing. Field testing in progress: Classroom testing from 8th through 12th grades, administered by classroom teachers. Test areas distributed geographically from Florida to California. All testing conducted by Learning Incorporated."

Prerequisites: Grade 9 reading level.

Average Time: 2 hours, 19 minutes (based entirely on data); standard deviation, 27.2 minutes.

Next Revision: "The published program is the final revision."

(1 sample page)

GRAMMAR & USAGE

FIGURES OF SPEECH

Neal, Collignon; CORONET INSTRUCTIONAL FILMS
one sample page:

Set 2

Basic Figures of Speech

2-1 Find the sentence that contains a figure of speech:

- A) "There are ten stores in our town."
- B) "She has a beautiful flower garden."
- C) "That girl is as delicate as a glass doll."

Sentence (2) .

C

2-2 Find the sentences that contain figures of speech:

- A) "That dancer is as graceful as a snowflake."
- B) "That dancer is like a snowflake."
- C) "That dancer is beautiful and graceful."

Sentences (2) and (3) .

A: B (either order)

2-3 A) "That dancer is as graceful as a snowflake."
B) "That dancer is like a snowflake."

These figures of speech use the words like and as to describe a dancer by comparing her to a (2) .

snowflake



2-4 A figure of speech that uses like or as in the comparison is called a simile.

- A) "Our house is like an overstuffed suitcase."
- B) "Our house is as cramped as an overstuffed suitcase."

Each sentence contains a figure of speech called (2) .

simile

Set 2

7

GRAMMAR & USAGE

Elem.

FUN WITH WORDS

Homonyms—Sound Alike Words

RUTH B. ROSENBERG, Programmer

Published by HONOR PRODUCTS COMPANY,
20 Moulton Street, Cambridge, Mass.

For use with HONOR TEACHING MACHINE, \$20 (approx.)
including 3 programs; program reusable, 200 frames;
\$2.00-\$2.50.

Constructed Responses sometimes used; some Multiple
Choice; some Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Public and private schools."

Prerequisites:

Average Time:

Next Revision:

(1 sample page)

GRAMMAR & USAGE

FUN WITH WORDS

Rosenberg; HONOR PRODUCTS COMPANY

one sample page:

Use the correct word to complete this rhyme:

Hear and here are twin words that
sound just the same.
To tell them apart is the aim
of our game.
The trick's in the spelling; put
h before ear.
And it's clear far and near what
the word is we _____.

- a. here
- b. hear

Press and hold the button of your choice.

a. here

No.
Read these lines again!

The trick's in the spelling; put
h before ear.
And it's clear far and near what
the word is we _____.

- a. here
- b. hear

Press and hold the button of your choice.

b. hear
Right again!

You hear with your ears.
(Illustration)

No answer
needed

Here's another rhyme to see if you remember.

There are _____ many ways to spell "to."
It's so hard to know just what to do!
Here is one that is fun;
You said add one and one.
While the answer, of course, is a two.

- a. too
- b. two
- c. to

Press and hold the button of your choice.

b. two
Oh, no! Two
is the sum of
one and one.

GRAMMAR AND USAGE

H.S. -Coll.

PROGRAMMED ENGLISH

A Modern Grammar for High School and College Students

M. W. SULLIVAN

Published by THE MACMILLAN COMPANY

60 Fifth Avenue, New York 11, New York

Programed text, 1782 frames, hard cover, 430 pp.,
8-1/4" x 11", \$7.80.

Teacher's Manual available, \$1.25.

Unit, Final and Diagnostic Test(s) available.

Constructed Responses usually used; some Multiple
Choice Responses; and no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"The course has been revised a total of 10 times making use of the combined efforts of 20 authors and critics. It has been field tested in the schools in and around Palo Alto, California from the seventh through the twelfth grades and at the college level."

Other using population(s): "The material has been tested from the seventh grade level through the college graduate level and in addition a total of 82 individuals ranging in age from 12 to 72 have individually tested the material."

Prerequisites: "Only the ability to read normal English sentences of the grade equivalent of 7 is needed."

Average Time: 24 hours (based entirely on data); standard deviation, 4 hours.

Next Revision: June 1964.

(1 sample page)

GRAMMAR & USAGE

PROGRAMMED ENGLISH

Sullivan; THE MACMILLAN COMPANY
one sample page:

PROGRAMMED ENGLISH

M. W. Sullivan

-1-

Words are divided into classes. We call the largest class NOUNS.

Nouns are a class of _____.

words

-2-

In English the class of words called nouns is larger than all the other _____ of words combined.

classes

-3-

We call the largest class of English words _____.

nouns

-4-

You will learn a number of ways to recognize and to use the class of _____ called nouns.

words

-5-

The words in a class are all alike in some way. All the members of the _____ of words called nouns have characteristics in common.

class

-6-

You will see that nouns occur in special positions in English sentences. Any word that occurs in a noun position must be a _____.

noun

GRAMMAR & USAGE

Jr. H.S. +

STRENGTHENING GRAMMATICAL CONCEPTS

FRANCES J. ZALENKA, Programmer, GPTC

JEROME B. WHITE, Programmer, GPTC

ANNE BEACH, Editor, GPTC

PAUL H. CARLSON, Editor, General Programmed
Teaching Corporation

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 2400 frames, paperback, 600 pp.,
8-1/2" x 11", \$ _____.

Teacher's Manual: "Instructions to teacher included in
preface."

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple
Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental testing: 8th graders and above.

Field testing: High school English students."

Prerequisites: None.

Average Time: 24 hours (based entirely on data).

Next Revision: 1968:

(2 sample pages)

GRAMMAR & USAGE

STRENGTHENING GRAMMATICAL CONCEPTS

Zalenka, White, Beach, Carlson; ENCYCLOPAEDIA
BRITANNICA PRESS

2 sample pages:

33

Punctuate the sentences.

- a) I will not go to the game nor will I go to the party
- b) Robert entered the contest and he won

34

Combine the two simple sentences into a compound sentence using the conjunction "but," and punctuate it.

- a) Toast tastes good with butter.
- b) It tastes better with jam.

35

Punctuate the sentences.

- a) Hay is fine but straw is cheaper
- b) Consideration for others is important but many people fail to realize this

36

Punctuate the sentences.

- a) A little common sense never hurt anybody but some people disregard it
- b) The fire was billowing and the people were running out of the building

37	Combine the two simple sentences into a compound sentence using the conjunction "but," and punctuate it. a) Scotch tape holds fairly well. b) Glue does a better job.
Scotch tape holds fairly well, but glue does a better job.	
38	Does the underlined clause in the following sentence make a complete sentence standing alone? Yes No When I tried out for the football team, I was very nervous. CIRCLE THE CORRECT ANSWER.
No	
39	Circle the number of the sentence which has a clause that cannot stand alone. 1) When the sun goes down, the moon comes up. 2) Scotch tape holds fairly well, but glue does a better job.
1	
40	A complex sentence contains at least one clause which cannot stand alone and one clause which can stand alone. Circle the complex sentence. a) After the children left for school, the house became quiet. b) The children left for school, and the house became quiet.
a	

GRAMMAR & USAGE

Jr. H.S.

**STUDENTUTOR LIBRARY OF SENTENCES, WORDS,
REFERENCES.**

TECHNICAL STAFF, General Education, Inc.

Published by GENERAL EDUCATION, INC.,

96 Mount Auburn St., Cambridge 38, Mass.

**For use in STUDENTUTOR, program reusable, 1500
frames, programs are supplied in a kit which contains
5 machines, 5 exhibit books, and 36 scrolls, \$75.00.**

Teacher's Manual available, free with kit.

Table of Contents.

**Unit, Diagnostic Test(s) available. Pre and Post tests are
interchangeable.**

**Constructed Responses usually used; some Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Pre and post tests used on 8-10 students per revision.

Several revisions to achieve negligible error rates.

Average Time: 16 to 18 hours (est.).

Next Revision: "None planned as yet."

(2 sample pages)

GRAMMAR & USAGE

STUDENTUTOR LIBRARY OF SENTENCES, WORDS, REFERENCES

Technical Staff; GENERAL EDUCATION, INC.

2 sample pages:

Excerpt from

Section I: SENTENCES

Program 1: Understanding Sentences

5. The man ate the fish. The fish ate the man. Changing the <u>order</u> of words in a sentence can make ... (a huge difference/no difference) in the meaning of a sentence.	a huge difference (especially if you were the man in this sentence.)
6. Ate fish man the the. Here are the same five words again. This time they are placed in alphabetical order. Without switching words around can you tell what this "sentence" means? ... (Yes/No)	No
7. In order for us to understand a sentence, the words must be placed in a certain order. The words in any meaningful sentence are arranged ... (in any order/in a very special order.)	in a very special order

Excerpt from

Section II: WORDS

Program 3: There, They're, Their

1. The single word "they're" stands for the two words "they are". The two words "they are" can be combined to form the single word "th____re".	"they're"
---	-----------

2. When we combine the words "they are" to form the word "they're" we leave out one letter and insert an apostrophe (') in place of that letter. The letter that we leave out to form "they're" is the letter "____" (what letter?).	a .
3. In forming "they're" from "they are" we omit the letter "a" and insert an apostrophe in its place between the letters "____" and "____".	y; r

Excerpt from

Section III: REFERENCES

Program 4: Page Numbers

5. Herbert gobbled up bananas, pears and grapes. This sentence means that Herbert ate . . . (a) bananas and pears. (b) bananas or pears.	(a) bananas and pears. (Are you wondering what this has to do with indexes?)
6. Oscar loves licorice, fishing and girls. A comma, then, is sometimes used instead of the word "____."	and
12. Ice cream, 29, 33 This index entry means that the subject ice cream is discussed on pages	29 and 33 (Do you see now what Herbert's bananas and pears have to do with indexes?)

GRAMMAR & USAGE

Sixth Grade

SYNONYMS, ANTONYMS, HOMONYMS
MARTA ZABORSKA, Programmer, Learning, Inc.
Published by LEARNING INCORPORATED,
1317 West Eighth Street, Tempe, Arizona.

Programed text, 34 frames, \$15.
Constructed Responses usually used; some Multiple
Choice Responses; no Branching.

DEVELOPMENTAL POPULATION(S): Grades 5, 6.
Prerequisites: "Grade 6 reading level."
Average Time: 12.8 minutes (based entirely on data);
standard deviation, 3.8 minutes.
Next Revision: "The program is the final revision."
(1 sample page)

GRAMMAR & USAGE

SYNONYMS, ANTONYMS, HOMONYMS Zaborska; LEARNING INCORPORATED one sample page:

9. Ship and boat are _____.

synonyms

10. When you turn left and your dog turns right, you are turning in the _____ (same or opposite) way.

opposite

11. Right and left are not _____.

onyms

12. The special name for a word which means the opposite of another word is antonym. Bad and good are _____.

anto

13. An antonym for hot would be _____.

cold

14. A word which means the opposite of another is a(n) _____.

antonym

15. Fast and slow are antonyms but fast and quick are _____.

synonyms

16. A word (nym) which means the opposite (anto) is called an _____.

antonym

17. Say to yourself silently sum and some. Both words sound _____ (alike or different?).

alike

GRAMMAR & USAGE

Jr. H.S. - Adult Ed.

ACHIEVING CLARITY THROUGH PUNCTUATION

ANNE BEACH, Editor, GPTC

ROBERT A. FAWVER, Programmer, GPTC

WILLIE Y. HUFF, Programmer, General Programmed
Teaching Corporation

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 1800 frames, paperback, 300 pp.,
8-1/2" x 11", \$ _____.

Teacher's Manual: "Instructions to teacher included
in preface."

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental testing: 8th-10th grade students.

Field testing: High school students."

Prerequisites: None.

Average Time: 18 hours (based entirely on data).

Next Revision: 1968.

(1 sample page)

GRAMMAR & USAGE

ACHIEVING CLARITY THROUGH PUNCTUATION

Beach, Fawver, Huff; ENCYCLOPAEDIA BRITANNICA
PRESS

one sample page:

41	What is so funny. This exclamatory sentence, if not asked with strong feeling, would have ended with _____. (Write the mark)

42	Write the end punctuation of the following sentences (a) expressed without strong feeling and (b) expressed with strong feeling.
	1. Tread water (a) _____ (b) _____
	2. We'll save you (a) _____ (b) _____
	3. Why don't you learn to swim (a) _____ (b) _____
	1. (a) _____ (b) ! 2. (a) _____ (b) ! 3. (a) ? (b) !
43	Match the following forms of sentences with the sentences on the right.
	1. Imperative _____ A. What a handsome waiter we have!
	2. Declarative _____ B. Would you like the shrimp cocktail?
	3. Interrogative _____ C. Give me the check.
	4. Exclamatory _____ D. This roast beef is excellent.
	1. C. 2. B. 3. A. 4. D.
44	Complete the following statements.
	1. The first letter of a sentence is a _____.
	2. Punctuation marks which may end a sentence are _____ (Write the marks)
	3. A sentence expresses a _____.
	1. capital letter 2. through
	2. ? ! (any order)

GRAMMAR AND USAGE

Jr. H.S.+

MODERN ENGLISH SERIES: PUNCTUATION
LLOYD E. HOMME

POLO C. DE BACA, both of Teaching Materials Corporation.
Published by **TEACHING MATERIALS CORPORATION**,
575 Lexington Avenue, New York 22, New York

Programed text, 1,178 frames, paperback, 272 pp.,
8 1/2" x 11", \$8.50.

For use in MIN/MAX II, \$25.00; program reusable, \$7.50.

Teacher's Manual: General Manual available for all
TMI-Grolier programs.

Table of Contents.

Unit and Final Test(s) included.

Constructed Responses always used; no Multiple Choice
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Age range 12 to 21 years, 7th grade through high
school, average age of 14.7. Average school grade:
4th month of 9th year."

Other using population(s): "Review for college students,
technical writers, adults performing secretarial duties."

Prerequisites:

Average Time: 8-12 hours (based entirely on data).

Next Revision: December, 1963.

(1 sample page)

GRAMMAR & USAGE

MODERN ENGLISH SERIES: PUNCTUATION

Homme, De Baca; TEACHING MATERIALS CORPORATION
one sample page:

151	Copy the word "ellipsis."
ellipsis	
152	The ellipsis shows that one or more words have been left out of a quotation. Which sentence shows the correct use of an ellipsis? 1. "To be or not to be ..." 2. John came yesterday ...
1	
153	Choose the correct answer. The paper quoted Mr. Bark as saying, "(---/...) and furthermore, we need at least three million dollars for this project."
...	
154	Which is correct? "Fourscore and seven years ago our fathers (.../xxx)" The ellipsis shows that one or more words have been left out of a _____.
...	
quotation	
155	What does the ellipsis show? The ellipsis shows that one or more words have been left out of a quotation.
8-31	TEACHING MATERIALS CORPORATION

GRAMMAR & USAGE

H.S.—Coll.

PROPER PUNCTUATION

KELLOGG SMITH

LEIGHTON STEELE

*** ADRIENNE ZAHNISER, all of U.S.I. Educational Science Division.**

**Published by DOUBLEDAY & COMPANY, INC.,
575 Madison Avenue, N.Y.C.**

**Programed text, 266 frames, hard cover, 277 pp.,
8 1/4" x 5 3/8", \$4.95.**

**(A similar program, PUNCTUATION, is available in
TM format from: EDUCATIONAL SCIENCE DIV.,
U.S. INDUSTRIES, INC., 250 Park Avenue, N.Y.C.**

**For use IN AUTOTUTOR MARK II. \$1,250; Program
reusable, \$70.00.)**

Table of Contents, both programs; Index, programed text.

Unit Test(s) available, machine program.

**Multiple Choice Responses and Branching always used,
no Constructed Responses.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

College remedial English students.

Prerequisites: High school education.

**Additional Material required: Dictionary (optional),
pencil and paper.**

**Average Time: 5-7 hours (est.), programed text; 4-10
hours (est.), machine.**

Next Revision: Summer, 1963.

(1 sample page)

*** Machine program only.**

GRAMMAR & USAGE

PROPER PUNCTUATION

Smith, Steele, Zahniser; DOUBLEDAY & COMPANY
one sample page:

Sample from Proper Punctuation

87
(from page 92)

YOUR ANSWER: The colon may be used only after a complete statement.

Right.

This is a carry-over from the older use of the colon to separate the independent elements of sentences. You should write

I bought a box of crayons, some paper, and a
stencil-cutter.

because I bought is not a complete statement. If you want to introduce the series with a colon, you should write

I bought the following items: a box of crayons,
some paper, and a stencil-cutter.

for I bought the following items is a complete statement, and can stand by itself.

Which of the following sentences is incorrectly punctuated?

I chose: the red, the blue, the green, and
the mauve.

page 74

What is the cause of your failure: sloth or
neurosis?

page 76

Again, nothing is asserted: no belief, no
truth, no philosophy.

page 78

GRAMMAR & USAGE

Jr. H.S.+

PUNCTUATION & CAPITALIZATION 26

GEORGE M. SNYDER, Programmer

**Published by EDUCATION ENGINEERING, Inc.,
381 West 7th Street, San Pedro, California.**

**Programed text, 3240 frames, paperback, 108 pp.,
5" x 7", available in 3 separate units at \$3.75 each.**

For use in SPEED machine, program reusable, \$30.00.

Teacher's Manual available, \$4.00 per unit.

Unit, Final, Diagnostic Test(s) available, \$3.75 each.

**Multiple Choice Responses always used; no Constructed
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

**Additional material required: SPEED machine, \$700 &
\$850.**

Average Time: 5 hours (est.).

Next Revision:

(1 sample page)

GRAMMAR & USAGE

PUNCTUATION & CAPITALIZATION 26 Snyder; EDUCATION ENGINEERING one sample page:

THE APOSTROPHE (')

The apostrophe is a clever invention used to com-
press words into one word.

The apostrophe indicates contractions. To contract
means to reduce in length.

EXAMPLES

does not - doesn't	I will - I'll
did not - didn't	it is - it's
do not - don't	there is - there's
can not - can't	they are - they're
he is - he's	who is - who's

WARNING

Do not use an apostrophe with the possessive pro-
nouns or with WHOSE.

ours	its
yours	his
theirs	hers

EXAMPLES

Whose book is this? It is his book, not hers. The
money is not their's to keep. It is yours. The dog
wagging its tail is ours.

X28802 - 04

QUESTIONS

In the usage underlined, right or wrong?

R - Right usage W - Wrong usage

- Be a fine car, but he's angry because it's fender
is dented, and it's expensive to repair.
- I don't like his' behavior when he's in a bad
mood, and he doesn't like mine.
- They're coming to get money which is not their's
and I can't see that it's fair.
- Whose coming to see if there's a defect in its
construction that can't be removed.
- Be not yours and it's not ours.

ANSWERS

- W R R W
- R R R R
- R W W R
- W W W W
- R W R W
- W W R R
- W W R R
- W R R R
- R R R W
- R W W W

GRAMMAR & USAGE

Elem.-Jr. H.S.

USING CAPITAL LETTERS

THORWALD ESBENSEN

DONALD HURST

CHARLES JENKS

DAVID SHIER, all of Merit Associates (formerly Educational Development Associates)

**Published by E-Z SORT SYSTEMS, LTD.,
45 Second Street, San Francisco, California**

**Programed text, 300 frames, paperback, 70 pp., 5" x 8",
\$6.45 (includes response device).**

"Program fits response device consisting of 15 edge-punched cards—printed educational matter published in pamphlet or text form with required student responses coded to correspond with the response device—a sorter."

Teacher's Manual available, included with program.

Unit test(s) available, included in program.

**Multiple Choice Responses usually used; some
Constructed Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Average third-grade class."

Prerequisites: "Ability to read at third-grade level."

**Additional material required: "Response device
described above."**

Average Time: 5 hours (est.).

Next Revision: "Unknown."

(1 sample page)

GRAMMAR & USAGE

USING CAPITAL LETTERS

Esbensen, Hurst, Jenks, Shier; E-Z SORT SYSTEMS, LTD.
one sample page:

The name of any school subject that comes from the name of a country should be capitalized. Look at this sentence: He is taking a course in french. In this sentence, should the word french be capitalized?

1-3 Yes

1-5 No

The word French comes from the name of the country, France. Therefore, ?

2-4 the word French should be capitalized.

2-5 the word French should not be capitalized.

The sentence should look like this: ?

3-4 He is taking a course in french.

3-5 He is taking a course in French.

Is it true that the name of any school subject should be capitalized?

4-8 Yes

4-9 No

Which statement is true?

5-8 The name of any school subject that comes from the name of a country should be capitalized.

5-9 The name of any school subject should be capitalized.

GRAMMAR & USAGE

Elem.-Jr. H.S.

**USING PUNCTUATION
THORWALD ESBENSEN**

DONALD HURST

CHARLES JENKS

DAVID SHIER, all of Merit Associates (formerly Educational Development Associates)

**Published by E-Z SORT SYSTEMS, LTD.,
45 Second Street, San Francisco, California**

**Programed text, 600 frames, paperback, 170 pp., 5" x 8",
\$7.85 (includes response device).**

"Program fits response device consisting of 15 edge-punched cards—printed educational matter published in pamphlet or text form with required student responses coded to correspond with the response device—a sorter."

Teacher's Manual available, included with program.

Unit test(s) available, included in program.

Multiple Choice Responses usually used; some Constructed Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Average third-grade class."

Prerequisites: "Ability to read at third-grade level."

Additional material required: "Response device described above."

Average Time: 10 hours (est.).

Next Revision: "Unknown."

(1 sample page)

GRAMMAR & USAGE

USING PUNCTUATION

Esbensen, Hurst, Jenks, Shier; E-Z SORT SYSTEMS, LTD.
one sample page:

SAMPLE FRAMES: USING PUNCTUATION

Sometimes, when we speak directly to a person, we use that person's name: George, are you coming?

Notice ? after the word George.

6-8 the comma

6-9 the exclamation point

Look at the following sentence: Where did you go, Sally?

Notice the before the word Sally.
6-12

Look at the following sentence: Say, Tom, what are you doing?

Notice the on each side of the word Tom.
16-28

Which rule fits these three examples?

7-8 When you speak directly to a person and use his name, always put a comma on each side of his name.

7-9 When you speak directly to a person and use his name, you should use a comma or commas to separate his name from the rest of the sentence.

GRAMMAR AND USAGE

Prim.

**BEGINNING SPELLING
THORWALD ESBENSEN**

DONALD HURST

CHARLES JENKS

**DAVID SHIER, all of Merit Associates (formerly
Educational Development Associates)**

**Published by E-Z SORT SYSTEMS, LTD.,
45 Second Street, San Francisco, California.**

Programed text, 1500 frames, paperback, 105 pp.,
5" x 8", \$ ____.

"Program fits response device consisting of 15 edge-punched cards—printed educational matter published in pamphlet or text form with required student responses coded to correspond with the response device—a sorter."

Teacher's Manual available, included with program.
Constructed Responses always used; no Multiple Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Primary grade students."

Prerequisites: "Readiness ability to discriminate between numbers and letters."

Additional material required: "Response device described above."

Average time: 120 hours (est.).

Next Revision: "Unknown."

(2 sample pages)

GRAMMAR & USAGE

BEGINNING SPELLING

Esbensen, Hurst, Jenks, Shier; E-Z SORT SYSTEMS, LTD.

2 sample pages:

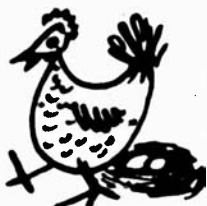
SAMPLE FRAMES: BEGINNING SPELLING



9-14	9-11	2-4	5-7
------	------	-----	-----



9-17	10-12	20-28	9-12	2-12
------	-------	-------	------	------



9-21	13-14	5-12	14-27	4-15	7-10	5-11
------	-------	------	-------	------	------	------



21-27	14-24	4-10	12-23	6-21
-------	-------	------	-------	------

SAMPLE MASTER CARD E-Z SORT INSTRUCTOCARD TWIN-T

GRAMMAR & USAGE

Jr. H.S.+

IMPROVING YOUR SPELLING

SHIRLEY B. BITTERLICH, Programmer, GPTC

ROBERT K. BRANSON, Editor, GPTC

PAUL H. CARLSON, Programmer, GPTC

WILLIE Y. HUFF, Programmer, General Programmed
Teaching Corporation.

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 2106 frames, paperback, 351 pp., 8-1/2"
x 11", \$

Teacher's Manual: "Instructions to teacher included in
preface."

Table of Contents.

Final test available.

Multiple Choice Responses usually used; some Constructed
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental testing: 8th-11th graders. Field
testing: Junior high students."

Prerequisites: None.

Average Time: 10 hours (based entirely on data).

Next Revision:

(2 sample pages)

GRAMMAR & USAGE

IMPROVING YOUR SPELLING

Bitterlich, Branson, Carlson, Huff; ENCYCLOPAEDIA
BRITANNICA PRESS

2 sample pages:

55	remember	
Mark out all incorrect spellings.		
	remimber	
	remember	
	rimember	
56	Check all correct spellings.	
	rememblr	remember
	remimber	rimember
57	Check all correct spellings.	
	crowde	crowd
	crawd	croud
58	She did not (remimber/remember/rimember) to mail the letter.	
59	Write the correct letters.	
	ex/min/ition	
60	mentioned	
Mark out all incorrect spellings		
	mintioned	
	mentiond	
	mentioned	

61	Write the correct letter.	
	m/ntioned	
62	Underline all correct spellings.	
	examination	examanation
	examination	eximanation
63	Mark out all incorrect letters and write the correct spelling.	
	croude	_____
64	Write the correct letters.	
	r/fm/mb/fr	
65	The speaker (mentioned/menshuned/menteoned) the international situation.	
66	Mark out all misspellings.	
	examination	examination
	evalueate	evaluate
	knowledge	nowledge

GRAMMAR AND USAGE

Prim. +

MODERN ENGLISH SERIES: SPELLING RULES
LLOYD E. HOMME

DONALD T. TOSTI, both of Teaching Materials Corp.
Published by **TEACHING MATERIALS CORPORATION**,
575 Lexington Avenue, New York 22, New York

Programed text, 2,990 frames, paperback, 612 pp.,
8 1/2" x 11", bound in 3 separate volumes, \$13.50.

For use in MIN/MAX II machine, \$25.00; program re-
usable, \$12.50.

Teacher's Manual: General Manual for all TMI-Grolier
programs available.

Table of Contents.

Unit and Final Test(s) included.

Constructed Responses always used; no Multiple Choice
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"8 year olds in 4th month of 3rd grade with average
IQ of 107."

Prerequisites: "Third grade reading skill."

Average Time: 12-24 hours (based entirely on data);
standard deviation, 4.2 hours.

Next Revision: June, 1963.
(3 sample pages)

GRAMMAR & USAGE

MODERN ENGLISH SERIES: SPELLING RULES






Homme, Tosti; TEACHING MATERIALS CORPORATION

3 sample pages:

6	The <u>shun</u> sound is often spelled <u>tion</u> . A story based on imaginary happenings is <u>fic</u> A double line under a letter(s) means to copy the letter(s).
	fiction
7	A story based on imaginary happenings is called fic.....
	TEST
8	A story based on _____ happenings is called fiction. (imaginary)
	imaginary
9	A story based on imagina__ happenings is called fiction. Choose the right letters. 1 ly 3 ay 2 ey 4 ry
	4 ry
10	A story based on imaginary happenings is called Choose the right spelling 1 fiction 3 fition 2. fiction 4. fation
	1. fiction
	7-2

116	_____ means shy.
Bashful	
117	A <u>camera</u> takes pictures. John takes pictures with his new _____.
camera	
118	A came__ takes pictures.
ra	
119	A ca_____ takes pictures. Choose the right letters. 1. area 2. nera
2. nera	
120	A _____ takes pictures.
camera	

9-24

31	When a line is placed over a vowel, it shows that it has the _____ vowel sound.
long	
32	The word <u>bring</u> comes _____ the word <u>bottle</u> in the dictionary.
TEST	
33	When you add <u>ed</u> to _____, you get <u>flapped</u> .
flap	
34	<u>Perhaps</u> means <u>maybe</u> . Find the misspelled word and spell it correctly. _____
Perhaps	
35	When words have the same letter at the beginning, like <u>job</u> and <u>jump</u> , they are put in the order of their _____ letter.
second	

GRAMMAR & USAGE

Elem.

SPELLING DEMONS, I and II

EMANUEL BIERMAN, programmer, assistant principal,
Queens, N. Y.

ALEXANDER SCHURE, President, N. Y. Institute of
Technology

Published by **CENTRAL SCIENTIFIC Company**,
1700 Irving Park Road, Chicago 13, Ill.

For use in **CENCO PROGRAMED LEARNER**, \$2.95;
program not reusable, 500 frames in I, 500 in II,
I or II included in price of machine.

Constructed Responses usually used; some Multiple
Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Over 200."

Prerequisites: None

Average Time: 3 hours (est.).

Next Revision: "Now available."

