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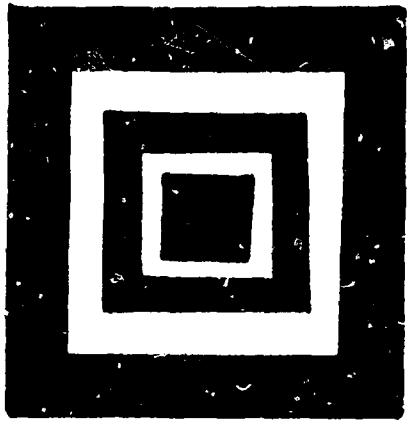
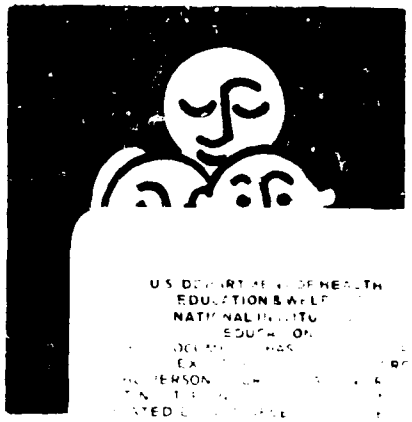
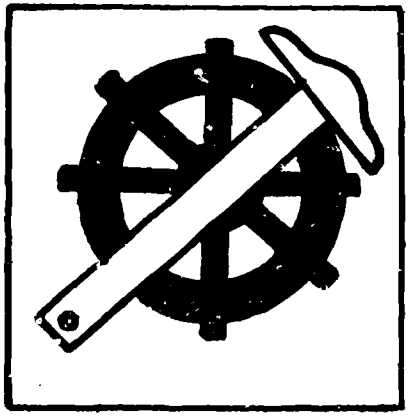
ABSTRACT

The guide is divided into two sections: Fundamentals of Mathematics I and Fundamentals of Mathematics II. Both sections are divided into vertical columns relating mathematical curriculum concepts to curriculum performance objectives; career concepts, performance objectives, general information and teaching activities; suggested teaching methods, and resource materials. Space is provided for teachers' notes which will be useful when the guide is revised. The first section is a three quarter course intended for ninth grade students whose achievement level in mathematics is two or more years below grade level. The purpose of the curriculum guide is to improve on the textbook used district-wide by implementing its coverage, describing supplementary material, and, in general, aiding the teacher. The second section describes a curriculum designed to relate mathematics to daily living and to present topics that are useful in becoming a wise consumer. Appended materials emphasize consumer credit. (AG)







FUNDAMENTALS OF MATHEMATICS 1 AND 2

Career - Curriculum Guide

CAREER EDUCATION CENTER
HARLANDALE INDEPENDENT SCHOOL DISTRICT
3706 ROOSEVELT
SAN ANTONIO, TEXAS 78214

CAREER EDUCATION CENTER

MR. CHARLES N. BOGGESS, SUPERINTENDENT

MRS. LUCYLLE V. DEASEY, PROJECT DIRECTOR

HARLANDALE INDEPENDENT SCHOOL DISTRICT

SAN ANTONIO, TEXAS

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The opinions expressed herein do not necessarily reflect the position or policy of the U. S. Office of Education or the Texas Education Agency, and no official endorsement should be inferred.

FUNDAMENTALS OF MATHEMATICS I
(a three quarter course)

CURRICULUM GUIDE

Mr. Duwain N. Salmon
Math Consultant

Career Education Center
Harlandale Independent School District
San Antonio, Texas

A C K N O W L E D G E M E N T S

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Mrs. Lucylle V. Deasey - Project Director - Career Education Program

Mr. William H. Bentley - Director of Vocational Education

Mr. William R. Marshall - Director of Curriculum

Miss Mary E. Daunoy - Secondary Consultant

Mr. Hamilton C. Dupont - Head of Math Department

Mrs. Gozelle Loveless - Audio-Visual Coordinator

Mrs. Mikel A. Arnold - Teacher

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Preface

Meaningful existence is the goal of life in today's world. Living takes on meaning when it produces a sense of self-satisfaction. The primary task of education must be to provide each individual with skills necessary to reach his goal.

When children enter school, they bring with them natural inquisitiveness concerning the world around them. Normal curiosity can be the nucleus which links reality to formal training if it is properly developed. A sense of continuity must be established which places education in the correct perspective. Communities must become classrooms and teachers resource persons. Skills such as listening, problem solving, following directions, independent thinking and rational judgement then can merge into daily living procedures.

In classrooms especially designed to form a bridge between school and the world of work, experiences must be developed. On campus performance in job tasks and skills, following a planned sequence of onsite visitation, will fuse information into reality. Practical relationships developed with those outside the formal school setting will provide an invaluable carry-over of learned skills.

Search for a rewarding life vocation is never easy. Without preparation it becomes a game of chance. With a deliberate, sequential, and planned program of development, decisions can be made based upon informed and educated judgements.

A full range career education program, K-12, will offer opportunities for participants to enter employment immediately upon completion of training, post secondary vocational-technical education, and/or a four-year college career preparatory program.

C. N. Boggess

C. N. Boggess, Superintendent
Harlandale Independent School District

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PHILOSOPHY

The educational needs of any community are somewhat unique. This was certain to have been one of the guiding principles used when our forefathers set up local control for public schools. Accordingly, the philosophy of the Harlandale school system is to serve the educational needs of all its citizens as evidenced by adult classes, government sponsored retraining programs, vocational courses, etc. The mathematics department follows this philosophy in planning a program best suited to the needs of our students.

The past decade has proven the need for the new emphasis on the importance of the study of mathematics. Usefulness of mathematics in many fields of learning and endeavor, long thought to be free of mathematics, is now an accepted reality. Also, basic principles must be understood in order that mathematical systems can be devised to describe new human or mechanical activities, as they come to pass.

As mathematics continues to grow this must, of necessity, result in the addition of new symbols, terms, topics, and new approaches. The changing times will make some older topics and methods obsolete. To meet the mathematical needs of our students and to assist teachers in their instruction, the mathematics department has prepared this mathematics guide. Any given faculty consists of personnel with different degrees of training, experience, local tenor, and understanding of student needs. Hence, the desirability for some guiding criteria. In addition, we feel all students should consider career planning as a major facet of their education. Thus it follows that they will need some exposure to the different mathematical requirements of the varied career fields. In part, it is the purpose of this guide to assist the teacher in providing appropriate instruction to meet such needs.

The department feels that the most important basic guide for any mathematics course is the textbook, and careful care is taken in the selection of this book. Not only is the textbook an important guide for the teacher but it is also desirable for the student to learn the use of a textbook as a guide and important tool for learning.

Therefore, the plan of this mathematics guide is not to rewrite the textbook but to improve on it. Generally, the plan is to implement, where desirable, the textbook coverage, describe supplementary material that is needed and make suggestions on methods, procedures, order of coverage, etc.

Mathematics is a thoughtful, creative and intellectually stimulating subject. The enthusiasm and interest of the teacher in the subject is the best atmosphere for creating student enthusiasm for mathematics. This guide is planned to help foster this enthusiasm and in no way infringes on the academic freedom of the teacher.

It is hoped that the guide will prove helpful in understanding the basic standards, improving instruction, and developing the desired uniformity for the classes in each area of study. Finally, the guide should serve as the nucleus for a continuing effort to improve mathematics instruction.

Mr. Hamilton C. Dupont - Head of Math Department
Harlandale Independent School District

FUNDAMENTALS OF MATHEMATICS 1

Overview

This course is designed to provide a successful mathematics experience for the students who have been promoted to the ninth grade while their achievement level in mathematics is two or more years below grade level. Students with a record of satisfactory achievement should not be permitted to elect this program. The involvement approach with various methods and activities should be used in an attempt to bring a student's achievement level up to a point where he may elect an academic track or choose a program that will assist him in solving practical problems dealing with effective living and future vocations. The student should be allowed to work at his own speed, but with guidance. The sequence of the topics in the following guide could certainly be adjusted according to group or individual needs. Strong consideration should be given to maintaining the student's interest. Units should be self-contained, offereng students short working periods and changes of pace.

The successful teaching of this group requires the talents of an experienced, enthusiastic teacher. He should emphasize the achievements of his students and minimize their failures. He must be aware of the intellectual or motivational limitations of the students and expect achievement according to their capabilities. Activities and games should be selected which are of interest to a particular class. This will vary greatly between any two classes. The teacher needs to be willing to experiment with different activities, continue those which are successful, and discontinue those which are not.

Since the students in these classes require more individual attention, it is best for the size of these classes to be kept as small as possible.

Goals

1. To improve the attitudes of the low achieving student toward the learning of mathematics
2. To develop an understanding of the set of whole numbers and extend this development to the rationals
3. To improve the student's computational skills
4. To improve the student's ability to solve practical problems related to his own needs and experiences
5. To extend the student's understanding of measurement and the use of measures
6. To develop in the student an understanding of elementary concepts of probability and informal geometry
7. To develop techniques for organizing and presenting data
8. To improve the student's understanding of the relationship between various careers and certain mathematical concepts through experimentation

The audio-visual materials listed in this guide have been assigned catalogue numbers by the Harlandale Independent School District audio-visual department or the Education Service Center, Region 20, San Antonio, Texas.

FUNDAMENTALS OF MATHEMATICS I

The following outline is built upon a "conceptual ladder" (concepts from 'easiest to hardest') for Fundamentals of Mathematics I. The outline corresponds to the outline found in the curriculum concepts of this guide. The page numbers refer to the present textbook being used in Fundamentals of Mathematics I by the Harlandale Independent School District. (Stein, Edwin I., Fundamentals of Mathematics, Boston: Allyn and Bacon, Inc., 1965.)

I. Probability p. 295
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II. Measurement
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   A. Whole Numbers
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- B. Angles and Angular Measure pp. 310-318, 328-332
- C. Parallel and Perpendicular Lines and Planes pp. 305, 326, 327, 328
- D. Closed Curves
- E. Basic Construction and Drawings pp. 325, 327
- F. Special Triangles pp. 219, 319, 339
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VI. Graphs and Statistics
- A. Line and Bar Graphs pp. 286, 287
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FUNDAMENTALS OF MATHEMATICS I

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
I. Probability A. Chance Experiments	I. THE STUDENT SHOULD BE ABLE TO: A. State orally with 90% accuracy the total number of outcomes of an event as well as the probability of specific outcomes.	Concept Relationship of probability to the specialized training needed by the geneticists. Performance Objective Given the needed inherited characteristics, calculate the chances of parents having a child with the ability to roll his tongue in a U shape. General Information Students wishing extra activities should be encouraged to research other careers in biology. They may wish to compile and analyze material on work done in different fields of biology. Examples: 1. Zoologists 2. Microbiologists 3. Agronomists 4. Anatomists 5. Biochemists 6. Biological oceanographers 7. Biophysicists 8. Ecologists 9. Embrologists 10. Entomologists 11. Geneticists 12. Horticulturists 13. Husbandry specialists 14. Nutritionists 15. Pathologists 16. Pharmacologists 17. Physiologists
B. Student Experiments	B. Design correctly one experiment using coins, marbles, or cubes which demonstrates the number of outcomes as well as the probability of specific outcomes.	

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
I. A. Group or individual experiments can be formulated using dice or tossing a coin. Stress the total number of outcomes and the probability of an event. The experiments should be handled on an informal basis with emphasis on arithmetic skills. B. Students should be asked to design their own experiment. The experiments may range from games of chance to weather forecasting.	<u>For Additional Information on Biological Careers</u> American Institute of Biological Sciences, 3900 Wisconsin Ave. NW., Washington, D. C. 20016. American Society of Horticultural Science, 615 Elm St. Joseph, Michigan 49085. American Physiological Society, 9650 Rockville Pike, Bethesda, Maryland 20014. Ecological Society of America, Connecticut College, New London, Connecticut 06320.	

URRICULUM ONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
		Approximately 71,000 worked in the biological sciences in 1970 (about ten percent were women). Employment is expected to increase rapidly through the 1970's. The average annual salary for biological scientists was $15,000 in 1970 (about ten percent earned $26,100 or more). High school students wishing to become biologists should plan to obtain an advanced degree -- preferably a Ph.D. -- in their field of interest. A bachelor's degree with a major in one of the life sciences may be adequate preparation for some beginning jobs. Teaching Activity (It is expected that students should have some knowledge of genetics at the high school level.) Some people have an ability to roll their tongue into a U shape when they extend their tongue from their mouth. The ability (commonly known as tongue rolling) is caused by a dominant gene (R). Suppose the parents of a child have the following characteristics: (genotypes, phenotypes) -- (Rr, rr; tongue roller, non-tongue roller). What are the chances of the parents having a non-tongue roller? Cross the two parent genotypes.

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS

JRRICULUM ONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES

	R	r
R	RR	Rr
r	Rr	rr

Only the rr genotypes will result in a non-tongue roller. Therefore, the parents have a one in four chance of having a non-tongue roller.

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
II. Measurement A. Length 1. American System 2. Metric System 3. Perimeter B. Approximation C. Area of Simple Polygons D. Volume and Surface Area of Simple Solids E. Review of Common Measures 1. Time 2. Temperature 3. Weight 4. Liquid Measure	II. THE STUDENT SHOULD BE ABLE TO: A. 1. Measure with 80% accuracy five line segments on a sheet of paper to the nearest inch and five objects (longer than one foot) in the room to the nearest foot. 2. Measure with 70% accuracy ten line segments on a sheet of paper to the nearest metric unit. 3. Determine with 80% accuracy the perimeter of geometric models such as: school campus, football field, by using either American or metric units. B. "Round off" with 80% accuracy 20 measurements to the nearest inch and foot. C. Calculate with 80% accuracy the area of five triangles and five special quadrilaterals. D. Calculate with 80% accuracy the volume and surface area of ten problems involving right prisms, cylinders, and spheres. E. Determine with 80% accuracy the time to the nearest minute, the temperature to the nearest degree, the weight of an object to the nearest pound, and the sums and remainders of problems involving liquid measures.	Concept Relationship of learning the concept of measurement to the preparation of becoming a sheet metal mechanic. Performance Objective Given the diameter of a metal duct used for a hot air furnace, calculate the circumference of the duct. General Information Students wishing to obtain extra activities should be encouraged to research the types of work done by sheet metal workers. They may wish to compile and analyze material on specific metal working careers. Examples: 1. Air conditioning ducts 2. Roofing and gutters 3. Architectural sheet-metal 4. Aircraft 5. Shipbuilding In 1970 approximately 60,000 sheet-metal workers were employed in the United States. The national average for sheet-metal workers was $6.75 per hour in 1970. High school students wishing to enter metal working should take advantage of any vocational course dealing with metal working. Most sheet-metal workers are expected to complete a 4-year apprenticeship program, however, many acquire skills by working as helpers.

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
II. A. 1. Activities should include measurement of line segments drawn on the board and objects in the room. 2. Students should measure objects in the room with a metric ruler and compare their measurements with the inch-foot ruler. 3. As an outside activity have a group of students measure the perimeter of the school campus or building. B. The students should be shown the concept of "rounding off" measurements they have been making are approximate. C. Area should be presented with concrete examples. Manipulative devices such as the geoboard may be used. After the presentation the students should compute area of triangles and quadrilaterals. D. If possible, concrete models should be used in introducing volume. Activities should include objects which are relevent to the student. Students should be able to find the volume of prisms, cylinders, and spheres. Students should make their own measurements on some problems. E. By using a short review lesson the teacher should determine how much work must be done on common measures. Remedial work may be necessary for some students while others may be ready to study more complex units of measure.	Curriculum ESC-Region 20 Measurement; 16mm film -- 8571 Measuring in Astronomy - How Big, How Far; 16mm film -- 8839 Measuring Large Distances; 16mm film -- 2258 Measuring Short Distances; 16mm film -- 8565 Career Harlandale Audio-Visual Center Cutting; record with filmstrip -- PR-737(BB-77) Drilling, Tapping and Threading; record with filmstrip -- PR-738(BB-78) Layout and Measurement; record with filmstrip -- PR-737(BB-76) Shaping and Fastening; record with filmstrip -- PR-738(BB-79) ESC-Region 20 Measuring and Layout Tools; 16mm film -- 8264	

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
		Teaching Activity A sheet-metal worker is manufacturing cylindrical ducts to be used in the installation of a hot air furnace. The diameters of the ducts are 7 inches reducing to 3½ inches. In order to make the pattern for the reducing cone the worker will have to find the circumference of the cone ends. The equation $C = \pi d$ is used to find the circumference of a circle when the diameter is known. Substituting we find that $C = 3.1416 \times 7$ or 21.99 inches. By the same method you would find the circumference of the smaller end to be 13.99 inches. This information may then be used in the cutting of the metal for the duct.

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
	For Additional Information on Sheet Metal Careers Sheet Metal and Air Conditioning Contractors' National Association, Inc., 1611 North Kent St., Arlington, Va. 22209. Sheet Metal Workers' International Association, 1000 Connecticut Ave. NW., Washington, D. C. 20036.	

