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ABSTRACT

This guide for high school consumer mathematics (one in a set of curriculum guides developed by Louisiana statewide mathematics curriculum committees) contains a course outline, performance objectives, and coordinated activities designed to teach skills that students will need as citizens and consumers. Background on the development, implementation, and use of the set of guides and lists of the various curriculum committee members are followed by a list of 15 student goals for the consumer mathematics course and a pacing chart indicating the number of weeks to devote to each topic. Topics for which there are objectives and activities are: (1) personal finances; (2) transportation; (3) housing; (4) taxes; (5) insurance; (6) money-saving activities; (7) investments; and (8) budgeting. Four suggested consumer mathematics student projects are described. A 13-item bibliography, a resource list of educational kits and pamphlets, and a list of sources of further information are also included. (JW)

CONSUMER MATHEMATICS

CURRICULUM GUIDE

Louisiana State Department of Education

J. Kelly Nix

State Superintendent

DEPARTMENT OF PUBLIC EDUCATION

STATE OF LOUISIANA

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CONSUMER MATHEMATICS CURRICULUM GUIDE

Issued by

Office of Academic Programs

J. KELLY NIX

State Superintendent

This public document was published at a cost of 43¢ per copy by the Printing Section, Department of Education, to fulfill the requirements of La. R.S. 17:24 (E) to develop and establish statewide curriculum standards for required subjects. This material was printed in accordance with the standards for printing by state agencies established pursuant to R.S. 43:31.

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FOREWORD

Curriculum guides have been developed for grades K-8 at the elementary level and for each mathematics course at the secondary level. These guides represent the best thinking of a selected statewide committee established to determine the scope of mathematics content which should be taught at each level.

The mathematics curriculum guides are another segment of the total educational program established by this administration and mandated by the Legislature in both the accountability and assessment and the competency-based education laws. This educational program requires that specific skills and concepts be established for each grade level and for each subject area. The mathematics curriculum guides with course outlines, performance objectives and coordinated activities effect this phase of the program.

It is hoped that the mathematics curriculum guides will make a major contribution to the improvement of mathematics instruction in the schools of Louisiana. This series of mathematics curriculum guides is another step toward achieving the goals of this administration.

J. KELLY NIX

ACKNOWLEDGMENTS

The Statewide Mathematics Curriculum Committee is to be commended for its work in the development of the Mathematics Curriculum Guide Series, K-12. Leadership for this project was provided by Dr. Jean Reddy Clement, Section Chief, Mathematics Section, Bureau of Secondary Education.

Supervisors in the Bureau of Elementary Education working under the direction of Mrs. Bonnie Ross, Elementary Supervisor, developed the activities for the K-8 guide. The activities for the secondary mathematics guides were written by a committee of secondary mathematics teachers and Dr. Clement. These dedicated educators are to be commended for their enthusiasm in undertaking this formidable project and for the superb quality of their contributions to this unique and comprehensive Mathematics Curriculum Series.

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INTRODUCTION

Act 750 of the 1979 Louisiana Legislature established the Louisiana Competency-Based Education Program. One of the most important provisions of Act 750 is the mandated "development and establishment of statewide curriculum standards for required subjects for the public elementary and secondary schools of this state...." The "statewide curriculum standards for required subjects" is defined as "the required subjects to be taught, curriculum guides which contain minimum skills and competencies, suggested activities, suggested materials of instruction, and minimum required time allotments for instruction in all subjects." Act 750 further provides that the "effective implementation date of the statewide curriculum standards for required subjects shall be the 1981-82 school year. Development of such curriculum shall begin by the 1979-80 school year."

During the 1978-79 school year, curriculum guides were developed by advisory and writing committees representing all levels of professional education and all geographic areas across the State of Louisiana for the following mathematics courses: Algebra I, Algebra II, Geometry, Advanced Mathematics, and Trigonometry. The major thrust of the curriculum development process in each of the guides has been the establishment of minimum standards for student achievement. Learning expectancies for mastery have been determined for each course and/or grade level. In addition, content outlines, suggested activities, procedures, and bibliographies have been developed as aids in support of the learning expectancies. The curriculum guides also contain activities designed to stimulate learning for those students capable of progressing beyond the minimums.

During the 1979-80 school year, the curriculum guides were piloted by teachers in school systems representing the different geographic areas of the state as well as urban, suburban, inner-city, and rural schools. The standard populations involved in the piloting reflected also the ethnic composition of Louisiana's student population. Participants involved in the piloting studies utilized the curriculum guides to determine the effectiveness of the materials that were developed. Based upon the participants' recommendations at the close of the 1979-80 pilot study, revisions were made in the curriculum guides to ensure that they are usable, appropriate, accurate, comprehensive, relevant, and clear.

These curriculum guides were implemented statewide in the 1980-81 school year. This stage must be understood in its operational context. The curriculum developers and the participants in the pilot studies do not stand alone in the State of Louisiana. Ultimately, local system supervisors, principals, and classroom teachers will have the responsibility for attaining this goal.

Following the established curriculum development procedures, curriculum guides for Mathematics I, Mathematics II, Consumer Mathematics, Business Arithmetic, and Computer Science were developed in 1979-80 and piloted in 1980-81. These curriculum guides now are ready for full program implementation.

As curriculum guides are implemented, the following guidelines should prove helpful:

...curriculum standards should be considered as the foundation for the year's instructional program. Where other programs are already in operation, these curricular materials must be checked with the foundation curricula to ensure that appropriate course and/or grade level standards are included and maintained.