(1 sample page)

GRAMMAR & USAGE

SPELLING DEMONS, I and II

Bierman, Schure; CENTRAL SCIENTIFIC

one sample page:

226. When everyone agrees in electing a new officer, he is elected by a u - - - - - vote.

STOP

227. Peter was elected by a vote as the class president.

nanim

STOP

228. There are syllables in u nan i mous.

unanimous

STOP

229. Fill in the missing syllables:

u / i
/ nan / mous

four

STOP

230. Add ly to unanimous to get .

nan mous
u i

STOP

231. Peter was elected ly as the class president.

unanimously

STOP

GRAMMAR & USAGE

SPELLING IMPROVEMENT 18

GEORGE M. SNYDER, Programmer

Published by EDUCATION ENGINEERING, Inc.,

381 West 7th Street, San Pedro, California.

Programed text, 6480 frames, paperback, 216 pp.,

5" x 7", available in 6 separate units at \$3.75 each.

For use in SPEED machine, program reusable, \$60.00.

Teacher's Manual available, \$4.00 per unit.

Unit, Final, Diagnostic Test(s) available, \$3.75 each.

Multiple Choice Responses always used; no Constructed Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

Additional material required: SPEED machine, \$700 & \$850.

Average Time: 8 hours (est.).

Next Revision:

(1 sample page)

GRAMMAR & USAGE

SPELLING IMPROVEMENT 18

Snyder; EDUCATION ENGINEERING
one sample page:

SPELLING DEMONS II

29. _____ are words that mean the same
or have the same definition.

.....
Synonyms

30. A synonym of resident is _____.

.....
inhabitant

31. To break into someone's conversation is to
_____ the conversation.

.....
interrupt

32. You will interr--- the speaker if you ask a
question while he is speaking.

.....
upt

33. It is impolite to in upt a conversation.

.....
terr

GRAMMAR & USAGE

Elem.

SPELLING U-3007

**UNIVERSAL ELECTRONICS LABORATORIES
CORPORATION**

**Published by UNIVERSAL TEACHING MACHINE
INSTITUTE,
510 Hudson Street, Hackensack, New Jersey.**

**For use in UNIVERSAL MODEL U machine, program
reusable, 2160 frames, machine and program, \$25.00
(school discount).**

Table of Contents.

**Constructed Responses usually used; some Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Grade level - 2-6."

**Other using population(s): "Jr. High school students,
high school students and adults."**

Prerequisites: None.

Average Time: 24 to 28 hours (est.).

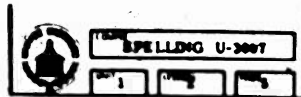
Next Revision: August, 1963.

(2 sample pages)

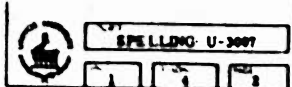
GRAMMAR & USAGE

SPELLING U-3007

Universal Electronics Laboratories Corporation;
UNIVERSAL TEACHING MACHINE INSTITUTE
2 sample pages:



<p>Write the plural form of <u>fun</u> as it is used in the following sentence:</p> <p>The old man _____ broken toys.</p>			fun
62	<p>Now write the plural of the following words:</p> <p>bush dress birch mix</p>	<p>bushes dresses birches mixes</p>	
63	<p>To form the plural, you added _____ to the words you have just written.</p>	es	
64	<p>What should we add to <u>pin</u> to form the plural?</p>	es	
65	<p>What is added to <u>chair</u> to form the plural?</p>	s	
66	<p>Write the plural of each of the following</p> <p>rush talk dog mass</p>	<p>rushes dogs talks masses</p>	



115	Since you hear a y when you say the plural of <u>leaf</u> , it must be formed by changing the f to y and adding <u>es</u> . Write the plural of <u>leaf</u> .	leaves
116	Words that end in f or ff and rhyme usually form their plurals in the same way. If the plural of <u>knife</u> is <u>knives</u> , then the plural of <u>wife</u> is _____.	wives
117	Write the plurals of the following words <u>wife</u> <u>knife</u> <u>life</u>	wives knives lives
118	What is the letter you hear before the g when you say the plural of <u>belief</u> ? You form the plural, then, by adding _____, as in the sentence: Different religions have different _____.	f beliefs
119	Form two other words that will rhyme with <u>belief</u> . <u>ch</u> _____ <u>gr</u> _____	chief grief
120	Write the plurals for the following words <u>belief</u> <u>chief</u> <u>grief</u>	beliefs chiefs griefs

LANGUAGE ARTS

H.S. -Coll.

FUNDAMENTALS OF POETRY

FRANKLIN M. DICKEY, Subject Matter Expert

JAMES E. LEAVENWORTH, Programmer, General Programmed Teaching Corporation

EDNA M. MORGAN, Editor, General Programmed Teaching Corporation

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 1050 frames, paperback, 325 pp.,
8-1/2" x 11", \$ _____

Teacher's Manual: "Instructions to teacher included in preface."

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental testing: Senior high school and college.

Field testing: Senior high school."

Prerequisites: None.

Average Time: 9 hours (based entirely on data).

Next Revision: 1968.

(1 sample page)

LANGUAGE ARTS

FUNDAMENTALS OF POETRY

Dickey, Leavenworth, Morgan; ENCYCLOPAEDIA
BRITANNICA PRESS

one sample page:

304	When we say, "make a pattern" we mean <u>scan</u> .
You scan these lines. (Make an iambic pattern. The first foot is <u>trochaic</u> .)	
As for myself, I walk abroad a-nights And kill sick people groaning under walls	
As for / myself, / I walk / abroad / a-nights And kill / sick peo/ple groan/ing un/der walls	
(Here is a typical example of a trochaic substitution in a basically iambic line.)	
305	This is a(n) _____ foot sign. <u>uu/</u>
anap _____	
anap <u>e</u> stic	
306	<u>Scan</u> (or make a pattern).
And we will some new pleasures prove	
u / u / u / u / And we / will some new pleas/ures prove	

LANGUAGE ARTS

H.S. -Adult

THE MEANING OF MODERN POETRY

JOHN CLARK PRATT, Captain U.S. Air Force

Published by DOUBLEDAY & COMPANY, Inc.

575 Madison Avenue, New York, New York

**Programed text, 339 frames, hard cover, 399 pp.,
8-1/4" x 5-3/8", \$5.95.**

Table of Contents, Index.

**Multiple Choice Responses and Branching always used;
no Constructed Responses.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites: High school education.

Additional Material Required: Dictionary (optional).

Average Time: 6-8 hours (est.).

**Next Revision: "Dependent on publisher's requirements."
(1 sample page)**

LANGUAGE ARTS

THE MEANING OF MODERN POETRY Pratt; DOUBLEDAY & COMPANY

one sample page:

Sample from The Meaning of Modern Poetry

131
(from page 130)

We have seen thus far how a person (a woman), an action (a salute), and a work of art (a painting) have led us into subjects of sexual love, dominion, and the relationship of art to life. In each case we have used the process of abstraction to arrive at the subject, starting with the occasion for the poem at the literal level, then proceeding to the pure idea behind it.

Let us look at another poem now, this one by Robert Frost. At first appearing deceptively simple, this poem is seen to be complex when studied carefully.

The Oven Bird

There is a singer everyone has heard,
Loud, a mid-summer and a mid-wood bird,
Who makes the solid tree trunks sound again.
He says that leaves are old and that for flowers
Mid-summer is to spring as one to ten.
He says the early petal-fall is past
When pear and cherry bloom went down in showers
On sunny days a moment overcast;
And comes that other fall we name the fall.
He says the highway dust is over all.
The bird would cease and be as other birds
But that he knows in singing not to sing.
The question that he frames in all but words
Is what to make of a diminished thing.

First, what type of poem is it?

It is a Shakespearean sonnet.

page 134

It is a sonnet.

page 137

It falls into no specific category, other than lyric. page 140

LANGUAGE ARTS

H.S.

POETRY: A CLOSER LOOK

JAMES M. REID, Harcourt, Brace & World

JOHN CIARDI, Saturday Review poetry editor

**LAURENCE PERRINI, Dept. of English, Southern
Methodist University**

**Published by HARCOURT, BRACE & WORLD,
750 Third Avenue, New York 17, New York**

**Programed text, 210 frames, paperback and hardcover,
128 pp., 6 1/4" x 9", \$1.60 (paperback), \$3.75 (hard-
cover).**

Table of Contents, Index.

**Constructed Responses usually used; some Multiple
Choice; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"1200 students in 33 schools and 4 colleges, involving
37 teachers."**

Prerequisites: None

**Average Time: "3 hours for programed section of 210
frames" (est.).**

**Next Revision: 1966
(1 sample page)**

LANGUAGE ARTS

POETRY: A CLOSER LOOK

Reid, Ciardi, Perrini; HARCOURT, BRACE & WORLD
one sample page:

At the opening of Scene Three (stanza four), the man has two main things on his mind: (1) the impatience of the little _____ and (2) the attraction of the _____ "lovely, dark and deep."

[21]

horse
woods

In the last three lines of stanza four, there appears still another problem for the speaker to face. To it Frost gives two names or descriptions: (1) "_____ to keep" and (2) "_____ to go before I sleep."

[22]

promises
miles

This new third question or problem refers to the original purpose of the driver's journey or errand. He has to decide whether to _____ on about his business or to linger by the woods.

[23]

move (go, drive,
continue)

In the fourth stanza the man makes his decision. Because he has "_____ to keep," he _____ on his way.

[24]

promises
goes or continues

Your second reading of the poem has carried you to a detailed understanding of a simple narration of a simple incident. This is one important kind of meaning. What you have grasped is the surface _____ of the poem. Closer reading will reveal some deeper meanings.

[25]

meaning

You have seen what happened in the poem. This narrative provides the surface meaning. The reader properly finds a certain measure of enjoyment in grasping this _____.

[26]

surface meaning

Usually there is little difference of opinion or interpretation about a poem's surface meaning. But just as we expect to find deep water beneath the quiet surface of a lake, we may expect to find _____ or more profound meanings beneath the surface of a poem.

[27]

deeper

POETRY—A CLOSER LOOK 8

LANGUAGE ARTS

H.S. - Coll.

EFFECTIVE WRITING

LEIGHTON STEEL*

JANE STAPLEFORD

KELLOGG SMITH

ADRIENNE ZAHNISER, all of U.S.I. Educational Science
Division

Published by **DOUBLEDAY & COMPANY, Inc.**

575 Madison Avenue, New York, New York

Programed text, 450 frames, hard cover, 8-1/4" x 5-3/8",
\$_____.

A similar program, **IMPROVING YOUR WRITING**, is
available in TM format.

Published by **EDUCATIONAL SCIENCE DIVISION**,
U.S. INDUSTRIES, Inc.,

250 Park Avenue, New York, New York

For use in **AUTOTUTOR MARK II**, \$1,250; program
reusable, \$150.00.

Table of Contents, both programs; Index, programed
text.

Unit Test(s) available, machine program.

Multiple Choice and Branching always used; no
Constructed Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

College remedial (freshmen) English students.

Prerequisites: High school education.

Additional Material Required: Dictionary (optional).

Average Time: 12-15 hours (est.), programed text;
6-12 hours (est.), machine program.

Next Revision: Undetermined.

(1 sample page)

*Machine program only.

LANGUAGE ARTS

EFFECTIVE WRITING

Steel, Stapleford, Smith, Zahnister; DOUBLEDAY & CO.
one sample page:

Sample from Improving Your Writing

57

None of their plans are working out.

YOUR ANSWER: The sentence above is correct.

Right. None, like any, all, more, most, and some, takes a singular or a plural verb, depending upon the word to which it refers. In the sentence above, none refers to plans, and thus takes the plural verb are.

Here is another rule:

6. Collective nouns commonly take singular verbs.

Collective nouns (like herd, class, committee, crowd) take singular verbs because we think of them as acting as a unit. For example:

The class is bored.

We'll abide by what the committee decides.

Collective nouns do, however, take plural verbs when the parts or members of the collection are thought of as individuals.

For example: ~

The committee were always arguing among themselves.

Which of the following sentences is correct?

The number of such incidents has greatly decreased.

H

If the government decide against war, the press will be disappointed.

G

The basketball team are well trained in zone defense.

F

LANGUAGE ARTS

H.S.

PERSUASIVE WORDS

Effective Word Usage

HELEN KAIN, Programmer

**Published by HONOR PRODUCTS COMPANY,
20 Moulton Street, Cambridge, Mass.**



**use in HONOR TEACHINE MACHINE, \$20 (approx.);
program reusable, 200 frames, \$2.00-\$2.50. (Machine
may be marketed in retail channels at this \$20 com-
bination price including 3 or 4 programs.)**

**Constructed Responses usually used; some Multiple Choice;
some Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Private and public schools."

Prerequisites:

Average Time: 1 1/2-2 hours (est.).

Next Revision:

(1 sample page)

LANGUAGE ARTS

PERSUASIVE WORDS

Kain; HONOR PRODUCTS COMPANY
one sample page:

Feelings of dislike, hate, and disgust are _____ feelings.	negative
Feelings of liking, love, and admiration are _____ feelings.	positive
Feelings that are neither positive nor negative are called _____ feelings.	neutral
Suppose that you like music; you have positive feelings about it. Then, you will probably also like words that have to do with music, like "song" or "melody." You will probably have feelings about the words "song" and "melody."	positive
When we associate a word with something that we like, the word takes on our positive feelings toward the thing that we like. When we associate a word with something that we dislike, the word often takes on our negative feelings toward the thing that we dislike.	word
Just as we have positive, negative, and neutral feelings about people, things, and events, we also have feelings about words that we associate with people, things, and events. Such words are said to have positive, negative, and neutral associations for us. For instance, a word that we associate with something that we like is said to have _____ associations for us.	positive
A word that we associate with something that we dislike is said to have negative _____ for us.	associations

LANGUAGE ARTS

H.S. -Coll.

PRINCIPLES OF DEBATE

PETER PROUSE, Subject Matter Expert

L. S. HARMS, Special Consultant

WAYNE T. ALCOCK, **EDNA M. MORGAN**, **HENRY C.**

ELLIS, Programers, GPTC

MARK W. UTTON, Editor, General Programmed
Teaching Corporation

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 2000 frames, paperback, 250 pp.,
8-1/2" x 11", \$_____.

Teacher's Manual: "Instructions to teacher included in
the preface."

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple
Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"High school and college students in Albuquerque, New
Mexico; high school students in Roanoke, Virginia."

Prerequisites: "9th grade reading level."

Average Time: 25 hours (based entirely on data).

Next Revision: Undetermined.

(2 sample pages)

LANGUAGE ARTS

PRINCIPLES OF DEBATE

Prouse, Harms, Alcock, Morgan, Ellis, Utton;
ENCYCLOPAEDIA BRITANNICA PRESS

2 sample pages:

57) Beginning with the First Affirmative Speaker, the teams alternate in giving constructive speeches. The second constructive speech is given by the First _____ Speaker.		Negative
58) The third constructive speech is given by the (1) _____ Affirmative Speaker, and the fourth, or last, constructive speech is given by the (2) _____ Speaker.	(1) (2)	(1) Second (2) Second Negative
59) The speaking order of the constructive speeches is _____ (Complete the answers)	(1) First Affirmative (2) _____ (3) _____ (4) Second Negative	(2) First Negative (3) Second Affirmative
60) The speaking order of the constructive speeches is _____	(1) (2) (3) (4)	(1) First Affirmative (2) First Negative (3) Second Affirmative (4) Second Negative
61) In making rebuttal speeches, the teams alternate beginning with the Negative team. The first constructive speech is made by the (1) _____ Speaker, but the first rebuttal speech is made by the (2) _____ Speaker	(1) (2)	(1) First Affirmative (2) First Negative
62) The first of the four rebuttal speeches in a debate is made by a member of the _____ team.		Negative
63) Beginning with the First Negative Speaker, the teams alternate in giving rebuttal speeches. The second rebuttal speech is given by the _____ Speaker.		First Affirmative
64) The third rebuttal speech is given by the (1) _____ Negative Speaker, and the fourth, or last, rebuttal speech is given by the (2) _____ Speaker.	(1) (2)	(1) Second (2) Second Affirmative

49) The first speech in a debate is made by the (1) _____ Speaker. The debater who speaks immediately thereafter is the (2) _____ Speaker.	(1) (2)	(1) First Affirmative (2) First Negative
50) The third speech in a debate is a (1) _____ speech made by the (2) _____ Speaker.	(1) (2)	(1) constructive (2) Second Affirmative
51) The fourth and final constructive speech in a debate is made by the _____ Speaker.		Second Negative
52) Of the eight speeches made in a debate, the first four are called (1) _____ speeches and the last four are called (2) _____ speeches in which the speaker tries to rebuild his team's arguments.	(1) (2)	(1) constructive (2) rebuttal
53) Each speaker's second speech is his (1) _____ speech, in which he tries to (2) _____ his team's arguments after they have been attacked.	(1) (2)	(1) rebuttal (2) rebuild
54) Each speaker's first speech is his _____ speech.		constructive
55) The second speech made by the Second Affirmative Speaker is his _____ speech.		rebuttal
56) None of the rebuttal speeches are made until all of the _____ speeches have been completed.		constructive

LANGUAGE ARTS

Coll.

A PROGRAMED INTRODUCTION TO LINGUISTICS:

Phonetics and Phonemics

CYNTHIA D. BUCHANAN, programmer with
Sullivan Associates

Published by: D. C. HEATH and Co.,
285 Columbus Ave., Boston, Mass.

Programed text, 1212 frames, 270 pp., 8 1/2" x 11", soft
bound, \$5.00.

Table of Contents.

Unit Test(s) available.

Constructed Responses usually used; some Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Hollins College: undergraduate and graduate students.

N.D.E.A. Summer language institute at Converse

College: language teachers."

Prerequisites:

Average Time: 14 hours (based entirely on data).

Next Revision:

(1 sample page)

LANGUAGE ARTS

A PROGRAMED INTRODUCTION TO LINGUISTICS

Buchanan; D. C. HEATH

one sample page:

PHONEMICS

392

All speech sounds differ from each other. We note some of the differences between speech sounds and disregard others. Apparently, we notice the differences in sounds which are capable of changing the _____ of an utterance.

meaning

Functional Differences

393

We will call the differences between sounds which are capable of changing the meaning of an utterance FUNCTIONAL _____.

differences

...

Is the difference between [p'] and [b'] a functional difference?

yes

394

The difference between [t'] and [t] is the presence or absence of ... (aspiration, voicing)

aspiration

Non-Functional Differences

395

If a speaker pronounces TIP first with an aspirated, and then with an unaspirated "t," e.g., [t'ip-], [tip-], does the meaning of the word change?

no

...

[tip-] would sound odd, because we _____ initial voiceless stops, but no difference in meaning results.

aspirate

...

In English, presence or absence of aspiration ... (changes does not change) the meaning of an utterance.

does not change

LANGUAGE ARTS

Prim.

STUDENTUTOR LIBRARY OF MATCHING EXERCISES
TECHNICAL STAFF, General Education, Inc.

Published by GENERAL EDUCATION, Inc.,
96 Mount Auburn St., Cambridge 38, Mass.

For use in STUDENTUTOR, program reusable, 360 frames,
programs supplied in kit which contains 5 machines
and 18 scrolls, \$45.00.

Teacher's Manual available, free with kit.

Table of Contents.

"Items in program itself may be used for diagnostic
purposes."

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):
Kindergarten children tested one at a time under
supervision. Materials were tested in teaching
machines.

Average Time: 5 hours (est.).

Next Revision: Fall, 1963.

(1 sample frame)

LANGUAGE ARTS

STUDENT TUTOR LIBRARY OF MATCHING EXERCISES

Technical Staff; GENERAL EDUCATION

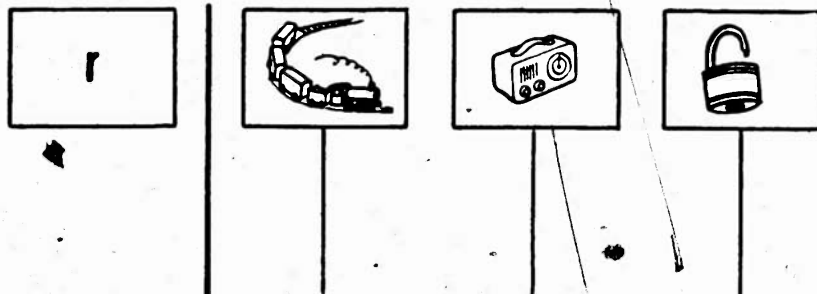
one sample frame:

READING READINESS:

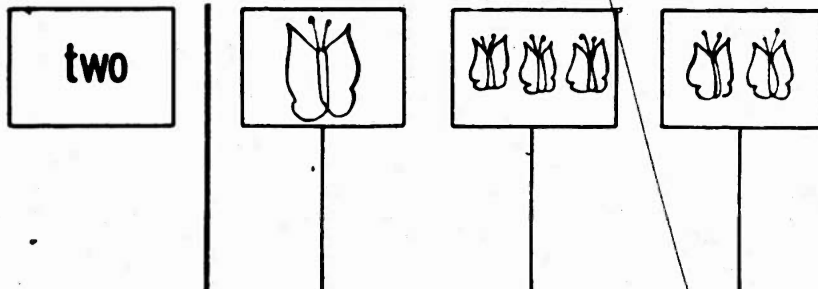
q	c	d	p	q	g	b	j



PHONIC TRAINING:



NUMBER CONCEPTS:



LANGUAGE ARTS

**Special
Education**

THE BASAL PROGRESSIVE CHOICE READING PROGRAM.

MYRON WOOLMAN

RUTH ANN DAVY

LOUISE RAMIREZ

MARCIA WOOLMAN

PATTI LOWERY

ALLEN PETERSON, all of Institute of Educational Research.

Published by: THE INSTITUTE OF EDUCATIONAL

RESEARCH, Inc.,

2226 Wisconsin Avenue, N.W., Washington 7, D.C.

Programed text, 400frames, Paperback, 428 pp., 8 1/2"x11"

Developmental editions available at \$1.00 per segment.

Teacher's Manual available.

Table of Contents.

Diagnostic Test(s) available.

**Some Constructed Responses, Multiple Choice Responses
and Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"500 mentally retarded children in 33 classes, taught
by 33 different teachers. Children's ages: 6-18;**

**I.Q. range: 20-80. Pre and Post Testing by Metro-
politan Achievement Test in Reading and Progressive
Choice Marginal Diagnostic Reading Test.**

**Prerequisites: Reading level less than 2.0 at start of
program.**

Average Time:

Next Revision:

(1 sample frame)

LANGUAGE ARTS

THE BASAL PROGRESSIVE CHOICE READING PROGRAM
Woolman, Day, Ramirez, Woolman, Lowery, Peterson;
THE INSTITUTE OF EDUCATIONAL RESEARCH
one sample frame:

H	H H H H H
H	H H H H H
H	H H H H H
H	
H	
H	

WS-5

LANGUAGE ARTS

Jr. H.S.

HOW TO IMPROVE YOUR READING

JANE BOYD LARIMORE, Programmer, Learning Incorporated

**WILLARD ABRAHAM, Dept. of Educational Services,
Arizona State University**

**Published by CORONET INSTRUCTIONAL FILMS,
65 E. So. Water Street, Chicago 1, Illinois.**

**Programed text, 300 frames, paperback, 7" x 10", \$1.20.
Teacher's Manual included.**

Test Set included.

**Constructed Responses usually used; some Multiple
Choice; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Data incomplete as of February 8, 1963."

Prerequisites: Grade 7 reading ability.

Average Time: "Data incomplete as of February 8, 1963."

**Next Revision: "Final revision scheduled for publication
in Summer, 1963."**

(1 sample page)

LANGUAGE ARTS

HOW TO IMPROVE YOUR READING

Larimore, Abraham; CORONET INSTRUCTIONAL FILMS
one sample page:

Example 1

George was always short of money, but he was too
timorous to ask his boss for a raise.

2-6 The sentence in which a word is used is the context
of that word. Read Example 1. We can call the sentence
in which timorous is used, the c

context

2-7 Word recognition is one of the steps toward reading
improvement and one of the aids to this step is

context

2-8 Look at Example 1. Try to recognize the meaning
of timorous by its context. Timorous
means (bold shy).

shy

2-9 The sentence in which a word is used is the
_____ of the word.

context

Example 2

Sarah is so phlegmatic that she is always the last
person finished with her work.

2-10 Read Example 2. Use the context to help you
recognize the meaning of phlegmatic. Phlegmatic
means

slow

2-11 You can use the context of a word to help you
recognize the _____ of unfamiliar words.

meanings

LANGUAGE ARTS-REMEDIAL READING Prim.

MODERN ENGLISH SERIES: FIRST STEPS IN READING
A Programed Reading Primer

L. BENJAMIN WYCKOFF

JOHN FULLILOVE

POLO C. DE BACA

THEODORE S. STRANCZEK

PATRICIA J. ANDREGO, all of Teaching Materials Corp.

Published by TEACHING MATERIALS CORPORATION,
575 Lexington Avenue, New York 22, New York

For use in MIN/MAX II machine, \$25.00; program reusable,
2,500 frames \$10.00.

Teacher's Manual: General Manual available for all
TMI-Groller programs.

Table of Contents.

Multiple Choice Responses always used; no Constructed
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Students age 6 years 1 month to 9 years 11 months,
average age 7 years 0 months."

Prerequisites: "Elementary motor skills with pencil.
Ability to comprehend simple instructions.

Average Time: 15-35 hours (based entirely on data);
standard deviation, .84 hours.

Next Revision: December, 1963.

(2 sample pages)





LANGUAGE ARTS-REMEDIAL READING






MODERN ENGLISH SERIES: FIRST STEPS IN READING

Wyckoff, Fullilove, De Baca, Stranczek, Andrego;

TEACHING MATERIALS CORPORATION

2 sample pages:

56	R ING		
	□ R AT	° B OY	□ R AT
57			
	□ RABBIT	° RING	□ RABBIT
58			
	□ RING	° RABBIT	□ RING
59			
	▲ BAT	° RAT	□ CAT
60			
	□ RING	° RAT	□ RING
		▲ SING	

16			
The rabbit is in the hat. <input type="checkbox"/>	<input type="checkbox"/> The rabbit is in the hat.		
17			
The rabbit is in the hat. ▲	● The spoon is in the cup.	▲ The rabbit is in the hat.	
18		 The _____ is in the hat.	
● rabbit	● rabbit	<input type="checkbox"/> hat	▲ spoon
19			
The rabbit was in the hat. <input type="checkbox"/>	<input type="checkbox"/> The rabbit was in the hat.		
20		 The rabbit _____ in the hat.	
<input type="checkbox"/> is	● to	<input type="checkbox"/> is	▲ sing
9-4			

LANGUAGE ARTS

Prim.

PROGRAMMED READING

CYNTHIA DEE BUCHANAN, Sullivan Associates

Published by McGRAW HILL BOOK COMPANY, Inc.,

330 West 42nd Street, New York City.

Programed text, paperback, 144 pp., 8 1/4" x 11",

\$

Teacher's Manual available.

Multiple Choice Responses always used; no Constructed Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

Average Time:


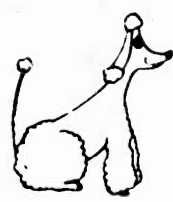

Next Revision:

(1 sample page)

LANGUAGE ARTS

PROGRAMMED READING

Buchanan; McGRAW HILL BOOK COMPANY
one sample page:

no		This is Sam. Is Sam sitting?	yes no
no		Is this Sam?	yes no
Nip		This is N__p.	
Nip		Sam pats	Nip. Tab.

45

LANGUAGE ARTS

Elem.

READING

Word Recognition

CHARLES WILLIAMS, Programmer

Published by PUBLISHERS Co.,

1106 Connecticut Avenue, N.W., Washington, D.C.

**For use in TEACHALL machine, \$69.95; program reusable,
800 frames, included in cost of machine, additional
800-frame programs, \$24.95.**

Teacher's Manual included.

Table of Contents.

Unit, Final, Diagnostic Test(s) available.

**Multiple Choice Responses always used; no Constructed
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Elementary levels."

Prerequisites:

**Additional material required: TEACHALL machine,
\$69.95.**

Average Time: 1/2-1 hour (est.).

Next Revision: "New courses ready about Feb. 15, 1963."

(1 sample page)

LANGUAGE ARTS

READING

Williams; PUBLISHERS CO.
one sample page:

READING UNIT 1 1 2



box



box



doll



box



mother

mother

box

cake

READING UNIT 1 3 4

box

cat



box

cat

sun

LANGUAGE ARTS

Special Ed.

REMEDIAL READING

A Set of 16 Automated Workbooks

Prepared through the facilities of **THE DEVEREUX
FOUNDATION**

Published by **DEVEREUX TEACHING AIDS,**
Box 717, Devon, Pennsylvania

Programed workbooks, 2016 frames, paperback, 18 pp. in each book, 7" x 11". "Available only to special education facilities for exploratory use. For further information contact Dr. Henry Platt, Director of Training, The Devereux Foundation, Devon, Pennsylvania.

For use in **DEVEREUX TEACHING AID - MODEL 50,**
\$89.50, program reusable.

Teacher's Manual available, \$1.00.

Table of Contents.

Unit Test(s) available; coordinated with California Achievement Test, which includes adequate diagnostic profile.

Multiple Choice Responses and Branching always used;
no Constructed Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Both within Devereux and other school systems.

Other using population(s): Experimentally in normal grade schools.