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
III. Numbers and Numerals A. Whole Numbers 1. Place-Value	III. THE STUDENT SHOULD BE ABLE TO: A. 1. Read with 80% accuracy twenty numbers which range from three to ten digits.	Concept Relationship of basic arithmetic to economical farming. Performance Objective Given the costs and amounts of seed, fertilizer, and insecticide needed to plant an acre of land, calculate the cost of planting 1,000 acres. General Information Students wishing extra activities should be encouraged to research other careers related to agriculture. They may wish to compile and analyze material on occupations related to agriculture. Examples: 1. Cooperative extension service workers 2. Soil scientists 3. Agronomists 4. Veterinarians 5. Foresters 6. Farm managers Additional information may be obtained from the U.S. Department of Agriculture, Washington, D.C. 20230; and from State Land Grant Colleges and Universities. Teaching Activity A farmer in planting 1000 acres of land needs 40 pounds of seed, 13 pounds of fertilizer, and 2.6 pounds of insecticides for each acre of land. The price of these materials is 4¢
2. Operations with Whole Numbers	2. Add, subtract, multiply, and divide correctly 90% of the problems on a written exercise which concerns whole numbers with from one to five digits.	
3. Properties of Whole Numbers	3. Correctly write closure, commutative, and associative beside 80% of the problems on a written exercise in order to identify the property used in an elementary proof involving whole numbers.	
B. Integers 1. Operations	B. 1. Correctly add, subtract, multiply, and divide 80% of the problems on a written exercise concerning integers.	
2. Properties	2. Correctly write closure, commutative, and associative beside 80% of the problems on a written exercise in order to identify the property used in an elementary proof involving integers.	

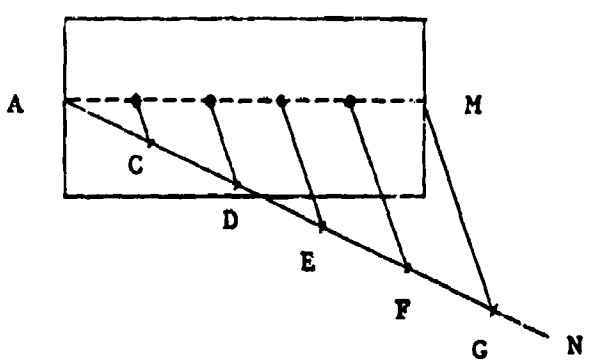
SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
III. **A.** 1. Place-value is an important concept in order that operations can be more meaningful with large numbers. Writing numerals in expanded form should be helpful. Teaching aids should also be helpful in presenting the concept. 2. Practice and drill in computational skills are important for students needing review. Games and puzzles should be a successful means of keeping the student's interest. 3. The properties of closure, commutativity and associativity should be presented using the various operations. The identity elements should also be examined. **B.** 1. The rules for operations with integers should be reviewed with the students. Addition and subtraction should be explained on the number line. Multiplication and division should be explained through the use of number sequences such as: 3 x 3 = 9 (-3) x 3 = (-9) 3 x 2 = 6 (-3) x 2 = (-6) 3 x 1 = 3 (-3) x 1 = (-3) 3 x 0 = 0 (-3) x 0 = 0 3 x (-1) = (-3) (-3) x (-1) = 3 3 x (-2) = (-6) (-3) x (-2) = 6 2. Relate the same properties of closure, commutativity, associativity, and the identities to operations with integers.	Curriculum Harlandale Audio-Visual Center Absolute Value; filmstrip -- Z-46 Addition and Subtracting of Decimals; filmstrip -- Y-30 Advancing in Linear Measurements; filmstrip -- Y-34 Advancing in Quality Measurements; filmstrip -- Y-35 Buying and Selling - Application of Percentage; filmstrip -- X-44 Changing Fractions to Decimals; Changing Decimals to Fractions; filmstrip -- Y-33 Commission-Meaning and Application; filmstrip -- X-45 Decimal Fractions; 16mm -- 16-216 Division of Decimals; filmstrip -- Y-32 Federal Taxes; filmstrip -- X-48 Insurance; filmstrip -- X-49	

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
C. Rational Numbers 1. Fractional Forms	C. 1. Add, subtract, multiply, and divide 85% of the rational numbers on a written exercise which concerns fractional forms.	a pound for seed, 13¢ a pound for fertilizer, and 23¢ a pound for insecticides. Equipment rental and hiring of extra labor is estimated to cost an additional $48.50 an acre. What are the planting expenses? Seed 1,000 x 40 x .04 = $1,600 Fertilizer 1,000 x 13 x .13 = $1,690 Insecticides 1,000 x 2.6 x .23 = $598 Equipment and Labor 1,000 x $48.50 = $48,500 Total Cost $52,388
2. Properties	2. Correctly write commutative, associative, and distributive beside 80% of the problems on a written exercise in order to identify the property used in an elementary proof involving rational numbers.	
3. Decimal Forms	3. Add, subtract, multiply, and divide 90% of the rational numbers on a written exercise which concerns decimal forms.	
4. Ratio and Proportion	4. Calculate correctly 80% of the problems on a written exercise which are similar to the following: 4/3 = n/9, 1/n = 2/8, n/5 = 8/10, and 15/7 = 60/n by using the rule that the product of the extremes equals the product of the means.	
a. Percentage	a. Correctly solve 85% of the problems on a written exercise of the following nature: "What number is 25% of 400?"	
b. Changing Units of Measure	b. Change 80% of the problems on a written exercise from one unit of measure to another by using proportion.	
D. Squares and Square Roots	D. Find 90% of the squares and square roots of a list of numbers from a standard square root table.	

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
C. 1. The discussion of rationals should include equivalent fractions, fractions in simplest form, and then the basic operations with fractions. Multiplication of fractions should be discussed first. Discuss complex fractions in the discussion of division of fractions. 2. The study of operations and the teaching of properties should be interwoven. 3. Working with decimal fractions should be related common fractions and to the place-value concept of our numeration system. Emphasis of decimal system should be given to money and the world of work. 4. Ratio and proportion are frequently used concepts in the world of work. After computational skills have been mastered, students should be shown some of the career applications of ratio and proportion. a. Percentages should be presented as ratios with denominators of 100. Percentages should be related to the world of work. b. Changing units of measure can be easily presented as an application of ratio and proportion. D. Students in fundamentals of mathematics benefit more from a knowledge of existence than the actual work with square root. The use of a table for finding squares and square roots is sufficient for this course. Exploration of the Pythagorean Theorem would benefit some students.	Interest-Borrowing and Investing; filmstrip -- X-46 Meaning and Reading of Decimals; filmstrip -- Y-29 Meaning and Understanding of Percentage; filmstrip -- X-43 Meaning of Signed Numbers and How to Add Them; filmstrip -- Z-43 Multiplication of Decimals; filmstrip -- Y-31 Multiplication of Signed Numbers; filmstrip -- Z-45 State and Local Taxes; filmstrip -- X-47 Subtraction of Signed Numbers; filmstrip -- Z-44 ESC-Region 20 How to Change Fractions; 16mm film -- 4955 Positive and Negative Numbers; 16mm film -- 8326 Ratio and Proportion in Mathematics; 16mm film -- 4496	

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
IV. Geometry A. Points, Lines, and Planes	IV. THE STUDENT SHOULD BE ABLE TO: A. State three examples found in the room of a point, a line, and a plane.	Concept Relationship of the specialized training received in geometry to the job of the draftsmen. Performance Objective Given the correct dimensions, locate by using parallel lines the points at which four holes should be drilled on a gasket template. General Information Students wishing extra activities should be encouraged to research drafting as a career. They may wish to compile and analyze material on work done in drafting. Approximately 310,000 draftsmen were employed in 1970; almost 4 percent were women. High school students wishing to enter drafting can obtain training from a number of sources (technical institutes, junior and community colleges, vocational and technical high schools, correspondence schools, on-the-job training programs, and 3 or 4 year apprenticeship programs. Employment opportunities for draftsmen are expected to be favorable through the 1970's. Prospects will be best for those having post-high school drafting training. Teaching Activity A draftsman is a person who draws plans and blueprints of machines, houses, automobiles and almost anything that can
B. Angles and Angular Measure	B. Measure with 85% accuracy 20 angles on a written exercise using a protractor.	
C. Parallel and Perpendicular Lines and Planes	C. Define parallel lines as two lines in the same plane which never intersect and perpendicular lines as two lines which intersect at right angles.	
D. Closed Curves	D. Draw a triangle, quadrilateral, pentagon, hexagon, septagon, octagon, nonagon, decagon, and circle.	
E. Basic Construction and Drawings	E. Given a compass and straightedge, construct with 80% accuracy congruent line segments, line bisections, angle bisections, and congruent angles.	
F. Special Triangles	F. Draw an isosceles triangle, an equilateral triangle, and a right triangle (tell what identifies each triangle).	

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
IV. A. Points, lines, and planes remain undefined, however, their relationship and properties are explored. Emphasis should be placed on understanding points, lines, and planes as concepts exhibited in the world of the student. B. Angles should be defined in terms of intersecting rays. If possible, use a plastic protractor on the overhead projector to explain angle measurement. Make sure each student has a protractor. For exercises you might duplicate angles to be measured. It is also a good idea to place some of the angles to be measured in different orientations, so that the student gets practice using the protractor upside down or in any position. C. After defining parallel and perpendicular lines and planes, emphasis should be placed on physical models which exist around the students. D. Include the study of polygons (including circles) and polygonal regions. Have students draw and label each closed curve. E. Activities that require drawings, paper folding, model building, and simple straightedge--compass constructions should be used. Show students examples of constructions at the board. Ask the students to follow and make an exact copy of each construction. F. Ask the students to draw and identify right triangles, equilateral triangles, and isosceles triangles.	Curriculum Harlandale Audio-Visual Center Introduction; filmstrip -- X-27 Vocabulary Circles, I; filmstrip -- X-33 Vocabulary Circles, II; filmstrip -- X-34 Vocabulary Lines & Angles I; filmstrip -- X-28 Vocabulary Lines & Angles II; filmstrip -- X-29 Vocabulary Lines - Relationship; filmstrip -- X-30 Vocabulary Polygons; filmstrip -- X-32 Vocabulary Triangles; filmstrip -- X-31 ESC-Region 20 Geometry-Inductive and Deductive Reasoning; 16mm film -- 8155 Possibly So, Pythagoras; 16mm film -- 8840 Triangles-Types and Uses; 16mm film -- 4590	

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
G. Similar Figures	G. Define similar triangles by writing the relationships between sides in regard to ratio and proportion.	be manufactured. These plans must be precise in their dimensions, and are usually drawn to scale. Suppose you are a draftsman and are working for a company which makes gasoline motors. A blueprint for a gasket is needed with 4 equally spaced holes along a center line. The blueprint is 3 3/32 inches long and 2 inches wide. Using parallel lines, locate the points at which the 4 holes should be drilled. Draw line AN at an angle to AM. Use a compass to mark off 5 equal segments on line AN. Mark points CDEFG. Draw a line segment from G to M. Using the compass, draw lines through C, D, E, F, and G parallel to GM. The intersection of the lines with AM will locate the centers of the 4 equally spaced holes. 

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
G. Similar figures should be related to ratio and proportion. A basic discussion of trigonometry using the right triangle may be introduced at this point.	<u>For Additional Information on Drafting Careers</u> American Institute for Design and Drafting, Post Office Box 2955, Tulsa, Oklahoma 74101. American Federation of Technical Engineers, 1126 16th Street, NW., Washington, D. C. 20036.	

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
V. Open Sentences in One Variable A. Solutions of Open Sentences	V. THE STUDENT SHOULD BE ABLE TO: A. Correctly solve 80% of the equations on a written exercise by using the addition, multiplication, and division properties of equations.	Concept Relationship of solutions of open sentences in one variable to the job of a metallurgist. Performance Objective Given the correct ratio for mixture and amount of iron to be [illegible] calculate the amount of nickel needed to make an experimental alloy.
B. Applications	B. Translate into open sentences and correctly solve 80% of the verbal problems on a written exercise.	General Information Students wishing extra activities should be encouraged to research the metallurgical field. They may wish to compile and analyze material on specific metallurgical careers. Approximately 5,000 to 10,000 metallurgical engineers were employed in 1970. Employment is expected to grow rapidly through the 1970's. Increasing numbers of metallurgical engineers will be needed by the metalworking industries to work on problems involving the development of new metals and alloys. Teaching Activity Metallurgists often experiment with new alloys for use by industry (such as alloys used in rockets). Suppose a metallurgist is experimenting with a new alloy made of iron and nickel. He wants to try a mixture of iron and nickel in a ratio of 21 to 5. He has 84 ounces of iron

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
V. A. Simple equations may first be solved intuitively by using a finite replacement set. The addition, multiplication, and division properties of equations may then be used. B. Translation of verbal sentences to mathematical sentences is usually a difficult topic for many students. Emphasis should be on the ability to translate the verbal statement into a mathematical sentence. Career situations are recommended as settings for problems.	Curriculum Harlandale Audio-Visual Center Equations and Equivalent Equations; filmstrip -- Z-31 Equations & Inequalities; filmstrip -- Z-30 Equations with Fractions; filmstrip -- Z-34 Proof in Algebra: Solving Equations; filmstrip -- Z-33 ESC-Region 20 Equations-Number Sentences; 16mm film -- 4180 For Additional Information on Metallurgical Careers The Aluminum Association, 750 Third Ave., New York, N.Y. 10017.	

RRICULUM NCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
		for the experiment and needs to calculate the amount of nickel needed. Solution: $\frac{21}{5} = \frac{84}{n}$ $21n = 420$ $n = 20$ ounces of nickel

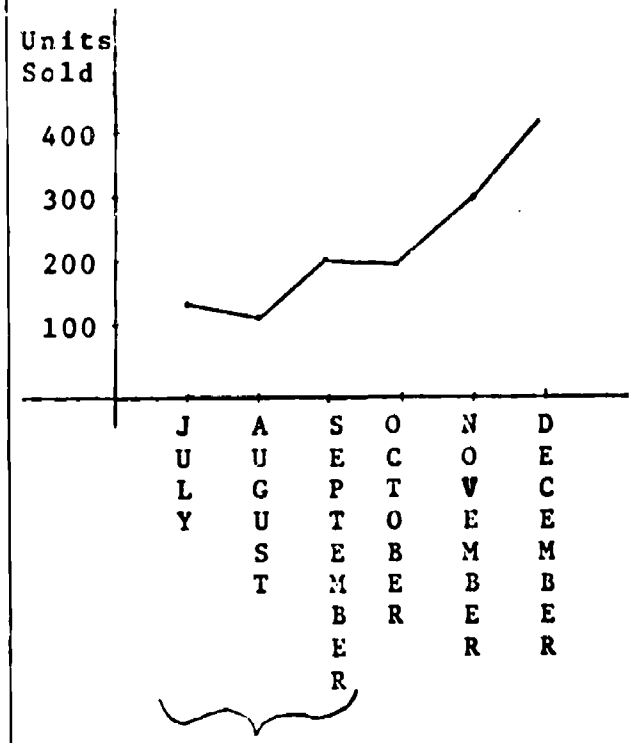
SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
VI. Graphs and Statistics A. Line and Bar Graphs	VI. THE STUDENT SHOULD BE ABLE TO: A. Draw with 80% accuracy a line and bar graph to represent the temperatures over a one week period.	Concept Relationship of graphs which show supply and demand to the work of an advertiser. Performance Objective Draw a line-graph which shows the demand for color televisions during a six month period. General Information Students wishing extra activities should be encouraged to research other careers in advertising. They may wish to compile and analyze material on specific advertising careers. Examples: 1. Advertising managers 2. Account executives 3. Advertising copywriters 4. Production managers 5. Research directors 6. Artists and layout More than 140,000 men and women were employed in advertising in 1970. There is no typical educational background for success in advertising, however, most employers prefer college graduates. Teaching Activity In order to sell an advertising campaign to a large company an advertiser needs to show the need for advertising to the companys' executives. During
B. Mean, Median and Mode	B. Correctly calculate with 90% accuracy the mean, median, and mode of a list of grades made by a student in the room.	

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
VI. A. Students should collect their own data and draw their own graphs. A discussion should be held on interpretations and choice of appropriate forms of graphs. Students should be allowed to select their own projects. B. The concept of average is the most important at this time. Mean, median, and mode may be helpful to more advanced groups. Let the students determine their own average grade for practice.	Curriculum ESC-Region 20 Mean, Median, Mode; 16mm film -- 8261 For Additional Information on Advertising Careers American Advertising Federation, 1225 Connecticut Ave. NW., Washington, D.C. 20036. American Association of Advertising Agencies, 200 Park Ave., New York, N.Y. 10017. Association of Industrial Advertisers, 41 East 42nd Street, New York, N.Y. 10017.	

URRICULUM ONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES

the period from July to December the television firm shows an increase in sales near December. The advertiser in an effort to increase in sales near December. The advertiser in an effort to increase in sales during July and August wants the executives to increase advertising during the low period of sales. In order to present this information he prepares a graph of sales.



SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS

AUDIO-VISUAL SOURCE INFORMATION

TITLE	TYPE	SOURCE	TIME	COLOR OR B/W
Absolute Value	FS	Popular Science		C
Addition and Subtraction of Decimals	FS	Singer/SVE		C
Advancing in Linear Measurements	FS	Singer/SVE		C
Advancing in Quality Measurements	FS	Singer/SVE		C
Buying and Selling Application of Percentage	FS	Singer/SVE		C
Changing Fractions to Decimals; Changing Decimals to Fractions	FS	Singer/SVE		C
Commission-Meaning and Application	FS	Singer/SVE		C
Cutting	record FS	Singer/SVE		C
Decimal Fractions	16mm	Texas Education Agency	10 min.	B/W
Division of Decimals	FS	Singer/SVE		C
Drilling, Tapping and Threading	record FS	Singer/SVE		C
Equations and Equivalent Equations	FS	Popular Science		C
Equations & Inequalities	FS	Popular Science		C
Equations - Number Sentences	16mm	Coronet Films	11 min.	C
Equations with Fractions	FS	Popular Science		C
Federal Taxes	FS	Singer/SVE		C
How to Change Fractions	16mm	Modern Learning Aids	11 min.	C
Insurance	FS	Singer/SVE		C
Interest - Borrowing and Investing	FS	Singer/SVE		C
Layout and Measurement	FS	Singer/SVE		C
Meaning and Reading of Decimals	FS	Singer/SVE		C
Meaning and Understanding of Percentage	FS	Singer/SVE		C
Meaning of Signed Numbers and How to Add Them	FS	Popular Science		C
Mean, Median, Mode	16mm	McGraw-Hill Textfilms	13 min.	C
Measurement	16mm	Modern Learning Aids	21 min.	B/W

AUDIO-VISUAL SOURCE INFORMATION

TITLE	TYPE	SOURCE	TIME	COLOR OR B/W
Measuring and Layout Tools	16mm	Sterling Educational Films	13 min.	C
Measuring in Astronomy-How Big, How Far	16mm	Film Associates of California	12 min.	C
Measuring Large Distances	16mm	Modern Learning Aids	29 min.	B/W
Measuring Short Distances	16mm	Modern Learning Aids	20 min.	B/W
Multiplication of Decimals	FS	Singer/SVE		C
Multiplication of Signed Numbers	FS	Popular Science		C
Positive and Negative Numbers	16mm	Coronet Films	16 min.	C
Possibly So, Pythagoras	16mm	International Film Bureau	14 min.	C
Proof in Algebra: Solving Equations	FS	Popular Science		C
Ratio and Proportion in Mathematics	16mm	Coronet Films	11 min.	C
Shaping and Fastening	record FS	Singer/SVE		C
State and Local Taxes	FS	Singer/SVE		C
Subtraction of Signed Numbers	FS	Popular Science		C
Triangles-Types and Uses	16mm	Coronet Films	11 min.	C
Vocabulary Circles, I	FS	Curriculum Films Inc.		C
Vocabulary Circles, II	FS	Curriculum Films Inc.		C
Vocabulary Lines & Angles I	FS	Curriculum Films Inc.		C
Vocabulary Lines & Angles II	FS	Curriculum Films Inc.		C
Vocabulary Lines - Relationship	FS	Curriculum Films Inc.		C
Vocabulary Polygons	FS	Curriculum Films Inc.		C
Vocabulary Triangles	FS	Curriculum Films Inc.		C

FUNDAMENTALS OF MATHEMATICS II
(a three quarter course)

CURRICULUM GUIDE

Mr. Duwain N. Salmon
Math Consultant

Career Education Center
Harlandale Independent School District
San Antonio, Texas

A C K N O W L E D G E M E N T S

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Preface

Meaningful existence is the goal of life in today's world. Living takes on meaning when it produces a sense of self-satisfaction. The primary task of education must be to provide each individual with skills necessary to reach his goal.

When children enter school, they bring with them natural inquisitiveness concerning the world around them. Normal curiosity can be the nucleus which links reality to formal training if it is properly developed. A sense of continuity must be established which places education in the correct perspective. Communities must become classrooms and teachers resource persons. Skills such as listening, problem solving, following directions, independent thinking and rational judgement then can merge into daily living procedures.

In classrooms especially designed to form a bridge between school and the world of work, experiences must be developed. On campus performance in job tasks and skills, following a planned sequence of onsite visitation, will fuse information into reality. Practical relationships developed with those outside the formal school setting will provide an invaluable carry-over of learned skills.

Search for a rewarding life vocation is never easy. Without preparation it becomes a game of chance. With a deliberate, sequential, and planned program of development, decisions can be made based upon informed and educated judgements.

A full range career education program, K-12, will offer opportunities for participants to enter employment immediately upon completion of training, post secondary vocational-technical education, and/or a four-year college career preparatory program.

C. N. Boggess

C. N. Boggess, Superintendent
Harlandale Independent School District

The Career Education Project has been conducted in compliance with the Civil Rights Act of 1964 and is funded by a grant from the U. S. Office of Education and the Texas Education Agency.

PHILOSOPHY

The educational needs of any community are somewhat unique. This was certain to have been one of the guiding principles used when our forefathers set up local control for public schools. Accordingly, the philosophy of the Harlandale school system is to serve the educational needs of all its citizens as evidenced by adult classes, government sponsored retraining programs, vocational courses, etc. The mathematics department follows this philosophy in planning a program best suited to the needs of our students.

The past decade has proven the need for the new emphasis on the importance of the study of mathematics. Usefulness of mathematics in many fields of learning and endeavor, long thought to be free of mathematics, is now an accepted reality. Also, basic principles must be understood in order that mathematical systems can be devised to describe new human or mechanical activities, as they come to pass.

As mathematics continues to grow this must, of necessity, result in the addition of new symbols, terms, topics, and new approaches. The changing times will make some older topics and methods obsolete. To meet the mathematical needs of our students and to assist teachers in their instruction, the mathematics department has prepared this mathematics guide. Any given faculty consists of personnel with different degrees of training, experience, local tenor, and understanding of student needs. Hence, the desirability for some guiding criteria. In addition, we feel all students should consider career planning as a major facet of their education. Thus it follows that they will need some exposure to the different mathematical requirements of the varied career fields. In part, it is the purpose of this guide to assist the teacher in providing appropriate instruction to meet such needs.

The department feels that the most important basic guide for any mathematics course is the textbook, and careful care is taken in the selection of this book. Not only is the textbook an important guide for the teacher but it is also desirable for the student to learn the use of a textbook as a guide and important tool for learning.

Therefore, the plan of this mathematics guide is not to rewrite the textbook but to improve on it. Generally, the plan is to implement, where desirable, the textbook coverage, describe supplementary material that is needed and make suggestions on methods, procedures, order of coverage, etc.

Mathematics is a thoughtful, creative and intellectually stimulating subject. The enthusiasm and interest of the teacher in the subject is the best atmosphere for creating student enthusiasm for mathematics. This guide is planned to help foster this enthusiasm and in no way infringes on the academic freedom of the teacher.

It is hoped that the guide will prove helpful in understanding the basic standards, improving instruction, and developing the desired uniformity for the classes in each area of study. Finally, the guide should serve as the nucleus for a continuing effort to improve mathematics instruction.

Mr. Hamilton C. Dupont - Head of Math Department
Harlandale Independent School District

FUNDAMENTALS OF MATHEMATICS II

Overview

Fundamentals of Mathematics II may be used as the second course of a two-year sequence to meet graduation requirements. This course may not meet college entrance requirements. It is designed to relate mathematics to daily living and present topics that are useful in becoming a wise consumer. For many of the students this will be the final mathematics course; so it must be able to serve as a foundation for future vocational or technical studey. Major emphasis should also be given to the consumer topics and their relevance to the students.

Differences in classes and individuals necessitate a flexible approach to the content of the course, and teaching materials should come from varied sources. The course should be activity oriented and involve as much student participation as possible. Most of these students have not had many successful mathematics experiences. A change in teaching method alone, however, will not guarantee success. Attitudes of all people involved are important, and enthusiasm should begin with the teacher. Students who are highly successful in this course should be encouraged to take more mathematics and be given the opportunity to do so.

Goals

1. To improve the attitudes of the low achieving student toward the learning of mathematics
2. To improve the student's computational skills
3. To improve the student's ability to solve problems related to daily living
4. To extend the student's understanding of measurement and the use of measures
5. To develop techniques for organizing and presneting data
6. To provide the student with experiences with which he may develop maturity and confidence as a consumer and producer in our society
7. To develop fundamental mathematical concepts and skills through consumer applications which the student can relate to his own needs and experiences
8. To provide the student with continued awareness and in-depth explorations into various careers

The audio-visual materials listed in this guide have been assigned catalogue numbers by the Harlandale Independent School District audio-visual department or the Education Service Center, Region 20, San Antonio, Texas.

FUNDAMENTALS OF MATHEMATICS II

The following outline is built upon a "conceptual ladder" (concepts from 'easiest to hardest') for Fundamentals of Mathematics II. The outline corresponds to the outline found in the curriculum concepts of this guide. The page numbers refer to the present textbook being used in Fundamentals of Mathematics II by the Harlandale Independent School District. (Skeen, Kenneth C., Mathematics with Business Applications, Menlo Park: Addison-Wesley, 1969.)

I. Operations
   A. Slide Rule
   B. Operations pp. 79, 87-89, 99-100, 113-115, 118-119, 120-121, 129, 136-137, 148, 149-150, 155
   C. Squares, Cubes, and Square Roots
   D. Open Sentences

II. Graphs p. 277
   A. Organizing and Representing Statistical Data
   B. Pictographs, Bar Graphs, and Line Graphs
   C. Circle Graphs
   D. Meters and Gauges

III. Ratio and Proportion
   A. Ratio p. 67
   B. Percent p. 162
   C. Properties

IV. Consumer Mathematics
   A. Personal Income pp. 126, 269, 274-275
   B. Money Management pp. 291-295
   C. Transportation pp. 298-305
   D. Credit Financing pp. 282-291
   E. Shelter p. 296
   F. Food and Clothing pp. 295-298, 305-308
   G. Medical Expenses pp. 302, 307
   H. Banking Services pp. 132-135
   I. Investments pp. 308-319
   J. Taxes pp. 278-282
   K. Leisure Time

FUNDAMENTALS OF MATHEMATICS II

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
I. Operations A. Slide Rule	I. THE STUDENT SHOULD BE ABLE TO: A. Given a slide rule, compute with 80% accuracy a written set of problems which contain basic arithmetic operations.	Concept Relationship of the study of the slide rule to the study of fluid mechanics by mechanical engineers Performance Objective Calculate the water pressure at the foot of a dam if the depth of water is 730 feet. General Information Students wishing extra activities should be encouraged to research other careers in mechanical engineering. Approximatly 220,000 mechanical engineers were employed in the United States in 1970. The employment outlook for mechanical engineering is for rapid growth in the 1970's. Salaries for mechanical engineers are considered above average with most making over $10,000 per year. High school students should prepare for their career by taking college preparatory courses. Emphasis should be placed on math and science. Mechanical drawing and drafting may prove helpful. Teaching Activity Engineers often use mathematics in their work. In order to simplify their calculations they often use a slide rule. Although the following problem can be worked using arithmetic, a mechanical engineer who is adapt in the use of the slide rule would work the problem in a fraction of the time.
B. Operations	B. Correctly solve 80% of the practical situation problems on a written exercise which contains operations on decimals and fractions.	
C. Squares, Cubes, and Square Roots	C. When given a standard mathematical table, find approximations in the table to aid in working problems which involve finding the area of triangles, squares, and circles as well as findind the volume of cubes and spheres.	
D. Open Sentences	D. Solve with 90% accuracy a set of linear equations in one variable which include integers or rational numbers.	

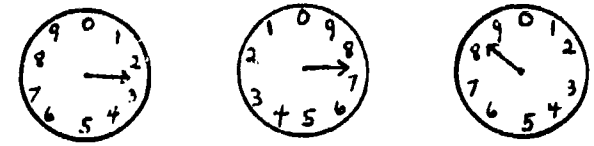
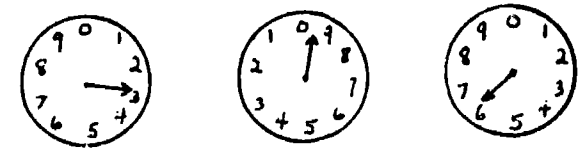
SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
I. A. The slide rule should be introduced as early as possible in this course and the students should be encouraged to use it for computations. The types of problems, the degree of difficulty of problems, and the accuracy of answers should be determined by the ability of the students. Use problems which will provide opportunities for a review of basic operations. B. No units in this course on basic operations should be set apart strickly for drill. If possible, all problems should be related to practical situations and placed throughout the course. Use problems which involve the basic operations on whole numbers, decimals, and fractions. C. Let the students use approximations from tables and slide rules. Applications involving triangles, squares, cubes, circles, and spheres should be stressed. D. Working with equations will vary with the ability of the students. The solution of equations in one variable is a minimum requirement. Be sure to include integers and rational numbers in the study of equations.	Curriculum Harlandale Audio-Visual Center Equations and Equivalent Equations; filmstrip -- Z-31 Equations & Inequalities; filmstrip -- Z-30 Equations with Fractions; filmstrip -- Z-34 Finding Square Roots; filmstrip -- AA-74 Proof in Algebra: Solving Equations; filmstrip -- Z-33 ESC-Region 20 Equations-Number Sentences; 16mm film -- 4180 For Additional Information on Mechanical Engineering The American Society of Mechanical Engineers, 345 East 47th St., New York, N. Y. 10017.	

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
		A mechanical engineer knows that the pressure of water at various depths (H in feet) is given by $p = Hd$ (pounds per square foot) where d is density in pounds per cubic foot (62.4 for fresh water). He needs to know the water pressure at the foot of a dam if the depth of water is 730 feet. $p = \frac{62.4 \times 730}{144} = 316$ pounds per square inch

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
II. Graphs A. Organizing and Representing Statistical Data	II. THE STUDENT SHOULD BE ABLE TO: A. Draw a graph or chart of statistical data compiled by the student, for example, tabulate different makes of cars passing a point in a given time.	<u>Concept</u> Relationship of reading meters and gauges to the job of a gas meter reader. <u>Performance Objective</u> Calculate the cubic feet of gas used by a family residence as shown by their gas meter.
B. Pictographs, Bar Graphs, and Line Graphs	B. 1. Given statistical data, determine appropriate units of measure and prepare both line and bar graphs. 2. Given a stated problem, obtain a solution by using information from prepared graphs.	<u>General Information</u> Students wishing extra activities should be encouraged to research other careers in public service. They may wish to compile and analyze material on work done by public servants. <u>Examples</u>: 1. Metermen 2. Meter Installers 3. Meter Testers 4. Meter Readers
C. Circle Graphs	C. 1. Measure with 90% accuracy central angles of a circle. 2. Correctly compute with 80% accuracy the angle measure to be marked in a circle graph when given a percentage by using ratio and proportion.	The energy crisis may deter the need for gas meter readers as customers turn to other forms of heating fuels. However, little change is expected in employment through the 1970's. Metermen are usually paid by the hour and averaged between four and five dollars an hour in 1970. High school students wishing to become meter readers should have a basic knowledge of math. Usually on the job training provides the specialized skills needed by the worker. <u>Teaching Activity</u> The reading on a gas meter at a family residence last month was 278. The reading this month is 296. Find the number of cubic

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
II. A. The discussion should include the different types of problems which require compiling statistical data. Let the students compile their own information on a topic which they choose. B. 1. Present the students with the necessary data for making a line and a bar graph. Explain to the students that the information should be placed on a regular sheet of notebook paper. Let the students choose their own units of measure and prepare both a line and a bar graph. 2. Place a line and bar graph on the board which present the same information. The graphs should show production sales ratio of a production firm. By examining the graph the student should determine what production sales ratio is best for profit. C. 1. Review measuring angles with a protractor. If possible, use the overhead projector and a plastic protractor in presenting the measure of central angles of a circle. Have several students draw circles with central angles of a given size on the board. 2. Compare a percentage to a portion of 360^0 (a circle) by using a proportion. Example: 80% -- $\frac{80}{100} = \frac{n^0}{360^0}$ $100n = 28800$ $n = 288^0$ Assign a written exercise on changing a percentage to degree measure.	Curriculum Harlandale Audio-Visual Center Graphs; filmstrip -- AA-62	

RRICULUM NCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
	3. Given statistical data, obtain a solution to the percentages of A's, B's, C's, D's, and F's in the room by using information from prepared circle graphs.	feet of gas used and the resulting cost. Last Month 100 Thousand 10 Thousand 1 Thousan  This Month 100 Thousand 10 Thousand 1 Thousan  First 200 cu. ft. or less $1.00 Next 2,000 bu. ft., $.80 per 1,000 cu. ft. Next 8,000 cu. ft., $.50 per 1,000 cu. ft. Over 10,200 cu. ft., $.40 per 1,000 cu. ft. Solution: 296 - Present Reading 278 - Previous Reading 18 - cu. ft. used Remember 18 on the meter means 18,000 cu. ft. 18,000 - 200 - cost $1.00 17,800 - 2,000 - cost $1.60 15,800 - 8,000 - cost $4.00 7,800 - cost $3.12 $9.72 paid for 18,000 cu. ft. of gas
D. Meters and Gauges	D. Given drawings of various types of meters write the correct reading with 90% accuracy as shown in the drawing (electric, gas, water, ohm, volt, etc.)	

