



Problem Solving through Careers with Hands on Material by

Curriculum Unit 80.07.02

by Joyce Bryant and Carolyn Kinder

INTRODUCTION

This unit is designed to give the learner knowledge as well as improve problem solving skills. This unit can be taught in part or can be ongoing throughout the school year.

Learners will become familiar with problem solving through hands on materials and careers. This will allow students to relate to real life situations. The activities in this unit fosters quantitative thinking in the learner, which will lead the learner to develop interest, objectivity, attitudes and problem solving skills. It is our intent that these skills will grow with adequate use, that is by having certain thought patterns recur in a wide range of problem solving. The adequate use will enhance the required amount of application of a concept necessary to insure its' future availability and in this way the learner will really become mathematically literate.

This unit will be taught to seventh and eighth middle school students. It can be taught to students on a high school level especially those interested in careers after high school.

This unit focuses on six careers through visitations to local businesses and one out of state trip. Speakers and on the job training will also be utilized as well as classroom activities. A pre and post test will be given to all students to determine their ability and progress in problem solving.

The middle and high school student is an entity in himself, with unpredictable reactions to problems and personal situations. The student should see that in problem solving the thought processes help to analyze the factors involved when something needs to be done as well as to organize the chosen factors in a problem in order to bring about a satisfactory outcome. The students are introduced to problems that are common. It is our hope that by solving some of the problems the students will acquire some of the skills and understandings that will be needed in the future. There are understandings to be mastered. There is insight to be gained. One of the purposes is to guide the students thinking to help make decisions. It is hoped that the learner will not only develop problem solving skills, but take a critical look at himself/herself in this ever changing and complex society of ours.

THEORY

Problem solving is more than the ability to compute.

When the learner is confronted with a problem situation whose solution is not known, the student must rely on his or her problem solving skills. One, problem solving is the ability to pick out the important facts that are given and disregard the facts that are not pertinent. Another skill is to recognize what information is missing and how to find it. Another is the ability of the learner to recognize similarities between problems which are being solved and have been solved.

There are several techniques, methods and strategies used in problem solving. Problem solving involves trying several ways to solve the problem before deciding on which to use. It involves putting together the facts that the learner has with the mathematics that he or she knows in such a way that the result is a solution that was unknown to begin with. A model of a problem can be a picture worth five hundred words, a sketch, a scale drawing a chart or graph. It's whatever helps the student. There are times when information is missing and the skill is the ability to recognize what additional information is necessary.

Problem solving situations are likely to be representative of those which the learner will face sometime in the future. Problem solving will give the students experiences to help them in their thinking and decision making processes. The main thrust of problem solving should be toward the development of logical thinking. Taking the numbers out of problems seems to be one way of doing this without the negative reaction that usually accompanies mathematical problems.

In New Haven, we have found that teaching problem solving is a problem, but like anything else, it can be solved. No automatic formula can be applied to guarantee success in teaching problem solving.

It is common knowledge that when the learner is trying to solve a problem he must:

1. Understand the problem.
2. Plan to solve the problem.
3. Solve the problem.
4. Review the problem and the solution.

The learner must apply some strategies. We've considered five strategies that we have found to be helpful. The learner can make a model of the problem by using commercial or teacher made materials. Needed information can be gained by asking questions whose answers will provide the necessary information.

Some problems must be broken down into smaller parts. Once the answer for each part has been found, the information can be used to solve the original problem. In order to simplify the problem eliminate extraneous information and list the facts that remain. There are times when problems can be simplified by making assumptions.

In research the learner identifies what information is needed, decides what information is necessary, and finds that information in reference books or by collecting data.

This unit is designed to help students gain insight into problem solving through hands-on materials based upon careers. Speakers and visitations will be included.

Six careers are utilized. They are:

1. Sales Person
2. Chef
3. Stock Clerk
4. Purchasing Agent
5. Bank Teller
6. Statistician

Six different professionals will be invited to speak to the classes based upon their career. Each will be asked to speak on the math problems that he or she has to encounter daily and give some examples. They will also be asked to discuss the firm that they work for and give some information about themselves.