...curricular activities contained in the guides provide a number of suggestions for helping students to achieve the established standards. Activities to meet the needs of "average," "below average," and "above average" students have been included in the appropriate guides. These activities should prove helpful as the teacher plans and organizes instruction. Additional activities, however, may supplement or be used in lieu of those listed in the guide as long as these activities are designed to achieve similar specific objectives.

...curricular suggestions for meeting the needs of the special child have been prepared by the Division of Special Education. These suggestions are designed to provide help for teachers who work with special children in the regular classroom.

The continued effort of mathematics teachers to provide quality instruction will enhance our statewide goal to ensure that every student in the public elementary and secondary schools of the State of Louisiana has an opportunity to attain and to maintain skills that are considered essential to functioning effectively in society.

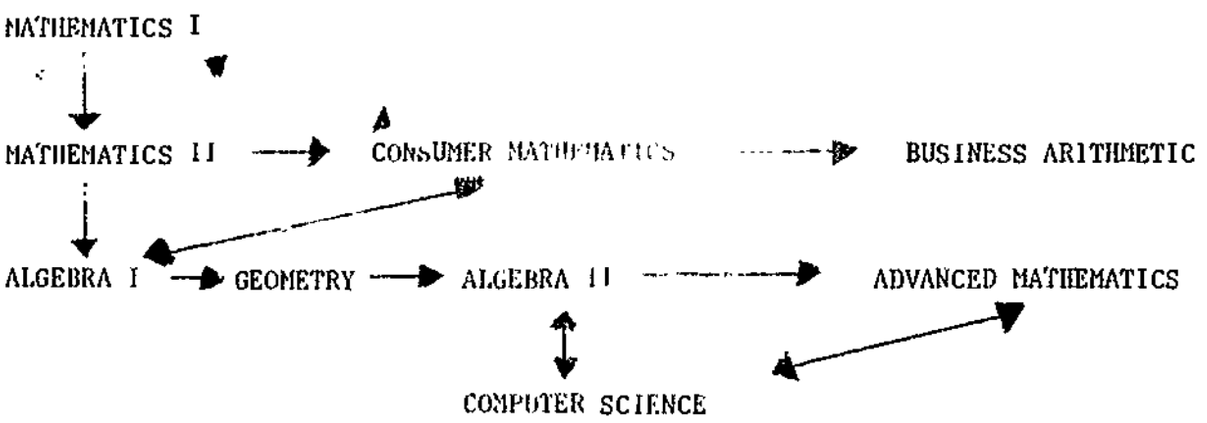
RATIONALE

Understanding the development of the entire set of mathematics curriculum guides is important to the proper use of the guides. This understanding is especially vital to the proper placement of students in the areas of Mathematics I, Mathematics II, Consumer Mathematics and Business Arithmetic. To avoid unnecessary duplication and repetition of content, the writing committee selected those topics which were deemed most appropriate for each of these courses. These topics were then eliminated from the content of the other courses or were treated with less emphasis.

Teachers and counselors need also to be aware of the difficulty levels of these courses. Mathematics I is the most fundamental course and is designed for those students entering ninth grade who have no acquired the basic skills in arithmetic. The stronger students who are still not quite prepared for success with Algebra I upon entering ninth grade should be encouraged to schedule Mathematics II. Mathematics II is designed to strengthen mathematical background and to prepare students for Algebra I and Geometry. Every student who plans to go to college should (at least) take Algebra I. It is recommended that they also take Geometry and Algebra II.

Consumer Mathematics, as the name indicates, treats that mathematics which each of us encounters routinely as a citizen and consumer. The content differs from that of Business Arithemtic in that Business Arithmetic approaches the topics from the viewpoint of an employer or one engaged in business or manufacturing. It is not recommended that a student who has successfully completed Algebra II be allowed to take Mathematics I or Mathematics II.

The accompanying diagram should aid in understanding some possible avenues a student may take in his secondary mathematics career.



GOALS

The student will:

1. Demonstrate proficiency in the four fundamental Arithmetic operations as applied to whole, fractional, decimal numbers, and United States and metric measurement.*
2. Utilize ratio, proportion and percent to solve relevant business and consumer problems.
3. Calculate earnings, payroll deductions, and take-home pay from varying situations of employment.
4. Demonstrate efficient budgeting procedures.
5. Properly maintain personal checking account records.
6. Demonstrate an understanding of savings account procedures.
7. Utilize proper techniques in purchasing economically.
8. Understand and use consumer credit wisely.
9. Determine costs involved in providing transportation services both private and public.
10. Recognize and compute costs involved in securing and maintaning adequate housing.
11. Recognize and calculate various methods of taxation.
12. Apply both United States and metric measurements in the solution of business and consumer problems.
13. Understand and recognize math skills necessary for various occupations.
14. Recognize the advantages and disadvantages of various types of investments.
15. Appreciate the value of insurance and understand what insurance will do and will not do to protect the insured and his property.

*At the beginning of the year, students should be evaluated on these operations and prepared to use them in practical applications.