Prerequisites: "Most booklets usable with students exhibiting specific reading disabilities though this is naturally not a requirement—neither is the ability to write, so physically handicapped can and do use them."

Additional material required: Devereux Teaching Aid - Model 50, \$89.00. Some developmental material available on the Graflex Instructor machine.

Average Time: "Depends on IQ and nature of limitations.

Many students go through the book in one hour but require several repetitions on subsequent days."

Next Revision: September, 1963.

(1 sample page)

LANGUAGE ARTS

REMEDIAL READING

Devereux Foundation; DEVEREUX TEACHING AIDS
one sample page:



Many of us like to find seashells on the beach. Where do they all come from? They are the houses of shellfish which have been washed up on the beach by the water. Shellfish are soft little animals which live inside of these shells. They do not look like the fish we know but do have eyes, a mouth and other things like a fish. Some shellfish have a foot to help them move. Others fasten themselves to one place and stay there.

What are seashells?
little pieces of rock

the houses of starfish

the houses of shellfish

How do shells get on the beach?

they live there

water washes them there

air moves them there

How do shellfish move?

with feet

with arms

with a foot

Do all shellfish move in the water?

yes

no

LANGUAGE ARTS

Seventh Grade

STEPS TO BETTER READING, Book One

**WILBUR SCHRAMM, Institute for Communication Research,
Stanford University**

**HERBERT POTELL, New Utrecht High School, Brooklyn,
New York.**

**GEORGE D. SPACHE, Reading Laboratory and Clinic,
University of Florida.**

**Published by HARCOURT, BRACE & WORLD,
750 Third Avenue, New York 17, New York.**

**Programed text, 808 frames, paperback, 176 pp.,
6 3/4" x 9 1/8", \$1.72.**

Teacher's Manual available.

Table of Contents.

**Unit and Final Test(s) available, included with book or
\$.40 when ordered separately.**

**Constructed Responses usually used; some Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"About 100 pupils in three different schools."

Prerequisites: "None, except being in Grade 7."

Average Time: 20 hours (est.).

Next Revision: 1968.

(1 sample page)

LANGUAGE ARTS

STEPS TO BETTER READING

Schramm, Potell, Spache; HARCOURT, BRACE & WORLD
one sample page:

14. Parentheses and commas aren't the only signals that the author is giving us a definition of an unfamiliar word. Look at this sentence:

"The pilot looked again and again at his altimeter—a little dial that told him the height of his plane above the ground."

Here the signal that a definition of altimeter follows is the punctuation mark called a _____

dash

15. Let's see what we can learn about the context of altimeter. We learn from the sentence in Step 14 that an altimeter is a little _____ at which the pilot looks often.

dial

16. The pilot looks often at his altimeter because it tells him how his plane is flying above the ground.

high or far

17. All this information is to be found in the text that goes with the unfamiliar word or, as we call it, the _____ of the word.

context

18. "The pilot looked again and again at his altimeter—a little dial that told him the height of his plane above the ground."

In this case the definition of altimeter comes immediately following the word and is set off by a _____

dash

19. You have learned three punctuation signals telling you that a definition may be expected immediately after an unfamiliar word. When the author explains the meaning of the unfamiliar word, he sometimes sets off the definition by _____, sometimes by _____, sometimes by _____.

parentheses
commas
a dash or dashes
any order

20. "Modern jet engines have tremendous thrust, the force that pushes the airplane forward."

In this sentence the definition of thrust is signalled by a _____

comma

21. "You can often determine the meaning of a word from its context the text that goes with it."

In this case the signal that context is going to be defined is _____

parentheses

LANGUAGE ARTS

Prim.

BEGINNING SIGHT VOCABULARY

THORWALD ESBENSEN

DONALD HURST

CHARLES JENKS

DAVID SHIER, all of Merit Associates (formerly Educational Development Associates)

Published by E-Z SORT SYSTEMS, LTD.,

45 Second Street, San Francisco, California

**Programed text, 945 frames, edge-punched cards,
105 "lesson units," \$174.65.**

**Teacher's Manual available, included with program
Table of Contents, Index.**

**Multiple Choice Responses always used; no Constructed
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"Primary classes and upper primary with reading
difficulties."**

**Other using population(s): "Used with remedial readers
and with mentally retarded students."**

Prerequisites: None

Average Time: 30 hours (est.).

Next Revision: "Unknown."

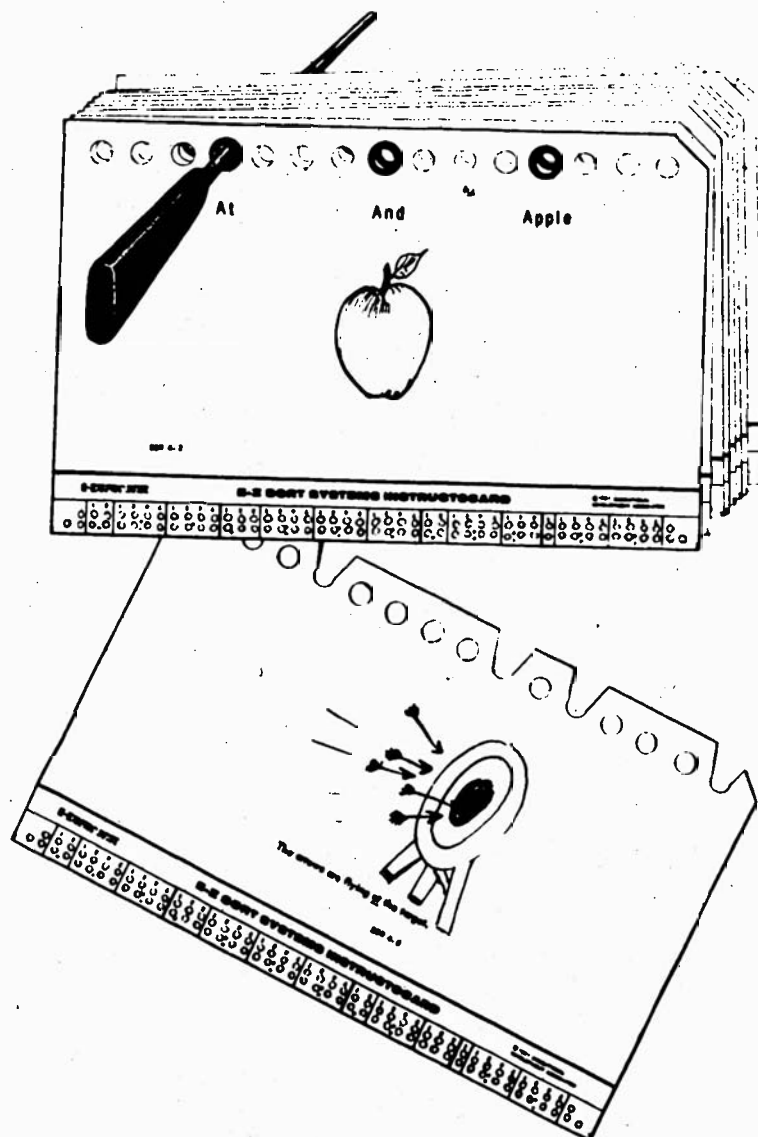
(2 sample pages)

LANGUAGE ARTS

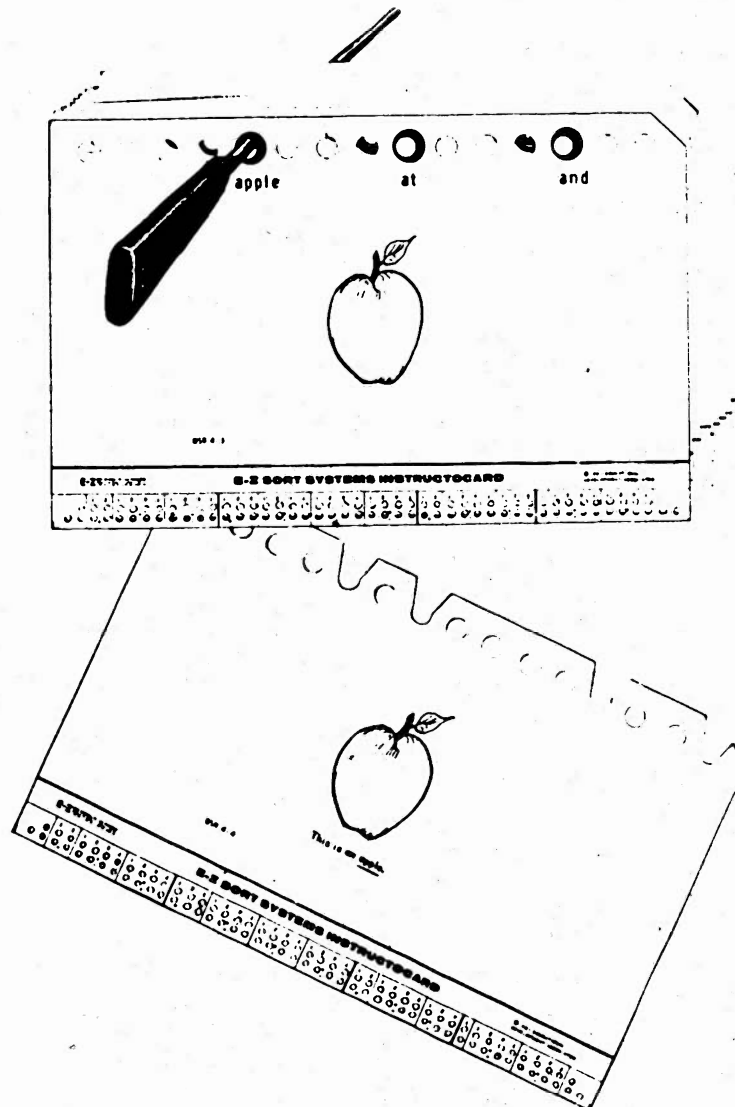
BEGINNING SIGHT VOCABULARY

Esbensen, Hurst, Jenks, Shier; E-Z SORT SYSTEMS, LTD.
2 sample pages:

BASIC SIGHT VOCABULARY INCORRECT RESPONSE



BASIC SIGHT VOCABULARY CORRECT RESPONSE



LANGUAGE ARTS

Jr. H.S.-H.S.

BUILDING WORDS

Structural Analysis of Words

RENATE LEPEHNE, Programmer

**Published by HONOR PRODUCTS COMPANY,
20 Moulton Street, Cambridge, Mass.**

**For use in HONOR TEACHING MACHINE, \$20 (approx.);
program reusable, 200 frames, \$2.00-\$2.50. (Machine
may be marketed in retail channels at this \$20 com-
bination price including 3 or 4 programs.)**

**Constructed Responses always used; no Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Public and private schools."

Prerequisites:

Average Time: 1 1/2-2 hours (est.).

Next Revision:

(1 sample page)

LANGUAGE ARTS

BUILDING WORDS

Lepehne; HONOR PRODUCTS COMPANY
one sample page:

<p>A <u>port</u> or <u>harbor</u> is a place where goods are brought <u>in</u> (or <u>into</u>).</p> <p>The word <u>in</u> serves many purposes and undergoes many changes. Not only may <u>in</u> be used as a word by itself, but it also may be used as a <u>prefix</u>. When used as a prefix, the <u>n</u> is changed to <u>m</u> before words beginning with <u>p</u>. Using these facts, write <u>port</u> and <u>in</u> as one word in the sentence below:</p> <p>If we <u>bring</u> things into a country, we _____ them.</p>	<p>import (In changes to <u>im</u> before <u>p</u>.)</p>
<p><u>Import</u> may be used as both a noun and as a verb. When used as a verb, <u>import</u> is pronounced <u>in-port</u>. When used as a <u>noun</u>, <u>import</u> is pronounced <u>im-port</u>.</p> <p>We not only <u>import</u> things, we also carry things out of the country. For the words <u>out</u>, <u>out of</u>, and <u>away from</u> there is another prefix: <u>ex</u>.</p> <p>If Mortimer Wordstock, a United States businessman, wants to sell his goods in European countries, he has to _____ them.</p>	<p>No answer needed</p> <p>export (verb: ex-port; noun: ex-port)</p>
<p>It turns out that Mr. Wordstock wants to _____ to Europe, soapflakes manufactured in his factory in Cincinnati.</p>	<p>export</p>
<p>Another word in the <u>port</u> family may be used to say that Mr. Wordstock wants to <u>carry</u> the boxes of soapflakes <u>across</u> the country to the ship in the port of New York.</p> <p>Here is a good clue: the new prefix is <u>trans</u>, which means <u>across</u>.</p> <p>Therefore, if you <u>carry</u> things across the country, you _____ them.</p>	<p>transport (verb: trans-port; noun: trans-port)</p>
<p>If, on the other hand, Mr. Wordstock himself goes to Europe, he will <u>bring back</u> news and stories to his partner, or he will <u>again bring</u> out the news and stories of his trip.</p> <p>The prefix meaning <u>back</u> or <u>again</u> is <u>re</u>. Therefore, Mr. Wordstock will <u>bring back</u> news and stories to his partner, or he will _____ the news and stories.</p>	<p>report</p>

LANGUAGE ARTS

Fifth Grade

DAVID DISCOVERS THE DICTIONARY

**NANCY GRANIERI WILLFORD, Programmer, Learning
Incorporated**

**Published by CORONET INSTRUCTIONAL FILMS,
65 E. So. Water Street, Chicago 1, Illinois**

**Programed text, 300 frames, paperback, 7" x 10", \$1.20.
Teacher's Manual included.**

Test Set included.

**Constructed Responses usually used; some Multiple
Choice; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Data incomplete as of February 8, 1963."

Prerequisites: 4th grade reading level.

Average Time: "Data incomplete as of February 8, 1963."

**Next Revision: "Final revision scheduled for publication
in Summer, 1963."**

(1 sample page)

LANGUAGE ARTS

DAVID DISCOVERS THE DICTIONARY Willford; CORONET INSTRUCTIONAL FILMS one sample page:

7-1 Cecil was confused when Miss James told the class that one word could have four or five definitions. She explained that you use only one of _____ at a time.

definition

7-2 Miss James explained it this way. A word you read in a sentence has only one definition. The same word in a dictionary may have many definitions. To understand the sentence, you must decide which _____ of the word has been used.

definition

7-3 Henry looked up the entry "fly" in the dictionary.

fly (flī), 1. an insect. 2.
motion through the air with wings.

The entry above has two definitions. Read the sentence below:

"The small bird could not fly."

This sentence uses _____ (how many?) definitions of "fly".

one (1)

7-4 All the definitions of a word cannot be used in the same sentence. Read all the definitions of "horse" below:

horse (hōrs), 1. the animal
shown in the picture. 2. a
supporting frame. 3. a piece of
gymnasium equipment.



"You can pet a horse and feed it sugar." This sentence uses definition number _____ of "horse".

one (1)

7-5 horse (hōrs), 1. the animal
shown in the picture. 2. a
supporting frame. 3. a piece of
gymnasium equipment.



Look at definition number 3 above. You do not pet or feed sugar to this kind of horse. A horse is also a piece of gymnasium _____.

equipment

7-6 horse (hōrs), 1. the animal
shown in the picture. 2. a
supporting frame. 3. a piece of
gymnasium equipment.



"The carpenter put the board across a horse before he cut it." This sentence uses definition number _____.

2.

7-7 You use the dictionary to choose which _____ of a word has been used in the sentence.

definition

LANGUAGE ARTS

Elem.

**STUDENTUTOR LIBRARY OF VOCABULARY
ENRICHMENT**

**TECHNICAL STAFF, General Education, Inc.
GENERAL EDUCATION, INC.,
96 Mt. Auburn St., Cambridge 38, Mass.**

For use in STUDENTUTOR with Variprompter window,
program reusable, 840 frames, programs supplied
in kit which contains 5 machines and 18 scrolls. \$45.00
Teacher's Manual available. Free with kit.

Table of Contents.

"Items in program may be used for diagnostic purposes."
Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Materials are based on research studies reported
in Israel, M. L., Variably Blurred Prompting: I.
Methodology and Application to the Analysis of
Paired-Associate Learning, The Journal of Psychology,
1960, 50, 43-52."

Average Time: 9 hours (est.).



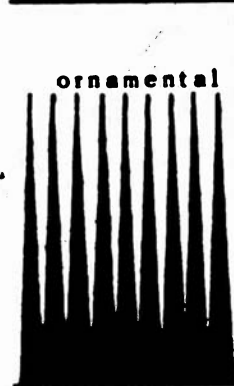
Next Revision: Fall, 1963.

(1 sample page)

LANGUAGE ARTS

STUDENT TUTOR LIBRARY OF VOCABULARY ENRICHMENT

Technical Staff; GENERAL EDUCATION
one sample page)

	<p>(adj) Decorative; used to add beauty. Hats are often not for warmth, but are merely _____.</p> <p style="text-align: right;">STAGE 8</p>	<p>12 11 10 9 8</p>
	<p>(adj) Decorative; used to add beauty. Hats are often not for warmth, but are merely _____.</p> <p style="text-align: right;">STAGE 4</p>	<p>12 11 10 9 8 7 6 5 4</p>
	<p>(adj) Decorative; used to add beauty. Hats are often not for warmth, but are merely _____.</p> <p style="text-align: right;">STAGE 0</p>	<p>12 11 10 9 8 7 6 5 4 3 2 1 0</p>

LANGUAGE ARTS

6th & 7th Grade

VOCABULARY BUILDING I and II

EMANUEL BIERMAN, Programmer, assistant principal,
Queens, N. Y.

ALEXANDER SCHURE, President, N. Y. Institute of
Technology

Published by **CENTRAL SCIENTIFIC COMPANY**,
1700 Irving Park Road, Chicago 13, Ill.

For use in **CENCO PROGRAMED LEARNER**, \$2.95;
program not reusable, 500 frames in I and 500 in II,
I or II included in price of machine.

Constructed Responses usually used; some Multiple Choice
Responses; no Branching

DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"Over 200."

Prerequisites: None

Average Time: 3 hours (est.).

Next Revision: "Now available."

(1 sample page)

LANGUAGE ARTS

VOCABULARY BUILDING I and II

Bierman, Schure; CENTRAL SCIENTIFIC COMPANY

one sample page;

VOCABULARY BUILDING II

8. John's lethargic behavior convinced his mother
he was ill. John was (spirited, sluggish, bored).

.....
sluggish

9. A synonym is a word that means the same as
another word. A synonym for lethargic is (in a
stupor, sorrowful).

.....
in a stupor

10. To be sluggish is to be _____.

.....
lethargic

11. The original meaning of lethargic was
forgetful. The greek work lēthē means _____.

.....
forgetfulness

12. To be homesick is to be _____.
To be sluggish is to be _____.

.....
nostalgic, lethargic

LANGUAGE ARTS

H.S.

VOCABULARY GROWTH

Divide and Conquer Words

MARTA ZABORSKA, Programmer, Learning Incorporated
JAMES COFFROTH, Instructor of Journalism and Publications, South Mountain High School, Phoenix, Arizona

Published by CORONET INSTRUCTIONAL FILMS,
65 E. So. Water Street, Chicago 1, Illinois.

Programed text, 339 frames, paperback, 57 pp., 7" x 10",
\$1.20.

Teacher's Manual included.

Test Set included.

Constructed Responses usually used; some Multiple Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"...Small representative samplings at appropriate grade levels tested informally on one-to-one basis with programmer. Small representative samplings under controlled conditions (Dukane Redi-tutor using 35 mm. film) for each revision of program. Program has been through 5 complete revisions, each revision based on data obtained from formal machine testing. Field testing in progress: Classroom testing from 8th through 12th grades, administered by classroom teachers. Test areas distributed geographically from Florida to California. All testing conducted by Learning Incorporated."

Other Using Population(s): "Subjects as low as grade 7."

Prerequisites:

Average Time: 2 hours, 18 minutes (based entirely on data); standard deviation, 32.8 minutes.

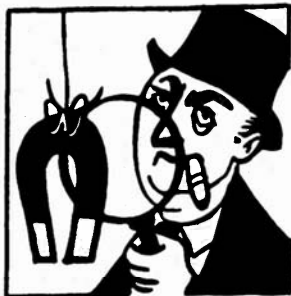
Next Revision: "The published program is the final revision."

(1 sample page)

LANGUAGE ARTS

VOCABULARY GROWTH

Zaborska, Coffroth; CORONET INSTRUCTIONAL FILMS
one sample page:



9-5 The *magnate* looked at the *magnet* with a *magnifying* glass. In this sentence the word which does not refer to greatness in any way is (?).

magnet

9-6 In the word *magnitude* the root meaning great is _____.

magn

9-7 *Magnitude* means _____ness.

greatness

9-8 *Magnitude* means size and importance.
beside (?)ness.

greatness

9-9 *magnitude* = size, greatness, importance
Write the meaning which fits best in the following phrases:

- a) a decision of great *magnitude* or (?).
- b) a building of great *magnitude* or (?).
- c) the *magnitude* or (?) of his generosity.

importance:

size;
greatness

LANGUAGE ARTS

Elem.-Jr. H.S.

WORD CLUES

Be a Word Detective

B. JEAN ANWYLL, Head Programmer

Published by HONOR PRODUCTS COMPANY,
20 Moulton Street, Cambridge, Mass.

For use in HONOR TEACHING MACHINE, \$20 (approx.);
program reusable, 200 frames, \$2.00-\$2.50. (Machine
may be marketed in retail channels at this \$20 com-
bination price including 3 or 4 programs.)

Constructed Responses used sometimes; some Multiple
Choice; some Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Public and private schools."

Prerequisites:

Average Time: 1 1/2-2 hours (est.).

Next Revision:

(1 sample page)

LANGUAGE ARTS

WORD CLUES

Anwyll; HONOR PRODUCTS COMPANY

one sample page:

<p>In each example, the restatement was a clue to the meaning of the new words, and the restatement was found right after a _____.</p>	<p>semicolon</p>
<p>You are now on your way to becoming a word detective. One clue that alerts a word detective is the _____ because it often introduces a restatement.</p>	<p>semicolon</p>
<p>Sam's OOPAS set the class to laughing.</p> <p>An "OOPAS" is:</p> <ul style="list-style-type: none"> a. an eight-legged animal. b. a musical instrument. c. There are not enough "clues" in the context to tell. <p>Press and hold the button of your choice. Do not be disturbed if you skip some of the material.</p>	<p>a. "An eight-legged animal"? I'd say I caught you guessing!</p>
<p>Sam's OOPAS set the class to laughing.</p> <p>An "OOPAS" is:</p> <ul style="list-style-type: none"> b. a musical instrument. c. There are not enough "clues" to tell. <p>Press and hold the button of your choice.</p>	<p>b. "A musical instrument"? Remember, I made up the word "OOPAS." Are there really enough clues in the context to tell what it means?</p>
<p>An "OOPAS" is:</p> <ul style="list-style-type: none"> b. a musical instrument. c. There are not enough "clues" to tell. <p>Press and hold the button of your choice.</p>	<p>c. You're right! There aren't enough clues in the context to tell what "OOPAS" means.</p>

LANGUAGE ARTS

Jr. H.S.-Coll.+

WORD CLUES

Books G, H, I, J, K, L, and M

STANFORD E. TAYLOR, President, Educational Developmental Labs

HELEN FRACKENPOHL, Educational Developmental Labs

ARTHUR S. MCDONALD, Director of Reading Services,
Marquette University

NANCY JOLINE, Staff Associate, Educational Developmental Labs

Published by EDUCATIONAL DEVELOPMENTAL
LABORATORIES, Inc.,

284 Pulaski Road, Huntington, New York

Programed text, 310 frames (in each book), paperback,
176 pp., 8-1/2" x 11", \$1.80.

Teacher's Manual available, \$30.

Index.

"Three equated tests are available which may be used as
initial, medial, or final tests," \$25 per copy.

Multiple Choice Responses usually used; some Constructed
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Schools in Milwaukee area and on Long Island."

Other using population(s): "Capable sixth grade students
have used the seventh and eighth grade books."

Prerequisites: "Need to be reading on at least sixth grade
level."

Average Time: 10-12 hours (est.).

Next Revision: 1-2 years.

(1 sample page)

LANGUAGE ARTS

WORD CLUES

Taylor, Frackenhohl, McDonald, Joline; EDUCATIONAL
DEVELOPMENTAL LABORATORIES
one sample page:

Lesson 1: A Summer in Washington

Last summer I had a job in Washington, D.C., working in the office of our Representative to Congress. It was fascinating to be behind the scenes and see how our government functions. I often attended sessions of both the House of Representatives and the Senate. I actually met many of the men we hear about in the news.....

An introductory frame sets the stage for the lesson to follow. Each of the ten words is then developed in three frames as follows:

1a

seethe (sēTH)

Write a definition or synonym.

Washington that summer was seething with activity.

FIRST FRAME

1b

In Washington two men may exchange friendly greetings and yet be inwardly seething with rage at one another.

Another word for seethe is:

- a. blush
- b. act
- c. boil
- d. talk

SECOND FRAME

1c

seethe (sēTH) seethed, seething; 1. boil 2. bubble and foam. Water seethed under the falls. 3. be excited, be disturbed. 4. snarl, snarl. (OE seathan) - Ryn. 5. See boil.

Check the sentence(s) in which seethe is used correctly.

- a. Please seethe the water for coffee.
- b. The boys were seething in the breeze.
- c. The water seethed as the waves crashed on the beach.
- d. The farmer asked me to seethe the field.

THIRD FRAME

(First frame for next word)

LANGUAGE ARTS

Jr. H.S.

WORDS

A Programed Course in Vocabulary Development
SUSAN MEYER MARKLE, Education Dept., University of
California at Los Angeles.

Published by SCIENCE RESEARCH ASSOCIATES, Inc.,
259 East Erie Street, Chicago 11, Illinois.

Programed text, 2200 frames, paperback, 224 pp.,
8 1/2" x 11", \$1.40 (quantity discounts).

Teacher's Manual available, \$.35, free with 25 or more
Text booklets.

Table of Contents.

Unit, Final, Diagnostic Test(s) available.

Constructed Responses usually used; some Multiple
Choice Responses; some Branching; some Double
Tracking.

DEVELOPMENTAL (FIELD TEST) POPULATION(S): "Grades 4-9"

Prerequisites:

Additional equipment required: (dictionary listing is a
self-contained unit within the program.)

Average Time: 40 hours (based entirely on data).

Next Revision: September, 1965.

(2 sample pages)

LANGUAGE ARTS

WORDS

Markle; SCIENCE RESEARCH ASSOCIATES
2 sample pages:

Chapter Seven

32. ▶ (If you said "no," there are several possible reasons:) CON- isn't a negative or The negative comes first or Without the negatives, a whole word is left. ▶ (If you said "yes," review Items 15 to 25.)	32. INCOMPLETE DISCONTINUE Both these words are negative. Both have two prefixes. Do you have any trouble deciding which prefix is the negative prefix in each word? _____ Why? _____
33. ▶ this (The negative prefix is the first one.)	33. In the word DISINCLINED the prefix DIS- comes first and the prefix IN- comes second. Which is the negative prefix? _____
34. ▶ in	34. In the word INDISTINCT, the prefix meaning "not" is _____
35. ▶ first or at the beginning or in front	35. In the words DISINCLINED and INDISPOSED, the negative prefix is the prefix that comes _____ in each word.
36. ▶ negative	36. If a word has two prefixes (such as IN- and DIS-), either of which could mean "not," the one that comes first is the _____ prefix.

Part B

37. ▶ dehumanize	37. DE- is a negative prefix that is put in front of verbs. DE- means "do the opposite of" the verb's meaning. HUMANIZE means "make human." The opposite of making something good for humans is making it bad: the opposite of HUMANIZE is _____.
38. ▶ demobilized	38. An army is called together and trained for action: it is mobilized. When the time of service is over, the men are let go. They have been _____.
39. ▶ opposite ("Antonym" is also correct.)	39. If the laws of a country are "made fit for humans" (or changed to what is favorable for man) we say that they have been humanized. If the changes are unfair to man, we would say the laws have been dehumanized. HUMANIZE is the _____ of DEHUMANIZE.
40. ▶ negative	40. DEHUMANIZE, DECENTRALIZE, DEMOCRATIZE, DEODORIZE All these words have the _____ prefix DE-.
41. ▶ humanized (Things are better now.)	41. A hundred years ago, young boys worked in factories and in mines. Boys as well as men worked twelve hours a day for very little money. Before long, such treatment of children was considered inhuman. There now are laws against it. These laws have [dehumanized, humanized] the treatment of working children.