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
3. Draw a circle graph on the board which shows the number of A's, B's, C's, D's, and F's given on the last reporting period. Have the students change the number of A's, B's, C's, D's, and F's given to a percentage for each grade. D. Either by use of the textbook or duplicated problems show the students how to read eletric, gas, water, ohm, and volt meters. If possible, use an actual working model. Allow the students to determine the charges for a utility bill. Ask students to bring old eletric or water bills to class. Stress the jobs available in public utilities.		

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
III. Ratio and Proportion A. Ratio	III. THE STUDENT SHOULD BE ABLE TO: A. Given a ratio or rate, interpret it in words or by a diagram with 80% accuracy.	Concept Relationship of ratio and proportion to cartography. Performance Objective Choose the most suitable scale for drawing a map which must show a region 9 miles by 9 miles and be drawn on a map which measures 3 inches by 3 inches. General Information Students wishing extra activities should be encouraged to research other careers related to cartography. Examples: 1. Cartographer 2. Map cataloguer 3. Title geographer Employment for geographers is expected to be favorable through the 1970's. Nationally the salaries for geographers range from $6,548 to over $20,000. High school students wishing to become geographers must receive a bachelor's degree with expectation of obtaining a higher degree. Teaching Activity A city tax office has employed a cartographer to make maps of certain sections of the city for tax purposes. The cartographer must show a square of land measuring 9 miles by 9 miles on a map measuring 3 inches by 3 inches. In order to prepare this map the cartographer must determine a proper ratio scale
B. Percent	B. Correctly solve with 90% accuracy written problems involving percent by using ratio and proportion. (Example: The problem "X% of base is number" would be written in the form " $\frac{x}{100} = \frac{\text{number}}{\text{base}}$ ").	
C. Proportion	C. Given a problem involving direct variation, similar figures, or inverse variation, write a proportion with a variable which will in turn determine the solution with 80% accuracy.	

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
III. A. In an oral lesson present the student with a ratio (example 120/160). Encourage the students to give the ratio an application (example: $\frac{120}{160}$ pounds for one student $\frac{120}{160} = \frac{3}{4}$ This means that the ratio of the weight of the students is in a ratio of 3 to 4. B. Use percent to find interest while stressing stated problems. Show the student how a credit loan officer would determine the interest on a loan. Let the student determine the amount of interest a person pays on a home mortgage of $19,000 for a period of 30 years. Refer to the appendix of this guide for information on consumer education. C. Stated problems which involve career situations pertaining to proportions should be stressed (refer to the career teaching activity). The student should be expected to solve problems involving direct variation, similar figures, and inverse variation.	Curriculum Harlandale Audio-Visual Center Percent, Discount and Commission; filmstrip -- AA-68 ESC-Region 20 Ratio and Proportion in Mathematics; 16mm film -- 4496 For Additional Information on Geographic Careers Association of American Geographers, 1710 16th St. NW., Washington, D.C. 20009.	

;RRICULUM ;NCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
		for the map. Solution: $\frac{3 \text{ inches}}{9 \text{ miles}}$ Most scales are shown in regard to "inches" to one mile. Therefore, reducing the ratio by 9 the ratio is 1/3 : 1. The scale of the map will be 1/3 inch to 1 mile.

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS

URRICULUM ONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
IV. Consumer Mathematics A. Personal Income	IV. THE STUDENT SHOULD BE ABLE TO: A. 1. Given the total sales and commission rate for a sales clerk, calculate the sales commission earned by the clerk during one month of selling. 2. Determine the take home pay for an employee when given payroll deductions (stressing social security and retirement plans).	Concept Relationship of consumer mathematics to the job of a mortgage loan officer. Performance Objective Calculate the amount of interest paid on a mortgage home loan of $14,000 for a period of 30 years. General Information Student wishing extra activities should be encouraged to research other careers in banking. They may wish to compile and analyze material on work done in banking. Examples: 1. Bank clerks 2. Tellers 3. Bank officers A moderate rise in employment is expected in banking occupations in the 1970's. Most job openings will be for clerks, however, an increasing number of trainee jobs, which may lead to officer positions. High school students wishing to enter banking should enjoy working with numbers. Most new employees receive in-service training by the bank. Most banks encourage their employees to continue their education at the college level. Professional and managerial bank personnel have usually completed college. Teaching Activity A mortgage bank officer must
B. Money Management	B. Given an estimated income, determine total estimated expenses and cash on hand at the end of a pay period (expenses should include savings, room and board, transportation, food, clothing, personal grooming needs, medical expenses, gifts, entertainment, and miscellaneous items).	
C. Transportation	C. Given the separate operating expenses on a car for one year and cost of public transportation, find the difference between the two modes of transportation after computing both costs.	

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
IV. Newspapers, catalogues, periodicals, and other advertising media are valuable aids in teaching this unit. A. 1. Let the students determine the total salary for one month of an appliance salesperson who works on a 5% commission. Give the students a listing of the prices of appliances sold by a salesperson in one month. Ask the students to determine the salary of the salesperson. 2. If possible, allow the students to view check stubs showing payroll deductions. Discuss such payroll deductions as withholding tax, insurance, anuities, social security, and retirement plans. Be sure to stress the benefits of each. (TP-159) B. A study of money management should involve budgeting, good buying practices, impulse buying, and saving. Refer to pages 1 and 2 of the appendix for teaching aids. C. Discuss some of the effects of cars upon society and the environment. The student should know some of the advantages and disadvantages of public transportation, car ownership, and car leases. Stress expenses of car ownership and operation. Include depreciation, interest involved in financing, insurance, taxes, upkeep, cost of extras, and cost of gasoline.	Career and Curriculum Harlandale Audio-Visual Center Applying for Social Security Coverage; transparency -- TP-127 Employee Wages and Salaries transparency -- TP-101 Employee's Withholding Exemption Certificate Form W-4; transparency -- TP-158 Financing Business Through Credit; transparency -- TP-97 Form 1040A; transparency -- TP-129 How Does the Stock Market Work?; cassette tape with filmstrip -- Cas.T-9(BB-26) Social Security Application Form; transparency -- TP-157 Taxes; transparency -- TP-146 Typical Payroll Check Stub: With Explanation of Entries transparency -- TP-159 Use of Taxes; transparency -- TP-132	

JRRICULUM ONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
D. Credit Financing	D. Calculate with 85% accuracy the interest on money for a certain amount of time and at a certain interest (include rates at banks, credit unions, savings associations, finance companies, and charge accounts).	compute the amount of interest on a home loan for his customer. The loan is for $14,000 at 8% simple interest to be repaid over a 30 year period. Solution: interest = principal X rate X time $14,000 X .08 = 1120.00 $1,120 X 30 = $33,600 interest paid in 30 years Concept Relationship of medical expenses to the job of an insurance claims adjuster. Performance Objective Calculate the major medical benefits to be paid to a policy holder who had medical bills totaling $192.50 during a one year period. General Information Students wishing extra activities should be encouraged to research other health service careers. Approximately 3.5 million people were employed in health related occupations in 1970. Examples: 1. Physicians 2. Dentists 3. Dental assistants 4. Nurses 5. Medical assistants 6. Technicians 7. Therapists 8. Optometrists 9. Pharmacists
E. Shelter	E. Given the expenses of home ownership such as: property taxes, insurance, mortgage, utility costs, and repairs; calculate the difference of expenses of apartment living.	
F. Food and Clothing	F. Determine a budget for food and clothing over a one month period (consider costs of prepared foods, dining out, cloths, and cleaning of cloths).	
G. Medical Expenses	G. Calculate with 80% accuracy the medical expenses of a family of four for one year (include regular medical and dental care, benefits and costs of hospitalization insurance, and records of these expenses).	

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
D. A study of credit financing should include the cost and types of consumer goods which may be wisely purchased by credit financing. Include the following types of financing: banks, credit unions, savings associations, finance companies, and charge accounts. Stress the mathematics involved in determining each of the following: interest rates, amount of interest, true interest, and total interest. It is now required by the Texas Education Agency that consumer education be taught in the classroom. A section in the appendix of this guide is included on consumer education to aid the teacher (pp. 3-39). E. Discuss home ownership versus apartment living. Include the following costs of home ownership: property taxes, types and costs of insurance, mortgage, utility costs, and home repairs. F. The students should be able to determine the unit costs of items. Consider the costs of prepared foods and dining out. Include selection and care of clothing, such as initial cost and cost of cleaning. Allow students to bring newspapers or catalogues to class to check prices. G. The study of medical expenses should include the following topics: value of regular medical and dental care, benefits and cost of hospitalization insurance, and records of these expenses. Allow students to discuss medical expenses that their families have encountered in the local community.	What is the Stock Market?; cassette tape with filmstrip -- Cas.T-8(BB-25) Your Future in the Internal Revenue Service; magnetic tape -- MT-281 For Additional Information on Consumer Financing American Bankers Association, Personnel Administration and Management Development Committee, 1120 Connecticut Avenue, NW., Washington, D.C. 20036. National Association of Bank Women, Inc., National Office, 111 E. Wacker Dr., Chicago, Ill. 60601. National Bankers Association, 4310 Georgia Ave., NW., Washington, D.C. 20011. The National Consumer Finance Association, 1000 16th St., NW., Washington, D.C. 20036. Federal Deposit Insurance Corporation, Director of Personnel, 550 17th St., NW., Washington, D.C. 20429.	

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
H. Banking Services	H. 1. Complete a deposit slip for $255. 2. Write a check for $85.23. 3. Given the deposits and checks made on an account during a month period, calculate a bank balance.	The wide range of careers available in health related occupations should make it evident that training varies. For instance some therapists receive on the job training while physicians must receive formal job training for as many as ten years. High school students should be encouraged to investigate the training necessary for a particular job. Teaching Activity Because of the high cost of health care many companies or businesses have group medical plans to defray medical expenses. Major medical benefits are often included in these policies. The insurance companies hire claim adjusters to determine the payment of claims. A teacher in a metropolitan school district carries group health insurance with his employer. The policy pays 80% of all medical expenses above $100 which are not paid by any other insurance. The teacher in question spent $192.50 on prescription drugs and office calls to his doctor during the past year. The teacher decides to claim this expense under major medical benefits in his health insurance policy. After compiling receipts for the $192.50 he sends his claim to the insurance company. Upon receiving the claim by the
I. Investments	I. 1. Calculate with 90% accuracy the simple interest on a savings account by formula and compound interest by the use of tables. 2. Calculate with 80% accuracy the profit or loss made on a purchase of stock over a period of one month.	
J. Taxes	J. 1. Given the sales tax rate, calculate the tax on a list of purchases with 95% accuracy. 2. Fill-out a Federal Income Tax Form using current Internal Revenue Service materials.	
K. Leisure Time	K. 1. Given the separate costs of hobbies, and vacationing, calculate the costs over a one year period. 2. Given the annual incomes of two persons, one a college graduate and one not, calculate their income separately over a thirty year period.	

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS
H. Discuss the various services of banks. The students should be able to perform the following tasks: Complete a deposit slip, write a check, keep accurate records, and reconcile a bank balance. A resource person such as a bank official may be included. Refer to pages 40 and 41 of the appendix for aids in teaching. I. Two major types of investments to be considered are savings accounts and stocks. Discuss types of institutions offering savings accounts. The student should determine simple interest by the formula and compound interest by use of tables. The costs of stock purchases, and reading of stock market quotations would be included in the discussion of stocks. Life insurance, bonds, and real estate are other important types of investments which would be included in this unit. Allow the students to use newspapers for the study of the stock market. J. Students will determine the sales tax on purchases. Refer to pages 42 and 43 of the appendix of this guide as a teaching aid. Ability of students will determine the depth of presentation of the study of Federal income taxes. The teacher should contact the local Internal Revenue Service for current materials. K. This topic may include the cost of hobbies, advantages and costs of continued education, and vacations. The discussion of travel would include figuring cost per mile for transportation using the distance formula, calculating average speed and distance, reading maps, and budgeting money.		

CURRICULUM CONCEPTS	CURRICULUM PERFORMANCE OBJECTIVES	CAREER CONCEPTS, PERFORMANCE OBJECTIVES, GENERAL INFORMATION, AND TEACHING ACTIVITIES
		insurance company a claim adjuster is appointed to settle the claim. The adjuster must investigate the claim to see that it is a valid claim and that all paper work is in order. He must then calculate the money to be paid to the teacher. Solution: $192.50 medical expenses $100.00 deductible $ 92.50 $ 92.50 X .80 percent paid by insurance $74.0000 A check for $74.00 will be paid the teacher.

SUGGESTED TEACHING METHODS CAREER AND CURRICULUM	AUDIO-VISUAL AND RESOURCE MATERIALS	TEACHER COMMENTS

AUDIO-VISUAL SOURCE INFORMATION

TITLE	TYPE	SOURCE	TIME	COLOR OR B/W
Applying for Social Security Coverage	TP	3 M		
Employee Wages and Salaries	TP	3 M		
Employee's Withholding Exemption Certificate Form W-4	TP	Tecnifax		
Equations and Equivalent Equations	FS	Popular Science		C
Equations & Inequalities	FS	Popular Science		C
Equations-Number Sentences	16 mm	Coronet Films	11 min.	C
Equations with Fractions	FS	Popular Science		C
Financing Business through Credit	TP	3 M		
Finding Square Roots	FS	Eye Gate House		C
Form 1040A	TP	3 M		
Graphs	FS	Eye Gate House		C
How Does the Stock Market Work?	cassette FS	Eye Gate House		C
Percent, Discount and Commission	FS	Eye Gate House		C
Proof in Algebra: Solving Equations	FS	Popular Science		C
Ratio and Proportion in Mathematics	16 mm	Coronet Films	11 min.	C
Social Security Application Form	TP	Tecnifax		
Taxes	TP	3 M		
Typical Payroll Check Stub: With Explanation of Entries	TP	Tecnifax		
Use of Taxes	TP	3 M		
What is the Stock Market?	cassette FS	Eye Gate House		C
Your Future in the Internal Revenue Service	MT	Guidance Associates		

APPENDIX

Money Management and Preparing a Budget

Example Budget of Income and Expenses
January 1, 19-- to January 15, 19--

Estimated Income:	
Cash on Hand	$ 2.25
Salary	104.86
Total Estimated Income	$107.11
Estimated Expenses:	
Savings	20.00
Room and Board	30.00
Busfare	8.00
Lunches	6.00
Clothing	10.00
Vacation Fund	8.00
Personal Grooming Needs	4.75
Potential Medical Examinations	4.00
Gifts	2.50
Entertainment	6.00
Miscellaneous Items	5.00
Total Estimated Expenses	$104.25
Cash on Hand (end of budget period)	2.86

The above illustrates an example of a budget plan. Let the students make a budget of their own using the information given below.

Leo Buchanan, a high school senior, is planning a budget for the pay period of March 1, 19-- to March 15, 19--. Leo will have the following income: Cash on hand $12.68 and a pay check for $42.35.

Leo expects to have the following expenses: Savings $15.00. Transportation $4.00, Lunches $4.00, Clothes $10.00, Grooming Needs $3.50, Haircut $2.25, Entertainment and Recreation $10.00 and Miscellaneous Items $5.00.

Help Leo prepare a budget like the one above for the forthcoming budget period.

SAVINGS ACCOUNT

FIRST NATIONAL BANK

Date March 4 19--

Deposit To The Credit Of

Savings Account No. 6345

NAME Helene Scott

ADDRESS 301 Creath

	DOLLARS	CENTS
CURRENCY	43	00
COIN		98
CHECKS 1	12	27
2		
3		
4		
5		
TOTAL	56	25
LESS CASH	0	00
TOTAL PAYMENT	56	25

Filling out a Deposit Slip for a Savings Account

Helene Scott must fill out a deposit slip each time she deposits money in her savings account. Study the deposit slip which is shown above. Answer the following questions about the information given on the deposit slip.

1. What is the deposit date? _____
2. What is the number of the savings account? _____
3. What is the depositor's complete name? _____
4. What is the address of the depositor? _____
5. How much money was deposited in currency? _____ coins? _____ checks? _____
6. How many checks were deposited? _____
7. What is the total amount of this deposit? _____

The Significance Of Consumer Credit

INTRODUCTION

The United States has been characterized both as an "affluent society" and as a "consumer-oriented economy." Certainly there is in no other nation today a higher material standard of living nor an industrial sector more dependent upon the preferences—expressed by purchase—of consumers. Both statistical fact and personal observation not only confirm these characterizations, but also indicate that both will become more true in the future. In short, in no other society does the average individual or household possess a greater command over goods and services or a wider freedom of choice.

It would be an oversimplification to attribute our economic well being solely to the consumer sector of our society, or to a single institution, such as consumer credit. Factors such as natural resources, skilled labor and management, education, and many others have played and continue to play important roles. At the same time it would be short-sighted to slight the role the consumer and the institution of consumer credit have played and continue to play in both our society and our individual lives.