PACING CHART

	TOPIC	NUMBER OF WEEKS
I.	Personal Finances	10
II.	Transportation	4
III.	Housing	4
IV.	Taxes	3
V.	Insurance	3
VI.	Money Saving Activities	5
VII.	Investment	3
VIII.	Budgeting	4

CONSUMER MATHEMATICS

CURRICULUM OUTLINE AND PERFORMANCE OBJECTIVES

CURRICULUM OUTLINE	PERFORMANCE OBJECTIVES
I. Personal Finances	
A. Income	A. To demonstrate a basic understanding of income, the student will be able to:
1. Hourly wages	1. Calculate pay based on hourly wages;
2. Overtime	2. Calculate pay based on overtime hourly rates;
3. Commission	3. Calculate pay based on straight and graduated commission;
4. Net pay	4. Determine net pay after deductions.
B. Banking	B. To develop an understanding of banking, the student will be able to:
1. Checking accounts	1. (a) Fill out a deposit slip; (b) Write checks; (c) Keep accurate check stubs; (d) Reconcile a bank statement.
2. Savings accounts	2. (a) Calculate compound interest; (b) Use compound interest tables.
C. Consumer credit	C. To develop an understanding of consumer credit, the student will be able to:
1. Promissory notes	1. Find the interest and amount due on a promissory note;
2. Credit cards	2. Find the finance charges based on the current balances;

CURRICULUM OUTLINE	PERFORMANCE OBJECTIVES
Personal Finances - Continued	
3. Charge accounts	3. (a) Find the finance charges based on the current balance; (b) Find the minimum monthly payment.
4. Installment buying	4. (a) Compute the finance charge; (b) Find the monthly payment.

CURRICULUM OUTLINE	PERFORMANCE OBJECTIVES
II. Transportation	
A. Car buying	A. To demonstrate an understanding of the factors involved in purchasing a car, the student will be able to:
1. Used car	1. Find the cost of purchasing a used car;
2. New car	2. Find the cost of purchasing a new car;
3. Financing a car	3. (a) Find the deferred payment price of a car; (b) Calculate the finance charge on a car loan.
B. Operating expenses	B. To demonstrate a basic understanding of operational expense of automobiles, the student will be able to:
1. Gasoline	1. Find the fuel consumption and the cost of fuel on a per-unit basis;
2. Depreciation	2. (a) Find total depreciation; (b) Find average annual depreciation; (c) Find rate of depreciation.
3. Insurance	3. (a) Find the annual premium for liability insurance; (b) Find the annual premium for collision insurance; (c) Find the annual premium for comprehensive insurance.

CURRICULUM OUTLINE	PERFORMANCE OBJECTIVES
Transportation - Continued	
4. Maintenance and repair	4. Recognize reasonable estimates for maintenance and repair.
5. Annual operating expenses	5. (a) Find the total annual cost of owning and operating an automobile; (b) Find the cost per unit.
C. Alternative transportation	C. To develop an understanding of the cost of alternative modes of transportation, the student will be able to:
1. Public transportation	1. Find the monthly cost of public transportation;
2. Leasing or renting	2. Find the monthly cost of leasing a car;
3. Car pooling	3. Find the monthly cost of a car pool.
D. Travel	D. To develop a basic understanding of factors involved in travel, the student will be able to:
1. Map reading	1. Use a map to find the distance between two locations;
2. Expenses	2. Find the total expenses for traveling a route by automobile;
3. Air travel	3. Compare air fares by using various plans.

CURRICULUM OUTLINE	PERFORMANCE OBJECTIVES
III. Housing	
A. Renting	A. To demonstrate an understanding of cost factors involved in renting, the student will be able to:
1. Cost	1. Calculate the amount to be spent on rent using a common guideline;
2. Location	2. Determine the best location for renting by using a cost comparison study;
3. Personal property insurance	3. Calculate the amount of reimbursement paid by insurance companies for personal property loss.
4. Redecorating (optional)	4. Determine the cost of redecorating a room.
B. Purchasing	B. To demonstrate a basic understanding of factors involved in purchasing a home, the student will be able to:
1. Cost factors	1. Calculate the amount to be spent on purchasing a home based on personal income. Cost should not exceed 2.5 times income.
2. Down payment	2. Calculate the amount of down payment;
3. Monthly payment	3. Determine the monthly mortgage payment;
4. Interest	4. Find the amount of interest paid on a mortgage payment;
5. Insurance	5. Determine the premium payments for homeowner's insurance;
6. Property taxes	6. Calculate assessed valuation and property taxes based on assessed valuation;
7. Closing costs	7. Find the closing costs of purchasing a home.

CURRICULUM OUTLINE		PERFORMANCE OBJECTIVES	
IV.	Taxes		
	A. Federal Income	A.	To demonstrate an understanding of federal income taxes, the student will be able to:
	1. Total income	1.	Determine total income;
	2. Standard deduction	2.	Determine standard deduction;
	3. Exemptions	3.	Determine the number and amount for exemptions;
	4. Taxable income	4.	Find the taxable income;
	5. Taxes paid	5.	Find the tax amount due from a table and tax credit information;
	6. Refund	6.	Find the balance or refund due;
	7. Income Tax Form	7.	Complete Form 1040A (other forms optional).
	B. State income	B.	Determine the state income tax due from a table and complete form.