There will be scheduled visits to receptive local businesses. Transportation will be provided by the city through its educational system, between the hours of nine and twelve.

As a culminating activity an out of state trip will be planned to the World Trade Center, Stock Exchange and/or United Nations.

Lesson plans will be constructed for each career listed in this unit in the form of word problems. Objectives and strategies will be listed and the strategies will be based upon a model.

Certain skills are necessary for the development of problem solving. Students must be able to denote details, recognize sequence and know what is given in the problem.

The learner needs to know what is asked for in the problem and plan a solution. In order to plan a solution the learner has to answer questions such as: how, when, where, what time, and how many.

Special emphasis will be placed on number facts, operation techniques, to ensure that the learner will have a general idea what the problem is about.

Key words will play a major role in helping students to understand the problem and have some thoughts relative to the reasonable steps leading to a solution.

Receptive local businesses will give the students on the job training. Local businesses will be asked to take at least two students for a school day thus giving them hands-on experience. Once this has been done the students will prepare a report for the class. A discussion of their experience will take place as to positive and negative aspects of the experience.

A definition of each career will be stated as well as information concerning each career.

A wide range of practical applications will include consumer activities such as: finding income, take home pay,

installment buying, sales, and exercises in banking.

The unit includes a list of speakers, their phone numbers and addresses; also a receptive list of individuals for visitations; a reading list for students and teachers, a bibliography and a resource list.

INFORMATION ABOUT CAREERS

Stock Clerk

Stock clerks help protect against such losses by controlling the flow of goods received, stored and issued. They usually receive and unpack incoming merchandise or material. Stock clerks report damaged or spoiled goods and process papers necessary for obtaining replacements or credit. On outgoing orders, they may check the items for quality, quantity and sometimes make minor repairs or adjustments.

Stock clerks organize and mark items with identifying codes or prices so that inventories can be located quickly and easily. They keep records of items entering and leaving the stock room.

Stock clerks work in small and large firms and perform various duties. They can advance to more stock handling jobs such as invoice clerk, stock control clerks, or procurement clerk. Few may be promoted to stock room supervisor.

Employment of stock clerks is expected to increase about as fast as the average for all occupations through the mid 1980's. Thousands of job openings will occur each as employment grows and as workers die, retire, or transfer to other occupations.

There are no specific educational requirements for beginning stock clerks. Employers prefer high school graduates. Reading and writing skills and a basic knowledge of mathematics are necessary. Typing and filing abilities are useful.

Usually a stock clerk works a forty hour week. They receive time and one half for over forty hours. Salaries usually depends upon where they work.

Stock clerks usually work in relatively clean, heated, and welllighted areas. Some stock rooms may be damp and drafty because of refrigerated goods and they may spend some time in cold storage rooms.

Salesperson

The success of any retail business depends largely on its sales workers. Courteous and efficient service, whether on the floor or behind the counter does much to satisfy the customer and build a good reputation.

The duties, skills, and responsibilities of sales workers are as different as the kinds of merchandise they sell. In addition to selling, most sales workers make out sales or charge slips, receive cash payments and give change and receipts. They also take care of returns and exchanges of merchandise and keep their work area neat.

Salespeople have to deal with pricing and sizes. They also must be knowledgeable about sales tax. When purchasing merchandise to be shipped out of state by the firm there is no tax charge.

In small firms a salesclerk may help order merchandise, stock shelves or racks, mark price tags, take inventory and prepare displays.

There are more than 2.7 million sales workers employed in retail business. Sales persons work in stores ranging from the small drug or grocery store employing one part time sales clerk to the giant department stores that has hundreds of sales workers. They also work for doorto door sales companies and mailorder houses.

Employers prefer high school graduates, especially those that have participated or taken courses in Distributive Education. Thousands of high schools across the country have distributive education programs. These programs generally consist of a cooperative arrangement between the school and business community. These programs allow students to work part time in local stores while taking courses in merchandising, accounting, and other aspects of retail selling. Subjects such as English, salesmanship and commercial arithmetic provide a good background. Math is essential. Salespersons earn approximately seven to fifteen thousand dollars and more depending upon the firm that they work for.