There are many definitions of the word "credit" in existence. One of the simplest (as well as most general) is that of the nineteenth century English economist, John Stuart Mill, who stated simply that credit is purchasing power. A more modern—and in some ways, a more useful—definition of the term "credit" is . . . "the ability of an individual . . . to obtain present values (money,

goods, or services) while deferring payment, usually in the form of money, to a definite future time."[1] When the word "consumer" is added to "credit", thus defined, it implies that the values (money, goods, or services) acquired are ultimately for consumption purposes, either currently or over a period of time, as opposed to business or investment purposes, including the acquisition of real estate.

When defined in this way it can be seen that consumer credit is a fairly simple term embodying an important idea that is significant not only to business and the economy in general, but also of great importance to individual consumers. If nothing else, it is all pervasive. Few, if any adults in the United States have never used consumer credit. The gasoline credit card, the department store charge account, the installment contract for the purchase of an automobile are all common examples of the use of consumer credit. Used wisely, consumer credit is not only a convenience to the individual, but also a means of improving his standard of living. Used unwisely, its results may range from family bickering and hard feelings to personal bankruptcy.

In short, consumer credit is an aspect of our economy and our business system which touches the lives of each of us. The following pages will be devoted to examining consumer credit in terms of its significance in our economy, the forms it takes and the institutions involved with it, the financial aspects of its use by individuals, and the many legal rights and obligations involved in its use.

THE ECONOMIC AND SOCIAL SIGNIFICANCE OF CONSUMER CREDIT

THE MAGNITUDE OF CONSUMER CREDIT

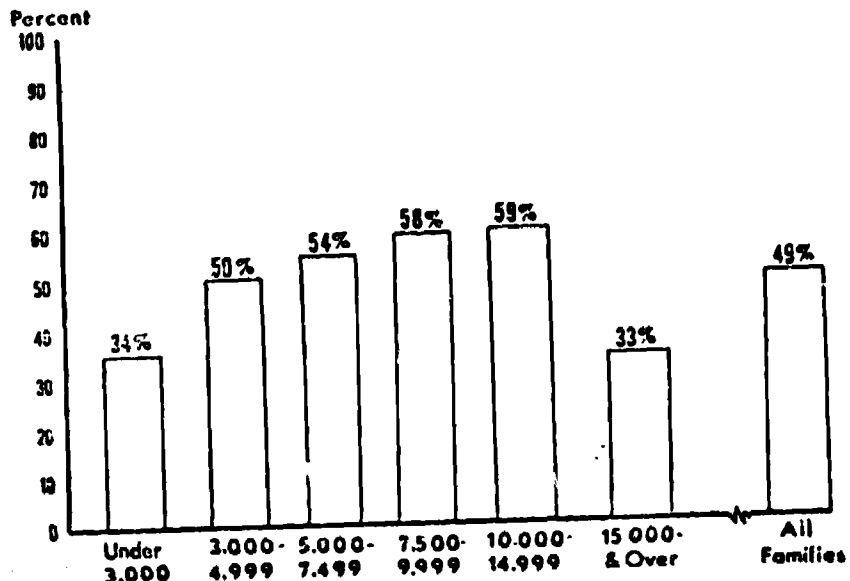
There is no doubt that consumer credit is an important element in our economic and financial system. Figures published by the Board of Governors of the Federal Reserve System show that, at the present time, total consumer credit outstanding exceeds $110 billion. In terms of averages, this is more than $1,600 for every household in the United States. Currently more than $8 billion worth of consumer credit (or more than $120 per household) is

[1] Albert F. Chapin and George E. Hassett, Jr., *Credit and Collection Principles and Practice* (7th Ed.), New York, McGraw-Hill, 1960, page 4.

efficiently, it also permits a family to plan and budget over a period of months and years, rather than days and weeks, and thus helps them use their long term income more effectively.

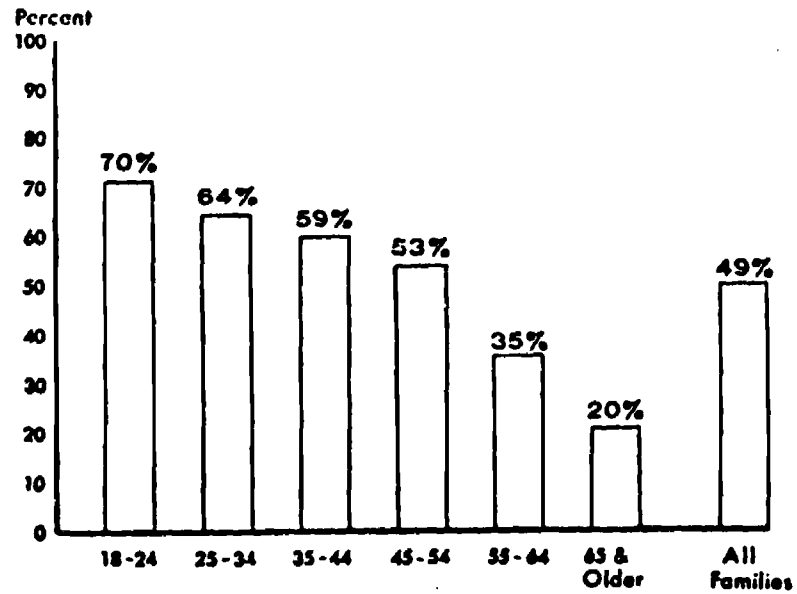
As important as consumer credit is to our economy and our society, it can be effective and beneficial only if the individual understands it and uses it wisely. In order to understand and use consumer credit wisely, we must now consider its forms and sources, how it is acquired and what it costs, and the many legal factors which affect its use.

Figure I-4: Percent of Families Using Consumer Credit, By Income



Source: S. Lees Booth, Finance Facts Yearbook 1965, National Consumer Finance Association, Washington, D.C. p. 46

Figure I-5: Percent of Families Using Consumer Credit, By Age



Source: Booth, op. cit., p. 47

SOURCES AND HOLDERS OF CONSUMER CREDIT

Although retail stores, individuals, and institutions providing services to consumers are the most frequent originators of consumer credit, the credit itself is most commonly held by a financial institution. When a retail store sells goods to a customer on credit, it is possible (and common) for the store to "sell the paper"—legally transfer the customer's obligation to pay—to some one else, such as a bank or finance company. The store does this to get the cash it needs to continue its business, since few retailers have sufficient capital to carry their own consumer credit for more than a few months. As one might expect, this practice is most common where installment credit is concerned or in examples of non-installment credit when there may be a long time period before payment is expected (as in the case of some medical bills).

In addition, the retailer who "sells his paper" normally must pay something to do so since, from the standpoint of the buyer, purchasing "paper" is comparable to making a loan. Such payment is frequently accomplished by "discounting" the paper: the retailer sells the customer's obligation to pay to the bank for less than its full face value. Thus, if a customer has agreed to pay a total of $100 in ten equal installments, the store may for example, transfer this obligation to its bank in exchange for $96 in cash, which it may need to pay its own current obligations or to replace inventory. The amount of the discount is determined by a number of factors, the more important ones being the current level of interest rates, the credit reputation of the original customer, and the degree to which the store is willing to guarantee that the customer will pay as agreed.

In some cases, the same end is achieved, but the process of "selling paper" is avoided by making it possible for the customer to borrow directly from a financial institution on the premises of the retail store or in the office of the person providing a service. For example, a sales finance company may have a representative at a desk in an auto dealer's show room, and applications for a loan are often available in doctors' and dentists' offices.

COMMERCIAL BANKS

Commercial banks are not only the most important single type of holder, but also are important sources of almost every type of consumer credit. This is a part of what is meant when commercial banks advertise that they are "department stores of finance," and is a reflection of the fact that in terms of dollars commercial banks are the most important financial institution in the United States. At the present time, there are almost 14,000 commercial banks, with total assets of almost $450 billion in this country. In addition, commercial banks (more commonly called simply "banks") are the most familiar financial institutions for most Americans; almost every town has one or more, usually named the "..... National Bank" or the "..... State Bank." They engage in accepting and holding the savings deposits and checking accounts of their customers, and at the same time, lending the funds deposited with them to other customers for almost any worthwhile purpose. Although loans to businesses are the most important part of their lending activities, in terms of total dollars loaned, consumer credit is a substantial part also. Since they usually charge higher interest rates for consumer credit than they do for business loans, consumer credit is considered a profitable and desirable type of lending by many bankers, even though the expenses associated with consumer credit are considerably greater.

FINANCE COMPANIES

Sales finance companies are another very important source of consumer credit, especially in the installment area. Among the more widely known are Associates Discount, Ford Motor Credit, General Motors Acceptance Corporation (GMAC), Commercial Credit Corporation, Great Western Finance, and Universal Credit Corporation. Like commercial banks, they are privately owned by and attempt to earn a profit for their stockholders and are engaged in the business of making loans to both consumers and business firms. Unlike banks, they rarely engage in other forms of lending (such as mortgage loans) and they offer no checking accounts or savings deposits to their customer. Instead, they acquire the funds they lend through the sale of stock and bonds to investors and by borrowing from other financial institutions.

The lending activity of sales finance companies emphasizes consumer credit which accounts for almost two-thirds of their

lending business. In addition, they tend to concentrate on automobile and other consumer goods installment credit, which normally equals more than one half of all their outstanding credit.

Consumer finance companies, on the other hand, concentrate most heavily on making personal loans to consumers; almost one-third of the personal installment loans outstanding in the United States are made by consumer finance companies. Otherwise, they are similar to sales finance companies in that they are owned by stockholders and financed by stock, bonds, and loans from other financial institutions.

Consumer finance companies are typified by such nation-wide firms (with literally thousands of offices) as Household Finance and Beneficial Finance, as well as a number of other chains (such as Dial Finance, and Pacific Finance) and many smaller locally owned and operated finance companies. In spite of the tendency of sales finance and consumer finance companies to concentrate on specific types of consumer credit, it should be noted that neither group is exclusive in terms of the types of credit it extends. Consumer finance companies often make auto and furniture loans, and, vice versa, sales finance companies often make personal cash loans to their customers.

FINANCE COMPANIES AND THE EVOLUTION OF CONSUMER CREDIT

Historically, sales finance companies and consumer finance companies were the pioneer financial institutions in the field of consumer credit. Fifty years ago (in 1919) almost eighty percent of all consumer installment credit was held by the retailers who had originated it. Seventy-five percent of the installment credit held by financial institutions was in the hands of sales finance and consumer finance companies. Commercial banks held less than three percent of the total installment credit outstanding (See Figure II-3).

Sales finance and consumer finance companies, as progressive lending institutions, grew rapidly in importance by responding to the needs of American consumers. On the one hand, consumers frequently needed loans and installment credit. Retailers were limited in the amount of credit they could supply; they simply did not have enough capital to run their retail business and sup-

ply vast amounts of credit, too. The options available to the consumer were few. If he wished to make a major purchase—an automobile, or furniture, for instance—he often had to wait until he could save up most or all of the price. If an emergency occurred, and he had to have money for medical payments, for instance, he could try to borrow from friends and relatives. If they had no extra cash either, his only recourse was to loan sharks, who usually charged twelve hundred percent (1200%) or more in interest. Banks of the time often refused to make consumer loans unless the borrower was already an important customer of the bank.

Consumer finance companies were started (typically under state regulation) to make loans to consumers for worthwhile purposes at rates of interest they could afford. They were immediately popular. It is interesting to note that many of the early consumer finance companies were begun as a means of social reform, designed to help raise the standard of living of the average working man. Many of those involved in the origination of the consumer finance movement (in which the Russell Sage Foundation played an important part) were dedicated philanthropists and idealists.[8]

Sales finance companies originated as a means of supplying credit for the increasing demand for automobiles. Again, established financial institutions were not especially interested in making loans to consumers for the purchase of automobiles. The relatively new consumer finance companies were committed to making small personal loans. As a result sales finance companies were formed to supply funds for the auto loan market and grew rapidly with it.

As consumer finance companies and sales finance companies demonstrated, over the years, that the average American consumer was a good credit risk and that there was nothing dangerous in making loans to him, other financial institutions—such as commercial banks—became more interested in making such loans. It was many years, however, before banks became more important lenders to consumers than sales finance and consumer finance companies were. By 1942 commercial banks held more installment credit than did sales finance companies, but as recently as 1959 sales finance companies held more automobile credit than did their banking competitors.

At the present time consumer finance and sales finance companies continue to be important sources of consumer credit. Since

[8]For an interesting account of the origin and growth of consumer finance, see Irving Michelman's *Consumer Finance: A Case History in American Business*, New York, Frederick Fell, 1966.

they may be more liberal than banks in their lending practices, although their interest charges may be higher over all, they are apt to continue to be important sources of consumer credit.

CREDIT UNIONS

Among the other sources of consumer credit, credit unions are one of the most important. In essence, a credit union is a financial cooperative. Persons with something in common (typically, their employment) are eligible for membership. As members of credit unions, they can deposit savings with the credit union, on which they earn interest, and can borrow from the credit union. Members' savings provide the funds which credit unions have available to lend to their members. The interest that borrower-members pay on loans is used to pay the expenses of the credit union as well as interest on the savings accounts. Practically all of the loans made by credit unions are for consumer credit purposes.

The first credit union in the United States was organized in 1909. Their most significant growth, however, has occurred since World War II. It is estimated that, at the present time, almost ten percent of the total population of the United States are members of credit unions. As a source of consumer installment credit and loans, they are third in importance, but may become even more significant. Over the last ten years the dollar amount of their installment credit outstanding has been growing more rapidly than that of either commercial banks or sales finance companies.

CONCLUSION

Commercial banks, sales finance companies, credit unions, and consumer finance companies together hold eighty-five percent of the consumer installment credit and loans outstanding. More than ten percent of the remainder is held by the retail outlets that originally extended the credit (more than half by department stores and mail order houses). The remaining portion (less than five percent) is held by a variety of financial institutions, such

as mutual savings banks, industrial banks, Morris Plan banks, and savings and loan associations. Most of these institutions are not involved in consumer credit in all of the fifty states, and many hold consumer credit only because of the special laws of one or more states. However, where they do operate, some of these institutions are important suppliers of consumer credit.

Thus, although local circumstances may include other major suppliers of consumer credit, in general there are five principal sources available to the consumer:

1. the retail store from which he purchases
2. commercial banks
3. sales finance companies
4. credit unions
5. consumer finance companies.

As we have seen, there are apt to be limitations on the use of most of these sources. The consumer must be a member of a credit union to borrow from it. Retail stores typically extend credit only for the goods or services they sell. Sales finance companies tend to concentrate on the financing of consumer durables. Consumer finance companies tend to concentrate on personal loans and on some types of consumer durables. Only commercial banks offer practically every type of consumer credit. All these sources prefer to extend credit to consumers who show that they know how to use their credit wisely.

In this chapter we have considered the various types of consumer credit available and the sources of consumer credit. In the next, we shall examine aspects of consumer credit that are important to the consumer if he is to use any of these types of credit, extended by these several sources, effectively and wisely.