CURRICULUM OUTLINE	PERFORMANCE OBJECTIVES
V. Insurance	
A. Health	A. To demonstrate a basic understanding of health insurance, the student will be able to determine health insurance benefits.
B. Workmen's compensation	B. To demonstrate a basic understanding of workmen's compensation, the student will be able to determine benefits based on salary and length of disability.
C. Life insurance	C. To demonstrate a basic understanding of life insurance, the student will be able to:
1. Term insurance	1. Determine the annual premium for term insurance;
2. Straight life	2. Determine the annual premium and cash value of straight life insurance;
3. Limited pay	3. Determine the annual premium and cash value of limited payment life insurance;
4. Endowment	4. Determine the annual premium and cash value of endowment life insurance.
D. Retirement	D. To demonstrate a basic understanding of retirement insurance, the student will be able to determine and compare social security benefits at different ages.

CURRICULUM OUTLINE	PERFORMANCE OBJECTIVES
VI. Money Saving Activities	
A. Food buying	A. To demonstrate a basic understanding of sound procedures in food buying, the student will be able to:
1. Unit pricing	1. Compute unit prices of merchandise;
2. Shopping	2. Compare unit prices of merchandise at various stores;
3. Cutting costs	3. Identify and use wise consumer procedures such as sales shopping and bulk buying.
B. Catalog shopping	B. To demonstrate a basic understanding of catalog shopping, the student will be able to complete a catalog order form.
C. Sales shopping	C. To demonstrate a basic understanding of sales shopping, the student will be able to:
1. Seasonal sales	1. Determine the best time of the year to purchase certain items;
2. Discount	2. Find the amount of discount and the sale price of items.
D. Self-made products (optional)	D. To develop a basic understanding of the advantages of self-made products, the student will be able to:
1. Sewing	1. Find the amount and cost of materials needed for a sewing project;
2. Crafts	2. Determine the total cost of materials for a craft project;
3. Home improvements	3. Find the cost of materials for home improvement projects.

CURRICULUM OUTLINE	PERFORMANCE OBJECTIVES
VII. Investments	
A. Bonds	A. To develop a basic understanding of governmental bonds, the student will be able to:
1. United States savings	1. Find the cost and redemption value of United States savings bonds;
2. Other (optional)	2. Find the interest on and annual yield of other bonds.
B. Certificates of deposit	B. To demonstrate a basic understanding of certificates of deposit, the student will be able to:
1. Interest	1. Find the interest earned on a certificate of deposit;
2. Annual yield	2. Find the annual yield on a certificate of deposit.
C. Stocks (optional)	C. To demonstrate a basic understanding of common stocks, the student will be able to:
1. Costs	1. Determine the total cost of an investment in common stock;
2. Profit or loss	2. Find the total profit or loss on common stocks;
3. Annual yield	3. Find the annual yield on a stock investment.

CURRICULUM OUTLINE	PERFORMANCE OBJECTIVES
VIII. Budgeting	
A. Spending habits	A. To demonstrate a basic understanding of spending habits, the student will be able to analyze expenditures by keeping organized records of monthly expenses.
B. Fixed expense	B. To demonstrate a basic understanding of fixed expenses, the student will be able to analyze expenditures by keeping records of fixed expenses.
C. Variable expenses	C. To demonstrate a basic understanding of variable expenses, the student will be able to:
1. Analyze	1. Analyze expenditures by keeping records of variable expenses;
2. Budget	2. Determine the amounts to be budgeted for variable expenses by finding averages of previous expenditures.
D. Preparing a budget	D. To develop a basic understanding of budgeting, the student will be able to:
1. Variable expenses	1. Determine the total monthly variable expenses;
2. Fixed expenses	2. Determine the total monthly fixed expenses;
3. Annual expenses	3. Determine the amount to be reserved monthly for annual expenses;
4. Adjusting	4. Adjust the budget to reflect changes in income or expenses.

ACTIVITIES

I. A. CONTENT: Personal Finance; Income

OBJECTIVE: The student will be able to solve income problems involving:

(a) Hourly wages

(b) Overtime

(c) Commission

(d) Net pay

ACTIVITIES:

(a) John works a 40-hour week. He earns $4.83 per hour. Find his pay.

(b) One week John works 45 hours, 40 of which are regular hours and 5 are overtime. If he is paid $3.90 per hour, calculate his total pay for the week.

(c) Mary works for a real estate agent. Her salary is based entirely on a commission of 3% of her sales. Last month she sold properties totaling $195,000. Find her pay.

(d) Josephine works for an appliance company. Her salary is based on a commission of 5% of the first $1,500 of sales and 7% of all sales over $1,500. Last week she sold $2,600 worth of appliances. How much did she earn?

(e) Sam earns $415.00 a week. He is married and has two children. His federal withholding is $62.60, social security is $23.40, insurance $18.50, and other miscellaneous deductions are $13.64. Find his net pay.

(f) Using the classifed ads of a local newspaper. discuss current wages and salaries.

B. CONTENT: Personal Finance; Banking

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Checking accounts

(b) Savings accounts

ACTIVITIES:

(a) Sally has checks of $102.39, $76.48, and $216.27. She wants to deposit all of the money except $25. Fill out her deposit slip, showing how much will be placed in her account.

(b) Sally receives a bill from the Power and Light Company in the amount of $79.83. Write a check to pay this bill and show her account balance on the stub. Her account before the check had $675.39 in it.

(c) On July 31, Charles Burbank's bank statement showed a balance of $210.96. His checkbook balance was $178.95. A service charge of $.49 was made by the bank. The following checks were issued by the depositor but not yet paid by the bank: No. 216, $25.50; No. 223, $3.85; and No. 237, $53.15. A $50 deposit made the last day of the month did not appear on the bank statement. Reconcile the bank and checkbook balances.