91

Chapter Seven

Part D

95. ▶ in ▶ dis ▶ pos ▶ suffix	95. The word <i>indisposed</i> has four parts. The first prefix is _____. The second prefix is _____. The root is _____. -ed is a _____.
96. ▶ in ▶ first or in front of not	96. In the word <i>indisposed</i> the negative prefix is _____, because it comes _____.
97. ▶ put away	97. The definition of the parts of <i>dispose</i> is "_____."
98. ▶ dispose	98. Suppose something you no longer want is worth money. A sale is one way of getting rid of something, or of "putting it away" for good. You can _____p_____ of something by selling it.
99. ▶ un	99. If an object has <i>not</i> been disposed of, it is <i>undisposed</i> of. When <i>dispose</i> means "throw away" or "sell," it is negated by the prefix _____, not by <i>in</i> .
100. ▶ undisposed of	100. A used car that has been sitting on the salesman's car lot for months is a car that is _____disposed of.
101. ▶ no	101. A newspaper headline says: PRESIDENT KENNEDY WAS <i>INDISPOSED</i> . Was anyone trying to "sell" or "throw away" Mr. Kennedy? _____
<p>Note: Use this panel for Items 102-109 (keep in view from No. 102 to No. 109).</p> <p>A. The picture was still <i>undisposed</i> of. B. President Kennedy was <i>indisposed</i>. C. Henry was <i>indisposed</i> to accept my plan.</p>	
102. ▶ A	102. In each of the three sentences above, there is a negation of <i>dispose</i> . In which of the sentences does the word <i>dispose</i> mean "sold" or "thrown away"? Sentence _____
103. ▶ no	103. In Sentence A, <i>UNDISPOSED OF</i> means "not gotten rid of." In Sentence B, no one tries to get rid of Mr. Kennedy, so <i>INDISPOSED</i> can't mean "not gotten rid of." What about Sentence C? Could <i>INDISPOSED TO</i> mean "not gotten rid of" in that sentence? Would it make sense? _____

MODERN LANGUAGE

H.S. and Coll.

ELEMENTARY FRENCH

MARY K. RICKERT, Programmer, General Programmed Teaching Corporation

BETTY LOU C. DUBOIS, Editor, General Programmed Teaching Corporation

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 2385 frames, paperback, 477 pp.,
8-1/2" x 11", \$ _____.

Teacher's Manual: "Instructions to teacher included in the preface."

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"High school and college students in Albuquerque, New Mexico; high school students in Roanoke, Va."

Prerequisites: None.

Average Time: 15 hours (based entirely on data).




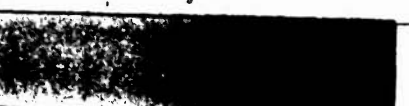

Next Revision: 1968.

(2 sample pages)

MODERN LANGUAGE

ELEMENTARY FRENCH

Rickert, Dubois; **ENCYCLOPAEDIA BRITANNICA PRESS**
2 sample pages:

1451	Parler rhymes with _____.	
	 parler	parle
1452	Translate into English: Est-ce que Marie et elle parlent français? Mais oui, elles parlent français.	
		
1453	Is je parle an infinitive? Répondez en français.	
		
1454	Circle the en which does not have the nasal sound [ɛ̃].	
	 len	en
1455	Match Pierre with the correct pronoun.	
	 Pierre	elle il

1456

Substitute Pierre for il in the sentence: Il parle français.

_____ parle français.

1457

To pronounce e in femme, gently place the tongue against the lower teeth, lower the jaw slightly and say at.

Practice this French sound [a] by repeating the words below.

ma

la

fa

1458

The French word parler means to speak.

Write to speak in French.

1459

Write in French without using est-ce que: Peter and my son are speaking English. Is she speaking English?

1460

The French word pronounced [par le] which means to speak is _____.

MODERN LANGUAGE

Open

FRENCH (ELEMENTARY)

CLT French Series I (No. 46-12-03)

EDWARD M. STACK, Dept. of French, The American
University, Washington, D.C.

Published by ELECTRONIC TEACHING LABORATORIES,
5034 Wisconsin Avenue, N.W., Washington 16, D.C.

For use in LANGUAGE LABORATORY, program
reusable, 2340 frames, \$79.95.

Teacher's Manual available; \$1.25.

Table of Contents, Index.

Unit test (s), "integral part of program."

Constructed Responses always used; no Multiple Choice
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

Additional material required: Minimum requirement:
tape recorder.

Average Time: 10 hours (est.).

Next Revision:

(1 sample page)

MODERN LANGUAGE

FRENCH (ELEMENTARY)

Stack; ELECTRONIC TEACHING LABORATORIES
one sample page:

SAMPLE FRAMES (from tapescript) CLT French (Series I)

1. STIMULUS La femme est intelligente. Et l'homme ?

RESPONSE (timed pause for student answer)

MASTER L'homme est intelligent.
↓

REINFORCEMENT (timed pause for repetition)

2. STIMULUS La jeune fille est charmante. Et le garçon ?

RESPONSE (timed pause for student answer)

MASTER Le garçon est charmant.

REINFORCEMENT (timed pause for repetition)

MODERN LANGUAGE

Jr. H.S.

FRENCH I

Short-Cut in Vocabulary Building

OGUZ R. TURKKAN, President of LFI

Mrs. J. BOUCHER, Consultant, Board of Education, N.Y.C.

Published by LEARNING FOUNDATIONS INSTITUTE, Inc.
271 North Avenue, New Rochelle, N.Y.

For use in LEARNATRON MK II	\$495.00
A/Z MARK I AND II	\$89-189
THE MINIK	\$4.95-14.75

Program reusable, 106 frames, \$2.00-20.00

Table of Contents.

Unit and Final Test(s) available.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"International Camp and Children's Colony (Lakeville,
Conn.): advanced students and teachers' training
camp."

Other using population(s): Adult beginners.

Prerequisites:

Average Time: 2 hours (est.).

Additional Material required: "Tape Recorder desirable,
not necessary; (we supply a Transistorized Tape
Recorder - The "Miny."






Next Revision: 1964.

(1 sample page)

MODERN LANGUAGE

FRENCH I

Turkkan, Boucher; LEARNING FOUNDATIONS INSTITUTE
one sample page:

<p>FRENCH I A Short-Cut to Vocabulary Building</p> <p>10. You will find many examples, as we will see, your already well-remembered as a starting point. But later, some further study will come as you, the first study-lesson can be used as a reference to — or as —</p> <p>CODE CYFRED</p>	<p>11. Naturally, the language has its limitations. But, it is a powerful beginning that you will learn will be a few other starting for to transform a French — into English — and vice versa.</p> <p>CODE CYFRED</p> <p>12. Isn't it easier to remember half a dozen words than to remember thousands of — ?</p>	<p>WORDS</p> <p>13. These two basic words will be taught to you through still another one method for vocabulary — one-way — one-time learning known as Programmed Learning.</p> <p>LEARNING</p>
<p>14. Have professors learn, language teachers have equipped printing and examples such as (start, start) and (start, start). Even better than it. Let's keep the teacher out of the way here. This is LA PLUME.</p> <p>(T B. TAPE) Say "the pen" </p> <p>LA PLUME </p>	<p>15. Being able to pronounce PLUME correctly is most important than you think. The French sound (P) is then used to very difficult for English speaking people. Try this: start making the first sound, then pause your lips while saying in (T B. TAPE) RECORD YOUR VOICE SAYING "LA PLUME" — THEN COMPARE IT WITH CORRECT PRONUNCIATION.</p> <p>LA PLUME</p>	<p>16. OF T B. RECORD YOUR VOICE SAYING LA TANTE, YOUR LUTTER. La Tante, pronounced "La Tante", then</p> <p>LA TANTE</p>
<p>17. For some reason, in French, this expression is common. That's why it takes the whole (start) and not (start). This phrase happens to be called LA PLUME. This is called in French LA PLUME.</p> <p>LA PLUME </p>	<p>18. This is my aunt — as soon as the (start) of my mother. Because she is a female (start) as my "M" (start) and not "M" (start) Say "M" (start)</p> <p>LA TANTE</p>	<p>19. Do you remember the famous French story called "LA PLUME DE MA TANTE"? What does it mean?</p> <p>LA PLUME DE MA TANTE </p>
<p>20. The (start) is called in French LA PLUME.</p> <p>LA PLUME</p>	<p>21. The sister of my mother is, in French, LA TANTE.</p> <p>LA TANTE </p>	<p>22. TRANSLATE La plume de ma tante est en plastique. Elle n'est pas en bois. Elle est en plastique. La plume de ma tante est en plastique. Elle n'est pas en bois. Elle est en plastique.</p>
<p>23. LA PLUME, pronounced "La Plume" means the —</p> <p>LA PLUME</p> <p>24. OF T B. record your voice saying "LA PLUME" — then listen to the correct pronunciation.</p>	<p>25. Aunt, in French, is LA —</p> <p>LA TANTE</p> <p>26. TANTE</p>	<p>27. REVER 28. TRANSLATE THESE WORDS INTO FRENCH: aunt, mother, sister, uncle</p> <p>LA TANTE, LA MERE, LA SORUR, L'ONCLE</p>

MODERN LANGUAGE

H.S.-Coll.

FRENCH PHONETICS

ELIANE BURROUGHS, French Dept., Hollins College
Published by ENCYCLOPAEDIA BRITANNICA PRESS,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 1,000 frames, paperback, 170 pp.,
8-1/2" x 11-1/2", \$7.70.

For use in TEMAC BINDER, \$1.75; program reusable,
\$5.95.

Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"College students at Hollins College; high school
students at Roanoke City Public Schools."

Prerequisites: "Basic vocabulary of at least 300 French
words."

Additional material required: Tape recorder or language
laboratory. Three single tapes—\$42.30 per set.

Average Time: 16 hours for average students (est.).

No Revision.

(1 sample page)

MODERN LANGUAGE

FRENCH PHONETICS

Burroughs; ENCYCLOPAEDIA BRITANNICA PRESS
one sample page:

986.

In the following sentences underline the "e" [ə] which must be pronounced

- 1 C'est le régime
- 2 Elle ne vendra pas
- 3 Il me dit
- 4 Elle regarde

Note: Remember that the graphemes "est" do not represent any consonant sound but ONLY the vowel [ə].
Listen to the tape and check your script.

- 1 C'est le régime
- 2 Elle ne vendra pas
- 3 Il me dit
- 4 Elle regarde

987.

When a [ə] is preceded by several consonant sounds it is pronounced. It is pronounced also when it is followed by the combination consonant-plus

semi-vowel

When a [ə] is eliminated in rapid speech a double consonant sound sometimes occurs.
Listen to the word henneté. In rapid speech the "e" [ə] is not pronounced and a double [n] occurs.

[n]

To pronounce a double consonant sound, such as [b], [t], [k], [d] and [g], hold your breath for a brief pause while in position for the consonant BEFORE PRONOUNCING IT. Practice the double consonant sounds in the following words, underline any [ə] which are dropped.

- 1 la-dédans
- 2 netteté
- 3 grande dame
- 4 bec cassé

- 1 la-d-dans [laddə]
- 2 nett-té [nɛttɛ]
- 3 grande dame [grɑ̃ddam]
- 4 bec cassé [bɛkkasɛ]

988.

To pronounce a double consonant such as [f], [s], [ʃ], [m], [r] and [l], hold the position of the consonant a while longer than for the single consonant. Practice the double consonant in the following expressions, underline any [ə] which are dropped.

- 1 belle laine
- 2 instantané
- 3 verrerie
- 4 un juge jeune et beau

- 1 belle laine [bɛllɛː]
- 2 instantané [ɛtʌnnɛː]
- 3 verrerie [vɛrrɛː]
- 4 un juge jeune et beau [ɔ̃ʒʒɛ̃ʒuɛtɔ̃bɔ̃]

989.

A double consonant sound occurs when a [] is dropped in rapid speech. A double [r] occurs in the future form of certain verbs to mark the difference from the present tense.
Repeat the words mourrons, mourrons and write them in phonetic script.

- 1 mourrons
- 2 mourrons

Note: To pronounce a double [p], [t], [k], [b], [d] and [g] there is a slight break in the flow of sound before the consonant. To pronounce any other double consonant, the position is held a little longer and the consonant is lengthened.

- 1 [mʊrʁɔ̃]
- 2 [mʊrʁɔ̃]

Programmed Student Manual for French Phonetics

MODERN LANGUAGE

Open

FRENCH TRAVATUTOR

JAC D. MEACHAM, Director, Universal Learning
Division

JOHN V. GORMLEY, Instructor

JEAN FREMONT, Instructor

Published by GRAFICROLL SYSTEMS, Inc.

4215 Calavo Drive, La Mesa, California

Programed text, 975 frames, paperback, 242 pp.,
5 1/2" x 8", \$9.95.

For use in DISCOVERY COLUMBUS machine, \$38.75;
program reusable, \$15.00.

For use in EXECUTUTOR machine, \$29.95; program
reusable, \$15.00

Program also available in French to English.

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple Choice;
some Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Students, teachers, businessmen, servicemen,
families, tourists, travelers, or anyone interested
in a foreign language."

Prerequisites: None

Average Time: 10 hours (est.).

Next Revision: March, 1963.

(1 sample page)

MODERN LANGUAGE

FRENCH TRAVATUTOR

Meacham, Gormley, Fremont; GRAFICROLL SYSTEMS
one sample page:

Correspondence

	1-Unlike the United States, in France you can buy stamps in a tobacco shop. If you do need a post office, you ask-- Le bureau de poste, la poste. (leh burodeh post, la post) or in english _____. .
1-the post office	2-The post office in French is Le bureau de ____, la ____.
2- poste poste	3-Parcel post is pronounced Le colis postal (leh kol postal). Parcel is english for the French ____, and colis postal is _____. .
3- colis parcel post	4-If you wish to send a parcel, you would say-- "Je veux envoyer ce colis", this is the same as--"I want to send this _____. "
	42

MODERN LANGUAGE

H.S.-Coll.

BASIC GERMAN VOCABULARY

HALMUTH H. SCHAEFER

CHARLES B. FERSTER, both of Institute for Behavioral
Research

Published by PROGRAMMED TEACHING AIDS, Inc.
3810 South Four Mile Run Drive, Arlington, Virginia.

Programed text, 1,586 frames, 131 pp., 8 1/2" x 11".
\$3.00.

For use in FERSTER TUTOR, under \$5.00., program re-
usable.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

27 graduate students, 3 high school students, 4 under-
graduate students, 1 secretary, 1 housewife.

Prerequisites:

Average Time: 50 hours (based entirely on data). Standard
deviation, 10 hours.

Next Revision:

(1 sample page)

MODERN LANGUAGE

BASIC GERMAN VOCABULARY

Schaefer, Ferster; PROGRAMMED TEACHING AIDS
one-sample page:

1. It takes a Knabe and a girl to fall in love. boy
 2. When Washington was a little Knabe he lied. boy
 3. When I was a little _____ I wore knee pants. Knabe
 4. Snips and snails and puppy dogs' tails,
that's what a little _____ is made of. Knabe
 5. boy = _____ Knabe
-
499. "Those awful Blumen!" said Hans who had hayfever.
"Sie sind schöne Blumen, not awful at all!" said
his Schwester who had no hayfever. ...flowers...They are
beautiful flowers...
sister
 500. "Du bist ein schöner Wissenschaftler!"
said the General full of sarcasm to his
rocket expert.
DON'T WRITE ANYTHING FOR THIS FRAME
 501. "Du bist ein schöner Student, getting all F's."
MAYBE YOU SEE IT NOW, BUT DON'T WRITE
ANYTHING DOWN YET
 502. A famous sarcastic line from Gilbert and
Sullivan is:
"What a schöner state of things!" ...pretty...
 503. Translate as far as you can:
"Some student you are, getting all F's." Du bist ein schöner
Student

MODERN LANGUAGE

Jr. H.S.-Coll.+

GERMAN A

DR. ERNEST E. ELLERT, Colorado State University
Published by **ENCYCLOPAEDIA BRITANNICA PRESS**
425 North Michigan Avenue, Chicago 11, Illinois

Programed text, 5,050 frames, paperback,
8 1/2" x 11 1/2", \$33.75. Bound in 10 separate
sections.

For use in **TEMAC BINDER**, \$1.75; program reusable,
\$32.00.

Constructed Responses usually used; some Multiple
Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Students at Hollins College and Roanoke Public
Schools."

No special prerequisites.

Additional material required: Tape recorder or language
laboratory and tapes accompanying the program.

Price of tapes - \$115.00 for a set of 12

Average Time: 120 classroom hours (est.).

No Revision.

(1 sample page)

MODERN LANGUAGE

GERMAN A

Ellert; ENCYCLOPAEDIA BRITANNICA PRESS

one sample page: .

1
The words of a language are combinations of sounds. When you speak English, you use English sounds. When you speak German, you will use German . . .

sounds

2
German and English are related languages. Thus they have many similar sounds. But they also have some . . . sounds

different

3
The sounds of English are divided into two groups: vowels and consonants. The sounds of German are also divided into . . . and . . .

vowels consonants

4
We use the letters of the alphabet to represent English sounds. We will use the same letters to represent German vowels that we do to represent English . . .

vowels

5
But these letters . . . (will/will not) always represent the same sounds that they do in English.

will not

German A . . .

MODERN LANGUAGE

Open

GERMAN TRAVATUTOR

JAC D. MEACHAM, Director, Universal Learning
Division,

RUTH H. COOVER, Instructor

MARIANNE C. BUSCH, Instructor

Published by GRAFICROLL SYSTEMS, Inc.

4215 Calavo Drive, La Mesa, California

Programed text, 1010 frames, paperback, 247 pp.,
5 1/2" x 8", \$9.95.

For use in DISCOVERY COLUMBUS machine, \$38.75;
program reusable, \$15.00.

For use in EXECUTUTOR machine, \$29.95; program
reusable, \$15.00.

Program also available in German to English.

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple
Choice; some Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Students, teachers, businessmen, servicemen,
families, tourists, travelers, or anyone interested
in a foreign language."

Prerequisites: None

Average Time: 10 hours (est.).

Next Revision: March, 1963.

(1 sample page)

MODERN LANGUAGE

GERMAN TRAVATUTOR

Meacham, Coover, Busch; GRAFICROLL SYSTEMS
one sample page:

Pronunciation

	1- The letter a in english is pronounced eight (8) different ways. In German we are concerned with only two types of sounds. The LONG a and the SHORT <u>a</u> . The long <u>a</u> is one of the _____ German sounds for the letter <u>a</u> .
1 two (2)	2- The long a in German can also be spelled <u>aa</u> or <u>ah</u> . The long a in German is pronounced like the a in father and the a in Dame (lady), haben (have), Haar (hair) in the _____ language.
2 German	3- The SHORT a in German is the sound of <u>aah</u> as in pot or like the a in artistic. The sound of the short a in German is like: Mann (man) Anna (Anne), Ball (ball), and das (the). The _____ a is quicker in sound than in the long <u>a</u> .
3 short	4- The German language, unlike the english, has only _____ types of sounds for the letter <u>a</u> . The _____ and the _____ <u>a</u> .
	5

MODERN LANGUAGE

Jr. H.S. +

**MODERN LANGUAGE SERIES - BASIC GERMAN READING
DONALD TOSTI**

NIRAM A. WILSON, both of Teaching Materials Corporation.
Published by **TEACHING MATERIALS CORPORATION**,
575 Lexington Avenue, New York 22, N.Y.

Programed text, 3,643 frames, paperback, 740 pp.,
8 1/2" x 11", bound in 3 separate volumes, \$16.00.
For use in MIN/MAX II machine, \$25.00; program reusable,
\$15.00.

Teacher's Manual: General Manual for all TMI-Grolier
programs available.

Final Test included.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Thirteen year olds through adults."

Prerequisites: "Requires ability to read and follow
simple instructions in English."

Average Time: 17-30 hours (based entirely on data);
standard deviation, 3.5 hours.

Next Revision: June, 1963.


(3 sample pages)

MODERN LANGUAGE

MODERN LANGUAGE SERIES - BASIC GERMAN READING Tosti, Wilson; TEACHING MATERIALS CORPORATION 3 sample pages:

71	Which of these below is correct for "You (they) will (to) go"?	
	a. Sie (sie) wird gehen. b. Sie (sie) werde gehen. c. Sie (sie) werden gehen.	Germ:
	c. Sie (sie) werden gehen.	
72	Which of these below is correct for "I shall (to) understand"?	
	a. Ich werde verstehe. b. Ich werde verstehen. c. Ich wird verstehen. d. Ich werden verstehen.	Germ:
	b. Ich werde verstehen.	
73	Which of these below is correct for "We shall (to) come"?	
	a. Wir werden komme. b. Wir werde kommen. c. Wir werden kommen.	Germ:
	c. Wir werden kommen.	
74	Which of these below is correct for "He (she) will give"?	
	a. Er (sie) wird geben. b. Er (sie) werde geben. c. Er (sie) werdt geben. d. Er (sie) werden geben.	Germ:
	a. Er (sie) wird geben.	
75	<p>German: Sie (sie) werden verstehen.</p> <p>Sound: Zee (see) VEHR-dehn fehr-SHTAY-ehn.</p> <p>Means: You (they) will (to) understand.</p> <p>(You (they) will understand.)</p> <p>(Copy all sentences.)</p>	
	<p>Sie (sie) werden verstehen.</p> <p>Zee (see) VEHR-dehn fehr-SHTAY-ehn.</p> <p>You (they) will (to) understand.</p>	<p>Germ:</p> <p>Ind:</p> <p>Ans:</p>

106	German: Wie _____ ? Means : How goes it (with) you? (How are you?)	(Copy German and fill in what is missing.)
	Wie (geht es Ihnen)?	Germ: _____
107	The German words "geht es" mean _____ The German word "Ihnen" means _____	
	_____ goes it (with) you	Ans: _____
108	German: _____ Means : 1. Good day. 2. Good morning. 3. Good evening.	
	1. Guten Tag. 2. Guten Morgen. 3. Guten Abend.	Germ: 1. _____ 2. _____ 3. _____
109	German Sound w v ("w" is always sounded "v" as in "very.") ie ee ("ie" is always sounded "ee" as in "see.") "ie" is sounded _____	
	vee	Ans: _____
110	Which word below is the correct sound for "how"? Which word below is the correct German word for "how"? boe vee wie	
	vee wie	Ans: _____ Germ: _____

86	German: Means : He (she) name Schmidt. (His (her) name is Schmidt.)	
		Germ:
Er (sie) heißt Schmidt.		
87	German: 1. Wir heißen Koch. 2. Heißen sie Müller? Means :	
		Mean: 1. 2.
1. We name Koch. (Our name is Koch.) 2. Name they Müller? (Is their name Müller?)		
88	German: Means : 1. We name Koch. (Our name is Koch.) 2. Name they Müller? (Is their name Müller?)	
		Germ: 1. 2.
1. Wir heißen Koch. 2. Heißen sie Müller?		
89	German: 1. Ich muß gehen. 2. Er (sie) muß sehen. Means :	
		Mean: 1. 2.
1. I must (to) go. (I must go.) 2. He (she) must (to) see. (He (she) must see.)		
90	German: Means : 1. I must (to) go. (I must go.) 2. He (she) must (to) see. (He (she) must see.)	
		Germ: 1. 2.
1. Ich muß gehen. 2. Er (sie) muß sehen.		
		22-18

MODERN LANGUAGE

Elem.+

**MODERN LANGUAGE SERIES: MODERN HEBREW:
BASIC READING**

RABBI MAX LEADER

**DONALD BERTHOLOMEY, Teaching Materials Corp.
Published by TEACHING MATERIALS CORPORATION,
575 Lexington Avenue, New York 22, New York.**

Programed text, 2,541 frames, paperback, 528 pp.,
8 1/2" x 11", bound in 2 separate units, \$16.00.

For use in MIN/MAX II machine, \$25.00; program
reusable, \$15.00.

Teacher's Manual: General Manual for all TMI-Grolier
programs available.

Table of Contents.

Unit and Final Test(s) included.

Constructed Responses usually used; some Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"8-15 year olds, 3-10th grade students."

Prerequisites: "Requires an ability to read and write
elementary English."












Average Time: 17-25 hours (based entirely on data);
standard deviation, 2.63 hours.








Next Revision: July, 1963.

(2 sample pages)

MODERN LANGUAGE

MODERN LANGUAGE SERIES: MODERN HEBREW:
 BASIC READING
 Leader, Bertholomey; TEACHING MATERIALS CORP.
 2 sample pages:

<p>41 Observe  is a letter. The three dots under the letter are called a vowel. Which is a vowel?</p>	<p>B O T T O M</p>			<p>N E I T H E R</p>
<p>X</p>				
<p>42 Which is a vowel?</p>	<p>B O T T O M</p>		<p>Kaf</p>	<p>N E I T H E R</p>
<p>X</p>				
<p>43  is a vowel that has the sound of "eh." Kaf and  have the sound of _____. 1) "keh" 2) "kah"</p>				
<p>1) "keh"</p>				
<p>44 Every Hebrew letter, unless it comes at the end of a word, must have a vowel. Which example follows this rule?</p>	<p>B O T T O M</p>			<p>N E I T H E R</p>
<p>X</p>				
<p>45 Notice that under the letter Shin  is the vowel _____. Choose the vowel.</p>	<p>B O T T O M</p>			<p>N E I T H E R</p>
<p>TEST</p>				

81 Which is Vet? 	B O T H	2	3	N E I T H E R
82 Vet has the sound of the English letter: 1) l 2) h 3) eh 4) v 	X	TEST		
83 How would you pronounce  ? 1) "veh" 2) "leh" 3) "eh" 4) "keh"	1) "veh"			
84  is pronounced "veh" because a Hebrew letter is always pronounced before the _____ that goes with it.	vowel			
85 Which letter in  does not have a vowel? 1) 2 2) 3 3) 4	3)	1-17		

MODERN LANGUAGE

Open

ITALIAN TRAVATUTOR

JAC D. MEACHAM, Director, Universal Learning
Division

JOSEPHINE REID, Instructor

Published by **GRAFICROLL SYSTEMS, Inc.**,
4215 Calavo Drive, La Mesa, California

Programed text, 900 frames, paperback, 230 pp.,
5 1/2" x 8", \$9.95.

For use in **DISCOVERY COLUMBUS** machine, \$38.75;
program reusable, \$15.00.

For use in **EXECUTUTOR** machine, \$29.95; program
reusable, \$15.00.

Program also available in Italian to English.

Table of Contents.

Final Test available.

Constructed Responses usually used; some Multiple
Choice; some Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Students, teachers, businessmen, servicemen,
families, tourists, travelers, or anyone interested
in a foreign language."

Prerequisites: None.

Average Time: 10 hours (est.).

Next Revision: March, 1963.

(1 sample page)

MODERN LANGUAGE

ITALIAN TRAVATUTOR

Meacham, Reid; GRAFICROLL SYSTEMS

one sample page:

ITALIAN TravaTutor

Colors

	1-The color blue in Italian is <u>blu</u> (bloo) and quite similar to the english blue. Black is <u>nero</u> (nay row). The water is _____ (blue) and the dirt is _____ (black).
1-blu, nero	2-If you wanted to buy a red and blue shirt you would ask for-- <u>rosse</u> (red) and _____. Rosso is red and blu is blue. _____ is black.
2-blu, nero	3-White in Italian is <u>bianco</u> (bee yong koh). The U.S. flag is _____ (red), _____ (white), and _____ (blue).
3-rosso bianco blu	4-The colors that we have covered thus far are: _____, _____, and _____.
	27

MODERN LANGUAGE

Open

JAPANESE TRAVATUTOR

JAC D. MEACHAM, Director, Universal Learning
Division

YASUKO KAJII, Instructor

Published by **GRAFICROLL SYSTEMS, Inc.**,
4215 Calavo Drive, La Mesa, California

Programed text, 1075 frames, paperback, 263 pp.,
5 1/2" x 8", \$9.95.

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple
Choice; some Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Students, teachers, businessmen, servicemen,
families, tourists, travelers, or anyone interested
in a foreign language."

Prerequisites: None

Average Time: 10 hours (est.).

Next Revision: March, 1963.

(1 sample page)

MODERN LANGUAGE

JAPANESE TRAVATUTOR

Meacham, Kajii; GRAFICROLL SYSTEMS
one sample page:

JAPANESE TravaTutor

Money of Japan

	1-The dollar-to-yen conversion rate is \$1.00 to Y 360.00. The ¥ is the Japanese sign for _____ and is the equivalent to our \$ (dollar) sign.
1- yen	2-The kinds of yen currency in circulation are: 1,000, 500, 50, 100, 10, and 5 ¥ bank notes. If you had 3,600 in yen, you would have: _____ in U.S..dollars.
2- ten (\$10.00)	3- The coinage used in Japan are in denominations of: ¥ 50, ¥ 10, ¥ 5, and ¥ 1. The coins are used very little since if you had ¥ 5, you would have only _____¢ in U.S. money.
3- 1½	4- When entering Japan you should convert your dollars to _____ (¥) and when leaving Japan reconvert your _____ (¥) to dollars.
	76

MODERN LANGUAGE

Jr. H.S.+

**MODERN LANGUAGE SERIES: BASIC RUSSIAN READING
LLOYD E. HOMME**

NIRAM A. WILSON, both of Teaching Materials Corp.
Published by **TEACHING MATERIALS CORPORATION**,
575 Lexington Avenue, New York 22, New York.

Programed text, 1,994 frames, paperback, 402 pp.,
8 1/2" x 11", bound in 2 separate volumes, \$11.00.
For use in MIN/MAX II machine, \$25.00; program
reusable, \$10.00.

Teacher's Manual: General Manual for all TMI-Grolier
programs available.

Final Test included.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"Twelve year olds through adults."

Prerequisites: "Requires an ability to read and write
elementary English."

Average Time: 18-20 hours (based entirely on data).

Next Revision: March, 1964.