Retail selling will continue to be an excellent source of job opportunities for high school graduates even though employment is expected to increase more slowly than the average for all occupations through the mid 1980's.

Sales persons work a five day, forty hour week. They usually work in clean, welllighted places, and many stores are airconditioned. They are usually paid by the hour. Some sales people receive a salary plus commission, that is a percentage of the sales that they make. Some are paid a straight commission and they find that their earnings are greatly affected by ups and downs in the economy.

Purchasing Agent

The purchasing agents job is to maintain an adequate supply of items an organization needs to operate. Purchasing agents called industrial buyers, obtain goods and services of the required quality at the lowest possible cost and see that adequate supplies are available. Because agents often can purchase from many sources, their main job is selecting the seller who offers the best value. The purchasing agent has to contact many sales people from different companies in order to compare prices, quantity and quality. He or she must compare price listings in catalogs, trade journals and compute the difference in savings. The salesperson makes telephone calls to suppliers to get information and meet with salespersons to examine samples, watch demonstrations of equipment, and discuss items to be purchased. It is very important that purchasing agents develop good business relationships with their suppliers.

Purchasing agents work in manufacturing industries, government agencies, construction companies, hospitals and schools. They also work in stores.

While there is no universal educational requirements for entry level jobs, most large companies now require a college degree, and prefer applicants with a master's degree in business administration. Training requirements vary with the needs of the firm. Regardless of educational background beginning purchasing agents spend a considerable amount of time learning about company operations and purchasing procedures. Some high school courses which might prove especially helpful are civics, economics, business law, bookkeeping, typing, and shorthand. In college required courses are economics, accounting, statistics, and business management.

Employment for purchasing agents is expected to increase faster than the average for all occupations through the 1980's. Opportunities will be excellent for persons with a master's degree in business administration. Persons with a bachelor's degree in engineering, science, or business administration whose college program included one course or more in purchasing also should have bright prospects. Demand for purchasing agents will increase because of their importance in reducing cost.

The earnings of purchasing agents vary depending upon the firm that they work for.

Statistician

A statistician collects, analyzes and interprets numerical data in a particular subject area to provide help to business and governmental officials and professional workers in determining the best way to produce results in their work. The statistician works with numbers and symbols which have a special meaning. Mathematical statisticians use mathematical techniques for designing and improving statistical methods to obtain and interpret numerical information.

They also work with theory, devising new ways in which the work may be accomplished and statistical method may be applied. There are statisticians who design experiments and prepare mathematical modes to test a particular theory.

Statisticians work in private industry, primarily in manufacturing, public utilities, finance and insurance companies. They work for the Federal Government, in the Department of Commerce, Health, Education, Welfare, Agriculture and Defense. Others work in state and local government, Colleges and Universities.

A bachelors degree with a major in statistics or mathematics is the minimum educational requirement for many beginning jobs in statistics. A graduate degree in mathematics or statistics is essential for college and university teaching.

Employment opportunities are expected to be favorable through the 1980's. Besides the faster than average growth expected in this field, additional statisticians will be needed to replace those who die, retire, or transfer to other occupations. Private industry will require increasing numbers of statisticians for quality control in manufacturing. Business firms will rely more heavily than in the past on statisticians to forecast sales, analyze business conditions, modernize accounting procedures, and help solve management problems.

Salaries for a statistician vary depending upon the firm.

Bank Teller

Most bank customers have contact with the teller, the man or woman behind the window performs a variety of duties.

The teller cashes customers checks and handles deposits and withdrawals from checking and savings accounts. Before cashing a check the teller must make sure that the written and numerical amounts agree, verify the identity of the person to receive payment and be certain that the payee's account has sufficient funds to cover the check. The teller must carefully count out the cash to avoid errors. There are times when customers withdraw money in the form of a cashier's check and the teller has to type it and verify it. When accepting a deposit, the teller checks the accuracy of the deposit slip and enters the total in a passbook or on a deposit receipt.

Some tellers use machines to do the math work, others use computer terminals, while some write and compute by hand. Their duties begin before and continue after banking hours. After banking hours, tellers count cash on hand, list currency received tickets on a settlement sheet, and balance the days accounts.