RECONCILIATION STATEMENT

Checkbook bal. _____ Bank Statement bal. _____

Service Charge _____ Outstanding Checks:

_____

_____

Unrecorded deposit _____

_____ _____ _____

_____

Error on Check Stub _____ Outstanding Deposits _____

_____ _____

_____ _____

(d) If Jim deposits $500 into his savings account, what is the interest earned in one year if compounded quarterly at 7%?

(e) Annie has $375 in her savings account. Find interest earned if compounded semi-annually at 6% for 3 years by using a compound interest table.

(f) It is suggested that a bank representative be invited to speak and/or a field trip made to a bank.

I. C. CONTENT: Personal Finances; Consumer Credit

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Promissory notes

(b) Credit cards

(c) Charge accounts

(d) Installment buying

ACTIVITIES:

(a) John signs a promissory note for $2800 due in 180 days. The interest rate is 12.5% per year. Find the amount of interest and total amount due.

(b) Jodie's unpaid balance on her charge account from last month is $95.84. This month she made a payment of $30 and purchases totaling $18.50. The finance charge is 1.5%. What is the amount of the finance charge? What is the new balance in her account?

(c) Marty has a charge account at a men's clothing shop. He is required to make a minimum monthly payment of one-sixth of the balance due. His current bill reflects charges of $184.20. Find his minimum payment.

(d) Jane purchases a component stereo system for $595. She pays $75 down and $60 per month for one year. What are the installment or finance charges?

(e) Leroy buys a portable TV set for his room. He makes a down payment of 10% of the $135 purchase price. Finance charges will amount to $38. If he pays for six months, what will his monthly payment be?

II. A. CONTENT: Transportation; Car Buying

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Used cars

(b) New cars

(c) Financing a car

ACTIVITIES:

(a) Jack buys a used car from his friend Joe for $695. The state sales tax is 3% and the local sales tax is 3%. The title fee is $7.00 and license fee is $6.00. The car needs a brake job that will cost $110. Find the total cost of the car.

(b) Elton is buying a new car. The base sticker price is $6,285. He selects various options: AM-FM radio $140; Air Conditioner $500; steel radial tires $475; and hatch roof $650. Find the total cost of the car.

(c) Elton uses his old car as a trade-in. The car is valued at $1,400. The balance due on the new car will be paid in monthly installments of $230 per month for three years. Find the deferred-payment price of the car. Calculate the finance charges.

B. CONTENT: Transportation; Operating Expenses

OBJECTIVE: The students will be able to solve problems dealing with:

(a) Gasoline

(b) Depreciation

(c) Insurance

(d) Maintenance and repair

(e) Annual operating expenses

ACTIVITIES:

(a) Susie's odometer reading was 39102.8 miles last week. This week the reading is 39604.1 miles. It takes 20 gallons of gasoline to fill her tank. Find her mileage rate.

(b) Lucretia bought a new car for $8,600. The dealer estimates that the car will have a trade-in value, in three years, of $2,500. Find the total depreciation. Find the annual depreciation. Find the rate of depreciation.

(c) Kevin bought the following insurance coverage on the car he uses in his business: $100/300,000 bodily injury, $50,000 property damage. Kevin also purchased $100 deductible collision insurance for $52 and comprehensive damage insurance for $23. What was Kevin's total annual premium? _____

TABLE 1. SAMPLE ANNUAL PREMIUMS FOR BODILY INJURY AND PROPERTY DAMAGE

Type of Insurance	Limits	Used for Pleasure Only	Used for Driving to Work	Used for Business
Bodily injury	$10/20,000	$57.00	$63.00	$74.00
Property damage	$5,000	$35.00	$39.00	$45.00

TABLE 2. RATES FOR HIGHER LIMITS

Bodily Injury		Property Damage	
Maximum Limits	Percent of $10/20,000 Premium	Maximum Limits	Percent of 5,000 Premium
$20/40,000	110%	$10,000	105%
$25/50,000	113%	$25,000	108%
$50/100,000	121%	$50,000	112%
$100/300,000	128%	$100,000	114%

(d) Sam's car needs a new water pump. One garage estimates that the total cost of replacing the pump will be $89.50. A second garage estimates the cost will be $56 for the pump and a 48% charge for labor. Which is the better estimate?

(e) Murray owns a three-year-old car. When new, the car cost $7,600. The present market value is $2,500. He drives the car 12,600 miles a year and gets 20 miles per gallon. Gasoline costs 99.7¢ per gallon. Insurance for the car costs him $985 per year. His monthly garage fee is $35. He owns the car outright, thus is making no monthly payments. License and fees total $6.00 and miscellaneous costs amount to $345.86. Find the total cost of operating the car for one year. Find the cost per mile for operating the car for one year.

II. C. CONTENT: Transportation; Alternative Transportation

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Public transportation

(b) Leasing or renting

(c) Car pooling

ACTIVITIES: (a) Jack commutes to work 20 days a month. His monthly train ticket costs $57.60 and his daily bus fare is $.40 each way. Find Jack's monthly travel costs.

(b) John leases a compact car for 36 months. Use the table below to determine the total cost of the lease.

Monthly Car Rental

Model	12 mo.	24 mo.	36 mo.
Compact	$250	$217	$189
Mid-Sized	$278	$245	$203
Full-Sized	$302	$270	$235

(c) A class discussion on the different types of car pooling is suggested.