(2 sample pages)

MODERN LANGUAGE

MODERN LANGUAGE SERIES: BASIC RUSSIAN READING
Homme, Wilson; TEACHING MATERIALS CORPORATION
2 sample pages:

Where S: goSTEE • ?
M: hotel?

goSTEE neetaa

goSTEE ?

707

Where S: go • ?
M: hotel?

go STEEneetaa

go ?

708

Where S: • ?
M: hotel?

goSTEEneetaa

709

S: GdYEH • ?

(COPY)

M: Where hotel?

GdYEH goSTEEneetaa?

S: • ?

710

S: GdYEH • ?

M: • hotel?

goSTEEneetaa where

S:

M:

143

1891

R:

M: Do they speak Russian?

Они говорят по-русски?

1892

R:

M: No, they speak very little.

Нет, они говорят очень мало.

1893

R:

M: I shall read. I shall read the book.

Я буду читать. Я буду читать книгу.

1894

R:

M: He will speak. He will speak Russian.

Он будет говорить. Он будет
говорить по-русски.

1895

R: Они будут говорить по-русски.

M:

They will speak Russian.

338

MODERN LANGUAGE

Jr. H.S.-Coll.+

WRITING RUSSIAN SCRIPT

A Self-Instructional Program.

IRVING J. SALTZMAN, Dept. of Psychology, Indiana University

**Published by MCGRAW-HILL BOOK COMPANY, Inc.,
330 West 42nd Street, New York City.**

**Programed text, 2,000 frames, papercover, 400 pp.,
8 1/2" x 11", \$3.95.**

Table of Contents.

Final Test included.

Multiple Choice Responses usually used; some Constructed Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"High school and college students, adults."

Prerequisites: "Must be able to read and write English."

Additional equipment required: "Tape recorder and taped material, optional."

Average Time: 10.5 hours plus 1.5 hours on tape (est.).

Next Revision:

(1 sample page)

MODERN LANGUAGE

WRITING RUSSIAN SCRIPT

Saltzman; McGRAW-HILL BOOK COMPANY

one sample page:

S224: IN RUSSIAN SCRIPT, THE SMALL LETTER "YAH" (я) IS CONNECTED WITH THE SMALL LETTERS WHICH PRECEDE IT AND FOLLOW IT IN THE FOLLOWING MANNER:

м.я.ч. в.я.ч. т.я.ч.

NOTICE THAT THE SMALL HOOK IS ALWAYS PRESENT AT THE BEGINNING OF "YAH," JUST AS WITH "ELL" AND "EM."

From each of the following pairs, select the item indicated, check your response and then make a copy of the correct item.

Q1-224: мяч in script.

1) - м.я.ч. - 2) - мяч -

A1-224: 1)

Q4-224: шун in script.

1) - ш.у.н. - 2) - шуня -

A4-224: 2)

Q6-224: Write: мям

A6-224: - м.я.м. -
Copy this if your answer is wrong.

Q7-224: Write: обяв

A7-224: - о.б.я.в. -
Copy this if your answer is wrong.

R-Q1: Are the following letters in their correct alphabetical order: ч ш щ ъ ы ь э ю я

R-A1: Yes.

MODERN LANGUAGE

6th Grade

AUTOMATED SPANISH

DELBERT L. BARCUS, Supervising Teacher, Denver Public Schools.

Published by **DENVER PUBLIC SCHOOLS**,
414 14th Street, Denver 1, Colorado

Programed text, 2016 frames, paperback, 291 pp., 8-1/2" x 11", 3 separate units @ \$1.50 each.

Final Test available, 2 forms, \$1.10 per copy.

Constructed Responses always used; no Multiple Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S): "6 to 20 individual trials preliminary to research study using 6000 sixth graders in the Denver Public Schools."

Prerequisites: "Fifty to seventy-five hours of audio-lingual training in Spanish."

Average Time: 21,039 hours (based entirely on data with a standard deviation of 4,926 hours).

Next Revision:
(2 sample pages)

MODERN LANGUAGE

AUTOMATED SPANISH

Barcus; DENVER PUBLIC SCHOOLS

2 sample pages:

245. señora

246. Este se es alto y flaco.



246. señor

247. José tiene dos hermanos.

Uno se llama Alberto;
uno a ll Federico.

247. se llama

248. Alberto no tiene hermanos.
Alberto h hermanos.

248. tiene

249. ¿Cuántos hermanos tiene Alberto?
Alberto dos hermanos.

249. tiene

250. Alberto no tiene tres hermanos;
tiene sólo dos h.

250. hermanos

251. Los h se llaman José
y Federico.

251. hermanos

252. Hay tres niños y dos niños.



252. niñas

253. No hay tres niños; hay ____
niños.



253. dos

254. ¿Tiene Alberto dos her ____?
Sí.



254. hermanos

255. Hay un niño; hay tres ____.



255. niñas

256. ¿Cuántos a ____ hay?
Tres.

256. niños

257. ¿Cuántos niños hay?
N ____ cuatro niños.

257. Hay

258. ¿No hay una niña?
No, hay dos a ____.

258. niños

259. Esta ca ____ tiene cuatro ventanas.



MODERN LANGUAGE

Jr. H.S.-Coll.+

INTRODUCTORY SPANISH

M. W. SULLIVAN, President, Sullivan Associates

**Published by ENCYCLOPAEDIA BRITANNICA PRESS,
425 N. Michigan Avenue, Chicago 11, Illinois**

**Programed text, 3,284 frames, paperback, 1,250 pp. (7
units), 8-1/2" x 11-1/2", \$18.00 plus Binder.**

**For use in TEMAC BINDER, \$1.75; program reusable;
\$18.00.**

Teacher's Manual included.

**Constructed Responses usually used; some Multiple
Choice; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"Hollins College students, Roanoke City Public
School students."**

Prerequisites: "No special prerequisites."

**Additional material required: Tape recorder or language
laboratory and accompanying tapes—\$64.75.**

Average Time: 45 hours (est.).

No Revision.

(1 sample page)

MODERN LANGUAGE

INTRODUCTORY SPANISH

Sullivan; ENCYCLOPAEDIA BRITANNICA PRESS

one sample page:

111.

Fill in the missing word:

The table is pretty.

La mesa es _____.

112.

bonita

113.

The Spanish adjectives for BLACK, WHITE, PRETTY, etc., end in _____ when they modify masculine nouns, and end in _____ when they modify feminine nouns.

114.

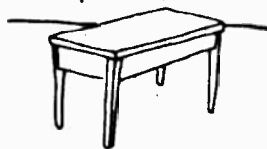
Answer the question.*



Check your answer.*

115.

Ask the question:



Is the table black?

Check.*

Now answer the question. Check.*

Programmed Student Manual for Introductory Spanish

140

MODERN LANGUAGE

Jr. H.S.+

MODERN LANGUAGE SERIES: BASIC SPANISH
JAMES L. EVANS

RAFAEL VALDES, both of Teaching Materials Corp.
Published by **TEACHING MATERIALS CORPORATION**,
575 Lexington Avenue, New York 22, New York.

Programed text, 3,480 frames, paperback, 837 pp.,
8 1/2" x 11", bound in 3 separate volumes, \$17.50.
For use in MIN/MAX II machine, \$25.00; program
reusable, \$16.50.

Teacher's Manual: General Manual available for all
TMI-Grolier programs.

Table of Contents.

Unit and Final Test(s) included.

Multiple Choice Responses usually used; some Constructed
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Eighth, ninth, tenth and eleventh grade students with
no prior studies or background in the subject."

Prerequisites: "Requires ability to read and follow simple
instructions in English."

Average Time: 30 hours (based entirely on data); standard
deviation, 5.24 hours.



Next Revision: January, 1964.
(3 sample pages)

MODERN LANGUAGE

MODERN LANGUAGE SERIES: BASIC SPANISH
Evans, Valdes; TEACHING MATERIALS CORPORATION
3 sample pages:

817	To form the plural of most words ending in a vowel, add ____.
<hr/>	
818	To nouns ending in consonants, add ____.
<hr/>	
819	The plural of "actor" is ____. The plural of "actors" is ____.
<hr/>	
820	To words ending in ____, add "s" to form the plural.
<hr/>	
821	To words ending in ____, add "es" to form the plural.
<hr/>	
822	The word "a" in Spanish ("a" man, "a" woman) may be "un" or ____ depending on whether you use "hombrer" or "mujer."
<hr/>	
<div>un</div> <div>87</div>	

043	<p>"To be," "to write," and "to know" are all infinitives.</p> <p>"Hablar" means "to speak." "Hablar" is to _____.</p>	
	infinitive	
044	<p>The "ar" in "actar" (to be) shows that "actar" is an infinitive.</p> <p>The "ar" in "hablar" (to speak) shows that _____ is also an infinitive.</p>	
	hablar	
045	<p>Many infinitives end in _____, such as "actar" and "hablar."</p>	
	ar	
046	<p>"Hablar" is an infinitive that ends in _____.</p>	
	ar	
047	<p>To form the different persons of "hablar" use the stem "habl-".</p> <p>We take off "ar" from "hablar" to form the s _____.</p>	
	stem	
048	<p>"Habl" is the _____ of "hablar."</p>	
	stem	

2817 "Vestibular" and "vestibular" have accent marks.	
28 = _____	
29 = _____	
28 = vestibular 29 = vestibular	Open 28 = _____ 29 = _____
2818 "Twenty-two" is "vestibular."	
"Twenty-three" is _____	(Place accent mark.)
vestibular (Place accent.)	Open
2819 Add the Spanish words for "ten," "two," "three," "four," and "five" to "vestibular" to form "21," "22," "23," "24," and "25."	
21 = _____	22 = _____
23 = _____	24 = _____
25 = _____	
21 = vestibular 22 = vestibular 23 = vestibular	24 = vestibular 25 = vestibular
2820 "Twenty-four" is not "vestibular," but _____	
vestibular	Open
2821 (Put here on ?)	
	
Open the door y vestibular.	Open
2822 (Put here on ?)	
	
Open the door y vestibular.	Open
Open the door y vestibular.	2823

MODERN LANGUAGE

Jr. H.S. -Coll.

SPANISH A

First Year Course in Spanish

**STANLEY M. SAPON, Professor of Psycholinguistics,
University of Rochester**

**Published by ENCYCLOPAEDIA BRITANNICA PRESS,
425 N. Michigan Avenue, Chicago 11, Illinois**

**Programed text, 6,602 frames, paperback, 8-1/2" x 11-1/2",
\$29.25 including Binder.**

**For use in TEMAC BINDER, \$1.75; program reusable,
\$28.50.**

Teacher's Manual included.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Ohio State University students."

Prerequisites: "Reading ability of seventh grade or above."

**Additional material required: Tape recorder or language
laboratory and tapes accompanying the program—
\$200.00 for 21 tapes.**

Average Time: 50-85 hours (est.).

No Revision.

(1 sample page)

**MODERN LANGUAGE
SPANISH A**
Sapon; **ENCYCLOPAEDIA BRITANNICA PRESS**
one sample page:

1. You are looking at frame number 1. It contains some instructions, and an underlined space to write your answers.

The underlined space is used to write down your a.

(Write in the word that would complete the sentence above, and pull the lower mask down to the next solid line at the margins.)

1. answers

(After you pull the top mask down to meet the line below, you will be ready to go on to frame number 2. You expose frame number 2 by pulling the lower mask down to the solid lines at the margins.)

2. (If you followed the instructions, frame number 1 and its answer frame are no longer visible. The top mask should be above the printed number 2 at the left, and the bottom mask should be at the solid lines at the margins. If the masks are not properly set, fix them now.)

After you are told something in a frame, you will either answer a question or complete a sentence. In either case, you will find a line on which to write your a .

2. answer (or answers)

(Cover up both parts of frame number 2, and proceed to the next frame.)

3. The purpose of the answer frame is to let you know immediately whether your answer is or wrong.

3. right

4. Sometimes instead of writing out an answer, you will have to make a mark in a space like this: []. Here is a question for you to answer:

When do you look at the answer frame, before or after you write your answer?

[] before

[] after

4. [x] after

5. When you reach the last frame on a page, you will find marks like this: fff. This means that you are to bring both masks to the top of the page, lift the masks slightly, and flip the page back. Once you have done this, you will be ready to expose the next f .

5. frame

fff

fff

UNIT 0

PAGE 1

Spanish A

MODERN LANGUAGE

Open

SPANISH (ELEMENTARY)

CLT Spanish, Series I (No. 16-12-04)

CHARLES I. FOLTZ, author

**Published by ELECTRONIC TEACHING LABORATORIES,
5034 Wisconsin Avenue, N.W., Washington 16, D.C.**

**For use in LANGUAGE LABORATORY, program reusable,
2400 frames, \$89.95.**

Teacher's Manual available, \$1.25.

Table of Contents, Index.

Unit test(s), integral part of program.

**Constructed Responses always used; no Multiple Choice
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

**Additional material required: Minimum requirement:
tape recorder.**

Average Time: 12 hours (est.).

Next Revision:

(1 sample page)

MODERN LANGUAGE

SPANISH (ELEMENTARY)
Foltz; ELECTRONIC TEACHING LABORATORIES
one sample page:

SAMPLE FRAMES (from tapescript) CLT Spanish (Series I)

1. STIMULUS Yo sigo el taxi. Y ellos ?
 RESPONSE (timed pause for student response)
 MASTER Ellos siguen el taxi.
 REINFORCEMENT (timed pause for repetition)

2. STIMULUS Come Ud. carne ?
 RESPONSE (timed pause for student response)
 MASTER Si, yo como carne.
 REINFORCEMENT (timed pause for student response)

MODERN LANGUAGE

H.S.

SPANISH U-3002

**UNIVERSAL ELECTRONICS LABORATORIES
CORPORATION**

**Published by UNIVERSAL TEACHING MACHINE
INSTITUTE,
510 Hudson Street, Hackensack, New Jersey.**

**For use in UNIVERSAL MODEL U machine, program
reusable, 2160 frames, machine and program,
\$25.00 (school discount).**

Table of Contents.

**Constructed Responses usually used; some Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Grade Level - 8-12."

Other using population(s): Adult.

Prerequisites: None

Average Time: 30 to 36 hours (est.).

Next Revision: August, 1963.

(2 sample pages)

MODERN LANGUAGE

SPANISH U-3002

Universal Electronics Laboratories Corporation;
UNIVERSAL TEACHING MACHINE INSTITUTE
2 sample pages:



SPECIAL INSTRUCTIONS		
433	Yago is pronounced _____-soh.	BAH
434	The word cinco is pronounced SEEN-_____.	hoh
435	The Spanish word cone is pronounced S _____-nah.	SAY
436	KAHN-soh is spelled _____ in Spanish.	cano
437	The Spanish word gente is pronounced HEHN-_____.	lay
438	HEE-rah is spelled _____ in Spanish.	gire

463	In the Spanish language, _____ is the masculine singular definite article.	el
464	The article <u>el</u> means <u>the</u> . <u>El</u> means _____ in Spanish.	the
465	The Spanish word _____ means <u>the</u> .	el
466	In Spanish, <u>el libro</u> means <u>the book</u> . The phrase <u>el libro</u> means _____ <u>book</u> .	the
467	The phrase _____ <u>libro</u> means <u>the book</u> .	el
468	<u>El libro</u> means _____	the book

MODERN LANGUAGE

Open

SPANISH TRAVATUTOR

JAC D. MEACHAM, Director, Universal Learning
Division

JAMES M. HARDISON, Instructor, Writer
Published by **GRAFICROLL SYSTEMS, Inc.**,
4215 Calavo Drive, La Mesa, California

Programed text, 850 frames, paperback, 210 pp.,
5 1/2" x 8", \$9.95.

For use in **DISCOVERY COLUMBUS** machine, \$38.75;
program reusable, \$15.00.

For use in **EXECUTUTOR** machine, \$29.95; program
reusable, \$15.00.

Program also available in Spanish to English.

Table of Contents.

Final test available.

Constructed Responses usually used; some Multiple
Choice; some Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Students, teachers, businessmen, servicemen,
families, tourists, travelers or anyone interested
in a foreign language."

Prerequisites: None

Average Time: 10 hours (est.).

Next Revision: March, 1963.

(1 sample page)

MODERN LANGUAGES

SPANISH TRAVATUTOR

Meacham, Hardison; GRAFICROLL SYSTEMS

one sample page:

SPANISH TravaTutor

Pronunciation

The "A" in Spanish is pronounced like the response given to the doctor when he says-- "Open your mouth and say --ah". Now say -ah each time the letter a appears in the following words: casa, mama, papa, pasa, la, da.

Now modify the a with the respective consonants and say -- "Papa pasa la casa" (Father passes the house).

Let's try another one. "Papa da la casa a mama" (Father gives the house to mother).

In Spanish a is always pronounced the same, regardless of where it appears in a word.

The a in Spanish is pronounced-----
(select one of the following statements)

_____ as in the english words: day, say, and may.
... turn to Page 3

_____ as in "ah" when responding to a doctor asking you to open your mouth for a look at your throat.
... turn to Page 2

MATHEMATICS-ALGEBRA

Jr. H.S.-H.S.

ADVENTURES IN ALGEBRA (TutorText)

NORMAN A. CROWDER,

**GRACE C. MARTIN, both of U.S.I., Educational Science
Division**

**Published by DOUBLEDAY & CO., Inc.,
575 Madison Avenue, N.Y.C.**

**Programed text, 336 frames, hard cover, 348 pp.,
8 1/4" x 5 3/8", \$4.95.**

**A similar program, INTRODUCTION TO ALGEBRA
(TutorFilm), available in TM format.**

**For use in AUTOTUTOR MARK II, \$1,250; program re-
usable, 410 frames, \$40.00.**

Table of Contents, Index.

Unit Test(s) included.

Programed text available in Japanese.

**Multiple Choice Responses and Branching always used;
no Constructed Responses.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisite:

Average Time: 6-8 hours (est.).

Next Revision: "Not scheduled."

(1 sample page)

MATHEMATICS-ALGEBRA

ADVENTURES IN ALGEBRA

Crowder, Martin; DOUBLEDAY & CO.

one sample page

Sample from Introduction to Algebra

YOUR ANSWER: If $x + a = 0$, $x = -a$.

You are correct. If we wish to solve any equation of the form $x + a = 0$, where a is a known number and x is the unknown, we can proceed as follows:

$$x + a = 0$$

Subtract a from both sides:

$$x + a - a = 0 - a$$

$a - a = 0$, so

$$x + 0 = -a$$

$$x = -a$$

If we had begun with the equation $x - a = 0$, we would have

$$x - a = 0$$

Add a to both sides:

$$x - a + a = 0 + a$$

$$x = a$$

Now, as we said at the beginning of this lesson, in solving an equation such as $x - a = 0$ or $x + a = 0$, we want to deduce from our original equation one in the form " $x =$ some number." When we have a term such as a either added or subtracted from our unknown, x , what rule will summarize the calculations above and enable us to get rid of the troublesome a on the left-hand side of the equation?

Move the a to the other side of the equation and change its sign. C

Move the a to the other side and put a minus sign in front of it. B

Move the a to the other side. A

MATHEMATICS - ALGEBRA

H.S.

ALGEBRA I

DANIEL P. MURPHY, Teaching Fellow State University of Iowa.

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 8,200 frames, paperback, 1,290 pp.,
8-1/2" x 11-1/2", \$13.25. Available in 5 separate
units @ \$3.25 each.

For use in **TEMAC BINDER**, \$1.25; program reusable,
\$12.00.

Teacher's Manual available, \$.50.

Table of Contents.

Unit Test(s) available. More than one equivalent form of
test available.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Selected groups, Roanoke City Public Schools."

Other using population(s): "Adult education groups; review."

Prerequisites: "No special student prerequisites other
than those required for normal ninth grade algebra."

Average Time: 135 classroom hours for average students
(est.).

No revision of this particular program. New programs in
ninth grade algebra will be developed.

(1 sample page)

MATHEMATICS - ALGEBRA

ALGEBRA I

Murphy; ENCYCLOPAEDIA BRITANNICA PRESS
one sample page

5426. Now we shall return to the problems. Refer to Figure 163. If x represents the number, what represents the number increased by 4?

$$x + 4$$

5427. If x represents the number, how would you represent the product of this number (x) and the number increased by four, ($x + 4$)?

$$x(x + 4) \text{ or } x^2 + 4x$$

5428. The product of a certain number and the number increased by 4 is ($x^2 + 4x$). According to the problem, it is also (-3) . Write an equation stating this equality.

$$x^2 + 4x = -3$$

5429. If x is the number, the equation which represents the problem is $x^2 + 4x = -3$. Transpose all terms so as to make the right member equal to 0. Factor the equation and find the roots.

$$\begin{aligned} x^2 + 4x + 3 &= 0 \\ (x + 3)(x + 1) &= 0 \\ x + 1 &= 0 \\ x &= -1 \\ x + 3 &= 0 \\ x &= -3 \\ \text{hence, } x &= -1; \\ x &= -3 \end{aligned}$$

5430. Since we have two roots, we have two possible answers to our problem. Let us check $x = -1$. The product of this number (-1) and the number increased by 4, $(-1 + 4)$, is -3 , therefore, this number checks. Now let us check $x = -3$. Is the product of -3 and -3 increased by 4 equal to -3 ?

$$\begin{aligned} \text{yes} \\ -3(-3 + 4) \\ -3(-1) \\ -3 \end{aligned}$$

5431. Refer to Figure 164. If x represents the number, how would you represent the product of a certain number, and the number increased by 7?

$$\begin{aligned} x(x + 7) \\ \text{or} \\ x^2 + 7x \end{aligned}$$

5432. Let x represent the number. Refer to Figure 164. Write the equation which states the fact of the problem.

$$x^2 + 7x = -10$$

570 1st Year Algebra

MATHEMATICS - ALGEBRA

H.S.

ALGEBRA II

ROBERT J. TITIEV, Britannica Center for Studies in Learning
Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 6,750 frames, paperback, 1,036 pp.,
8-1/2" x 11-1/2", \$13.25. Available in 5 separate
units @ \$3.25 each.

For use in **TEMAC BINDER**, \$1.25; program reusable,
\$12.00.

Teacher's Manual available, \$2.50.

Table of Contents.

Unit Test(s) available \$1.60 per copy. More than one
equivalent form of test available.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Naive groups from the Roanoke City Public Schools;
field test population classrooms from Roanoke City
Public Schools. Roanoke, Virginia."

Other using population(s): "Adult education, professional
review."

Prerequisites: "No special prerequisites other than reading
ability approximating ninth grade level."

Average Time: 120 classroom hours for average students
(est.).

No expected revision.

(1 sample page)

MATHEMATICS - ALGEBRA

ALGEBRA II

Titiev; ENCYCLOPAEDIA BRITANNICA PRESS

one sample page

4916. Now refer to Figure 103. Remember that the function $-x^2 + 12x$ represented the product of two real numbers whose sum is 12. We have found that this product is a maximum when $x =$ _____

6

4917. Therefore, since the two numbers that we wanted to find were represented by x and $12 - x$, we know that the solution to the problem will be the numbers _____ and _____

6,

6

4918. By graphing a function, we have found that the product of 6 and 6 is greater than the _____ of any other two numbers whose sum is 12.

product

4919. Look at Figure 104 once again. We see that the graph of $f(x) = -x^2 + 12x$ crosses the X -axis at the point whose x -coordinate is 0, and also at the point whose x -coordinate is _____

12

4920. Since the y -coordinate of every point on the X -axis is 0, we know that the function $-x^2 + 12x$ will be equal to _____ whenever its graph crosses or touches the X -axis.

0

4921. We know that the graph of $-x^2 + 12x$ crosses the X -axis at $x = 0$ and at $x = 12$. Therefore, $-x^2 + 12x$ is _____ to 0, when $x = 0$ and when $x = 12$.

equal

4922. We know that the value of a function will be equal to 0 wherever the _____ of the function crosses the _____-axis.

graph,
 X

4923. We know that the graph of $-x^2 + 12x$ crosses the X -axis at $x = 0$ and at $x = 12$. Therefore, $-x^2 + 12x$ is _____ to 0, when $x = 0$ and when $x =$ _____

equal,
12

4924. Since the function $-x^2 + 12x$ is equal to 0 when $x = 0$ and $x = 12$, we know that $x = 0$ and $x = 12$ are two solutions to the equation $-x^2 + 12x =$ _____

0

500 Second Year Algebra

MATHEMATICS - ALGEBRA

Jr. H.S.

ALGEBRA I and II

PROFESSOR KRAKOW, programmer

MARTIN MEO, New York University

**ALEXANDER SCHURE, President, N. Y. Institute of
Technology**

**Published by CENTRAL SCIENTIFIC Company,
1700 Irving Park Road, Chicago 13, Ill.**

**For use in CENCO PROGRAMED LEARNER, \$2.95;
program not reusable, 500 frames in I, 500 in II, I or
II included in price of machine.**

**- Constructed Responses usually used; some Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Over 200."

Prerequisites: None.

Average Time: 3 hours (est.).

Next Revision: "Now available."

(1 sample page)

MATHEMATICS - ALGEBRA

ALGEBRA I and II

Krakow, Meo, Schure; CENTRAL SCIENTIFIC CO.

one sample page

ALGEBRA II

3. $16a^3b^3$ is called a _____.

.....
monomial

4. $15a^2 + 9b^2 + 8c + d^3$ is called a _____.

.....
polynomial

5. When we multiply a polynomial by a monomial we first multiply all the terms of the polynomial separately by the monomial and then combine the resulting products using the co --- ct sign.

.....
correct

6. Let's work a sample problem. To multiply $16r + t$ by $2r$ we begin by rewriting the expression as we would an arithmetical multiplication. $16r + t$

$2r$

Our first step is multiplying $16r \cdot 2r$ giving _____.

$32r^2$
.....

MATHEMATICS-ALGEBRA

H.S.+

ALGEBRA 11

**R. CLAYTON COURSEY, Education Engineering, Inc.
Published by EDUCATION ENGINEERING, Inc.,
381 West 7th Street, San Pedro, California.**

**Programed text, 15,200 frames, paperback, 540 pp.,
5" x 7", available in 15 separate units at \$3.75 each.
For use in SPEED machine, program reusable, \$152.00
Teacher's Manual available, \$4.00 per unit.
Unit, Final, Diagnostic Test(s) available, \$10.00 per unit.
Multiple Choice Responses always used; no Constructed
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites: Arithmetic

**Additional material required: SPEED teaching machine
\$700 & \$850.**

Average Time: 30 hours (est.).

Next Revision:

(1 sample page)

MATHEMATICS-ALGEBRA

ALGEBRA 11

Coursey; EDUCATION ENGINEERING, Inc.

one sample page

If a letter or letters has no coefficient written before it, the coefficient 1 is understood.

For example, $1x$ is the same as x because multiplying a number by 1 does not change its value.

In the product ab :

the coefficient of ab is 1.
the coefficient of a is b .
the coefficient of b is a .

What do we mean by, the coefficient 1 is understood? We mean that even though it is not written down, we know it is there.

11201 - 10

QUESTIONS

- 1- What is the coefficient of xy in the product xy ?
- 2- What are the prime factors of 16?
- 3- What are the prime factors of $3xy$?
- 4- What is the coefficient of x in the product $3xy$?
- 5- What is the coefficient of $uvwx$ in the product $uvwx$?

ANSWERS

- 1- y
- 2- 1
- 3- 2, 2, 3, x and y
- 4- 4 and 4
- 5- x
- 6- 3, 4, x and y
- 7- 3
- 8- $3y$
- 9- uvx
- 10- 2, 2, 2 and 2

11201 - 10

MATHEMATICS - ALGEBRA

H.S.

ALGEBRA U-3001

**UNIVERSAL ELECTRONICS LABORATORIES
CORPORATION**

**Published by UNIVERSAL TEACHING MACHINE
INSTITUTE,
510 Hudson Street, Hackensack, New Jersey.**

**For use in UNIVERSAL MODEL U machine, program
reusable, 2160 frames, machine and program, \$25.00
(school discount).**

Table of Contents.

**Constructed Responses usually used; some Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Grade Level - 8-12."

Other using population(s): "Adult."

Prerequisites: None

Average Time: 36 to 45 hours (est.).

Next Revision: August, 1963.