Tellers work in clean well lighted air conditioned places. They generally work a thirty seven to forty hour week.

A high school diploma is usually sufficient for hiring with a good background in math. The applicant must pass a basic math test. Maturity, neatness, tact, courtesy, friendliness and attentiveness are very important.

Thousands of openings will occur each year as a result of employment growth and the need to replace tellers who stop working for various reasons. The relatively high replacement needs in this career are expected to be an important source of job opportunities. Qualified applicants should find good employment prospects.

In general, the greater the range of responsibilities the teller performs, the higher his or her salary.

Chef

A person employed in the preparation and cooking of food, usually in large quantities. Chefs coordinate the work of the kitchen staff, and often direct certain kinds of food preparation. They decide the size of servings, sometimes plan menus, and buy food supplies. Many chefs have earned fame for both themselves and the firm for which they work because of their skill in creating new dishes and improving familiar ones. The work depends upon the size of the firm.

Chefs work in restaurants, hotels, colleges, hospitals, government agencies, factories, private clubs, schools, and many other organizations employ them.

Chefs work thirtyseven and one half to forty eight hours a week. Some work in airconditioned kitchens and have convenient work areas and modern equipment. Older and smaller eating places are often not as well equipped and working conditions are less desirable.

Chefs that work in famous restaurants earn more than the minimum rates and many chefs with a national reputation earn more than forty thousand dollars a year.

Persons interested in becoming chefs should take courses in business arithmetic and business administration in high school. They can get experience by working part time in a fast food restaurant or other food service operations.

After high school interested persons should attend a culinary vocational school. Some universities and junior colleges offers curricula in the area of becoming a chef.

The demand for chefs will increase as the population increases and people spend more money eating out. Higher personal incomes will allow people to eat out more. The working wives find it a welcome convenience to eat out.

LEARNING ACTIVITIES FOR CAREERS

Stock Clerk

1. Have students contact a stock clerk in a local store and find out what methods and procedures he or she uses to keep track of his merchandise sold, in stock and what is needed.
2. List problem solving skills needed to solve the above problem.

Salesperson

1. Find the commission and net proceeds when the sales are \$259.98 and the rate of commission is 8%.
2. Find the price of the living room set sofa \$800.00, love seat \$500.00, chair \$259.00, sales tax 7%.

Purchasing Agent

1. Roleplaying
MaterialsNew Haven Register
Sears Roebuck Catalog
Have students order AV equipment for the school. Compare prices, transportation cost, delivery time and compute the difference.
2. Discuss bidding and the bidding process, including substitutions, penalties, deadlines and specifications.

Statistician

1. There are fifteen people in the physical education class. Here are a number of baseball points made by each student. Organize this information into a chart. Find the median, mode and mean.
17,4,25,15,8,9,8,27,22,15,14,15,8,10,8
2. Have students construct a bar graph from the following information. Monday 98° Tuesday 75°

Wednesday 80° Thursday 71 ° Friday 68° Saturday 69°.

Bank Teller

1. John Doe's pay check was \$459.98 which he gave to the bank teller. The teller made the following deductions: \$150.00 in his savings account, \$200.00 in his checking account and \$50.00 on an installment loan, what was his change?
2. Name four qualities a bank looks for when hiring a bank teller.

Chef

1. How many people could a chef feed with a 100 pound roast, giving each person 1/4 of a pound?
2. There is a banquet at the Motor Inn and the chef must purchase food for two hundred people. He will purchase

25 pounds of chicken wings for	18.25
50 pound roast	100.00
25 pounds of white potatoes	10.00
15 tomatoes	5.00
10 heads of lettuce	6.50
20 pounds of green beans	12.75
225 rolls	25.00
cake	30.00
coffee	9.00
milk	3.00
hors d'oeuvres	50.00

What is the total bill?

Listed are some activities that we have found to be helpful in the other academic areas through an interdisciplinary approach.

General Activities

Dollar Bill Inquiry

This activity applies the process of inquiry to a dollar bill. The same process can be applied to arrowheads, ancient tools, or other handson objects. A discussion should be held before, during, and after this activity.