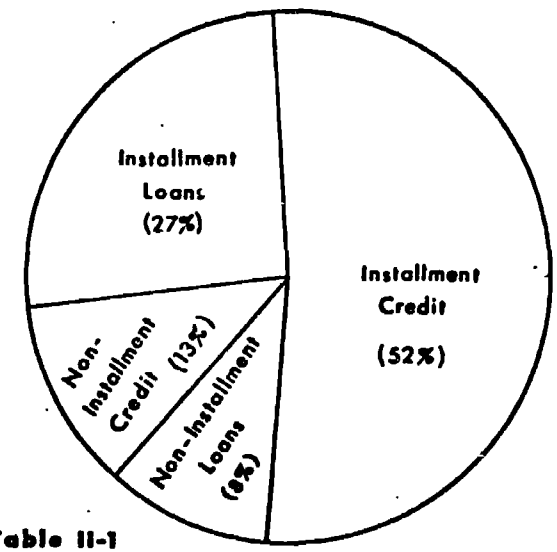
Table II-1 Categories of Consumer Credit ,December, 1968

($ in billions)

	CREDIT		LOANS		TOTAL	
	$	%	$	%	$	%
INSTALLMENT	59.0	52	30.9	27	89.9	79
NON-INSTALLMENT	14.2	13	9.1	8	23.3	21
TOTAL	73.2	65	40.0	35	113.2	100

Source: Federal Reserve Statistical Release, G.19, Feb. 4, 1969

Figure II-1: Categories of Consumer Credit, December, 1968



Source: Table II-1

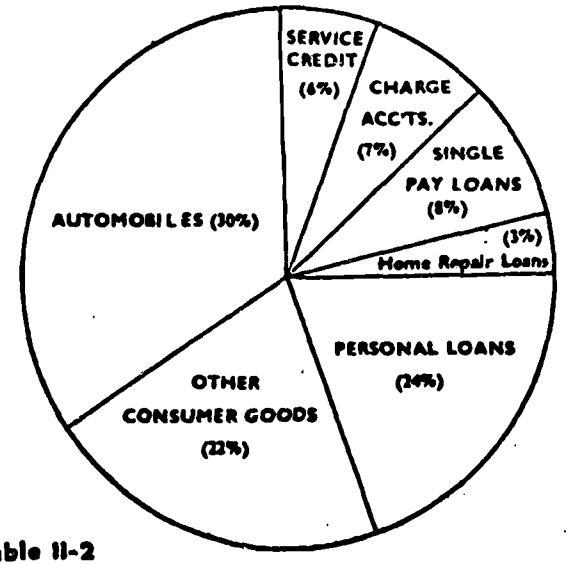
Table II-2: Uses of Consumer Credit, December, 1968

($ in billions)

USE	AMOUNT($)	PERCENT
Automobiles	34.1	30
Other Consumer Goods	24.9	22
Home Repair Loans	3.9	3
Personal Loans	27.0	24
Total Installment	89.9	79
Single Payment Loans	9.1	8
Charge Accounts (inc. credit cards)	7.8	7
Service Credit	6.4	6
Total Non-Installment	23.3	21
Total Consumer Credit	113.2	100.0

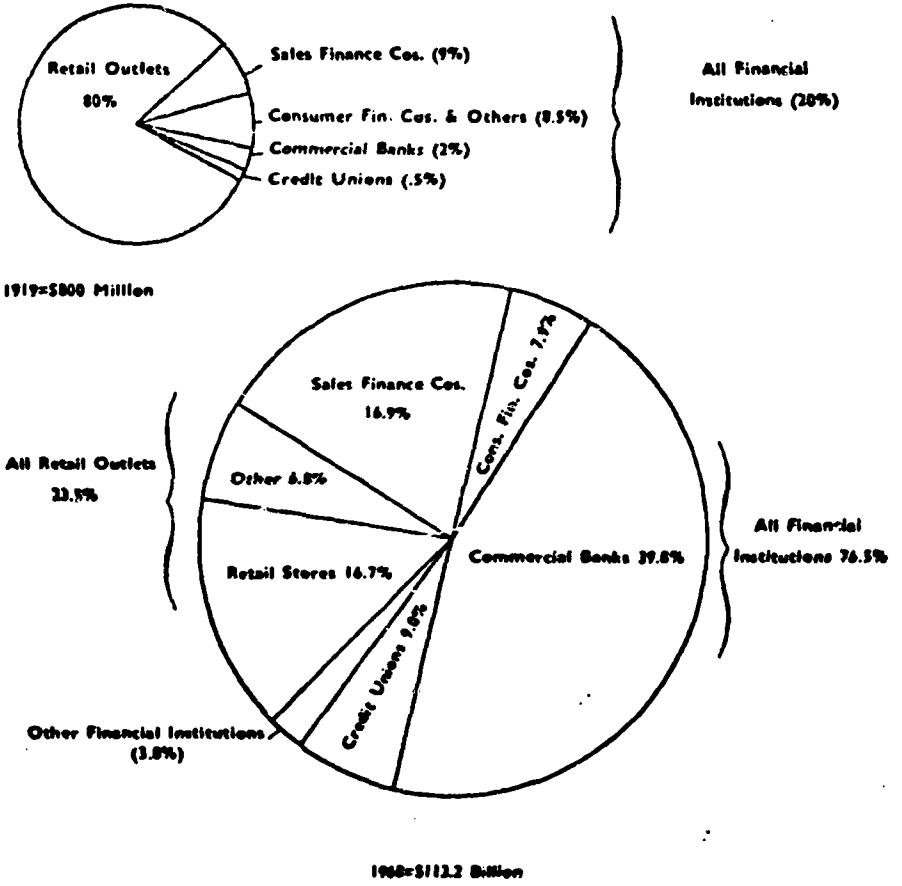
Source: Federal Reserve Statistical Release, G.19, Feb. 4, 1969

Figure II-2: Uses of Consumer Credit, December, 1968



Source: Table II-2

Figure II-3: Holders of Consume Credit: 1919 and 1968



Sources: Table II-3; and Supplement to Monetary and Banking Statistics Section 16 (now): Consumer Credit p. 38

Table II-3: Holders of Consumer Credit, December 31, 1968

($ in billions)

	Commercial Banks	Sales Finance Cos.	Other Fin. Inst. (Total)	Credit Unions	Consumer Finance Cos.	Other (inc. Credit Cards)	Retail Stores	Total
INSTALLMENT								
Automobile	19.3	10.0	4.4		.1		.3	34.1
Other Cons. Gds.	6.1	4.8	1.1		.8		12.1	24.9
Home Repair Loans	2.7	.1	1.1					3.9
Personal Loans	8.9	3.3	6.8		8.0			27.0
SUB-TOTAL	37.0	18.2	3.2	10.2	8.9	—	12.4	89.9
Percent	41.2	20.3	3.5	11.3	9.9		13.8	100.0
NON-INSTALLMENT								
Single-Pay Loans	8.0		1.1					9.1
Charge Accts.							6.5	6.5
Service Credit						6.4		6.4
Credit Cards						1.3		1.3
SUB-TOTAL	8.0	—	1.1	—	—	7.7	6.5	23.3
Percent	34.4	—	4.7			33.0	27.9	100.0
TOTAL	45.0	18.2	4.3	10.2	8.9	7.7	18.9	113.2
Percent	39.8	16.0	3.8	9.0	7.9	6.8	16.7	100.0

Sources: Federal Reserve Bulletin, Feb. 1968, pp. A-52, A-53; and Federal Reserve Statistical Releases for Dec. 1968, Nos. G.19 and G.22

COSTS AND CHARGES

COMPUTATION AND COMPARISON

The vast majority of American consumers have both the capacity and character to qualify them as desirable consumer credit customers. For them the basic credit question should be not "Can I get credit?" but "How much will it cost me?" Many recent studies, including a number reported in hearings before the United States Congress, have shown that far too many people are either ignorant of or unconcerned with the cost of the consumer credit they use. Even when credit costs and charges are stated clearly, many do not take the time to evaluate them and later do not understand, or in some cases, even remember what they are.

Although consumers are in part to blame for their lack of knowledge in this area, a large part of the confusion has arisen from the variety of ways of quoting rates and charges that exist, and from the activities of a few greedy and unscrupulous lenders.

Interest, in its simplest definition, is the cost of hiring money--the rental fee for the use of money. Consumers may be charged interest either on the money they borrow as a loan, or on the monetary value of the goods they buy on credit. In either case, the cash borrowed or the cash price of the goods or services bought on credit are considered to be the principal amount of a loan. The amount that they pay in addition to that principal amount is the cost of the loan from the standpoint of the consumer.

SIMPLE INTEREST

The most familiar form of interest is "simple" interest—the amount (usually expressed as a percentage) that is paid for the use of a given sum of money for a given period of time. Thus, if $1,000 is borrowed for one year and the simple interest charge is six percent, then, at the end of the year the borrower will repay $1,060. However, interest rates or charges are not always quoted in terms of simple annual interest, as in the example above. It should be emphasized that variations in quoting interest charges do not normally occur because of any intention of deceiving the customer. Instead, other types of quotations are customary for certain types of loans, and in many cases, the method of quotation is intended to make the actual dollar charges and the method of calculating charges clearer to the customer. For the sake of explanation, however, in discussing these alternatives we will attempt to relate them to simple annual interest so that the reader has a familiar basis for comparison.

A common practice, especially on retail charge accounts, is to quote interest, or "service charges" in terms of monthly simple interest. This makes sense, when it is realized that most customers are apt to be most interested in discovering what it is going to cost them if they defer payment on their account for another month. They are apt to be much less interested in knowing what the equivalent interest charge would be on a one-year loan. However, the customer may be misled if he thinks that a monthly charge is equivalent to an annual charge. For monthly simple interest to be equated with annual simple interest, the monthly figure must be multiplied by twelve, the number of months in a year. Thus "one-and-one-half percent per month" is equivalent to eighteen percent simple annual interest. Similarly, interest may be

quoted on a period of time greater than a month but less than a year. If this is done, it may again be necessary to convert the charge to simple annual interest for the sake of comparison. Thus "three percent for three months" is equivalent to twelve percent simple annual interest (three percent multiplied by four, the number of three month periods in a year).

DISCOUNTING

Discounting is another method of computing interest that is apt to prove confusing to those who are familiar only with simple interest. It is used most commonly in figuring the charges on small personal loans made by banks and consumer finance companies. When discount interest is charged, the interest is deducted from the principal amount of the loan and the balance given to the borrower. When the loan matures, the borrower repays the full amount of the principal. For example, if $100 is borrowed at an annual discount of eight percent for a period of six months the borrower will receive $96. (Eight percent of one hundred is eight dollars; but since the loan is for half a year, the charge will be half of eight, or four dollars.) Six months later, he will repay $100. Although the discount is eight percent, the equivalent simple annual interest is eight and one-third percent. The borrower received only $96, for which he paid $4. As simple interest on $96, $4 is four and one-sixth percent. Since there are two six-month periods in a year this figure must be multiplied by two, the result being that simple annual interest in this case is eight and one-third percent.

ADD-ON INTEREST

A fourth method of calculating interest—and in some ways the most difficult to convert to simple annual interest—is "add-on" interest, so called because of the method of computation. It is commonly used in calculating installment credit charges. The interest charge is calculated by multiplying the annual interest rate by the number of years the loan will be outstanding and then multiplying the product by the principal amount of the loan. This total charge

is then "added-on" to the principal, and the total amount divided by the number of months in which payments will be made to arrive at a monthly payment figure. Add-on rates are commonly quoted as "dollars per hundred per year."

To illustrate, let's assume that $2400 is borrowed at five percent add-on interest ($5 per $100 per year), to be repaid monthly over a two-year period. Five percent multiplied by two years is ten percent; and ten percent of $2400 is $240. Thus $240 is the total amount of interest to be paid. To determine the monthly payment, $240 interest is "added-on" to $2400 principal, giving a total of $2640; and $2640 is divided by 24 months to give a monthly payment of $110. In simple interest terms, however, this charge is almost ten percent, rather than five, since, although the principal amount is reduced on a monthly schedule, the interest payments made do not reflect this reduction.

If it is assumed that the monthly payments are composed of $100 in principal and $10 in interest, then the simple annual interest cost during the first month is five percent ($10 on $2100 principal). At the end of a year, however, the remaining principal balance is down to $1200, but the interest charge is still $10; the simple annual interest equivalent would be ten percent $\left(\frac{10}{1200} \times 12\right)$. In the final month, the remaining principal to be repaid is only $100, but interest charges remain $10; the simple annual interest rate here is 1200 percent $\left(\frac{10}{100} \times 12\right)$.

In most cases the easiest way to estimate the *average* simple annual interest rate equivalent to an add-on interest rate is to double the quoted add-on rate. Thus, the simple annual interest equivalent of the add-on rate in the example above is ten percent. (It should be noted that this "short cut" method provides an answer that is higher than the true average.)

A simple formula can be used to estimate more exactly the simple annual interest equivalent of an add-on rate.[8] Using the following symbols:

R = Average simple annual interest rate

p = Number of payment periods in a year (12, if monthly)

I = Add-on interest charge in Dollars

P = Principal amount borrowed (after down payment is deducted)

m = Number of payments to be made

then "R" can be calculated with the following formula:

$$R = \frac{2 \times p \times I}{P(m+1)}$$

Applying the formula to the example, we have:

$$R = \frac{2 \times 12 \times \$240}{\$2400\ (24+1)} = \frac{5760}{60{,}000} = 9.6\%$$

Add-on interest is used by banks, finance companies, and retailers on most installment loans for the purchase of automobiles or other durable goods. When an installment sales contract is used, a customer will be quoted a "time price" reflecting the added-on interest that will be charged. Although the formula may appear a little complicated at first, it is a good idea to remember it, or at least have it available because of the widespread use of add-on interest and because of variations in quoting add-on interest.

There is a final area of consumer credit in which it is often impossible to calculate an interest cost. Many forms of credit—such as charge accounts—may carry no quoted interest rate, and, of even more importance, the "time" price and the "cash" price may be the same. There is, of course, an interest cost to someone whenever credit is extended. In many cases in which it is not identified, it is actually borne by the seller, as one of his costs of doing business. In some cases, however, it may be borne in whole or in part by the customer. The only real way to determine if this is true is to discover if there is a difference between the price if credit is used and the cash price of the item at another store where credit

[8] The most accurate method of determining interest equivalents relies on more complicated actuarial formulae, such as those used by the Financial Publishing Co. in their *Financial Rate Translator and Guide to Legal Installment Sales Rates*, which is used by many lenders.

is not offered. If there is no difference, then from an economic standpoint, it is more profitable for the consumer to buy on credit than for cash.

DETERMINANTS OF CHARGES

A personal examination of the costs of credit in any part of the country will suggest that interest rates will vary rather widely, both with the type and amount of the credit involved, and over a period of time. A more thorough examination would show that rates vary somewhat with the individual customer also. There are several factors that are important in determining what it will cost a given customer for a given amount of credit.

The first of these factors, and the most basic, is the general interest rate, or the cost of money to the lender. Banks, for instance, must pay interest on savings deposits, and finance companies must pay interest on their bonds. The rates of interest that prevail nationally, which are determined by national economic forces, will ultimately affect the interest rates which consumers are charged for consumer credit. This effect, however, is apt to be much the same on all types and amounts of consumer credit and for all customers; if interest rates go up nationally, then all consumer credit rates are apt to go up also, and vice versa.

A second factor in determining the cost of consumer credit is the "administrative" factor. Simply, a part of the charge made for consumer credit reflects the lender's costs of doing business—the credit investigators, the clerks, the collectors, and the managers employed, plus a wide variety of office supplies and equipment that are needed. Such costs (in terms of dollars) tend to vary with the type of loan; an installment loan is more costly than a single payment loan, for instance, because more bills must be sent and more payments recorded. In percentage terms, administrative costs are higher for small loans than for large loans of the same type, since it requires about the same amount of employee effort and office supplies to set up and maintain a small loan as it does a large one. Thus, in general, the smaller a loan and the more complicated the loan provision, the greater the administrative cost of the loan is apt to be.

A third factor that helps determine the cost of consumer credit is the reliability or financial responsibility of the user of credit. It

is likely that a customer with a poor credit rating will be charged more than one with a good rating. If nothing else, the poor credit risk may take longer to pay and may require more collection effort. In some cases, the type of merchandise being purchased or used as collateral may in itself suggest that the loan is risky. For instance, installment loans on older and lower priced used cars tend to carry higher interest rates than would be charged on newer cars simply because, on the basis of experience, lenders have found that they are more apt to have greater collection problems and more repossessions.

These three factors are the principal determinants of the cost of credit to the consumer. The loans and credit he requests will cost more or less depending on the general interest rates determined by the national economy, the administrative costs associated with the type of credit he seeks, and the riskiness inherent in the credit itself. These factors are generally independent of the source of credit; it is apt to cost a bank, for instance, just as much to administer an installment loan as it does a credit union or a sales finance company. If anything, it can be said that the more specialized, and in some cases, the larger the lender, the lower some of these costs are apt to be, although this cannot be made an absolute rule.

CHARGES AND SOURCES OF CREDIT

In addition to these three general factors it is not unusual to find situations in which the charges made for consumer credit differ between the sources of credit. There are few generalizations that can be made, however, concerning the relative costs of different sources of credit that hold true outside a given locality or a given set of circumstances. Many people believe, for instance, that bank rates are generally lower than the rates charged for consumer credit by other sources. This belief is about as valid—or invalid—as any such generalization. In some cases it is true; in others, not.

A number of scholars and researchers have made attempts to determine whether or not there are consistent differences in the cost of credit from different sources of consumer credit. It has been determined that, in general, the average rate of interest earned by banks on all consumer credit outstanding is usually lower than the average rates earned by sales finance and con-

sumer finance companies on all their consumer credit. Other studies have suggested that the reason for this difference is the fact that sales finance and consumer finance companies make more loans, proportionately, of the types that are high in administrative cost and high in risk than do banks. Similarly, banks tend to avoid making small (under $100) and high cost loans of a risky nature.

Because of these differences in the types of credit extended, data collected and analyzed on the basis of average rates are meaningless as guides to the consumer seeking credit. The only valid conclusion that can be drawn from these studies is that the individual consumer, seeking a specific type of consumer credit, may find that any of the three types of sources—banks, sales finance, or consumer finance companies—may be the cheapest and best source for him, depending on the desire of the source to make that type of loan and the way in which each source evaluates the consumer's credit worthiness.

Credit unions, the other major source of consumer credit, have generally been ignored in the studies referred to above because of the fact that they lend only to their membership and not to the general public and because of the difficulty of making generalizations about them. Because of their cooperative nature and because they are able to avoid some of the risks and expenses that are borne by other sources of credit, credit unions can, if they wish, be the cheapest source of credit available to their membership. Whether or not they are the cheapest source, however, depends upon the policies under which they operate. Some credit unions have established a policy of attempting to pay the highest possible dividends on their shareholder's accounts. In such cases, their charges for credit will be relatively high, comparable to or even higher than the charges made by other sources of consumer credit. Other credit unions have a policy of charging the lowest possible interest on loans and consequently are sources of the cheapest credit. The majority, apparently, fall somewhere between these two extremes, and thus are usually competitive in cost with other sources of consumer credit.