(2 sample pages)

MATHEMATICS - ALGEBRA

ALGEBRA U-3001

Universal Electronics Laboratories Corporation; UNIVERSAL TEACHING MACHINE INSTITUTE

2 sample pages



<p>439 Now we have: $x (+) + 8 (+) - 8 = -8 (+) - 8$ The next step in our solution is to _____ $+ 8$ and $- 8$. This step is: $+ 8 (+) - 8 = 0$</p>		add
<p>440 Now we have: $x (+) 0 = -8 (+) - 8$ Our next step is to add _____ and _____. $x + 0 = 0$</p>		x 0
<p>441 We now have: $x = -8 (+) - 8$ Our next step is to add _____ and _____. $-8 (+) - 8 = -16$ We now have the solution. It is: $x =$ _____</p>		-8 -8 -16
<p>442 Now let's work another step-by-step problem. $-7 (+) x = +3$ The first step is to _____ $+ 7$ to _____ sides of the equation.</p>		add both
<p>443 Now we have: $+7 (+) - 7 (+) x = +3 (+) + 7$ The next step is to add $+ 7$ and $- 7$, the sum of which is _____. This leaves: $0 (+) x = +3 (+) + 7$</p>		0
<p>444 The next step is to _____ 0 and _____ $x = +3 (+) + 7$ whose sum is x. This leaves: $x = +3 (+) + 7$ We then add: $+3 (+) + 7 = +10$ We now have the solution: $x = +10$</p>		add x

457	<p>Addition in algebra is roughly similar to addition in arithmetic.</p> <p>A negative number plus a negative equals a _____ number.</p>	negative
458	<p>If we add a negative and a positive number, and, if the negative number is larger, then the sum of the two numbers will be a _____ number.</p>	negative
459	<p>If we add a positive and a negative number, and, if the positive number is larger, then the sum of the two numbers will be a _____ number.</p>	positive
460	<p>A positive number plus a positive number equals a _____ number.</p>	positive
461	<p>Now let's solve for x in this equation.</p> $+3 \cdot x (+) -2 (-) -3 = +8 (-) -2$ <p>Our general rule for solving for x (is/is not) to get x by itself on one side.</p>	is
462	<p>First, we'll do the obvious addition problems on each side, to shorten the equation.</p> <p>On the left side:</p> $+3 \cdot x (+) -2 (-) -3 = 3 \cdot x (+)$ <p>On the right side:</p> $+8 (-) -2 =$ <p>We then have $+3 \cdot x (+) = +7$</p>	<div style="text-align: center;">+1</div> <div style="text-align: center;">+7</div>

MATHEMATICS - ALGEBRA

Jr. H.S.

ALGEBRAIC EQUATIONS

LAURENCE WHISLER, Consultant in Programed Education, Central Scientific Co.

Published by **CENTRAL SCIENTIFIC Company**,
1700 Irving Park Road, Chicago 13, Ill.

Planned for use in **CENCO PROGRAMED LEARNER**,
\$2.95; 100 frames.

Multiple Choice Responses always used; no Constructed Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"Planned population of 100."

Prerequisites:

Average Time: 3 hours (est.).

Next Revision: September, 1963.

(1 sample page)

MATHEMATICS - ALGEBRA

ALGEBRAIC EQUATIONS

Whisler; CENTRAL SCIENTIFIC Company
one sample page

ALGEBRAIC EQUATIONS

28. Use division to change an equation so that it
can be used simultaneously with another equation.

First set of equations

$$\begin{array}{rcl} 9A - B & 31 & \text{leave unchanged} \\ 9A - 23B & 253 & \text{divide by 23} \end{array}$$

$$\begin{array}{r} 31 \\ - 23 \\ \hline 8 \end{array}$$

.....
Complete equation

$$4A - B \quad 11$$

29. Solve for A by subtraction

$$\begin{array}{rcl} 9A - B & 31 \\ 4A - B & 11 \end{array}$$

.....
Complete equations

$$5A \quad 20$$

$$A \quad 4$$

30. Another problem: Machines J and K make the same
product, but the machine K is older and slower. With
3J and 2K machines, 7 finished products can be made
per hour. Write the equation.

.....
Complete equation

$$3J \quad 2K \quad 7$$

MATHEMATICS - ALGEBRA

Elem.-Jr.H.S.

EQUATIONS AND INEQUALITIES

EUGENE D. NICHOLS

ROBERT KALIN

HENRY GARLAND, all of Florida State University.

Published by: **HOLT, RINEHART & WINSTON**,
383 Madison Ave., N. Y. 17, N.Y.

Programed text, 284 frames, paperback, 80 pp., 7" x 10",
\$.96.

Teacher's Manual available, \$.16.

Table of Contents.

Final Test included.

Constructed Responses usually used; some Multiple
Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"Grades 7 thru 12."

Prerequisites: "Four fundamental operations with
directed numbers."

Average Time: 3-9 hours (est.).

Next Revision: Unknown.

(1 sample page)

MATHEMATICS - ALGEBRA

EQUATIONS AND INEQUALITIES

Nichols, Kalin, Garland; RINEHART & WINSTON
one sample page

77 If Writeall writes 5 in place of \square in

$$\frac{10}{\square} + 4 = 9,$$

does he obtain a true or a false statement?

STOP

STOP

77

false

78 If Writeall writes 4 in place of \square in

$$\frac{10}{\square} + 4 = 9,$$

does he obtain a true or a false statement?

STOP

STOP

78

false

79 What should Writeall write in place of \square in

$$\frac{10}{\square} + 4 = 9$$

to get a true statement?

STOP

STOP

79

2

80 Does 0 in place of \square in

$$\square \times 9 + 3 = 3$$

give a true statement?

STOP

STOP

80

Yes

81 What should Writeall write in place of \square in

$$\square \times 25 + 9 = 9,$$

to get a true statement?

STOP

STOP

81

0

MATHEMATICS-ALGEBRA

H.S.-Coll.

INTENSIFIED ALGEBRA R-1

A Review or Remedial Program

NANCY ANDERSON, University of Maryland

THOMAS GILBERT

Published by PROGRAMMED TEACHING AIDS, Inc.

3810 S. Four Mile Run Drive, Arlington, Virginia.

**For use in FERSTER TUTOR, Program reusable, \$10.00,
machine and program, separate answer tapes
replaceable. 1,300 frames (approx.)**

Teacher's Manual included.

Table of Contents.

**Constructed Responses always used; no Multiple Choice;
no Branching.**

**DEVELOPMENTAL (FIELD TEST) POPULATION(S): "Both
High School and College freshman."**

Prerequisites:

Average Time: 20 hours (est.).

Next Revision: January, 1964.

(1 sample page)

MATHEMATICS-ALGEBRA

INTENSIFIED ALGEBRA R-1

Anderson, Gilbert; PROGRAMMED TEACHING AIDS, Inc.
one sample page

52. But the fact that $3 \cdot 7 = 7 \cdot 3$ follows
from the _____ law for mul- commutative
tiplication.

TOPIC IV - Multiplication and Division of Signed Numbers

41. Since $-x$ is defined equal to $(-1) \times$
then $-(-x) = (-1)(-x) = \underline{\hspace{2cm}}$ \times

TOPIC VI - Operations on Algebraic Expressions

2. So $3x+4x = (3+4)x = \underline{\hspace{2cm}}$ $7x$
(total)

TOPIC VII - Division

14. $\frac{8x^2}{2x} = \underline{\hspace{2cm}}$ $4x$

TOPIC X - Linear Equations 1.

75. Solve $\frac{w}{50} = \frac{-1}{5}$ -10

TOPIC XII - Fractions 1.

24. Thus a fraction can sometimes be
simplified by removing factors
common to the numerator and the
denominator. In this way
 $\frac{x^2-a^2}{3x-3a} = \frac{(x+a)(x-a)}{3(x-a)} = \underline{\hspace{2cm}}$ $\frac{x+a}{3}$

MATHEMATICS - ALGEBRA

Jr. H.S.

INTRODUCTION TO ALGEBRA

**JACOB REGER, Programmer, General Programmed
Teaching Corporation**

**JOHN MORRIS, Editor, General Programmed Teaching
Corporation**

**Published by ENCYCLOPAEDIA BRITANNICA PRESS,
425 N. Michigan Avenue, Chicago 11, Illinois**

**Programed text, 1000 frames, paperback, 200 pp.,
8-1/2" x 11", \$**

**Teacher's Manual: "Instructions to teacher included in
preface."**

Final test available.

**Constructed Responses usually used; some Multiple
Choice; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental testing: 8th and 9th grade students."

Prerequisites: None.

Average Time: 10 hours (est.).

Next Revision:

(1 sample page)

MATHEMATICS - ALGEBRA

INTRODUCTION TO ALGEBRA

Reger, Morris; ENCYCLOPAEDIA BRITANNICA PRESS
one sample page

473	A term is an expression whose parts ARE NOT connected by addition or subtraction. Is $2 + y$ a term?	
	Circle,	
	Yes	No
474	The parts of a term are not connected by addition or subtraction. $3 + x$ is not a term because 3 and x are connected by addition. Is $y - 5$ a term?	
475	The parts of a term may be connected by multiplication or by division. Circle the letters before the terms below.	
	A) $2 + 5t$	D) $\frac{w}{8}$
	B) $c - y$	E) $4 + (g + \frac{1}{2})$
	C) $5d$	F) $\frac{d}{4} + x$
476	An expression whose parts are not connected by addition or subtraction is called a _____.	

MATHEMATICS - ALGEBRA

Jr. H.S.

**AN INTRODUCTION TO VERBAL PROBLEMS IN
ALGEBRA**

**DR. NATHAN LAZAR, Mathematics Education, Ohio State
University**

**Published by ENCYCLOPAEDIA BRITANNICA PRESS,
425 N. Michigan Avenue, Chicago 11, Illinois**

**Programed text, 1,024 frames, paperback, 147 pp.,
8-1/2" x 11-1/2", \$4.75.**

**For use in TEMAC BINDER, \$1.25; program reusable,
\$3.50.**

Teacher's Manual available, \$1.00.

Table of Contents.

Unit Test(s) available.

**Constructed Responses always used; no Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"Berkeley, California public schools on development
testing. Roanoke City Schools on evaluation testing."**

**Other using population(s): "Any remedial students, pre-
algebra."**

Prerequisites: "Ability to solve equation $3W$ is equal to 15:"

Average Time: 10-20 hours (est.).

No Revision.

(1 sample page)

MATHEMATICS - ALGEBRA

AN INTRODUCTION TO VERBAL PROBLEMS IN ALGEBRA

Lazar; ENCYCLOPAEDIA BRITANNICA PRESS
one sample page

9. The value of y which makes $6y = 12$ a true statement is the number _____. Therefore, we say that this number is a solution of the equation, $6y =$ _____.

2
12

10. The solution of the equation, $5m = 15$, is the number _____.

3

11. The equation, $2n = 12$, means that "twice a certain unknown number, represented by the letter n , is equal to twelve." This statement in words is called a translation of the equation into words.

12. When we express the meaning of the equation, $4w = 16$, as "four times a certain number, represented by w , is equal to sixteen," we say that we have translated the equation, $4w = 16$, into _____.

words

13. Another way of saying this is that the statement "four times a certain number, represented by w , is equal to sixteen," is a translation of the equation, _____.

$4w = 16$

14. The sentence which expresses, in words, the meaning of an equation is called a _____ of the equation into words.

translation

15. We have seen that a solution of the equation, $4n = 24$, is the number _____.

6

16. Furthermore, 6 is the only solution of $4n = 24$ since, when any number other than 6 is multiplied by 4 we (do/do not) _____ get 24 as the product.

do not

MATHEMATICS - ALGEBRA

Coll.

THE LANGUAGE OF ALGEBRA

Fields and Ordered Fields

F. WILLIAM LAWVERE, Britannica Center for Studies in
Learning and Motivation

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

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Table of Contents.

Unit Test(s) available, \$1.60.

Constructed Responses always used; no Multiple Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Students at Hollins College, Roanoke Public Schools developmental and public school classrooms at Roanoke, Virginia for field test."

Other using population(s): "Advanced high school students, professional review, teacher training in modern mathematics."

Prerequisites: "Basic understanding of algebra."

Average Time: 35-40 hours for average students (est.).

No Revision.

(1 sample page)

MATHEMATICS - ALGEBRA

THE LANGUAGE OF ALGEBRA

Lawvere; ENCYCLOPAEDIA BRITANNICA PRESS
one sample page

THEOREMS 13-23

$$146. \quad 2 - \frac{3}{x-1} + \frac{4x+2}{x^2-1} = \frac{2}{1} - \frac{3}{x-1} + \frac{4x+2}{x^2-1} \quad \frac{2x^2+2x-23}{x^2-4}$$

$$= \frac{2(x^2-1) - 3(x+1) + 4x+2}{x^2-1} = \frac{2x^2-2-3x-3+4x+2}{x^2-1}$$

$$= \frac{2x^2+x-3}{x^2-1}$$

Similarly,

$$2 + \frac{4}{x+2} - \frac{2x+3}{x^2-4} = \frac{2x^2+2x-23}{x^2-4}$$

147. When multiplying or dividing fractions, there is of course no need to find common denominators. The technique in such examples is to cancel as many common factors from numerators and denominators as is possible at every stage. For example:

$$(2-5x) \left(\frac{x+4}{4-25x^2} \right) = \frac{(x+4)(2-5x)}{(2+5x)(2-5x)} = \frac{0}{0}$$

$$\left(\frac{2x-5}{x^2-64} \right) (x-7) = \frac{0}{0}$$

$$\frac{x+4}{2+5x}$$

$$\frac{2x-5}{x+7}$$

$$148. \quad \left(\frac{x^2-7x-6}{x^2+6x-6} \right) \left(\frac{2x+13}{3x-24} \right) = \frac{(x-8)(x+1)}{(x+6)(x-1)} \cdot \frac{2(x+9)}{3(x-8)}$$

$$= \frac{2(x-8)(x+1)(x+9)}{3(x-8)(x-1)(x+6)}$$

$$= \frac{2(x+1)}{3(x-1)}$$

$$\left(\frac{2x-15}{4x+12} \right) \left(\frac{x^2-2x-15}{x^2-x-20} \right) = \frac{0}{0}$$

$$\frac{2x-15}{4x+12}$$

$$149. \quad \left(\frac{2x-3}{x^2+5x^2} \right) = \frac{(2x-3)}{(x^2+5x^2)} \cdot \frac{(2x^2+10x^2)}{4x^2-9}$$

$$= \frac{(2x-3)}{(x^2(x+5))} \cdot \frac{2x^2(x+5)}{(2x+3)(2x-3)}$$

$$= \frac{x^2(2x-3)(x+5)(2x)}{x^2(2x-3)(x+5)(2x+3)}$$

$$= \frac{2x}{2x+3}$$

$$\left(\frac{p-2p^2}{t+3} \right) = \frac{0}{0}$$

$$\left(\frac{p-4t}{p-8} \right) = \frac{0}{0}$$

$$\frac{p-2p^2}{t+3}$$

150 The Language of Algebra: Fields and Ordered Fields

MATHEMATICS—ALGEBRA

Jr. H.S.

NUMBER SENTENCES

An Introduction to Equation Solving

VERNON L. DAUSCH, Millburn Jr. H. S.

MARTIN M. MOSKOWITZ, Mathematics Department,
Vailsburg H. S.

ERNEST R. RANUCCI, Newark State College

MORTON SELTZER, Mathematics Department,
Weequahic H. S.

EDWARD J. ZOLL, Newark State College

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program can be reusable.

Teacher's Manual in preparation.

Table of Contents.

Unit and Final Test(s) included.

Constructed Responses usually used; some Multiple
Choice Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Average 7th and 8th grade students. Some testing of
students in Grades 5 and 6."

Prerequisites: "Programs will fit in with both "modern"
and traditional backgrounds."

Average Time: 12-15 hours (est.).

Next Revision:

(1 sample page)

MATHEMATICS-ALGEBRA

NUMBER SENTENCES

Dausch, Moskowitz, Ranucci, Seltzer, Zoll; THE MAC-MILLAN COMPANY

one sample page

SPECIAL PROPERTIES OF THE NUMBER 0

110. In the last few sections you have been dealing with properties of operations. Now you are going to take a look at special properties of certain numbers.

First we will talk about the number 0. When 0 is added to 7, the sum is —?—.

- a. 0 b. 7

b. 7

111. Look at the list below and fill in the blanks to make each of the number sentences true.

a. $6 + 0 =$ —

a. 6

b. $17 + 0 =$ —

b. 17

c. $0 + 0 =$ —

c. 0

d. $1 + 0 =$ —

d. 1

e. $a + 0 =$ —

e. a

112. When 0 is added to any number, it —?— change that number.

- a. does b. does not

b. does not

113. No matter what number a stands for, $a + 0 =$ —?—.

- a. 0 b. 1 c. a

c. a

114. You know that $a + 0 = a$. And you know that addition is commutative. Then you can say that $0 + a =$ —?—.

- a. 0 b. 1 c. a

c. a

MATHEMATICS - ALGEBRA

Jr. H.S.-Coll.

PROGRAMMED BEGINNING ALGEBRA

IRVING DROOYAN,

**WILLIAM WOOTON, both of Pierce College, Los Angeles,
California**

**Published by JOHN WILEY & SONS, Inc.,
605 Third Avenue, New York 16, N.Y.**

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Teacher's Manual available, free.

Table of Contents.

Unit and Prerequisite Test(s) available.

**Constructed Responses always used; no Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"Jr.-sr. H.S. students, first year college students,
tech. institute students, heterogeneous group of
employees in industrial training program."**

**Prerequisites: 8th grade reading level, mastery of
arithmetic (through fractions).**

Average Time: 42-97 hours (est.).

Next Revision:

(4 sample pages)

7

MATHEMATICS-ALGEBRA

PROGRAMMED BEGINNING ALGEBRA.

Drooyan, Wooton; JOHN WILEY & SONS, Inc.
4 sample, pages

272. "Find a number such that five more than the number is 9." This sentence is what is called a "word problem" or a "stated problem." It asks us to find a number that is subject to the condition that its sum with five is 9. This condition is expressed by the equation _____.

273. Solve $x + 5 = 9$.

274. Since five more than 4 is 9, 4 (is/is not) the solution of the word problem in Frame 272.

275. "If four times a certain number is increased by 1, the result is 29. What is the number?" Let x represent a number and write an equation representing the conditions on the number stated in the first sentence.

276. If the solution of $4x + 1 = 29$ is evident, write it directly. If the solution is not evident, transform the equation to an equivalent equation in which the solution is evident. The solution of $4x + 1 = 29$ is _____.

277. Does four times 7 increased by 1 equal 29?

Programmed Beginning Algebra/Unit III 43

$$x + 5 = 9$$

Any letter will do for the variable.

4

is

$$4x + 1 = 29$$

7

$$\begin{aligned} 4x + 1 &= 29 \\ 4x &= 28 \\ x &= 7. \end{aligned}$$

Yes

Remark. While the quadratic formula offers a way to find the solutions of any quadratic equation, you generally resort to it only when you cannot find solutions an easier way. For example, if possible, it is more efficient to solve such an equation by factoring or by the extraction of roots.

factoring

$x^2 - 3x - 4$ factors easily to $(x - 4)(x + 1)$.

extraction of roots

$x^2 - 8$ does not contain a linear term.

factoring

$2x^2 - 3x - 2$ factors to $(2x + 1)(x - 2)$.

formula

289. The most efficient way to solve $x^2 - 3x - 4 = 0$ would be by (circle one)

a) factoring b) extraction of roots c) formula

290. The most efficient way to solve $x^2 - 8 = 0$ would be by (circle one)

a) factoring b) extraction of roots c) formula

291. The most efficient way to solve $2x^2 - 3x - 2 = 0$ would be by (circle one)

a) factoring b) extraction of roots c) formula

292. Since the left member of $2x^2 - 3x - 6 = 0$ will not factor, the way to solve the equation would be by (circle one)

a) factoring b) extraction of roots c) formula

Programmed Beginning Algebra/Unit VIII

42

time 689. Suppose a freight train travels 120 miles in the same length of time an express train travels 180 miles, and suppose that the express travels 20 miles per hour faster than the freight; how fast must each be traveling? Since the time the trains travel is the same in each case, it seems reasonable to approach the problem by writing an equation relating the _____ each travels.

$r + 20$ 690. If r represents the rate of the freight, and if the express travels 20 miles per hour faster than the freight, the rate of the express is given in terms of r by _____.

$\frac{120}{r}$ 691. If the freight train travels 120 miles at a rate (r), the time it takes to do this can be

$t = \frac{d}{r}$ represented by the expression _____.

$\frac{180}{r + 20}$ 692. If the express train travels 180 miles at a rate ($r + 20$), the time it takes to do this can be repre-

$t = \frac{d}{r}$ sented by the expression _____.

$\frac{120}{r} =$ 693. The fact that the time traveled by the freight train and the time traveled by the express train is the same, can be expressed in terms of r by the equation _____.

40 694. The solution of $\frac{120}{r} = \frac{180}{r + 20}$ is _____.

Programmed Beginning Algebra/Unit V 106

Remark. This unit introduces a part of the vocabulary necessary for the successful study of algebra. The terms are introduced through a consideration of the numbers of arithmetic, and certain properties associated with these numbers.

set

1. Any collection of things is called a set. The letters in the English alphabet form a _____.

set

2. The collection of coins in a man's pocket is a _____.

8; 10; 12

3. Braces, $\{ \}$, are used to identify a set. Thus, $\{1, 2, 3, 4, 5\}$ is the set of numbers 1, 2, 3, 4, and 5. Similarly, $\{8, 10, 12\}$ denotes the set of numbers _____, _____, and _____.

member

4. Any one of a collection of things in a set is called a member of the set. Thus, 3 is a _____ of $\{3, 4, 5\}$.

elements

5. A member of a set is also called an element of the set. Thus, 3, 4, and 5 are the members or the _____ of $\{3, 4, 5\}$.

Programmed Beginning Algebra/Unit I 1

MATHEMATICS-ALGEBRA

Elem.-H.S.

A PROGRAM IN CONTEMPORARY ALGEBRA

- I Sets, Numbers and Language of Algebra**
 - II Equations and Inequalities in One Variable**
 - III Equations and Inequalities in Two Variables**
 - IV Polynomial Expressions Relations and Functions**
 - V Exponents, Radicals and Quadratic Equations**
- RALPH T. HEIMER, University of South Florida**
FRANK KOCHER, Pennsylvania State University
JOHN J. LOTTES, State University College, Genesee, N. Y.
Published by **HOLT, RINEHART AND WINSTON,**
383 Madison Ave., N. Y. 17, N.Y.

Programed text, 3792 frames, paperback, 728 pp., 8-1/2" x 11", available in 5 separate volumes @ \$1.20 each.

Teacher's Manual available, \$.60.

Table of Contents, Index.

Unit and Final Test(s) available.

Constructed Responses usually used, some Multiple Choice, no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"High School and College students."

Other using population(s): "Inservice and preservice training of math teachers; College students with little previous math."

Prerequisites: "The program assumes a knowledge of the arithmetic of positive integers, but no previous study of algebra is required."

Average Time: 32-1/2 hours (est.).

Next Revision: unknown

(2 sample pages)

MATHEMATICS-ALGEBRA

A PROGRAM IN CONTEMPORARY ALGEBRA

Helmer, Kocher, Lottes; HOLT, RINEHART AND WINSTON
2 sample pages

25

INTEGERS

26

Every natural number is an integer. Is every integer a natural number? _____

• • • • •

26

NO

For example, (-1) is an integer, but it is not a natural number.

27

The number 0 is an integer. Is it a natural number? _____

• • • • •

27

NO

28

The additive inverse of 7 is _____

• • • • •

28

(-7)

29

Is the additive inverse of 7 an integer? _____

• • • • •

29

YES

30

The additive inverse of (-5) is the number _____

• • • • •

30

Is the additive inverse of (-5) an integer? _____

• • • • •

30

YES

31

The number (-1) is

(a) an integer

(b) a natural number

(c) both (a) and (b)

(d) neither (a) nor (b)

• • • • •

31

AN INTEGER (a)

(-1)

• • • • •



Which is greater, (-1) or (-2) ? _____

132

0

• • • • •

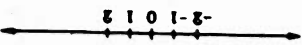


Which is greater, 0 or (-2) ? _____

131

RIGHT

• • • • •



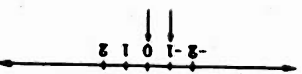
Notice that, on the number line, 0 appears to the

of (-1) .

130

0

• • • • •



Which is greater, 0 or (-1) ? _____

129

POSITIVE
NEGATIVE
either order

• • • • •

Every real number except 0, then, is either

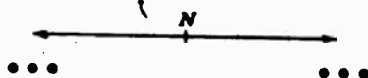
128

14

REAL; LESS

15

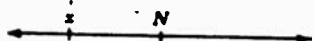
If $x > N$, then the point whose coordinate is x appears on the number line to the _____ of the point whose coordinate is N .



15

RIGHT

16



If the point whose coordinate is x appears to the left of the point whose coordinate is N , then x _____ N . ($<$ or $>$?)

16

 $x < N$

17

The word "arithmetic" is normally construed to mean the study of certain numbers under the operations of addition, subtraction, multiplication, and division.

We shall undertake a study of the arithmetic of real numbers; that is, study the real numbers under the operations of addition, subtraction, multiplication, and division.

GO TO NEXT FRAME

18

We know how to add two positive numbers. For example,

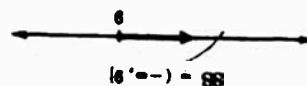
$$2 + 3 = 5 \text{ and } 1 + 7 = 8.$$

5 is said to be the sum of 2 and 3.

8 is said to be the _____ of 1 and 7.

18

SUM



$$88 = (-8, 8)$$

130



$$88 = (-8, 8)$$

$$2x \leq 18.$$

Find and graph the solution set for

130



$$88 = (-8, -2)$$

129



$$x \leq (-2).$$

Find and graph the solution set for keeping in mind the fact that this inequality is equivalent to

129

$$5 \leq 5$$

128



$$x \leq (-2).$$

$$\text{or } (-8) \cdot (-3) \cdot x \leq (-8) \cdot (-3) \cdot 6$$

Multiplying each member of the inequality by $(-8) \cdot (-3)$, we get the equivalent inequality

$$(-8) \cdot x \geq 6$$

128

MATHEMATICS-ALGEBRA

H.S. +

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TMI-Grolier programs.**

Table of Contents.

Unit and Final Test(s) included.

**Constructed Responses always used; no Multiple Choice
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"High school graduates who had studied one year of
Algebra."**

**Prerequisites: "Ability to read at 8th grade level and to
add, subtract, divide and multiply whole numbers,
fractions and decimals."**

Average Time: 30-50 hours (based entirely on data).


Next Revision: December, 1963.

(2 sample pages)

MATHEMATICS-ALGEBRA

SECONDARY MATHEMATICS SERIES.- ALGEBRA REFRESHER

Yesselman; TEACHING MATERIALS CORPORATION
2 sample pages

184	<p>If the first expression is in parentheses, it usually does not have "+" sign in front. In $(a+b) + c$, "$(a+b)$" (does/does not) have a "+" sign in front.</p>	
	does not	
187	<p>If the first expression is in parentheses, it has a "+" sign in front. In $(a+b) + c$, the parentheses (can/cannot) be removed.</p>	
	can	
188	<p>- $(a+b)$ means the same thing as $-1(a+b)$. By the distributive law $-1(a+b) = -1a - 1b = -a - b$ - $(a-b)$ means the same thing as $-1(a-b)$. By the distributive law $-1(a-b) = -1a - 1(-b) = -a + b$</p>	
	-a + b	
189	<p>By the distributive law: To remove parentheses with "-" sign in front, change all "+" signs inside to "-". $a - (b+c) = a - b - c$ Also: $x - (y+z) = \dots$</p>	
	x - y - z	
190	<p>$r - (x+s) = \dots$ (Remove parentheses) $r + (x+s) = \dots$ (Remove parentheses) $(r-x) + s = \dots$ (Remove parentheses)</p>	
	r - x - s r + x + s r - x + s	
	<p>2-30</p>	

6

$x = y - 2$
 If $y = -3$, $x = -5$
 If $y = -1$, $x = -3$
 If $y = 0$, $x = -2$
 If $y = 1$, $x = -1$

1
2
3

7

Make a table for the equation. $x = 2y$.

If $y = -1$, $x = -2$

Fill in the table.

x	y
-2	-1
0	0
2	1
4	2

x	y
-2	-1
0	0
2	1
4	2

8

$y = \frac{x}{2} - 4$

If $x = -2$, $y = \frac{-2}{2} - 4 = -1 - 4 = -5$

Fill in the table.

x	y
-2	-5
0	-4
2	-3
4	-2

x	y
-2	-5
0	-4
2	-3
4	-2

9

$x = \frac{3y}{2} - 2$

If $y = -1$, $x = \frac{3(-1)}{2} - 2 = -\frac{3}{2} - 2 = -\frac{3}{2} - \frac{4}{2} = -\frac{7}{2} = -3\frac{1}{2}$

Fill in the table.

x	y
$-3\frac{1}{2}$	-1
-2	0
-1	1
1	2

x	y
$-3\frac{1}{2}$	-1
-2	0
-1	1
1	2

10

Plot and connect in order.

x	y
-1	$-3\frac{1}{2}$
0	-2
1	-1
2	1

9-2

MATHEMATICS-ALGEBRA

Jr. H.S.+

SECONDARY MATHEMATICS SERIES: FUNDAMENTALS OF ALGEBRA

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frames; paperbacks; Part I, 462 pp.; Part II, 927 pp.;
8-1/2" x 11"; Part I, bound in 2 separate volumes,
\$11.00; Part II, bound in 4 separate volumes, \$16.00.

For use in MIN/MAX II machines, \$25.00; programs
reusable, Part I: \$10.00, Part II, \$15.00.

Teacher's Manual: General Manual for all TMI-Grolier
programs available

Unit Test(s) included (Part I) Final Test included
(Part I & Part II).

Table of Contents.

Constructed Responses always used; no Multiple
Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Part I: "Eighth graders having no prior Algebra
background - average age 13 years 6 months."

Part II: "Eighth grade students who have completed
FUNDAMENTALS OF ALGEBRA, Part I - average
age 13.5"

Other using population(s): "Brush up for those having had
beginning Algebra."