Direction for the Students

The students have been on an expedition to ancient historical site. While digging, they discovered an artifact (a dollar bill). Their assignment is to look at the artifact and describe it. Talk about the people who made it.

The only rule is that their conclusions should be formed from what they can read and interpret from the material on the bill itself. They must observe. Do not relate what you know through previous experiences.

Social Studies

Locate the origin of the dollar bill on a map.

Trace the history of the dollar bill.

Science

Describe the artifact (dollar bill).

Compare the dollar to similar bills.

Make a diagram of the bill.

Language Arts

Make a written and an oral report about the artifact (dollar bill).

Tape record the oral report.

Art

Draw the artifact (dollar bill) in the past and in the future.

Make some transparencies.

Mathematics

Write several mathematics problems dealing with the artifact (dollar bill).

Career Education

Find out the occupations related to money (dollar bill) such as banking, etc.

Have a banker or other individual involved with money visit your class.

Money

What is money? Have students research the history of money. Make a chart comparing the various types of money in the past.

Make a list of reasons why people need money.

Find out more about Credit Cards. Have students design their own. The students can make charts comparing the currencies of different countries.

Have students design some money for the future.

Have students keep track of the money that they spend for a whole month.

Food and Marketing

Visit the local supermarket to find out more about foods and food processing.

The stock market: The students will use the newspaper to learn more about fractions. Keep track of several stocks for a period of time.

Mathematics

Make up a new numeration system. Have students do a research project on the ancient numeration system.

Have students make a collection of mathematics oddities and write curious problems with them.

Language Arts

Have students make up an original game with instructions and board. Ask them to write an original story based on the pattern.

Science

Classify objects on a science table in several different ways. Write an accompanying report.

Social Studies

Make a set of transparencies to supplement the lessons Activity Hawaii fiftieth state of the union.

Mathematics

Have students write original problems about Hawaii, using Hawaiian themes. Example: How much is two tons of pineapples if each pound is worth 29¢?

The students can use world maps and globes to measure distances from their state to Hawaii.

The students can compare the size and population of their state to that of Hawaii. Make a chart comparing the results.

The students can find out the total number of people who visit Hawaii each year.

Have students write original word problems and illustrate them.

Social Studies

Have students do a report on Hawaii's special industries, such as the sugar and pineapple industries. Bring in samples.

Science

Have students find out more about the manufacturing of products in Hawaii. What processes for food preservation were used in ancient times?

Language Arts

Write a poem with a Hawaiian theme.

Have students plan meals.

Mathematical Activities

Use a menu from a restaurant. Have the students figure the cost of a given meal.

Use the telephone and the telephone directory for activities. Have students make up problems using the dial (or push button). Add the values for these letters

$$G + E + O + M + E + T + R + Y =$$

$$4 + 3 + 6 + 6 + 3 + 8 + 7 + 9 = 46$$

Calorie charts can be helpful. Make up problems using a calorie chart. This can be used with the health unit. Have students write a letter to an airline company and get an airfare chart telling the cost of various flights. The students can compare the costs of a first class vs. coach vs. night or weekend rates.

The teacher can ask a car dealer for a copy of the new car accessory list. Order an imaginary car with certain options and have the students figure the cost.

The student can use a calculator to help supplement the program. Use the bank to help with checks, interest, services of banks, etc. Have students make a list of the various changes that would be made if America became 100% metric tomorrow. Include sports, businesses, gasoline stations, recipes, etc.

Social Studies Activities

Problems will be handled individually, then in groups and scored. The quality of the decision should be better when handled by the group. The added dimensions are involvement and commitment.

Listed are five top problems facing the nation.

Low productivity standards

Unemployment

Drug addiction

Inflation

Low educational standards

Have students decide which problems they regard as the five most urgent facing the nation. Have five students handle the problems, then five groups.

The groups should decide what they would do in the situation and make their report.

1. Students will select a product, make speech to try and sell the product. Students in the class will study the pros and cons, seeing if they can find false advertising in the talk, ask questions and then decide whether or not the product has consumer value.
2. Students can read books and articles dealing with the consumer and prepare a report. Some magazines are "Changing Times", "Consumer Report" and "Consumer Journal", some books, "The Waste Maker" by Vance Packard, and "Your Home and You" by Carlatta C. Green.
3. Utilize films: "The Littlest Giant" and "A Penny Saved" and follow up with a written student critique.