About the only conclusion that can be drawn realistically from an examination of the costs of credit from different sources is that it behooves the consumer to "shop" for credit just as he does for his other purchases. Depending upon the type of credit he seeks, he should ask each of the sources available to him for a quotation and should select the one that he considers best. It should be noted that from the standpoint of the consumer, the "best" source of credit—just as the "best" buy in anything else—is not necessarily the cheapest. Just as merchants compete with

each other in offering "bundles of utilities" to their customers, so do sources of credit compete with each other, especially in the offering of various services and conveniences. Some of these conveniences (or "utilities") may be worth a few dollars more in interest charges to the consumer. As in all such situations, each consumer must make the decision for himself. In any case, however, he should be aware of the costs as well as the benefits of the alternatives available to him if he is to make a wise decision.

THE WISE USE OF CREDIT

ESTABLISHING A CREDIT REPUTATION

The preceding consideration of the consumer credit process serves as a basis for determining several of the factors that are important to the consumer who desires to use consumer credit both effectively and wisely. As we have seen, the credit grantor's evaluation of a consumer's "character" is critical to his decision. It should be obvious that it is necessary for a consumer to establish and maintain a good credit reputation, as evidence of his "character," if he desires to use consumer credit.

From the consumer's standpoint, establishing credit initially is often the most difficult part of the consumer credit process. If one has never borrowed, never charged, never bought anything on credit, then how can the credit grantor evaluate his character? Fortunately, this problem is less severe (at least for adults) today than in the past. With reliable non-credit references and with a steady job it is possible to receive credit in small amounts from many retailers and to acquire credit cards from many oil companies. In addition, some consumers have actually borrowed money in order to pay it back promptly and thus establish a credit reputation. They view the relatively high cost of such loans as a cost of establishing their credit. In any event the best advice is to start small—it is easier to charge five dollars' worth of clothing or gasoline than it is to borrow $2,000 for a new car—and to pay promptly so that your creditor is willing to recommend you to others.

Teenagers, because they are legally minors, often find it more difficult to establish credit than adults do. In many cases they

will find it necessary to have an adult—an older relative for instance—with established credit to vouch for them or even to guarantee the credit they wish. New developments in credit—such as teenage charge accounts (which will be described in a later chapter)—make the establishment of a credit reputation much easier for teenagers than it has been in the past. In all cases, however, they will find it desirable to have good recommendations from their teachers, employers, and ministers.

Once begun, a credit reputation should be maintained if it is to be useful. In order to do so, the consumer must be careful to "pay as agreed." If payments are due on the first of the month, they should be made on or before that date, not a week or so later. Obviously if the consumer should fail to pay, permit a repossession of merchandise, take bankruptcy, or get into a situation in which suit is filed against him, these will reflect adversely on his "character."

CREDIT CAPACITY

A second general rule that not only will help a consumer maintain a good credit reputation but also will permit him to get the greatest benefit from his use of credit is related to the credit grantor's criterion of "capacity." Each consumer should evaluate his own capacity, determine his own financial limitations, and stay within them. Simply, he should live within his means. Credit grantors will try to estimate an applicant's capacity and will often refuse credit to one who does not have the capacity for it. The information they have, however, is less complete than that which the consumer has about himself. He can determine his own capacity much more accurately than any credit grantor can if he wishes to. Such a determination requires a little effort; ideally, the consumer and his family should draw up a rough household budget including both his take home income, his normal and regular expenses, and any special expenses (or a reserve for special expenses and savings) that he expects. In this way he can determine the amount of additional payments or charges that he can handle without cutting back on necessities, and without causing conflicts within the family over "money problems." If a consumer is aware of his financial limitations and refuses to go beyond them, he will find it easy to establish a credit reputation, and (perhaps more

important) to reduce or avoid the bickering over money matters that may occur within the family. In short, a family budget, wisely prepared and wisely used, contributes immensely to the wise and effective use of consumer credit.

PROTECTING A CREDIT RECORD

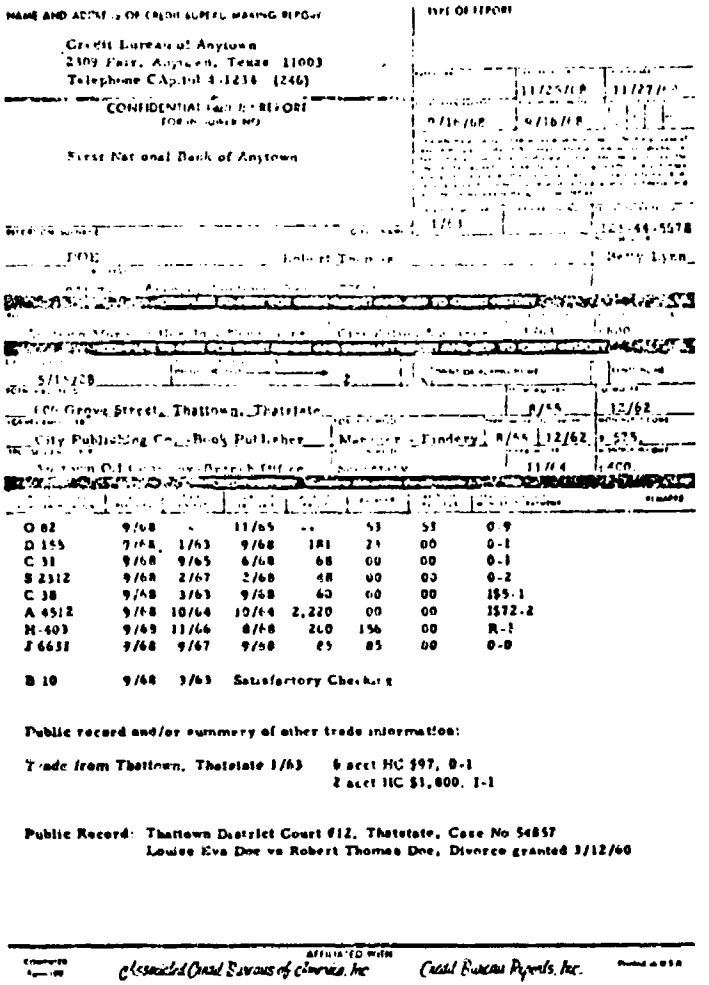
In spite of a desire to maintain a good credit reputation, and in spite of a realistic budget designed to keep the family within its financial limitations, unforeseen circumstances occasionally may make it difficult or impossible to pay a bill or make a payment on time. What happens then? As we can see in Part II, any of several legal problems can arise. Equally important, the family's credit reputation may be impaired. In the majority of cases, however, neither need occur. The consumer is best advised to contact his creditor and discuss the situation with him (if possible, before the bill or payment becomes overdue). All credit grantors are aware that such unforeseen problems can and do occur; most are sympathetic and desire to help their customers maintain their credit ratings, and work their way out of their current problems.

If anything, the consumer's willingness to keep his creditors informed of problems and to discuss solutions with them is a further indication of the good "character" of the consumer. On the other hand, if the consumer fails to consult with his creditors and fails to pay promptly his credit reputation may suffer and he may find himself confronted with legal problems. Such problems are easily avoided by the consumer who discusses his financial difficulties beforehand with his creditors.

The possibility of such problems arising suggests that the consumer should use some care in selecting the source of his credit. Even if no emergencies arise, in credit as in the purchase of other services and goods, it is wise to deal with reputable and trustworthy persons. Just as the credit grantor evaluates the "character" of the consumer, so should the consumer evaluate the "character" of those from whom he seeks credit. Size alone, or the amount of advertising done, is not a certain indicator of the desirability of dealing with a source of credit. Many cities have Better Business Bureaus which can serve as a source of information for the consumer. The experiences of relatives, friends, acquaintances, and especially the recommendations of a lawyer, are apt

to be equally helpful in making a decision. Basically, the consumer should look for a source of credit known for its honesty and fair dealing. The fact that a lender repossessed merchandise or sued a borrower who refused to pay (even if the borrower is a relative) should not be considered an adverse factor. (In some cases, it may be a good recommendation for the lender.) Instead the consumer should consider the lender's willingness to discuss and explain credit agreements and charges, its willingness and intelligence in assisting the consumer with his financial planning and problems, and its general reputation for fairness in the community.

Many of the recommendations that have been made on the last few pages appear to be contradicted when one reads or hears a certain type of advertising that is especially prevalent in large cities. Some business firms and lenders announce that "we will give you credit even if no one else will" or that "we specialize in lending to people who have been bankrupt and lost their credit ratings." Such statements are usually true; poor credit risks can find some sources of credit. In almost every case, however, there are special circumstances involved. Firms extending credit to very poor credit risks often do so only if there is sufficient collateral to ensure that they will not lose their principal and accumulated interest if the merchandise is repossessed and resold. Those who specialize in lending to bankrupts do so with the knowledge that a person who has filed bankruptcy cannot do so again for a period of six years. If the borrower has gone bankrupt recently, the lender is sure that he cannot do so again in the near future and that his loan (if it matures soon enough) is free from this risk. In most of these "poor credit" or "bankrupt" cases the credit grantor feels justified—and in truth is justified—in charging the highest possible rates of interest because of the risk he is assuming. The truth of the matter is that if the consumer wishes to avoid very high interest rates and a severe limitation on his sources of credit, he should use his credit wisely and maintain his credit reputation.



NAME AND ADDRESS OF CREDIT BUREAU MAKING REPORT

Credit Bureau of Anytown
2309 Fair, Anytown, Texas 11003
Telephone CApitol 4-1234 (246)

TYPE OF REPORT

CONFIDENTIAL CREDIT REPORT

First National Bank of Anytown

O 82	9/68	-	11/65	--	53	53	0-9
D 155	7/68	1/63	9/68	181	21	00	0-1
C 31	9/68	9/65	6/68	68	00	00	0-1
S 2312	9/68	2/67	2/68	48	00	03	0-2
C 38	9/68	3/63	9/68	60	00	00	155-1
A 4512	9/68	10/64	10/64	2,220	00	00	1572-2
M-603	9/69	11/66	8/68	200	156	00	R-1
J 6631	9/68	9/67	9/68	85	85	00	0-0
B 10	9/68	3/63	Satisfactory Checking				

Public record and/or summary of other trade information:

Trade from Thattown, Thatstate 1/63 — 6 acct HC $97, 0-1
2 acct HC $1,600, 1-1

Public Record: Thattown District Court #12, Thatstate, Case No 54857
Louise Eva Doe vs Robert Thomas Doe, Divorce granted 3/12/60

AFFILIATED WITH
Associated Credit Bureaus of America, Inc. — Credit Bureau Reports, Inc.

CONCLUSION

From our consideration of what is necessary if a consumer is to use consumer credit wisely, it can be concluded that, in addition to desire, knowledge is essential. The consumer must be informed if he is to use credit in the way that is best for him. He must be aware of the various types of credit that are available, and the sources from which he can secure credit. He needs to know something about the credit granting process, how to calculate the cost of credit, and how such costs are determined. Finally he must be aware of what he himself should do if he is to acquire and use his credit effectively and beneficially. These topics have been examined in this and the preceding chapter.

As a guide to the buyer on what charges are being made, a typical "portion" of the retail installment contract showing such charges (in conformity with the law stated above) is illustrated below.

PLUS	CASH PRICE (MDSE.)	$
PLUS	SALES TAX	$
	A CASH SALE PRICE	$
LESS	MDSE. TRADE-IN $	
LESS	DOWN PAYMENT $	
	B UNPAID BALANCE OF CASH PRICE	$
PLUS	TOTAL INSURANCE $_____	
PLUS	C OTHER CHARGES OFFICIAL FEES $_____ AS ITEMIZED	$
	D UNPAID BALANCE	$
LESS	PREPAID FINANCE CHARGE $	
LESS	REQUIRED DEPOSIT BALANCE $	
	E AMOUNT FINANCED	$
	F FINANCE CHARGE	$
	G TOTAL PAYMENTS E + F *	$
	H DEFERRED PAYMENT PRICE A + C + F	$
	I ANNUAL PERCENTAGE RATE _____%	

* DIVIDED BY NO. OF PAYMENTS = AMOUNT OF EACH PAYMENT

The annual percentage rate will be one of the bases by which the retail installment buyer will be able to shop for the best credit terms.

APPENDIX A

[illegible]

Article 6.02
Retail Installment

[illegible]

[illegible]

RETAIL INSTALLMENT CONTRACT—GOODS & SERVICES & SECURITY AGREEMENT

Consecutive & Substantially Equal Monthly Installments
Truth In Lending Act Disclosure

IN ACCORDANCE with the terms and provisions of the combined Retail Installment Contract and Security Agreement and Truth in Lending Act Disclosure SELLER hereby sells and BUYER hereby purchases from SELLER the following described GOODS AND SERVICES for the consideration shown herein.

Description of Goods and Services (Give make & trade name)	N or U	Model	Serial No.	Price

Sales Tax ______
TOTAL ______

Description of Trade-in ______ To be itemized, kept at ______

Disclosure Column

1 $______ Cash Price
$______ Cash down payment
$______ Trade-in
2 $______ Total down payment
3 $______ Unpaid balance of cash price (1 less 2)
4 $______ Total of other charges (itemized herein)
5 $______ Unpaid balance (3 plus 4)
$______ Prepaid FINANCE CHARGE
$______ Required deposit balance
6 $______ Total prepaid FINANCE CHARGE and required deposit balance.
7 $______ Amount financed (5 less 6)
8 $______ FINANCE CHARGE (description of each)
9 $______ Deferred payment price (1 plus 4 plus 8)
10 ______% ANNUAL PERCENTAGE RATE
11 $______ Total of Payments

Itemization of other charges included in the amount financed but not part of FINANCE CHARGE.

a Recording fees:
$______ ______
$______ ______
b $______ Premium for insurance in lieu of perfecting security interest
c $______ Taxes ______
d $______ Licenses, certificate of title and/or registration fees.
e $______ ______
f $______ ______
$______ Total

Total of payments shown on line 11 of Disclosure Column is payable to SELLER at SELLER'S address, or any other place in the State of Texas, designated in writing by the owner and holder of this Contract in ______ monthly installments of $______ each, commencing ______ 19___ and on the same day of each month thereafter with the remaining unpaid balance being due ______ 19___. Buyer hereby grants to SELLER a security interest in goods and services.

[illegible]

Credit life, accident, health or loss of income insurance coverage is voluntary and not required for this credit. For term of credit, ☐ Credit life, at $______ ☐ Credit life, accident and health at $______ ☐ ______ at $______ is available. I desire the insurance coverage checked. ______ 19___

☐ I do not desire insurance coverage. ______ (Signature of Buyer)

☐ (✓ if applicable) ______ insurance coverage for a term of at least ______ months payable to BUYER, SELLER,

[illegible] SHALL HAVE THE OPTION OF FURNISHING SAID INSURANCE EITHER THROUGH EXISTING POLICIES OWNED OR CONTROLLED BY BUYER OR OF PROCURING AND FURNISHING EQUIVALENT COVERAGE THROUGH ANY INSURANCE COMPANY AUTHORIZED TO TRANSACT BUSINESS IN TEXAS. The insurance coverage to be furnished by ☐ SELLER ☐ BUYER

BUYER hereby acknowledges delivery and acceptance of GOODS AND SERVICES in [illegible] condition, and hereby grants to SELLER a security interest in GOODS AND SERVICES to secure the payment of Total of Payments.

"Notice to the BUYER — Do not sign this Contract before you read it or if it contains blank spaces. You are entitled to a copy of the Contract you sign. Under the law you have the right to pay off in advance the full amount due and under certain conditions may obtain a partial refund on the FINANCE CHARGE. Keep this Contract to protect your legal rights."

NOTICE: See other side for important information. [illegible]

BUYER hereby acknowledges that the Combined Retail Installment Contract and Security Agreement with Truth in Lending Disclosure was completed as to all essential provisions and enclosures before it was signed by BUYER and a copy thereof was delivered to BUYER at the time this Contract was signed.

DATED this the ______ day of ______ 19___

______
(BUYER'S name, address and signature)

______
(SELLER'S name, address and signature)

BUYER WARRANTS, COVENANTS AND AGREES

[illegible]

ASSIGNMENT

For value received, SELLER assigns the Total of Payments due under the above Retail Installment Contract and all rights, title and interest in said Retail Installment Contract to ______________________ with / without recourse.

DATED this the ______ day of ______________ 19____

____
Signature of Seller

(Form furnished by Courtesy of The Steck Div., Steck-Warlick Co., Box 968, Austin, Texas, 78767)

BEST COPY AVAILABLE

APPENDIX B

Article 3.15
and Chapter 4
Above $100.00

NOTE—UNSECURED—WITH LOAN STATEMENT
Consecutive & Substantially Equal Monthly Installments
Truth In Lending Disclosure

$ ______ ______ Texas,

______ 19 ______

Disclosure Column

1. $ ______ Amount of credit
$ ______ Prepaid finance charge
$ ______ Required deposit balance
2. $ ______ Total prepaid finance charge and required deposit balance
3. $ ______ (1 less 2)
4. $ ______ Total other charges (itemized hereon)
5. $ ______ Amount financed (3 plus 4)
6. $ ______ FINANCE CHARGE
7. ______ % ANNUAL PERCENTAGE RATE
8. $ ______ Total of payments

Itemization of other charges included in credit extended but not part of FINANCE CHARGE:

a. Recording fees:
$ ______
$ ______
b. $ ______ Premium for insurance in lieu of perfecting security interest.
c. $ ______ Taxes ______
d. $ ______ Licenses, certificate of title and/or registration fees.
e. $ ______
f. $ ______
$ ______ TOTAL

FOR VALUE RECEIVED, I, we, or either of us (BORROWER) promise to pay to the order of LENDER at the address of LENDER stated above, the sum of $ ______ payable in ______ monthly installments of $ ______ each, and one installment of $ ______, the first installment being due and payable on the ______ day of ______, 19 ______, and the remaining installments being due and payable on the same day of each succeeding month thereafter until this note is fully paid [illegible]

[illegible]

Each of the undersigned hereby waives presentment for payment, protest and notice of protest, diligence in bringing suit against any party hereto.