Prerequisites: "Ability to read at 8th-grade level and to
add, subtract, divide and multiply whole numbers,
fractions, and decimals."

Average Time: Part I: 15-25 hours (based entirely on
data); standard deviation, 7.07 hours. Part II: 30-50
hours (based entirely on data); standard deviation,
29.0 hours.

Next Revision: Part I: April, 1963. Part II: March, 1963.
(6 sample pages)

MATHEMATICS-ALGEBRA

SECONDARY MATHEMATICS SERIES: FUNDAMENTALS OF ALGEBRA

Evans, Yesselman; TEACHING MATERIALS CORPORATION

6 sample pages

51	Do additions inside the parentheses first. $7 + (5 + 1) = 7 + (6)$ $12 + (3 + 9) = \dots + \dots$ (Follow the pattern of the example.)
	$12 + (12)$
52	After addition gives a single number, parentheses can be removed. $5 + (6 + 7) = 5 + (13) = 5 + 13$ $4 + (5 + 10) = \dots + \dots$
	$4 + (15) = 4 + 15$
53	You can do two steps before writing your answer if you are careful. $3 + (5 + 4) = 3 + 9$ (adding and removing parentheses). $14 + (2 + 1) = \dots$
	$14 + 3$
54	After removing the parentheses, add $1 + (2 + 3) = 1 + 5 = 6$ $4 + (6 + 2) = \dots + \dots$
	$4 + 8 = 12$
55	In $(3 + 6) + 9$, the _____ show that 3 and 6 are added first.
	parentheses

4-11

16	In $17r$, r is the coefficient of 17. In $36c$, c is the coefficient of 36.
36	
17	If a product has a single arithmetic number for a factor, that number is called a NUMERICAL COEFFICIENT of the other factors. In $3r$, 3 is the _____ of r . The numerical coefficient of $70x$ is ...
numerical coefficient	70
18	A numerical coefficient can be a fraction. In $\frac{1}{2}x$, the numerical coefficient is $\frac{1}{2}$. What is the numerical coefficient in $\frac{3}{4}x$? ...
$\frac{1}{2}$	
19	In $\frac{3}{4}x$, $\frac{3}{4}$ is the _____
numerical coefficient	
20	$\frac{1}{2}x$ can be written $\frac{1}{2} \cdot x$ or $\frac{x}{2}$. Similarly, $\frac{3}{4}$ can be written $\frac{3}{4}x$. Write $\frac{3}{4}$ with a fractional coefficient. ...
$\frac{1}{2}x$	

51	<p>You are going to learn an easy way to take square roots, using the Table of Approximate Square Roots.</p> <p>Table I shows the square _____ of numbers from 1 to 1000. (Ask your instructor for table I.)</p>	
	roots	
52	<p>In table I, some columns are labeled "N." Other columns are labeled "\sqrt{N}." If you find a number in a column labeled "N," you can guess that the square root of that number is next to it in a column labeled "...".</p>	
	\sqrt{N}	
53	<p>Look on the first page of table I.</p> <p>When N is 1, \sqrt{N} is 1.000.</p> <p>When N is 2, \sqrt{N} is 1.414.</p> <p>When N is 3, \sqrt{N} is</p>	
	1.732	
54	<p>$\sqrt{4} = 2.000$</p> <p>$\sqrt{8} = \dots$</p>	
	2.400	
55	<p>$\sqrt{49} = \dots$</p> <p>$\sqrt{100} = \dots$</p>	
	TEST	

3-11

U. S. G. O.

346	$\sqrt{\frac{16}{9x^2}} \cdot \frac{\sqrt{16}}{\sqrt{9x^2}} \cdot \frac{1}{3x} \quad \sqrt{\frac{25y^2}{36x^2}} \cdot \frac{\sqrt{25y^2}}{\sqrt{36x^2}} \dots$
347	$\frac{\sqrt{64}}{\sqrt{4}} \cdot \frac{1}{2} = 4 \quad \sqrt{\frac{64}{4}} \cdot \sqrt{16} = 4$ In other words, $\frac{\sqrt{64}}{\sqrt{4}} = \sqrt{\frac{64}{4}}$
	$\sqrt{\frac{64}{4}} \quad \sqrt{\quad}$
348	If the expression under the square root sign is a perfect square, you may leave off the square root sign only <u>after</u> taking the square root of the expression. $4x^2$ is a perfect square, so you can express $\sqrt{4x^2}$ as $2x$. You <u>cannot</u> express $\sqrt{4x^2}$ as just $4x^2$. Express $\sqrt{16y^2}$ without the square root sign. ...
349	If the expression under the square root sign is a perfect square, and you write its square root, you do <u>not</u> use the square root sign. $\sqrt{9} = 3$; it is <u>not</u> $= \sqrt{3}$. $\sqrt{25} = \dots$
350	$\sqrt{16x^2} = (\sqrt{4x}/4 \sqrt{x}/\text{None of these})$
	3-99

96	In some fractions it may be necessary to factor before we can cancel.	
	$\frac{2a+2b}{3} \cdot \frac{3(a+b)}{3} = \frac{2(a+b)}{1} = 2(a+b)$ (removing a common monomial factor)	$\frac{2c+2d}{c+d} = \frac{2(c+d)}{c+d} = 2$ (factoring, cancelling, and reducing)
	$\frac{2c+2d}{c+d} \cdot \frac{3(a+b)}{3(a+b)} = 2$	
97	Factor this fraction and reduce to lowest terms.	
	$\frac{2x^2+2x}{2x} = \dots$	
	Did you factor first?	
	$\frac{2(2x+1)}{2x} = \frac{2x+1}{x}$	
98	Factor and reduce: $\frac{7b+7a}{ca+cb} = \dots$	
	$\frac{7(b+a)}{c(a+b)} = \frac{7}{c}$	
99	Factor and reduce: $\frac{2ax+2ay}{(x+y)} = \dots$	
	$\frac{2a(x+y)}{(x+y)} = 2a$	
100	Factor and reduce if possible.	
	A. $\frac{2a-12b}{18as} = \dots$ B. $\frac{4b+8c}{9bc} = \dots$	
	A. $\frac{2(a-6b)}{18as} = \frac{a-6b}{9as}$	B. $\frac{4(b+2c)}{9bc}$

536	<p>The L.C.D. of $\frac{3}{7 \cdot 6r^2} + \frac{5}{7 \cdot 2rs}$ is $7 \cdot 3 \cdot 2 \cdot r^2 \cdot s$. The denominator of $\frac{3}{7 \cdot 5 \cdot r^2}$ does not have the factors 3 and s which are found in the L.C.D. The denominator of $\frac{5}{7 \cdot 2 \cdot r \cdot s}$ does not have the factors r^2 and \dots which are found in the L.C.D.</p>	
537	<p>The L.C.D. of $\frac{1}{2 \cdot 5} + \frac{1}{5 \cdot 3}$ is $2 \cdot 3 \cdot 5$. We must multiply the numerator and denominator of $\frac{1}{2 \cdot 5}$ by 3, the missing factor, to get a like fraction: $\frac{1 \cdot 3}{2 \cdot 5 \cdot 3} = \frac{3}{2 \cdot 5 \cdot 3}$ $\frac{1 \cdot \dots}{5 \cdot 3 \cdot \dots} = \frac{2}{5 \cdot 3 \cdot 2}$</p> <p>What factor of the L.C.D. was missing in the denominator of $\frac{1}{5 \cdot 3}$?</p> <p>$\frac{1 \cdot 2}{5 \cdot 3 \cdot 2} = \frac{2}{5 \cdot 3 \cdot 2}$</p>	
538	<p>The L.C.D. of $\frac{1}{7 \cdot 3^2 \cdot y} + \frac{1}{2 \cdot x^2}$ is $7 \cdot 3^2 \cdot 2 \cdot x^2 \cdot y$.</p> <p>$\frac{1 \cdot 2x^2}{7 \cdot 3^2 \cdot y \cdot 2x^2} = \frac{2x^2}{7 \cdot 3^2 \cdot 2 \cdot x^2 \cdot y}$ $\frac{1 \cdot \dots}{2x^2 \cdot \dots} = \frac{7 \cdot 3^2 \cdot y}{7 \cdot 3^2 \cdot 2 \cdot x^2 \cdot y}$</p> <p>(missing factors) (missing factors)</p> <p>$\frac{1 \cdot 7 \cdot 3^2 \cdot y}{2x^2 \cdot 7 \cdot 3^2 \cdot y} + \frac{7 \cdot 3^2 \cdot y}{7 \cdot 3^2 \cdot 2 \cdot x^2 \cdot y}$</p>	
539	<p>$\frac{3}{a^2bc^2} + \frac{4}{a^2bc^2}$ L.C.D. = a^2bc^2</p> <p>$\frac{3 \cdot a}{a^2bc^2 \cdot a} = \frac{3a}{a^3bc^2}$ $\frac{4}{a^2bc^2} = \frac{4}{a^2bc^2}$</p> <p>(missing factor(a))</p> <p>$\frac{4 \cdot c}{a^2bc^2 \cdot c} = \frac{4c}{a^2bc^3}$</p>	
540	<p>What method would you use to add $\frac{2}{3y}$ and $\frac{4}{10y}$? _____</p>	
<p>L.C.D. _____</p>		

MATHEMATICS - ALGEBRA

Jr. H.S.

SIMULTANEOUS EQUATIONS

**K. AUSTWICK, Research Unit, Education Department,
Sheffield University, U.K.**

Published by METHUEN & CO., LIMITED

36 Essex Street, Strand, London. W.C. 2., U.K.

**Programed text, 140 frames, soft cover, 40 pp.,
6 1/2" x 8", \$1.50 (approximately).**

Table of Contents.

Final Test available.

**Constructed Responses always used; no Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Average and above average ability 7-8 grade.

**Prerequisites: "Facilities with negative quantities and
signs."**

Average Time: 4 hours (est.).

Next Revision:

(1 sample page)

MATHEMATICS - ALGEBRA

SIMULTANEOUS EQUATIONS

Austwick; METHUEN & CO., LIMITED

one sample page:

7	$3x + 11y = 32$ (1) $3x + 4y = 18$ (2) Find x and y Subtract means 'Change the signs on the and'	1
8	$3x + 11y = 32$ $3x + 4y = 18$ $- 7y = 14$ $y = -2$ Answer: $x = 6, y = -2$	2
9	$3x + 11y = 32$ (1) But $y = -2$ $3x + 4(-2) = 18$ $3x - 8 = 18$ $3x = 26$ $x = 8\frac{2}{3}$ Answer: $x = 8\frac{2}{3}, y = -2$	3
10	Next problem: $4x + 7y = 29$ (1) $4x + 5y = 23$ (2) Subtract (2) from (1) i.e. 'Change the signs on the bottom line and add.' $4x + 7y = 29$ $4x + 5y = 23$ $- 2y = 6$ $y = -3$ Answer: $x = 8, y = -3$	4
11	$3x + 5y = 21$ (1) $3x + 2y = 12$ (2) Subtract to get rid of the x i.e. 'Change the signs on the bottom line and add.' $3x + 5y = 21$ $3x + 2y = 12$ $- 3y = 9$ $y = -3$ Answer: $x = 6, y = -3$	5

7	SECTION B 1 There is one more step in setting out these equations. So far, the subtractions at the beginning have been easy because all the signs in the equations were plus. This does not always happen, but from earlier algebra we have a rule for subtracting. 'Change the sign on the bottom line and add', like this: $3x - 4y = 17$ $2x - y = -2$ Minus $2x - y = -2$ Answer $x - 3y = 19$	1
8	Similarly $5x + 3y = 17$ minus $x + y = 5$ $4x + 2y = 12$ Answer: $x = 1, y = 2$	2
9	$4x - 7y = 17$ minus $x + y = 5$ $3x - 8y = 12$ Answer: $x = 1, y = 2$	3
10	$3x + 7y = 17$ (1) $3x + y = 5$ (2) Subtract (2) from (1) to get rid of the x $6y = 12$ $y = 2$ Answer: $x = 1, y = 2$	4
11	Let us work through the example in A31 again, so that we can compare the results: $3x + 7y = 17$ (1) $3x + y = 5$ (2) Subtract (2) from (1) to get rid of the x $6y = 12$ $y = 2$ Answer: $x = 1, y = 2$	5

MATHEMATICS - ALGEBRA

Jr. H.S.-H.S.

SOLVING ARITHMETIC WORD PROBLEMS

Be a Problem Analyst

DIANE CUMMINGS, Programmer

**Published by HONOR PRODUCTS COMPANY,
20 Moulton Street, Cambridge, Mass.**

**For use in HONOR TEACHING MACHINE, \$20 (approx.)
including 3 programs; program reusable, 200 frames,
\$2.00-\$2.50.**

**Constructed Responses sometimes used; some Multiple
Choice; some Branching.**

**DEVELOPMENTAL (FIELD TEST) POPULATION(S):
"Public and private schools."**

Prerequisites:

Average Time: 1 1/2-2 hours (est.).

Next Revision:

(1 sample page)

MATHEMATICS - ALGEBRA

SOLVING ARITHMETIC WORD PROBLEMS Cummings; HONOR PRODUCTS COMPANY one sample page:

The first step in analyzing every problem is taking out the DATA. The data is the information in the problem.

data

Study the problem below:

In the first four years of the space age, several satellites were placed in orbit. First, 2 satellites were successful. Later, 8 satellites; then, 11 satellites; and, finally, 18 satellites were successful. After four years, how many satellites were placed in orbit?

The underlined words give you the information, or _____.

Study the problem below:

26,000,000 miles

It is about 36,000,000 miles from the sun to Mercury and about 31,000,000 miles from Mercury to Venus. It is only 26,000,000 miles from Venus to earth.

What is the sum of these distances?

All the data items are underlined except _____.

Here is the problem with all the data underlined:

data
(Finding the data in the problem is Step I.)

It is about 36,000,000 miles from the sun to Mercury and about 31,000,000 miles from Mercury to Venus. It is only 26,000,000 miles from Venus to earth. What is the sum of these distances?

Now do Step I in the analysis; that is, find the _____ in the problem.

Here is the data record of the problem in the previous frame:

found in

36,000,000 miles
31,000,000 miles
26,000,000 miles

The data record is all the data _____ the problem and, then, recorded.

MATHEMATICS - ALGEBRA

Coll.

VECTOR ALGEBRA

R. K. MOORE, Programmer

HENRY C. ELLIS, Programmer

HOWARD LINDBERG, Programmer

AMARYLLIS D. HUNT, Editor

**Published by GENERAL PROGRAMMED TEACHING
CORPORATION, 1719 Girard, N. E., Albuquerque,
New Mexico**

**Programed text, 353 frames, paperback, 71 pp., 8-1/2" x
11", \$1.75.**

Table of Contents.

Final test available.

**Constructed Responses always used; some Branching ("A
linear supplement in determinants is supplied and is
a type of branching known as branching-within-linear
programing, as distinct from Crowderian branching);
no Multiple Choice Responses.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"Engineering college students at the University of
New Mexico."**

Prerequisites:

Additional material required: "Slide rule may be useful."

Average Time: 5 hours (based entirely on data).

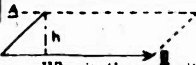
Next Revision: 1968.

(1 sample page)

MATHEMATICS - ALGEBRA

VECTOR ALGEBRA

Moore, Ellis, Lindberg, Hunt; GENERAL PROGRAMMED
TEACHING CORPORATION
one sample page:

267	 <p>The area of the parallelogram is given by the formula $A \cdot b \sin \theta$.</p> <p>Why is the magnitude of the cross product $\underline{A} \times \underline{B}$ equal to the area of the parallelogram formed by \underline{A} and \underline{B}?</p> <p>Because $\underline{A} \times \underline{B} = \underline{A} \underline{B} \sin \theta_{AB}$ $\underline{A} \sin \theta_{AB} = h$ and $\underline{B} = b$ $\therefore \underline{A} \times \underline{B} = bh$</p>
268	<p>$\underline{R} = 3\underline{a}_x - 4\underline{a}_y + 14\underline{a}_z$</p> <p>The component of \underline{R} in the direction of the vector $6\underline{a}_x + 8\underline{a}_y + 24\underline{a}_z$ is () .</p> <p>+11</p>
269	<p>$\underline{F} = 3\underline{a}_x - \underline{a}_y + \underline{a}_z$ newtons $\underline{R}(7, 1, -3)$ $\underline{S}(-2, -4, 5)$ (meters)</p> <p>1. Find the work done by \underline{F} in moving an object from \underline{R} to \underline{S}.</p> <p>2. Find the moment of force about \underline{S} if \underline{F} is applied at \underline{R}.</p> <p>1. -24 newton-meters 2. -24 newton-meters</p>
270	<p>Find the area of a parallelogram whose sides are the vectors $\underline{A} = 4\underline{a}_x + 6\underline{a}_y - 3\underline{a}_z$; $\underline{B} = -4\underline{a}_x - 3\underline{a}_y + 2\underline{a}_z$</p> <p>(Find the vector $\underline{A} \times \underline{B}$ and then determine its magnitude.)</p> <p>$\underline{A} \times \underline{B} = 24\underline{a}_x + 24\underline{a}_y + 24\underline{a}_z$ $\underline{A} \times \underline{B} = 24\sqrt{3}$</p>
271	<p>$\underline{T} = 4\underline{a}_x + 4\underline{a}_y + 4\underline{a}_z$; $\underline{W} = \underline{a}_x - \underline{a}_y + \underline{a}_z$</p> <p>1. $\underline{T} \cdot \underline{W} = ()$</p> <p>2. $\underline{T} \times \underline{W} = ()$</p> <p>1. $8\underline{a}_x + 8\underline{a}_y + 8\underline{a}_z$ 2. $8\underline{a}_x - 8\underline{a}_y - 8\underline{a}_z$</p>

APPLIED MATHEMATICS

Jr. H.S.-Coll.

THE ARITHMETIC OF COMPUTERS

NORMAN A. CROWDER, Vice President and Technical
Director, U.S.I. Educational Science Division.

Published by: **DOUBLEDAY & COMPANY, INC.**,
575 Madison Avenue, N.Y.C.

British edition—**THE ENGLISH UNIVERSITIES PRESS
LIMITED.**

Programed text, 448 frames, hard cover, 469 pp.,
8 1/4" x 5 3/8", \$4.95.

(A similar program, **INTRODUCTION TO COMPUTER
MATHEMATICS**, is available in TM format from:
**EDUCATIONAL SCIENCE DIVISION, U.S. IN-
DUSTRIES, INC.**,
250 Park Avenue, N.Y.C.

For use in **AUTOTUTOR MARK II**, \$1,250; program
reusable, \$100.00.)

Table of Contents, both programs; Index, programed text.
Unit Test(s) included.

Multiple Choice Responses and Branching always used;
no Constructed Responses.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

Average Time: 10-12 hours for text, 8-20 hours machine
version. (est.)

Next Revision: "None scheduled."

(1 sample page)

APPLIED MATHEMATICS

THE ARITHMETIC OF COMPUTERS
Crowder; DOUBLEDAY & COMPANY, INC.
one sample page

Sample from The Arithmetic of Computers

29
(from page 10)

YOUR ANSWER: $3^4 = 3 \times 3 \times 3 \times 3 = 81$.

You are correct. The symbol 3^4 means "the product formed by using 3 as a factor four times."

You can form an entire series of products by using a particular number as a factor twice, three times, four times, etc. These products are called the powers of the number. Thus:

$2 \times 2 = 2^2 = 4$, which is the 2nd power of 2,

$2 \times 2 \times 2 = 2^3 = 8$, which is the 3rd power of 2,

$2 \times 2 \times 2 \times 2 = 2^4 = 16$, which is the 4th power of 2,
and so on.

2^2 can also be called "2 raised to the 2nd power," 2^3 can also be called "2 raised to the 3rd power," and so on.

The 2nd power of 3, that is, 3 raised to the 2nd power, would be the number formed by using 3 as a factor twice.

What would 5 raised to the 2nd power be?

The 2nd power of 5 = $5 \times 5 = 25$. page 12

The 2nd power of 5 = $5^2 = 5 \times 5 = 25$. page 24

The 2nd power of 5 = $2^5 = 2 \times 2 \times 2 \times 2 \times 2 = 32$. page 32

APPLIED MATHEMATICS

Tech. Ed.

ARITHMETIC FOR NURSES

MARILYN FERSTER, R.N.

**Published by SPRINGER PUBLISHING COMPANY, Inc.,
44 East 23rd Street, New York 10, N.Y.**

**Programed text, 667 frames, paperback, 112 pp.,
6 3/4" x 10", \$2.50.**

Table of Contents.

**Constructed Responses always used; no Multiple Choice;
no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"60 nursing students in Pittsburgh, Pa. area hospitals."

Prerequisites:

Average Time: 15 hours (est.).

Next Revision: "Not now planned."

(1 sample page)

APPLIED MATHEMATICS

ARITHMETIC FOR NURSES

Ferster; SPRINGER PUBLISHING COMPANY, Inc.
one sample page:

F. Multiplication of decimal numbers is even simpler when one of the factors is 10 or any multiple of 10, because then you can use a short cut.

Rule:

Move the decimal point in one factor one place to the right for every 0 in the 10 (or multiple-of-10) factor.

Example: Multiply 25.3 by 1000.

<u>short cut</u>		<u>regular method</u>
$25.3 \times 1000 = 25300$	← compare →	25.3
3 zeroes		$\begin{array}{r} 1000 \\ \hline 25300.0 \end{array}$

In the short-cut method, you have to move the decimal point in 25.3 3 places to the right because 1000 has 3 zeroes. In order to do this, 2 zeroes are added to the right of 3. Look at the results using either method. Are they the same?

F.1. Multiply 0.0939 by 100.

$$0.0939 \times 100 = \boxed{}$$

2 zeroes

Because one of the factors, 100, is a multiple of 10, you can use the short cut to multiply. Move the decimal point in 0.0939, 2 places to the right since 100 has 2 zeroes. Put the product in the double-line box.

F.2. For practice, use the short cut to multiply these factors.

(a) $5.63 \times 1000 = \boxed{}$	(b) $42.09 \times 100 = \boxed{}$
(c) $0.0009 \times 100 = \boxed{}$	(d) $0.50 \times 10,000 = \boxed{}$

ANSWERS:

F. Yes

F.1. 9.39

F.2. (a) 5630, (b) 4209, (c) 0.09, (d) 5000

APPLIED MATHEMATICS

H.S. - Adult

BASIC COMPUTER PROGRAMMING

THEODORE G. SCOTT, U.S.I. Educational Science Division

Published by DOUBLEDAY & COMPANY, Inc.

575 Madison Avenue, New York, New York

**Programed text, 457 frames, hard cover, 490 pp.,
8-1/4" x 5-3/8", \$5.95.**

**A similar program, COMPUTERS, A Four-Part Course in
Programming, is available in TM format from
EDUCATIONAL SCIENCE DIVISION, U.S. INDUSTRIES,
Inc., 250 Park Avenue, New York, New York.**

**For use in AUTOTUTOR MARK II, \$1,250; program reus-
able, available in 4 separate parts @ \$100 each; com-
bination I-IV, \$375.00.**

**Table of Contents, both programs; Index, programed text.
Unit Test(s) included, both programs; Final Test included
machine program.**

**Multiple Choice Responses, and Branching always used;
no Constructed Responses.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

**"High school graduates in business education; adult
education courses."**

Prerequisites: High school education.

Additional Equipment: Pencil, paper, machine program.

**Average Time: 12-14 hours (est.) programed text; 24-40
hours, machine.**

Next Revision:

(1 sample page)

457

APPLIED MATHEMATICS

BASIC COMPUTER PROGRAMMING
Scott; DOUBLEDAY & COMPANY, Inc.
one sample page:

Sample from Basic Computer Programming

(from page 18)⁶

YOUR ANSWER: The number -365 would appear in a memory cell as
1 000000365.

Right. The decimal point is located at the extreme right of each cell. Thus, all whole numbers must be located in the right-hand positions. The sign digit (here 1, since -365 is a negative number) is located in the left-hand position of a cell.

Now let's have some practice coding numbers:

Here are three groups of numbers. Each number is followed by the corresponding TUTAC word. One number in one of these three groups is coded incorrectly. Which group contains the error?

921,165	0	0000921165	This group contains an error.	page 9
50,000	0	0000050000		
-8,622,508	1	0008622508		
1,010,101,010	0	1010101010	This group contains an error.	page 17
-182,002	1	0000182002		
-60	1	0000000060		
1,000,000,009	1	0000000009	This group contains an error.	page 20
3	0	0000000003		
-9,825	1	0000009825		

APPLIED MATHEMATICS

Tech. Ed.

**MATHEMATICAL BASES FOR MANAGEMENT DECISION
MAKING - Unit I**

Matrices and Mathematical Programming.

ALBERT G. HOLZMAN, Dept. of Industrial Engineering,
University of Pittsburgh

ROBERT GLASER, Dept. of Psychology, University of
Pittsburgh

HALMUTH H. SCHAEFER, Institute of Behavioral Research,
University of Maryland.

Published by: ENCYCLOPAEDIA BRITANNICA PRESS,
425 N. Michigan Ave., Chicago 11, Ill.

Programed text, 4,054 frames, paperback, 8 1/2" x 11 1/2",
\$18.75. Bound in 3 separate units.

For use in TEMAC BINDER, \$1.25; program reusable,
\$17.50.

Teacher's Manual included.

Table of Contents.

Unit Test(s) included with program.

Constructed Responses always used; no Multiple Choice
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Industrial samplings; Westinghouse; Proctor &
Gamble; Officers Section of Wright Patterson Center,
Dayton, Ohio; Undergraduate students in engineering,
University of Pittsburgh."

Other using population(s); "Mathematics courses on the
College level."

Prerequisites: None.

Average Time: "35 classroom hours for average college
level student" (est.).

No Revision.

(1 sample page)

APPLIED MATHEMATICS

MATHEMATICAL BASES FOR MANAGEMENT DECISION MAKING

Holzman, Glaser, Schaefer; ENCYCLOPAEDIA BRITANNICA PRESS

one sample page:

338. Expressed in summation symbolism, the shipping cost to D_1 is

$$a_{11}c_{11} + a_{21}c_{21} + a_{31}c_{31} + \dots + a_{n1}c_{n1}$$

Or simply $a_{11}c_{11} + a_{21}c_{21} + a_{31}c_{31} + \dots + a_{n1}c_{n1}$

Similarly, the shipping cost to D_2 is

$$a_{12}c_{12} + a_{22}c_{22} + a_{32}c_{32} + \dots + a_{n2}c_{n2}$$

339. The shipping cost to D_2 is

340. Since we have four destinations, the total shipping cost is

$$a_{11}c_{11} + a_{21}c_{21} + a_{31}c_{31} + a_{41}c_{41} + a_{12}c_{12} + a_{22}c_{22} + a_{32}c_{32} + a_{42}c_{42} + a_{13}c_{13} + a_{23}c_{23} + a_{33}c_{33} + a_{43}c_{43} + a_{14}c_{14} + a_{24}c_{24} + a_{34}c_{34} + a_{44}c_{44}$$

We can more conveniently express this as the double sum

$$\sum_{i=1}^n \sum_{j=1}^4 a_{ij}c_{ij}$$

341. The total cost for this assignment is then

Since many of the terms have a zero assignment, the cost is simply

$$a_{11}c_{11} + a_{21}c_{21} + a_{31}c_{31} + a_{41}c_{41} + a_{12}c_{12} + a_{22}c_{22} + a_{32}c_{32} + a_{42}c_{42}$$

$$70 \cdot 3 + 110 \cdot 5 + 100 \cdot 2 + 90 \cdot 16 = \$3580$$

$$100 \cdot 2 + 110 \cdot 8 + 50 \cdot 6 + 90 \cdot 16 = \$3580$$

342. The solution obtained by selecting the minimum cost elements for shipping assignments (as we have done in this problem) usually gives an answer which is close to an optimum (best) solution. More sophisticated methods, such as linear programming, are needed to guarantee the solution to be a best or optimum solution.

343. In the transportation problem we have just solved,

\$3580 is not the minimum cost solution.

Therefore, we say that this is not the

solution

optimum

optimum, or best

THE MATHEMATICAL LANGUAGE OF SCIENCE

The Measurement of Space, Time and Matter

MARSHALL ARKY, et al., Roto-Vue

Published by MODEL PUBLISHING Company,
1606 Hodiament Street, St. Louis, Missouri

Programed text, 1069 frames, paperback, 100 pp., 7"x
10 1/2", available in 4 separate units at \$2.25 each.
For use in HONOR SYSTEMS machine, \$20.00; program
reusable, \$10.00.

Teacher's Manual included.

Table of Contents.

Diagnostic Test(s) included.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Small groups of selected students for development.

Field tested on two high school geometry classes and
seven Junior High School science classes, and two
large suburban school districts. Subsequent tests in
large urban High School."

Prerequisites: Knowledge of decimal fractions.

Average Time: 10 hours (est.).

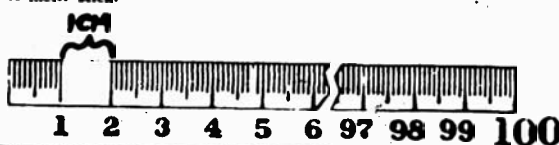
Next Revision: March, 1963.