Vocabulary List

1. Salary
2. Career
3. Operation
4. Consumer
5. Profit
6. Sale
7. loss
8. Taxes
9. Ingredients
10. List Price
11. Menu
12. Inflation
13. Unit Pricing
14. Quality
15. Comparison Shopping
16. Commission

Have students look up definitions of words. Use each word in a sentence. Write math problem where applicable.

Visits to Local Businesses

We made visits to several local businesses within the Greater New Haven Area.

We discovered that the following business will be receptive to your classroom needs.

Community Health Care Plan stated that “we are available to help in any way we can, whether you want to bring a class by for a tour or simply want to ask us questions. Just give us a call.”

Nationwide Insurance is interested in doing what they can to help and they wrote to say that, “we want to develop relationships with the community. We look forward to working with you and will be happy to speak to any of your classes. If you have a group of students that you would like to bring up and have a tour, give us a call I’m sure that we can work something out.”

Other visits that we made were G & O Manufacturing, Olin Corporation, and National Savings Bank. They are receptive to our needs and will do what they can to meet the needs.

First Bank, Blue CrossBlue Shield, Yale Food Service, Long Wharf Food Terminal, have participated in the past and will continue to do so. We made phone calls to them and they indicated that would be a resource for us. Just call them when we are ready. We have had the pleasure and the experience of working with them.

These resources have been an integrated part of the total educational process. It has been our experience through these resources to see students grow socially, emotionally and intellectually. Discipline decreased, attendance and academic achievement improved.

Teachers using this unit may call a local business of their choice for speakers and tours.

Pre and Post Test

Listed are four problems. Solve each problem and list the problem solving steps and strategies that you used to help you solve the problems.

Gary has a newspaper route which covers seven city blocks. He delivers newspapers to 135 customers on this route every day except Sunday. Gary begins his daily delivery at 6:50 A.M. On the average, it takes him 25 minutes to complete his route. Besides the time it takes him to deliver the newspapers each day, Gary spends 2 hours each Saturday collecting money from his customers. How many hours and minutes does he work altogether during a week?

Mr. Selski owns a used car business. At the present time he has 15 used cars on his car lot. They cost him an average of \$874 each to buy. Mr. Warren bought a late model car from Mr. Selski for \$3,400. He made a down payment of \$760. He agreed to pay the rest in equal monthly payments over the next two years. How much would each payment be?

Woody plays on the Greenville basketball team. In the game against Central he made 6 baskets and 5 free throws. Each basket counted 2 points and each free throw counted 1 point. How many points did Woody score in the game?

Mrs. Miller and her class went to visit the city library. While they were there, the librarian Mr. Graham told them that there were 53,874 books in the library. He said that 11,379 of these were children's books. How many books in the library were not children's books?

Resource Visitations

Peter Firla

National Savings Bank

950 Chapel St.

New Haven, Connecticut

7722641

First Bank

1 Church Street

New Haven, Connecticut

4974000

Rosemary Madigan & Robert Croteau

Nationwide Insurance

261 Skiff Street

Hamden, Connecticut

2882531

Blue CrossBlue Shield

370 Bassett Road

North Haven, Connecticut

2394911

Yale Food Service

Yale University Dining Hall (Commons)

New Haven, Connecticut

Christoforo & Brothers

Long Wharf Food Terminal

Long Wharf

New Haven, Connecticut

5629833

New York Stock Exchange

12126233000

American Stock Exchange

12129386000

United Nations

United Nations Plaza

New York, New York

12127547715

World Trade Center

12124664170

Bob McGuinnis

Community Health Care Plan

Long Wharf

New Haven, Connecticut

7873141

Eddie Cummings

Stop & Shop Warehouse

Montowese Ave.

North Haven, Connecticut

7722310

Grace Mauro & Georgiana Coleman

Olin Corporation

Winchester Ave.

New Haven, Connecticut

7895529 or 7895612

Ed Morse

G&O Manufacturing

Winchester Ave.