D. CONTENT: Transportation; Travel

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Map reading

(b) Expenses

(c) Air travel

ACTIVITIES:

(a) Use a Louisiana highway map to find the distance from Baton Rouge to Shreveport by way of Lake Charles. If a person averages 50 miles per hour, how long would this trip take?

(b) If, in the above problem, the car gets 18 miles per gallon and if the gasoline costs 98.9¢ per gallon, find the total cost of gasoline. There are four persons in the car and each has two meals during the trip. If the meals average $2.65 per person per meal, find the total meal cost. Find the total cost of the trip.

(c) John and Marsha and their 7-year-old son Milton fly from New Orleans to Chicago. Use the table below to calculate the one-way fare in each of the given categories.

FROM NEW ORLEANS TO:

Fare Code	Chicago	Miami
One Way		
1st Class	$150	$165
Tourist	$102	$119
Economy	$ 85	$ 92

(Children 2-11: 2/3 adult fare)

III. A. CONTENT: Housing; Renting

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Cost

(b) Location

(c) Personal property insurance

(d) Redecorating (optional)

ACTIVITIES:

(a) The Sanchez family has an annual income of $12,500. How much should they spend per month on rent for an apartment?

(b) The Ramirez family has been apartment hunting. They found two apartments which they find equally attractive. One apartment has a monthly rental of $250, utilities included, but is 5 miles from Mr. Ramirez's work. He would use public transportation at a cost of $.80 per day. The second apartment would cost $195 per month, utilities not included. The utilities are estimated to cost $75 per month. This second apartment is one block from his work. Which is the most economical apartment? By how much?

(c) A fire destroyed part of the Ramirez's furniture, which was three years old. They had a $50 deductible insurance policy, which subtracted 15% per year for depreciation on the furniture. If the total cost of the destroyed pieces was $895, how much will the insurance company pay for their loss?

(Optional)

(d) Mrs. Ramirez decides to redecorate the living room of the apartment. The room is 18 feet long, 16 feet wide and has 9-foot ceilings. She wants to paint three walls and the ceiling. A narrow wall will be wallpapered, and the floor will be recarpeted. She knows that one gallon of paint will cover about 38 square feet of surface area. One roll of wallpaper will cover about 9 sq. ft. of surface area. The paint will cost $14.85 per gallon, wallpaper will cost $7.85 per roll and carpet $15.60 per square yard installed. If she and her family do the painting and papering themselves, find the total cost of the redecorating project.

III. B. CONTENT: Housing; Purchasing

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Cost factor

(b) Down payment

(c) Monthly payment

(d) Interest

(e) Insurance

(f) Property taxes

(g) Closing costs

ACTIVITIES: (a) If Mr. Smith's income is $480 a week, can he afford to buy a home costing $80,000?

(b) Complete the table below using the monthly payment chart that follows.

Purchase Price	Down Payment	Amt. of Down Payment	Amt. of Loan	Interest Rate	Time (Years)	Monthly Payment
$25,000	20%	$5,000	$20,000	10.75%	30	$186.80
$40,000	30%			10.25%	30	
$46,000	10%			10.5%	20	
$60,000	15%			11%	25	
$72,000	16 2/3%			11.25%	30	
$90,000	20%			11.5%		

MONTHLY PAYMENT FOR $1,000 LOAN

Interest Rate	20-Year Loan	25-Year Loan	30-Year Loan
7.5%	$ 8.06	$ 7.39	$ 7.00
7.75%	8.21	7.56	7.17
8.0%	8.37	7.72	7.34
8.25%	8.53	7.89	7.52
8.5%	8.68	8.06	7.69
8.75%	8.84	8.23	7.87
9.0%	9.00	8.40	8.05
9.25%	9.16	8.57	8.23
9.5%	9.33	8.74	8.41
9.75%	9.49	8.92	8.60
10.0%	9.66	9.09	8.78
10.25%	9.82	9.27	8.97
10.5%	9.99	9.45	9.15
10.75%	10.16	9.63	9.34
11.0%	10.33	9.81	9.53

(c) Sam and Janet wish to insure their home for full market value. The annual premium is $158. If they pay the premium every three years instead of annually, they can save by multiplying the annual premium by 2.7 rather than by 3. How much can they save each three years by paying every three years rather than every year?

(d) Mike and Molly own a new home. The house and lot have a market value of $98,000. The rate of assessment in their parish is 46% of the market value. The tax rate is $1.56 per $100 valuation. Find the assessed value of the property. Find the taxes due on the property.

(e) Find the closing costs on a $62,000 house with a $52,000 loan where the lawyer charged .75% of the purchase price, the loan costs were 1.25% of the loan, .25% of the purchase price for recording, 1% of the purchase price for the title transfer, and half of the $220 title examination.

IV. A. CONTENT: Taxes; Federal Income

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Taxable income

(b) Standard deduction

(c) Exemptions

(d) Taxes paid

(e) Refund

(f) Income tax form

ACTIVITIES: (a) It is strongly suggested that materials for this unit be obtained from the Internal Revenue Service. The IRS has a complete set of materials for both teacher and student. These materials can be had by contacting your district IRS office. There is no charge for these materials.

B. CONTENT: Taxes; State Income

OBJECTIVE: The student will be able to solve problems dealing with state income taxes.

ACTIVITIES: (a) The residents of the state of Euphoria pay state income taxes based on their gross income. Mr. and Mrs. Hugh Gnu have a combined annual gross income of $27,000. Euphoria levies an income tax at a rate of 5.63%. Find the state taxes owed by the Gnu's.