(1 sample page)

APPLIED MATHEMATICS

THE MATHEMATICAL LANGUAGE OF SCIENCE Arky; MODEL PUBLISHING Company one sample page:

46. The meter is divided into smaller units just as the yard is divided into smaller units. One yard can be divided into three equal smaller units, each of which is called a foot. One meter is divided into 100 equal smaller units, each of which is called a *centimeter*. A meter can be divided into 100 smaller units each of which is called a
A meter stick:



centimeter

47. A centimeter is one-hundredth part of a meter. It takes one hundred centimeters to make a meter, just as it takes three feet to make a yard.
One meter is made up of one hundred

centimeters

48. One hundred centimeters make a meter. This is similar to the system we use with money: one hundred cents make a dollar.
100 centimeters = 1

meter

49. 100 centimeters equal 1 meter as 3 feet equal 1 yard. 200 centimeters equal 2 meters as 6 feet equal 2 yards. It takes 9 feet to make 3 yards.
The number of centimeters it takes to make 3 meters is

300

50. 5 meters equals centimeters.

500

51. 700 centimeters equal meters.

7

52. A centimeter can be divided into 10 millimeters, just as a foot can be divided into 12 inches.
One centimeter millimeters.

10

53. A centimeter can be divided into 10 millimeters. A cent, or a penny, can be divided into 10 mills (these are used mostly for tax purposes).
1 centimeter = 10

millimeters

54. The line below is actually 1 centimeter long. Each of the 10 spaces into which it has been divided is 1 millimeter:

..... a dime is 1 millimeter thick



1 centimeter can be divided into 10 equal spaces. Each of these spaces is called a

millimeter

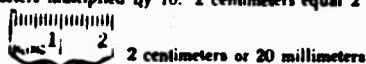
55. It takes 10 millimeters to make 1 centimeter. It takes 12 inches to make 1 foot, or 10 mills to make 1 cent. 10 millimeters centimeter

one

56. 10 millimeters = 1

centimeter

57. The number of millimeters in any number of centimeters equals the number of centimeters multiplied by 10. 2 centimeters equal 2 x 10, or 20 millimeters:



9 centimeters = 9 x 10, or millimeters.



90

APPLIED MATHEMATICS

H.S.

MEASUREMENT IN THE METRIC SYSTEM

NED HATTON, Programmer

**SHIRLEY B. BITTERLICH, Editor, General Programmed
Teaching Corporation**

**Published by ENCYCLOPAEDIA BRITANNICA PRESS,
425 N. Michigan Avenue, Chicago 11, Illinois**

**Programed text, 1500 frames, paperback, 300 pp.,
8-1/2" x 11", \$ _____**

**Teacher's Manual: "Instructions to teacher included in
preface."**

Table of Contents.

Final test available.

**Constructed Responses usually used; some Multiple
Choice; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"8th-9th grade science students in Albuquerque;

Similar students employed in field testing."

Prerequisites:

Average Time: 15 hours (est.).

Next Revision: 1968

(1 sample page)

APPLIED MATHEMATICS

MEASUREMENT IN THE METRIC SYSTEM

Hatton, Bitterlich; ENCYCLOPAEDIA BRITANNICA
PRESS

one sample page:

186	A number with a unit describes a definite magnitude of a physical quantity. Which expression does not do this?	
	one ounce	3 yards
	4 seconds	meters
187	Circle the part of the expression which indicates <u>what kind</u> of standard amount is being used to describe the physical quantity.	
		9 gm
188	Which expression does not indicate a definite magnitude of a physical quantity.	
	7 min	two thumbs
	five hours	3 km
189	Circle the part of the expression which indicates <u>how many</u> standard amounts are necessary to describe the physical quantities.	
		eight millimeters
190	The <u>(1)</u> in the description of a physical quantity tells "how many" and the <u>(2)</u> tells "of what kind."	
	(1) number	unit
	(2) number	unit

APPLIED MATHEMATICS

H.S.-Coll.

NUMBERS AND UNITS FOR SCIENCE

FRANK E. HARRIS, Dept. of Chemistry, Stanford University;
in conjunction with Behavioral Research Laboratories,
Palo Alto, California.

Published by **ADDISON-WESLEY** Publishing Co., Reading
Mass.

Programed text, 1000 frames; paperback, 250 pp. 8 1/2" x
11", \$3.75 (approx.).

Teacher's Manual available, \$7.00.

Table of Contents.

Unit, Final, Diagnostic Test(s) available. More than one
equivalent form of Unit Test available.

Constructed Responses usually used; some Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S): "High
school students with an I.Q. range of 95-145."

Prerequisites: None

Average Time: 15 hours (est.)

Next Revision:

(1 sample page)

APPLIED MATHEMATICS

NUMBERS AND UNITS FOR SCIENCE

Harris; ADDISON-WESLEY

one sample page:

CHEMISTRY SECTION X TEMPERATURE

57. If we speed up the random motion of the molecules of an object we increase its _____ temperature
58. The temperature of an object doesn't tell us how many molecules the object has. It only tells us how _____ they are going. fast
59. If two glasses of water are at the same temperature the average speeds of the molecules in both glasses are _____. equal
60. If the molecules of one object cannot change the average speed of the molecules of another object by collisions the two objects are at the same _____. temperature
61. If the molecules of an object are moving very slowly, its temperature is very _____. low or cold
62. There is no way of completely stopping the molecules of an object from moving at all. But if we could do this we would have made the lowest possible _____. temperature
63. We call the lowest possible temperature the absolute zero of temperature. The absolute zero is the temperature at which the molecules do not _____ randomly at all. move
64. Because molecules are always moving randomly no matter what we do, we cannot cool off an object until it reaches the temperature of absolute _____. zero

APPLIED MATHEMATICS

Jr. H.S.

NUMERATION SYSTEMS AND SCIENTIFIC NOTATION

MILDRED REIGH, Mathematics Dept.

J. WILLIAM MOORE, Education Dept.

WENDELL SMITH, Psychology Dept., all of Bucknell University.

**Published by MCGRAW-HILL BOOK COMPANY, Inc.,
330 West 42nd Street, New York City.**

Programed text, 1000 frames, \$ ____.

Teacher's Manual available.

Table of Contents.

Unit and Final Test(s) available.

**Constructed Responses always used; some Branching;
no Multiple Choice.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Developmental: 12 seventh grade students drawn from upper half of class. Test: 90 seventh grade students, one half average and one-half above average in mathematics ability."

Prerequisites: "Knowledge of arithmetic including fractions."

Average Time: 22 hours (est.).

Next Revision: June, 1963.

(1 sample page)

APPLIED MATHEMATICS

NUMERATION SYSTEMS AND SCIENTIFIC NOTATION

Reigh, Moore, Smith; McGRAW-HILL BOOK COMPANY

one sample page:

(Preliminary Version)

- 15 Thus, when you are asked for the factors of 20, you are to find two (or more) numbers that, when multiplied together, have a product of 20.

(1) Thus, the factors of 20 could be 2 and ____.

(2) Or, the factors of 20 could be 4 and ____.

(3) Or, the factors of 20 could be 1 and ____.

(1) 10 (2) 5 (3) 20

- 16 Factors of 21 could be 21 and 1 or 3 and 7.

(1) Factors of 35 could be ____ and ____.

(2) _____ or _____ and _____.

(1) 5 and 7
(2) 35 and 1 } may have reversed order

APPLIED MATHEMATICS

H.S.-Adult

PRACTICAL MATHEMATICS

GRACE C. MARTIN

ANN SMALLEY, both of U.S.I. Educational Science Division.

Published by DOUBLEDAY & CO., Inc.,

575 Madison Avenue, N.Y.C.

**Programed text, 900 frames, Hard cover, 695 pp.,
8 1/4" x 5 3/8", \$5.95.**

Table of Contents, Index.

**Multiple Choice Responses and Branching always used;
no Constructed Responses.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites: High school education

Average Time: 12-16 hours (est.).

Next Revision: Undetermined.

(1 sample page)

APPLIED MATHEMATICS

PRACTICAL MATHEMATICS

Martin, Smalley; DOUBLEDAY & CO.

one sample page:

Sample from Practical Mathematics

174A

Now that you've learned how to handle signed numbers and exponents, the battle's half won. You're well on your way to a mastery of the fundamentals of algebra. Remember, the better you learn the basic rules, the easier it will be to understand more complicated operations.

We're going to use some of these basic rules now to simplify some rather formidable-looking algebraic expressions.

Any combination of explicit arithmetic numbers and literal numbers by addition, subtraction, multiplication, or division is called an algebraic expression.

$$3x + y - 2$$

$$a^2 - 6b^2 + c$$

$$5r^2$$

$$\frac{6y - 3}{2} \quad \text{and}$$

$$c + 2d - 1$$

are all algebraic expressions.

The parts of the expression joined together by plus or minus signs are called the terms of the expression.

How many terms are there in the algebraic expression $4x^2y^3$?

One. page 176A

Three. page 180A

APPLIED MATHEMATICS

H.S.

THE SLIDE RULE

ROBERT SAFFOLD

ANN SMALLEY, both of Doubleday & Co.

**Published by DOUBLEDAY & COMPANY, Inc.,
575 Madison Avenue, N.Y.C.**

**Programed text, 456 frames, hard cover, 466 pp.,
8 1/4" x 5 3/8", \$4.95.**

Table of Contents, Index.

Unit Test(s) included.

**Multiple Choice Responses and Branching always used;
no Constructed Responses.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites:

Additional material required: Slide rule.

Average Time: 10-12 hours (est.)

Next Revision: "Not scheduled."

(1 sample page)

APPLIED MATHEMATICS

THE SLIDE RULE

Saffold, Smalley; DOUBLEDAY & CO.

one sample page:

Sample from The Slide Rule

218

(from page 221)

YOUR ANSWER: The antilog of 12.68 is 4.79×10^{12}

Correct. The part of the logarithm to the left of the decimal can be considered the exponent of a power of 10. The part to the right of the decimal is the log of a factor between 1 and 10 by which the power of ten is to be multiplied.

To put this another way, the logarithm 12.68 may be considered the sum of the logarithm 12.00 plus the logarithm 0.68. So the number whose logarithm is 12.68 can be considered the product of the antilogs of 12.00 and 0.68.

The antilog of 12.00, of course, is 10^{12} . The antilog of 0.68 is found by a direct reading. Locate 0.68 on the L scale with the hairline and read the antilog on the D scale; it's 4.79. So the antilog of 12.68 is 4.79×10^{12} ; therefore, $64.8^7 = 4.79 \times 10^{12}$.

If instead of raising 64.8 to the seventh power, you want to find the seventh root of 64.8 ($\sqrt[7]{64.8}$), what would you do first?

Divide log 64.8 by 7.

page 222

Divide log 64.8 by log 7.

page 232

MATHEMATICS - GEOMETRY

APPLIED GEOMETRY 36

**R. CLAYTON COURSEY, Education Engineering, Inc.
Published by EDUCATION ENGINEERING, Inc.,
381 West 7th Street, San Pedro, California.**

**Programed text, 8640 frames, paperback, 5" x 7", 288 pp.,
available in 8 separate units at \$3.75 each.**

For use in SPEED machine, program reusable, \$80.00.

Teacher's Manual available, \$4.00 per unit.

Unit, Final, Diagnostic Test(s) available, \$3.75 each.

**Multiple Choice Responses always used; no Constructed
Responses; no Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Prerequisites: Arithmetic

**Additional material required: SPEED teaching machine,
\$700 & \$850.**

Average Time: 20 hours (est.).

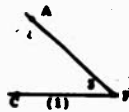
Next Revision:

(2 sample pages)

MATHEMATICS-GEOMETRY

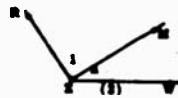
APPLIED GEOMETRY 36 Coursey; EDUCATION ENGINEERING 2 sample pages:

HOW TO NAME AN ANGLE



The common ways to name an angle are:

1. Place a number between the sides.
2. Place a lower-case letter between the sides.
3. Use the name of the vertex if only one angle has that vertex.
4. Use three capital letters. Be sure to put the vertex letter in the middle.



In figure (1), $\angle 1$ can be named $\angle APC$, $\angle CPA$ or simply $\angle P$. Since S in figure (2) is the vertex of more than one angle, none of the angles can be named $\angle S$. Another name for $\angle 1$ is $\angle ASW$; $\angle 1$ is also $\angle WSA$; and another name for $(\angle 1 + \angle 2)$ is $\angle WSA$.

3601 - Q13

The common ways to name an angle are:

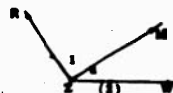
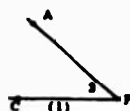
1. Place a _____ between the sides.
2. Use the name of the _____ if only one angle has that _____.
3. Use _____ capital letters.
4. Place a _____ letter between the sides.
5. Another name for angle b in the following figure is _____.



1. MNO
2. vertex, vertex
3. lower case
4. side, side
5. two
6. three
7. upper case
8. MNO
9. number
10. one

3601-Q13

HOW TO NAME AN ANGLE



The common ways to name an angle are:

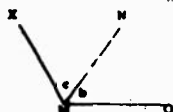
1. Place a number between the sides.
2. Place a lower-case letter between the sides.
3. Use the name of the vertex if only one angle has that vertex.
4. Use three capital letters. Be sure to put the vertex letter in the middle.

In figure (1), $\angle 1$ can be named $\angle AP$, $\angle C$, or simply $\angle P$. Since Z in figure (2) is the vertex of more than one angle, none of the angles can be named $\angle Z$. Another name for $\angle 1$ is $\angle R$; $\angle 1$ is also $\angle M$; and another name for ($\angle 1 + \angle 2$) is $\angle R$.

3601 - 813

The common ways to name an angle are:

1. Place a _____ between the sides.
2. Use the name of the _____ if only one angle has that _____.
3. Use _____ capital letters.
4. Place a _____ letter between the sides.
5. Another name for angle b in the following figure is _____.



1. NMO
2. vertex, vertex
3. lower case
4. side, side
5. two
6. three
7. upper case
8. MNO
9. number
10. one

3601-Q12

MATHEMATICS-GEOMETRY

H.S.

PLANE GEOMETRY

EDWARD B. CURTIS, Teaching Fellow, Harvard University.

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 North Michigan Avenue, Chicago 11, Illinois

Programed text, 11,207 frames, paperback, 1,151 pp.,
8-1/2" x 11-1/2", \$19.75. Available in 5 separate
units @. \$4.50 each.

For use in **TEMAC BINDER**, \$1.25; program reusable,
\$18.50.

Teacher's Manual available, \$3.50.

Table of Contents.

Unit Test(s) available, \$1.60.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Selected groups during development; evaluative testing
Roanoke City Public Schools, Roanoke, Virginia."

Other using population(s): "Adult education, professional
review."

Prerequisites: "Student reading ability of eighth grade level."

Average Time: Average students, 185 classroom hours.
(est.).

No Revision.

(1 sample page)

MATHEMATICS-GEOMETRY

PLANE GEOMETRY

Curtis; ENCYCLOPAEDIA BRITANNICA PRESS
one sample page:

4508. We are then that $\angle AOC$ and $\angle BOD$ are each equal to $180^\circ - \angle BOC$. We know then that $\angle AOC$ and $\angle BOD$ are _____ equal
4509. $\angle AOC$ and $\angle BOD$ are equal by the use of the axiom: "Quantities equal to the _____ are equal to each other." same quantity
4510. $\angle AOC$ and $\angle BOD$ are each _____ to $\angle BOC$. supplementary
4511. We could show that $\angle AOC$ and $\angle BOD$ are equal in another way which is very similar to the preceding way. We would use the statement, "Supplements of the same angle are _____." equal
4512. Since $\angle AOC$ and $\angle BOD$ are supplements of $\angle COB$, they must be _____ equal
4513. If $\angle COB$ has 133° , then we would also know that $\angle AOC$ has _____ 133°
4514. Then $\angle BOD$ has (approximately) _____ (no). 47°
4515. (On figure 343, we see three straight lines AB , CD , and EF which all pass through the point _____ (let). P
4516. (On figure 343, the three straight lines pass through the point P . We say that the three lines are _____ (nd), or _____ (name wd) at the point P . concurrent
4517. On figure 343, $\angle BPE$ and _____ are two correct names for $\angle 3$. $\angle EPB$
4518. On figure 343, $\angle 3$ and _____ are a pair of vertical angles. $\angle 6$
- 446 Plane Geometry

MATHEMATICS—GEOMETRY

Jr. H. S.

POINTS, LINES, AND PLANES

An Introduction to Geometry in Two Dimensions.

VERNON L. DAUSCH, Millburn Junior H. S.

MARTIN M. MOSKOWITZ, Mathematics Department,
Vailsburg H. S.

ERNEST R. RANUCCI, Newark State College

MORTON SELTZER, Mathematics Dept., Weequahic H. S.

EDWARD J. ZOLL, Newark State College

Published by THE MACMILLAN COMPANY,
60 Fifth Avenue, New York 11, New York

Programed text, 400 frames, paperback, 112 pp., 8-1/4" x
11", \$1.50.

For optional use in FLEXTAB BINDER, \$1.67 per copy;
program can be reusable.

Teacher's Manual in preparation.

Table of Contents.

Unit and Final Test(s) included.

Constructed Responses usually used; some Multiple Choice
Responses; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Average 7th and 8th grade students. Some testing of
students in Grades 5 and 6."

Prerequisites: "Programs will fit in with both "modern"
and traditional backgrounds."

Average Time: 12-15 hours (est.).

Next Revision:

(1 sample page)

MATHEMATICS-GEOMETRY

POINTS, LINES, AND PLANES

Dausch, Moskowitz, Ranucci, Seltzer, Zoll; THE
MACMILLAN COMPANY
one sample page:

114. As you have seen, polygons can be classified into two types, concave and convex.

A polygon can also be classified according to the number of vertices (or sides, or angles) it has. A polygon with 3 vertices is called a 3-gon.

A polygon which has 6 sides is called a _____

6-gon

115. A polygon which has 9 angles is called a _____

9-gon

116. A polygon which has 12 vertices is called a _____

12-gon

117. If you saw the name "polygon RON," you would know that the polygon had _____ vertices. And then you would know that the polygon is a _____-gon.

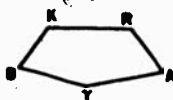
3

3

118. Suppose someone tells you about polygon RCFC. You know right away that the polygon is a _____-gon.

4

119. Here is polygon KRATB.



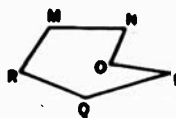
The polygon is a _____-gon. It has _____ vertices, _____ sides, and _____ angles.

5, 5, 5

5

120. Draw 6-gon MNOPQR.

Your drawing might look something like this:



121. Polygon MNOPQR has _____ vertices, _____ sides, and _____ angles.

6, 6

6

[78]

MATHEMATICS—GEOMETRY

H.S.

SOLID GEOMETRY

DAVID C. LUCKHAM, Research Assistant, Massachusetts
Institute of Technology

Published by **ENCYCLOPAEDIA BRITANNICA PRESS**,
425 N. Michigan Avenue, Chicago 11, Illinois

Programed text, 2,272 frames, paperback, 8-1/2" x 11-1/2",
\$15.00. Available in 3 separate units.

For use in **TEMAC BINDER**, \$1.25; program reusable,
\$13.75.

Teacher's Manual available, \$1.75.

Table of Contents.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Selected students Palo Alto, Calif. during develop-
mental stages. Roanoke City Public Schools during
field test evaluation."

Other using population(s): "Professional review; adult
education."

Prerequisites: "Reading level ninth grade."

Average Time: 90 classroom hours for average students
(est.).

Will not be revised.

(1 sample page)

MATHEMATICS-GEOMETRY

SOLID GEOMETRY

Luckham; ENCYCLOPAEDIA BRITANNICA PRESS
one sample page:

7.2. REGULAR POLYHEDRONS

1490. A solid geometric figure bounded completely by planes is called a polyhedron. In the next few frames we shall see that the regular polyhedrons are given special names.

1491. Now turn to Figure 540. The solid geometric figure shown is called a _____ since it is bounded completely by planes.

polyhedron

1492. A polyhedron is any solid geometric figure bounded completely by _____.

planes

1493. The portions of the planes bounding a polyhedron are called its faces. Thus, $\triangle ADE$ is a _____ of the polyhedron shown in Figure 540.

face

1494. How many faces does the polyhedron shown in Figure 540 have? _____. (Notice that _____ of its faces are hidden from view.)

Seven
two

1495. The lines of intersection of the planes forming the faces of a polyhedron are called the edges of the polyhedron. The intersections of the edges are called the vertices. How many edges of the polyhedron in Figure 540 intersect at vertex A ? _____.

Four

1496. How many edges intersect at vertex H ? _____.

Four

1497. Can any of the faces of a polyhedron be curved surfaces (for example, a portion of a sphere)? _____.

No (All faces of a polyhedron must be plane figures.)

SOLID GEOMETRY

- 251 -

MATHEMATICS-LOGIC

H.S. - Coll+

BASIC SYMBOLIC LOGIC

JAMES L. BECKER, RCA

**Published by RCA EDUCATIONAL SERVICES,
RADIO CORPORATION OF AMERICA.**

Cherry Hill, Camden 8, New Jersey.

**Programed text, 200 frames, paperback, 22 pp.,
8 1/2" x 11", \$1.25.**

"A Review and Test is included in the program."

**Constructed Responses usually used; some Multiple
Choice Responses and Branching.**

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

Field Test - 15 Computer Technicians.

**Prerequisites: "A knowledge of Binary Arithmetic is
desirable but not essential."**

Average Time: 1 1/2-2 hours.

Next Revision:

(1 sample page)

MATHEMATICS-LOGIC

BASIC SYMBOLIC LOGIC

Becker; RCA EDUCATIONAL SERVICES

one sample page:

f. Using the following chart, complete the Truth Tables for the propositions "c" through "j."

a.	A	T	F	T	F
b.	B	T	T	F	F
c.	A	F	T	F	
d.	B				
e.	A · B	T	F		
f.	A · B				
g.	A · B				
h.	A ∨ B				
i.	A ∨ B				
j.	A ∨ B				

(487)

(488)

(489)

Hint: invert Truth Table for A · B (112)

Hint: construct Truth Table the same as e, except use A instead of a A, and B instead of B (485)

(490)

Be careful (114)

(555)

Note, propositions "e" and "j" of item 17, have identical Truth Tables. Thus the Truth Table for A · B is the same as _____ (560)

18. There are special rules for converting one logic formula (complex proposition) to another with the same Truth Table. These rules were first discovered by Augustus DeMorgan and in his honor, were termed DeMorgan's Theorem. There are three steps to _____ (117) theorem which converts one logic formula to another that has the same _____ (372); they are:

MATHEMATICS - LOGIC

Elem.

WFF

The Beginner's Game of Modern Logic
LAYMAN E. ALLEN, Yale Law School
Published by SCIENCE RESEARCH ASSOCIATES,
259 East Erie Street, Chicago 11, Illinois

Programed text, 71 frames, paperback, 84 pp., 2-1/4" x 4-1/4", \$1.00 plus \$.25 for mailing and handling from WFF 'N PROOF, Box 71, New Haven, Conn.; will be available from SRA late spring, 1963.

Teacher's Manual included.

Table of Contents.

Constructed Responses always used; no Multiple Choice; no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Unselected classes at each of the following grades:
6th grade, Orange, Conn.; 6th grade, Hamden, Conn.;
6-10th grade, Yale-North Haven, Conn.; 4-6th grade,
Palo Alto, Calif.; 7-9th grade, Palo Alto, Calif."

Other using population(s): "Adults have played and enjoyed these beginning games."

Prerequisites:

Additional material required: Logic cubes and playing mats (included with kit).

Average Time: 2 to 5 hours, depending on the students."

Next Revision: February 1, 1963.

(1 sample page)

MATHEMATICS - LOGIC

WFF

Allen; SCIENCE RESEARCH ASSOCIATES

one sample page:

WFF (sample of program)

In the WFF games, the small letters 'p', 'q', 'r', and 's' are sentence variables. Each of them can symbolize any sentence whatsoever. For example, in one context we might stipulate that 'p' symbolizes the sentence "Logic is fun" and that 'q' symbolizes the sentence "Games are fun." If we did so stipulate, then the WFF 'Kpq' would symbolize the sentence "Logic is fun, and games are fun." What WFF would symbolize the sentence "Games are fun, and logic is fun"?

	<u>WFF</u>	<u>Sentence Symbolized</u>	• • • • •
47	p	Logic is fun.	•
	q	Games are fun.	•
	Kpq	Logic is fun, <u>and</u> games are fun.	•
	? _____	Games are fun, <u>and</u> logic is fun.	•
			• Kqp
48	Apq	Logic is fun, <u>or</u> games are fun.	•
	? _____	Games are fun, <u>or</u> logic is fun.	•
			• Aqp
49	Cqp	If games are fun, <u>then</u> logic is fun.	•
	? _____	If logic is fun, <u>then</u> games are fun.	•
			• Cpq
50	Np	<u>It is not so that</u> logic is fun.	•
	? _____	<u>It is not so that</u> games are fun.	•
			• Nq
			• • • • •

MATHEMATICS - LOGIC

Open

WFF 'N PROOF

The Game of Modern Logic

LAYMAN E. ALLEN, Yale Law School

Published by SCIENCE RESEARCH ASSOCIATES,
259 East Erie Street, Chicago 11, Illinois

Programed text, 2176 frames, paperback, 221 pp., 5" x 8",
\$6.00 from S.R.A. or plus 25¢ for mailing and handling
from WFF 'N PROOF, Box 71, New Haven, Conn.

Teacher's Manual included.

Table of Contents.

Constructed Responses always used; no Multiple Choice;
no Branching.

DEVELOPMENTAL (FIELD TEST) POPULATION(S):

"Unselected classes at each of the following: 6th grade,
Orange, Conn.; 6th grade, Hamden, Conn.; 6-10th
grade, Yale-North Haven, Conn.; 4-6th grade, Palo
Alto, Calif.; 7-9th grade, Palo Alto, Calif."

Prerequisites:

Additional material required: Logic cubes, playing mats,
timer (all included with the WFF 'N PROOF kit).

Average Time: "Difficult to say. It may take years to
become a good player of WFF 'N PROOF, somewhat
like bridge or chess."

Next Revision: June, 1963.

(2 sample pages)

MATHEMATICS - LOGIC

WFF 'N PROOF

Allen; SCIENCE RESEARCH ASSOCIATES

2 sample pages:

- 4 Np? • Yes. (Np (1) 'p' is a WFF by clause 1 (C1).
 • (2) Since 'p' is a WFF, 'Np' is a
 • WFF by clause 2 (C2).
 •

• In other words:

WFFs Reasons

- (1) p C1
 • (2) Np 1, C2)
 •

- 5 NNq? • Yes. (NNq WFFs Reasons

- (1) q C1
 • (2) Nq 1, C2
 • (3) NNq 2, C2

• The reason '1, C2' indicates that since 'q' is
 • a WFF in Step 1, 'Nq' is a WFF by C2. The
 • reason '2, C2' indicates that since 'Nq' is a
 • WFF in Step 2, 'NNq' is a WFF by C2.)
 •
 •

The underlined parts in 'Np' and 'NNq' of the answers to questions 4 and 5 are WFFs containing two or more letters. The expressions 'Np' and 'Nq' are 2-letter WFFs, and the expression 'NNq' is a 3-letter WFF. Any given expression comprised of two or more letters can be tested to determine whether or not it is a WFF by underlining every part (the whole is also a part) of that expression that is a WFF comprised of two or more letters. When tested by such an underlining procedure, a given two-or-more-letter expression is a WFF if and only if the entire expression gets underlined by one line. For example:

'CpNq' is a WFF.

C p Nq

'ANrNs' is a WFF.

A N r N s

'ANrCpNq' is a WFF.

A N r C p N q

WFF 'N PROOF (sample of program)

Definition of a WFF

A given expression is a WFF if and only if

- (C1) it is a 'p', 'q', 'r', or 's'; or
- (C2) it is the expression formed when
and 'N' is immediately followed by
exactly one WFF; or
- (C3) it is the expression formed when a
'G', 'A', 'K', or 'E' is immediately
followed by exactly two WFFs.

According to the definition of a WFF, is the expression 'p' a WFF? The answer to this question is "Yes." Hereafter, such questions will be abbreviated. The expression 'p?' appearing in the left column on a page will be an abbreviation for the question "Is the expression 'p' a WFF?" The answer to the question will appear in the right column enclosed in asterisks. Sometimes, immediately following the answer, there will be some further explanation enclosed in parentheses.

QUESTIONS

ANSWERS

- | QUESTIONS | ANSWERS |
|-----------|---|
| 1 p? | * Yes. ('p' is a WFF by clause 1 (C1) of the definition of a WFF.) |
| 2 o? | * No. (There is no clause in the definition of a WFF that indicates that an expression that contains an 'o' is a WFF, and a given expression is a WFF only if it is a WFF by one of the clauses of the definition.) |
| 3 pq? | * No. (There is no clause in the definition of a WFF that indicates that an expression comprised of two WFFs is a WFF.) |