Credit life, accident, health or loss of income insurance coverage is voluntary and not required for this credit. For term of credit, ☐ Credit life, at $ ______ ☐ Credit life, accident and health at $ ______ ☐ ______ at $ ______ is available. I desire the insurance coverage checked. ______ 19 ______

(Signature of BORROWER)

☐ I do not desire insurance coverage

☐ (V. if applicable) ______ insurance coverage for term of at least ______ months payable to BORROWER, LENDER, LENDER'S assigns, as interest may appear, is required for this loan, premium $ ______ if obtained through LENDER. BORROWER SHALL HAVE THE OPTION OF FURNISHING SAID INSURANCE EITHER THROUGH EXISTING POLICIES OWNED OR CONTROLLED BY BORROWER OR OF PROCURING AND FURNISHING EQUIVALENT COVERAGE THROUGH ANY INSURANCE COMPANY AUTHORIZED TO TRANSACT BUSINESS IN TEXAS. Insurance coverage to be furnished by ☐ LENDER ☐ BORROWER.

BORROWER hereby acknowledges that this combined note, loan statement and Truth in Lending Disclosure was completed as to all essential provisions and disclosures before it was signed by BORROWER and a copy thereof was delivered to BORROWER at the time of signing.

(BORROWER'S name, address and telephone No.)

(Signature of BORROWER) (Signature of BORROWER)

(Form furnished by Courtesy of The Steck Div., Steck-Warlick Co., Box 968, Austin, Texas, 78767)

APPENDIX C

Uniform Commercial Code—FINANCING STATEMENT—Form UCC-1 (Rev. 10-68)

92462

IMPORTANT—Read Instructions on back before filling out form

This Financing Statement is presented to a Filing Officer for filing pursuant to the Uniform Commercial Code

1. Debtor(s) (Last name first) and Mailing Address:	2. Secured Party(ies) Name and Address	3. Maturity Date (if any) 4. For Filing Officer (Date, Time, Number and Filing Office)

5. This Financing Statement covers the following types (or items) of collateral (WARNING: If collateral is crops or fixtures, read instructions on back.)

6. Name and Address of Assignee of Secured Party: (Use this space to describe collateral, if needed)

Check ☑ if covered: ☐ Proceeds of collateral are also covered. ☐ Products of collateral are also covered. Number of additional sheets presented ___

7. This Statement is filed without the Debtor's signature to perfect a security interest in collateral
(Please check appropriate box)
- ☐ already subject to a security interest in another jurisdiction when it was brought into this state, or
- ☐ which is proceeds of the original collateral described above in which a security interest was perfected, or
- ☐ already subject to a financing statement filed in another county, or
- ☐ already subject to a pre-code perfected security interest.

By _____ Signature(s) of Debtor(s)

By _____ Signature(s) of Secured Party(ies)

(1) Filing Officer Copy—Numerical

STANDARD FORM—FORM UCC-1 (Rev. 10-68)—APPROVED BY SECRETARY OF STATE OF TEXAS—FORM NO. [illegible]—THE STECK DIVISION, AUSTIN, TEXAS

(Form furnished by Courtesy of The Steck Div., Steck-Warlick Co., Box 958, Austin, Texas, 78767)

INSTRUCTIONS

1. PLEASE TYPE this form. Do not write in Box 4. The completion of Box 3 is optional.

2. If collateral is CROPS growing or to be grown, describe real estate concerned and give name of record owner of the realty.

3. If collateral is or will become FIXTURES, describe real estate concerned and give name of record owner of the realty. Also, write in the phrase, "Collateral is or includes fixtures." A financing statement covering fixtures cannot perfect a security interest in non-fixtures. If the collateral includes both fixtures and non-fixtures, separate financing statements for the fixtures and for the non-fixtures must be filed.

4. If the space provided for any item on the form is inadequate, the item should be continued on additional sheets, preferably 5" x 7 3/8".

5. FILING FEE for this standard form is $1.00. If the Assignee is shown on this standard form, the fee is $1.50. If any other form is used, or if any additional sheets or documents are attached, the fee is double (either $2.00 or $3.00).

6. Remove Secured Party and Debtor copies, and send other 3 copies with interleaved carbon paper still intact to the filing officer.

7. Fold only above or below TAB card copy for mailing. DO NOT bend TAB card.

8. At the time of original filing, the filing officer will return second copy as an acknowledgment. If acknowledgment copy is to be returned to other than the Secured Party or Assignee, please enclose a self-addressed envelope.

(Form furnished by Courtesy of The Steck Div., Steck-Warlick Co., Box 968, Austin, Texas, 78767)

APPENDIX D

Uniform Commercial Code—FINANCING STATEMENT CHANGE—Form UCC-3 (Rev. 10-68)

15026

[illegible]

IMPORTANT—Read instructions on back before filling out form

This Financing Statement is presented to a Filing Officer for filing pursuant to the Uniform Commercial Code | 3. Maturity Date (if any):

1. Debtor(s) (Last name first) and Mailing Address:	2. Secured Party(ies) Name and Address:	4. For Filing Officer (Date, Time, Number and Filing Office):

5. This statement refers to original Financing Statement No. ______ Date Filed ______ 19___

6. A. Continuation ☐ The original Financing Statement is still effective.	B. Assignment ☐ The Secured Party of record has assigned his interest in the following collateral to:	C. Termination ☐ The Secured Party of record no longer claims a security interest under the Financing Statement.	D. Partial Release ☐ The Secured Party of record releases the following collateral:	E. Amendment ☐ The Financing Statement is amended as set forth below:

7.

By ______ Signature(s) of Debtor(s) By ______ Signature(s) of Secured Party(ies)

(1) Filing Officer Copy—Numerical

[illegible]

(Form furnished by Courtesy of The Steck Div., Steck-Warlick Co., Box 968, Austin, Texas, 78767)

INSTRUCTIONS

1. PLEASE TYPE this form. Do not write in Box 4.

2. Fold only above or below TAB card copy for mailing. DO NOT bend TAB card.

3. This form must be signed by the Secured Party of record. If an assignment is presented along with the termination, however, the Assignee may sign this statement as the Secured Party of record. This form need not be signed by the Debtor unless collateral is added by amendment.

4. If the space provided for any item on the form is inadequate, the item should be continued on additional sheets, preferably 5" x 7 3/8".

5. FILING FEE for statement specified under 6 A., B., C., D., or E., is $1.00. If an assignment is shown along with the termination on this same form, the filing fee is $1.75. If any other form is used, or if additional sheets or documents are attached, the filing fee is double.

6. Remove Secured Party and Debtor copies, and send other 3 copies with interleaved carbon paper still intact to the filing officer.

7. At the time of filing, the filing officer will return second copy as an acknowledgment. If acknowledgment copy is to be returned to other than the Secured Party or Assignee, enclose a self-addressed envelope; however, if the Financing Statement is terminated, the acknowledgment can only be returned to the Secured Party of record.

(Form furnished by Courtesy of The Steck Div., Steck-Warlick Co., Box 968, Austin, Texas, 78767)

APPENDIX E

Uniform Commercial Code—REQUEST FOR INFORMATION OR COPIES—Form UCC-11

"LITHO-SNAP" • • • LITHO-SNAPPED BY THE STECK CO., AUSTIN, TEXAS • • •

IMPORTANT—Read Instructions on back before filling out form.

Debtor (Last name first) and Address:	Party Requesting Copies or Information (Name and Address)	For Filing Officer

☐ Filing officer please furnish certificate giving the following information concerning any presently effective financing statement filed pursuant to the UCC naming the above named debtor and any statement of assignment thereof. See Fee Schedule on back of part 3.

☐ Filing officer please furnish exact copies of each page of financing statements and statements of assignments listed below which are on file with your office pursuant to the UCC. See Fee Schedule on back of part 3.

FILE NUMBER	DATE AND HOUR OF FILING	NAME AND ADDRESS OF SECURED PARTY

CERTIFICATE: The undersigned filing officer hereby certifies that

☐ the above listing is a record of all presently effective financing statements and statements of assignment which name the above debtor and which are on file in my office as of _____, 19____ at _____ M.

☐ the attached _____ pages are true and exact copies of all available financing statements or statements of assignment listed in above request.

_____ Date

_____ Filing Officer

(1) Copy 1

STANDARD FORM—FORM UCC-11—APPROVED BY SECRETARY OF STATE OF TEXAS—FORM 1050—THE STECK COMPANY, AUSTIN, TEXAS

(Form furnished by Courtesy of The Steck Div., Steck-Warlick Co., Box 968, Austin, Texas, 78767)

INSTRUCTIONS

1. PLEASE TYPE this form in black.

2. Remove copy of party requesting information or copies (part 2) and send other 2 copies with interleaved carbon paper still intact to the filing officer.

3. FEE SCHEDULE: *If request for information or copies is made on this standard form the filing fee is:*

   INFORMATION:
   - $1.00 for the certificate
   - $1.00 for each Financing Statement and each Assignment filed.

   COPIES:
   - $1.00 for each page copied, plus
   - 2% sales tax, plus
   - $1.00 for the certificate

4. No request for information or copies will be certified without payment of the total fee in advance. In order to expedite this request, it is recommended that a minimum of $2.00 be sent to the filing officer along with this form.

5. If this standard form is not submitted as a request for information or copies under the Uniform Commercial Code, the fee will be double that shown in the above schedule.

(Form furnished by Courtesy of The Stock Div., Steck-Warlick Co., Box 968, Austin, Texas, 78767)

DEPOSITED WITH
HARLANDALE BANK
SAN ANTONIO, TEXAS

[illegible]

ORIGINAL

ACCT. NO. 31-1891-4 DATE May 19__

TO THE ACCOUNT OF Janet Alvarado

ADDRESS 2392 W. Hutchins

San Antonio, Texas 78221

PLEASE LIST EACH CHECK SEPARATELY

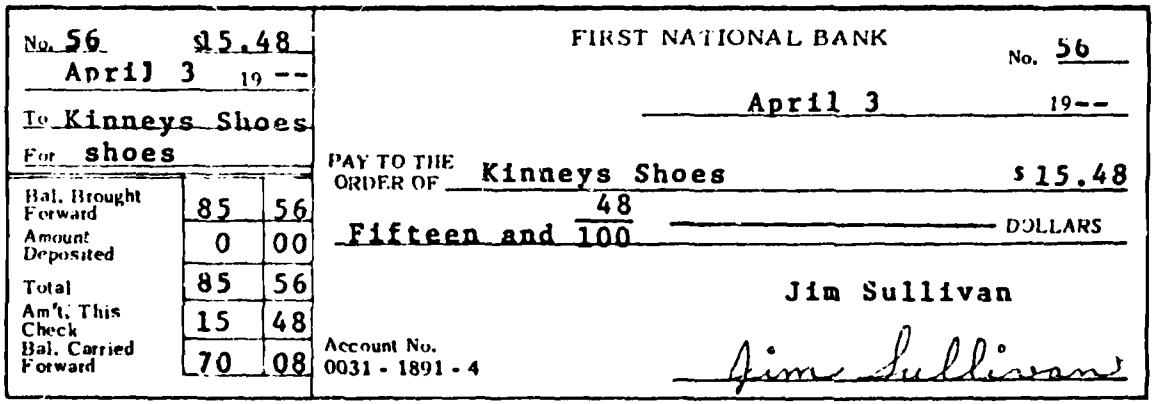
	DOLLARS	CENTS
CURRENCY	10	00
SILVER		75
CHECKS	72	38
	9	41
TOTAL DEPOSIT	92	54
FOR BANK USE ONLY		

CLARKE PRINTING CO
SAN ANTONIO, TEXAS

FILLING OUT A DEPOSIT SLIP

Janet Alvarado fills out a deposit slip each time she deposits money into her checking account. Study the above deposit slip carefully. Answer the following questions about this deposit slip.

1. What is the deposit date?__________
2. What is the complete name of the depositor?__________
3. What is the address of the depositor?__________
4. What is the account number of the depositor?__________
5. How much money was deposited in <u>currency</u>?__________ <u>coin</u>?__________ <u>checks</u>?__________
6. How many checks were deposited?__________
7. What is the total amount of this deposit?__________



No. 56 $15.48
April 3 19--
To Kinneys Shoes
For shoes

Bal. Brought Forward	85	56
Amount Deposited	0	00
Total	85	56
Am't. This Check	15	48
Bal. Carried Forward	70	08

FIRST NATIONAL BANK No. 56

April 3 19--

PAY TO THE ORDER OF Kinneys Shoes $15.48

Fifteen and 48/100 DOLLARS

Jim Sullivan

Account No. 0031 - 1891 - 4

Jim Sullivan

Writing Checks

Jim Sullivan can fill out a check when he has enough money in his checking account. Above is a picture of a check stub and a check that Jim has completed. The check stub is Jim's record of his transactions with the bank. A check stub is attached for each check in the checkbook. It is a good habit to fill out the check stub before writing the check. The check goes to the person Jim is paying money.

1. What does the number (no.) on the check stub and check represent?

2. What is the date of the check?

3. What is Jim's account number?

4. What was the amount of the check?

5. To whom was the check paid?

6. What was the balance carried forward?

Using Sales Tax

Directions: Add up the following prices and then figure out the sales tax on each purchase by using the table on the next page. Add the sales tax to the sub total.

	1.	2.	3.	4.	5.	6.	7.
	$ .32	$ .16	$ .10	$ .18	$ .23	$ .12	$ .25
	.18	.03	.22	.21	.18	.03	.12
	+ .10	+ .14	+ .31	+ .16	+ .06	+ .04	+ .10
Sub Total	___	___	___	___	___	___	___
Sales Tax	___	___	___	___	___	___	___
Total Price	___	___	___	___	___	___	___

	8.	9.	10.	11.	12.	13.	14.
	$ .33	$ .17	$ .16	$ .16	$ .35	$ .23	$ .16
	.12	.13	.13	.12	.15	.15	.21
	+ .10	+ .21	+ .15	+ .13	+ .12	+ .16	+ .36
Sub Total	___	___	___	___	___	___	___
Sales Tax	___	___	___	___	___	___	___
Total Price	___	___	___	___	___	___	___

	15.	16.	17.	18.	19.	20.	21.
	$ .50	$ .12	$ .14	$ .19	$ .22	$ .15	$ .16
	.12	.15	.13	.22	.13	.21	.10
	+ .13	+ .22	+ .16	+ .16	+ .16	+ .30	+ .23
Sub Total	___	___	___	___	___	___	___
Sales Tax	___	___	___	___	___	___	___
Total Price	___	___	___	___	___	___	___

SALES TAX CHART - 5%

Amount of Purchase	Sales Tax	Amount of Purchase	Sales Tax
$ .11 to $ .20	$.01	$5.11 to $5.20	$.26
$ .21 to $ .40	$.02	$5.21 to $5.40	$.27
$ .41 to $ .60	$.03	$5.41 to $5.60	$.28
$ .61 to $ .80	$.04	$5.61 to $5.80	$.29
$ .81 to $1.10	$.05	$5.81 to $6.10	$.30
$1.11 to $1.20	$.06	$6.11 to $6.20	$.31
$1.21 to $1.40	$.07	$6.21 to $6.40	$.32
$1.41 to $1.60	$.08	$6.41 to $6.60	$.33
$1.61 to $1.80	$.09	$6.61 to $6.80	$.34
$1.81 to $2.10	$.10	$6.81 to $7.10	$.35
$2.11 to $2.20	$.11	$7.11 to $7.20	$.36
$2.21 to $2.40	$.12	$7.21 to $7.40	$.37
$2.41 to $2.60	$.13	$7.41 to $7.60	$.38
$2.61 to $2.80	$.14	$7.61 to $7.80	$.39
$2.81 to $3.10	$.15	$7.81 to $8.10	$.40
$3.11 to $3.20	$.16	$8.11 to $8.20	$.41
$3.21 to $3.40	$.17	$8.21 to $8.40	$.42
$3.41 to $3.60	$.18	$8.41 to $8.60	$.43
$3.61 to $3.80	$.19	$8.61 to $8.80	$.44
$3.81 to $4.10	$.20	$8.81 to $9.10	$.45
$4.11 to $4.20	$.21	$9.11 to $9.20	$.46
$4.21 to $4.40	$.22	$9.21 to $9.40	$.47
$4.41 to $4.60	$.23	$9.41 to $9.60	$.48
$4.61 to $4.80	$.24	$9.61 to $9.80	$.49
$4.81 to $5.10	$.25	$9.81 to $10.10	$.50