New Haven, Connecticut

5625121

Resource Speakers

For speakers call the following places and set up appointment.

Blue CrossBlue Shield

2394911, extension 2510 or 2443

First Bank

4974000

National Savings Bank

776 2641

Yale Food Service

436 1360

Nationwide Insurance

2882531

Stop & Shop

7722310

Curriculum Unit 80.07.02

G & O Manufacturing

5625121

Olin Corporation

7895529 or 7895612

Community Health Care Plan

7873141

Call a local restaurant of your choice and invite a chef in to speak to students.

Call a local department store of your choice and invite a salesperson to speak to students. Also a local car dealer.

Students' Reading List

Burns, Marilyn. *The Book of Think (or how to solve a problem twice your size)*. Little, Brown and Company, Boston, 1976.

The information in this book will cause you to think and work with what you have. It will cause you to limber up and get your tools working in good order.

Burns, Marilyn. *The I Hate Mathematics! Book*. Little, Brown and Company, 1975.

The information deals with get rich quick games to stop playing around with those magic tricks.

Chapman, Victoria. *Let's Go to a Super Market*. 1971. Putnam,

The book is about two children who learned the value of money when they visited the super market.

Gay, Kathlyn. *Be A Snart Shopper*. Messner, 1974.

Consumer education and information for children on income sources are provided in this book.

Hoghen, Lancelot Thomas. *Wonderful World of Mathematics*. The H.W. Wilson Company, 1955.

This information concerns how man gradually discovered and learned to use mathematics concepts in various aspects of their lives.

Saunders, Rubie. *Smart Shopping and Consumerism*. Watts. 1973.

You will enjoy this book just before you go shopping. It is filled with advice for young buyers, tips on budgeting, and bargain hunting.

Smith, George O. *Mathematics: The Language of Science*. G. P. Putnam's Sons, New York, 1961.

This book presents important developments in the history of math and the language there of.

Young, Jim, & Young, Jean. *Kids Money Making Book*. Doubleday, 1976.

There are thirtytwo projects described in this book that students can use to earn money.

Bibliography

Bergimini, David. Mathematics. Time Incorporated, New York, 1963.

Burch, Robert L. "Formal Analysis as a Problem Solving Procedure". Journal of Education (New England), 136, (1953): 4447

Cotler, Harold I. Encyclopedia Deskbook of Teaching Ideas and Classroom Activities. Parker Publishing Company, Inc., West Nyack, New York, 1977.

Judd, Wallace P. Problem Solving Kit. Science Research Associates, Inc., Chicago, 1977.

Kinney, Lucien B., Ruble, Vincent, & Brown, Gerald. Problem Solving Mathematics. Holt Rinehart and Winston, Inc., New York, 1967.

Kline, M. Mathematical Thought From Ancient to Modern Times. Oxford University Press, 1972.

Knifong, J. Dan, & Boyd, D. Holton. "A search for Reading Difficulties Among Erred Word Problems". Journal for Research in Mathematics Education, 83, (1977), 22730.

Lankford, Francis G., Gol, William E. Consumer Mathematics. Harcourt Brace Jovanovich, Inc., New York, 1977.

Newman, James R. The World of Mathematics Vol. I IV, Simon & Schuster, New York, 1956.

Peterson, J. M. Finite Mathematics. Irvington Press, New York.

Polya. Mathematics and Plausible Reasoning. Princeton University Press, Princeton, 1954.

Polya. How to Solve It. Princeton University Press, Princeton, N. J., 1973.

Rademacher, M., & Loeplitz, O. The Enjoyment of Mathematics. Princeton University Press, Princeton, 1957.

Sooke, Thomas F. Businesses and Consumer Mathematics. AddisonWesley Publishing Company, Monterey, California, 1977.

Stokes, Newton C., Beattie, Ann, & Hoffman, Ruth I. Arithmetic in My World. Allyn and Bacon, Inc., Boston, 1959.

Wiltsie, David H. Skills for Everyday Living. Motivation Development, Inc., 1978.

<https://teachersinstitute.yale.edu>

©2019 by the Yale-New Haven Teachers Institute, Yale University

For terms of use visit <https://teachersinstitute.yale.edu/terms>