(b) The residents of the state of Timbuktu are taxed at a rate of 2% on the first $15,000 and 3% on all other income over $15,000. Mrs. Etta Kitt earned $16,850 last year. What is her state income tax bill?

V. A. CONTENT: Insurance; Health

OBJECTIVE: The student will be able to solve problems dealing with health insurance.

ACTIVITIES: Ham Diamond has a $50 deductible medical insurance policy; the insurance company pays 80% over and above the deductible amount. If Mr. Diamond's hopsital bill amounts to $1,895, how much will the insurance company pay? How much will he pay?

B. CONTENT: Insurance; Workmen's Compensation

OBJECTIVE: The student will be able to solve problems dealing with workmen's compensation.

ACTIVITIES: John Smith is injured at work. He loses seven weeks of work. His medical costs amount to $3,850. While disabled, he receives 2/3 of his pay. His usual salary is $300 per week. How much of his medical costs will be paid? How much salary will he receive?

C. CONTENT: Insurance; Life

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Term insurance

(b) Ordinary life

(c) Limited pay

(d) Endowment

ACTIVITIES: (a) Ada Johnson, age 30, wishes to purchase a ten-year term insurance policy for $7.25 per thousand. How much will her annual premium be for a $50,000 policy?

ANNUAL PREMIUM FOR $1,000 INSURANCE

	KIND OF POLICY		
AGE	ORDINARY LIFE	20-PAYMENT LIFE	20-YEAR ENDOWMENT
26	$13.04	$21.92	$42.69
27	13.47	22.49	42.75
28	13.92	23.08	42.82
29	14.41	23.70	42.90

In solving the following problems, use the rates in the above chart.

(b) Jerry Wayne, who is 28 years old, takes out a 20 payment life policy for $5,000. At his age, the annual premium on a 20 payment life policy for $1,000 is $_____. For a $5,000 policy, the annualy premium is $_____.

(c) Warren Miller, age 26, takes out an ordinary life policy for $1,000 and elects to pay the premiums quarterly. If paid annually, the cost of the annual premium would be $_____.

(d) Hubert Jones carries a 20-year endownment policy for $8,000 at the annual rate of $48.31 per $1,000. Today he receives notice that the next annual premium will be due next month and that he will be entitled to a dividend of $56.32. If he uses the dividend to reduce the premium, he will send the insurance company a check for $_____ when he makes the premium payment.

V. D. CONTENT: Insurance; Retirement

OBJECTIVE: The student will be able to solve problems dealing with social security.

ACTIVITIES: It is strongly suggested that students work problems dealing with social security retirement benefits for retirement at various ages. Tables dealing with this type of information can be found in most business and/or consumer mathematics books. Further information can be obtained from your district social security office.

VI. A. CONTENT: Money Saving Activities; Food Buying

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Unit pricing

(b) Shopping

(c) Cutting costs

ACTIVITIES:

(a) Apples cost 78¢ per kilogram. Find the cost of 1.7 kg of apples.

(b) Canned green beans sell at 39¢ for 13 oz. Find the cost per ounce.

(c) If onions cost 89¢ for 3 lbs., find the cost per pound.

(d) If canteloupes sell at three for $1.19, find the cost of one. The cost of two.

(e) If tomato catsup sells at 36 oz. for 89¢ and 54 oz. for $1.16, find the better buy.

(f) It is suggested that students bring in newspaper ads concerned with food sales. From those ads, a comparative shopping exercise could be constructed. An additional activity would be to calculate savings, if any, not only from sales, but from discount coupons found in the newspaper. Special attention should be paid to convenience food costs as compared to "from scratch" foods.

B. CONTENT: Money Saving Activities; Catalog Shopping

OBJECTIVE: The student will be able to solve problems dealing with catalog shopping.

ACTIVITIES:

(a) Susie Jones ordered a skirt and blouse from Acme Clothing Company. The skirt sold for $10.98 and the blouse for $7.98. She had to pay a 6% sales tax and shipping charges of 7¢ per ounce. Find the total cost of the order if the shipping weight of the blouse is 9 ounces and the skirt is 12 ounces.

(b) It is suggested that additional exercises could be planned from catalogs that the students bring to class.

VI. C. CONTENT: Money Saving Activities; Sales Shopping

OBJECTIVE: The student will be able to solve problems dealing with seasonal sales and discounts.

ACTIVITIES:

(a) John Smith has need of a new sports jacket. He finds one that he likes while shopping at a clothing store in December. It retails for $75. He discovers that the jacket will be on a seasonal sale in January at 1/3 off. How much will the jacket cost? How much will he save?

(b) Mary bought a dress on sale for $32 that was originally priced at $40. Find the rate of discount.

D. CONTENT: (Optional) Money Saving Activities; Self-Made Products

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Sewing

(b) Crafts

(c) Home improvements

ACTIVITIES:

(a) Sandra Homemaker decides to construct a dress for her church festival. She needs 4 7/8 yards of fabric that sells for $6.50 a yard. The pattern costs $1.75 and the notions cost $3.79. If the sales tax rate is 6%, find the total cost of the garment.

(b) Mary decides to latch hook a rug for her den. She finds that she will need 3 yards of rug canvas at $4.98 per yard. She also needs 25 bundles of rug yarn, 15 of which are brown, 6 are green and 4 are yellow. The yarn is priced at 7 or more bundles for $.49 each and less than 7 bundles at $.59 each. If the sales tax is 6%, find the cost of materials.

(c) Karl Schultz decided to build a shelter for his dog Rover. He purchased a set of plans for $7.95. The materials list is as follows:

10 - 2' x 4' @ $1.25 each

Roofing $5.00

1 - 4' x 8' plywood sheet $14.00

5 lbs. common nails @ 45¢ lb.

1 gallon paint @ $14.95

Calculate the total cost including a 6% sales tax.

VII. A. CONTENT: Investment; Bonds

OBJECTIVE: The student will be able to solve problems dealing with:

(a) U.S. savings bonds

(b) Other (optional)

ACTIVITIES: (a) Sam Brown purchases thirty $25 series E bonds at a cost of $18.75 each. How much interest will he have earned when the bonds mature in 5 years?

(b) P. G. Turkey purchased a $5,000 municipal bond that pays 7.6% interest and matures in 10 years. Find the total interest on the bond. Find the annual yield from the bond. (Optional)

B. CONTENT: Investments; Certificates of Deposit

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Interest

(b) Annual yield

ACTIVITIES: Mrs. Jones, a recent widow, has insurance benefits of $25,000 from her husband. She decides to place $15,000 of this in Certificates of Deposit. The certificates pay 9.8% and she agrees to a term of 3 years. Find the total interest earned. Find the annual interest earned.

C. CONTENT: (Optional) Investments; Stocks

OBJECTIVE: The student will be able to solve problems dealing with:

(a) Cost

(b) Profit or loss

(c) Annual yield

ACTIVITIES: (a) Russell Smith purchases 30 shares of stock for $15.125 per share. He pays a .1% commission to the broker. What was his total investment?

(b) Russell later sold his stock at $18.875 per share. He again paid a .1% broker's fee. What was the amount of his profit or loss?

(c) Jane Smith invested $990 in 30 shares of stock. During the year, she received a dividend of $1.50 per share. What was the rate of annual yield on her investment?

VIII. A. CONTENT: Budgetiug; Spending Habits

OBJECTIVE: The student will be able to solve problems dealing with spending habits.

ACTIVITIES:

(a) It is suggested that the teacher require students to keep daily records of their spending. They should do this for at least two weeks. The data collected can and should be used in all aspects of this budget unit.

(b) The data could be used to find average amounts spent in certain areas such as gasoline costs, dating costs, clothing costs, etc.

(c) The student's expenditures could be expressed as percentages and this data could be expressed using circle and/or bar graph.

B. CONTENT: Budgeting; Fixed Expenses

OBJECTIVE: The student will be able to solve problems dealing with fixed expenses.

ACTIVITIES: The teacher needs to help the student identify from their own spending habits those items which are fixed and unvaried.

C. CONTENT: Budgeting; Variable Expenses

OBJECTIVE: The student will be able to solve problems dealing with variable expenses.

ACTIVITIES: The teacher needs to help the student identify from their own spending habits those items which do vary.

D. CONTENT: Budgeting; Preparing a Budget

OBJECTIVE: The student will be able to solve problems dealing with preparing a budget.

ACTIVITIES:

(a) Willis and Ada Mae Johnson have a joint monthly income of $1,500. They have three children. Their monthly income expenses are as follows:

Variable		Fixed	
Food	$350	Mortgage payment	$225
Operation of car	$100	Car payment	$285
Telephone	$ 15	Savings	$ 75
Entertainment	$ 30		
Personal spending	$ 70		
Utilities	$125		
Miscellaneous	$100		

Annual Expenses

Car Insurance	$235
Homeowner's Insurance	$185
Life Insurance	$500
Car Maintenance	$200
Property Taxes	$ 50
Home Maintenance	$300
Medical	$800
Clothing	$800
Periodicals	$ 75
Miscellaneous	$ 75

Find the total of the variable expenses. Find the total of the fixed expenses. Find the total of the annual expenses and determine the per month cost. Compare the total monthly expenditures to the total income.

(b) Adjust the budget to fit the income.

* *

SUGGESTED PROJECTS FOR THE YEAR

1. Students may gain experience in actual situations by examining employment opportunities and salary ranges within their immediate area. An appropriate salary should be determined by the student to allow for food, shelter, clothing, automobile, insurance, recreation, etc. The student could then determine if it is advisable to seek employment in the area or look elsewhere. Either a written or oral report could reflect the findings.

2. Students could prepare a budget that will reflect their standard of living four or five years from now.

3. Consumer Math students could operate, on a small scale, a school supply store.

4. Maintain a current math bulletin board (newspaper articles, math art, math brain teasers, math cartoons, etc.).

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Filmstrip/cassette 9A415826, $21.50
Function of "pocket money"; history and manufacture of money in U.S., discussing banking, loans, credit, inflation, recession.

Money Management Series. Santa Monica, California

BFA Educational Media, 1 set of 6 filmstrips,
each @ 50 f w/records $78.00, w/cassettes $90.00
Charge account application
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Understanding Taxes (Publication 21)

Teachers' Guide (Publication 19)

The Farm Supplement (Publication 22)

Taxpayer Education Coordinator
Internal Revenue Service
(write to office nearest your school)

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Social Security Administration
6401 Security Blvd.
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P. O. Box 61609
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American Council of Life Insurance
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New York Stock Exchange, Inc.
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American Society of Travel Agents
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