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Administrative strategies in developing a real-life skills mathematics unit

Dorian A. Jones

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ADMINISTRATIVE STRATEGIES IN DEVELOPING
A REAL-LIFE SKILLS MATHEMATICS UNIT

A Project Submitted to
The Faculty of the School of Education
In Partial Fulfillment of the Requirements of the
Degree of
Master of Arts
in
Education: School Administration Option

By
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San Bernardino, California
1992
SUMMARY

Statement of the Problem

The purpose of this project is to develop a real-life math skills unit for seventh and eighth grade average students who often lack motivation and interest. Average students are those who are not currently enrolled in pre-algebra or algebra but are taking general mathematics.

Selected items from the California Test of Basic Skills (CTBS) indicate that students lack the ability to apply skills in practical situations. Individuals need real-life skills to function in society and they need to see the value of mathematics and how the accompanying skills they are learning will be of use to them today and in the future. Many teachers feel that learning improves when the student is interested in the material and understands its practical value. The writer of this project feels that a real-life skills unit would reinforce the utilization of application skills in relation to mathematics.

Although much of this project is devoted to the curriculum unit, the administrative roles and their responsibilities are also included. These processes are viewed as essential to both the development and implementation of that curriculum unit.

Procedure

The writer formed a committee of six mathematics teachers from four middle schools in the San Bernardino City Unified School District in 1987 which met to discuss and analyze the CTBS scores of the seventh and eighth grade students at Golden Valley Middle School. An analysis of these tests indicated that 64% of the scores were lower on the application section of the test than on the computation section. The committee members discussed the
needs of the average students and generated ideas for a unit which would help motivate these pupils. The committee concluded that the development of a unit based upon real-life skills would be appropriate. The main purpose in creating this unit was to encourage students to become involved in activities which are real, personal and meaningful.

The writer devised and conducted a survey soliciting ideas from middle school mathematics teachers in the San Bernardino City Unified School District. Then the committee utilized the results for developing specific lessons emphasizing the use of manipulatives as well as authentic materials such as menus, checks, food flyers and catalogs. The committee believed that by using these realistic materials, as well as the hands-on approach, students would be motivated and eager to complete the activities. The committee also felt that the materials would be visually appealing to the students.

The committee included in this unit specific procedures, material lists and behavioral objectives for each lesson. The unit was piloted at Golden Valley Middle School by two mathematics teachers in the fall of 1991. Additional mathematics teachers in the San Bernardino City Unified School District will pilot the unit in the spring of 1992 and revisions of the unit will be made if necessary.

An inservice will be held for other teachers within the district who wish to utilize the unit. In June of 1992, a follow-up meeting will be held to obtain feedback from teachers, to further evaluate the unit, and to write a final report which will be distributed to the assistant superintendent of curriculum, all middle school principals, and all mathematics teachers at the middle schools in the San Bernardino City Unified School District.

Results

The purpose of this project is the completion of a real-life skills unit
and a description of how selected administrators carried out their roles and responsibilities to support and implement the development, evaluation, and dissemination of this unit. Teachers can use the unit with their students to reinforce previously learned skills through hands-on activities involving the materials listed above. Each activity can be revised to meet the individual needs of the students.

Conclusions and Implications

Utilizing the research discussed in Chapter 2 and the results of the meetings with the mathematics teachers at the middle school level, the writer discovered that students need to become more aware of the importance of mathematics in our society. A unit on real-life skills will offer an opportunity to review, reinforce and apply previously learned mathematical processes. A fundamental premise of the unit is that activities which involve everyday life and draw on students' interests will help students develop an understanding of mathematical concepts as well as an appreciation for the use of mathematics in daily living.

Teachers will have to be prepared to collect materials listed previously, prior to beginning the unit. Teachers may also find it necessary to revise task sheets to correspond with specific materials being used with the community.
# Table of Contents

Summary................................................................. iii

List of Tables ........................................................... vii

Chapter 1 - Introduction.............................................. 1

Chapter 2 - Review of the Literature ............................... 5

Chapter 3 - The Role of the Administrators in Relation to
The Real-life Mathematical Skills Curriculum... 24

Chapter 4 - Statement of Objectives............................... 30

Chapter 5 - Design of the Proposed Project.................... 31

Chapter 6 - An Overview of the Real-life Mathematical Skills
Curriculum Unit....................................................... 35

Chapter 7 - Results of the Pilot..................................... 37

Chapter 8 - Real Life Mathematical Skills Unit.................. 40

References............................................................... 73

Appendix................................................................. 75
List of Tables

Table 1 - Results of Student Evaluations .................... 37
Table 2 - Results of Student Pre- and Post-Tests .......... 39
Table 3 - Task Sheet for Days 1 and 2 ...................... 43
Table 4 - Job Hunting Task Sheet ............................ 47
Table 5 - Task Sheet for Living .............................. 51
Table 6 - Sample Schedule .................................. 53
Table 7 - Sample Menu Task Sheet ............................ 55
Table 8 - Amusement Park Ad ................................. 56
Table 9 - Amusement Park Coupons ............................ 56
Table 10 - Task Sheet for Coupon 1 ........................... 57
Table 11 - Task Sheet for Electric Bill ....................... 59
Table 12 - Task Sheet for Telephone Bill ..................... 60
Table 13 - Task Sheet for Gas Bill ............................ 61
Table 14 - Task Sheet for Cable Bill .......................... 62
Table 15 - Task Sheet for Trip Tic ............................ 64
Table 16 - Comparative Pricing - Clothing ................... 67
Table 17 - Comparative Pricing - Groceries ................... 68
Table 18 - Coupon Task Sheet #2 ............................. 69
Table 19 - Task Sheet - Food Budgeting ....................... 71
Table 20 - Catalog Ordering Task Sheet ....................... 72
CHAPTER 1: INTRODUCTION

During the 1987-88 school year, middle school mathematics teachers in the San Bernardino City Unified School District had several opportunities to meet to discuss textbooks, contests and other topics related to the mathematics curriculum. On several occasions these discussions centered on "average" students. Average students are defined as those students not currently enrolled in pre-algebra or algebra but are taking general mathematics. The author will utilize this definition throughout the paper.

Many teachers feel that average students at the middle school level are among the most difficult to teach because they lack confidence, motivation and often some of the necessary basic skills. The job of the middle school teacher is to motivate the students so they will once again attempt the tasks they had previously failed. Due to poorly written textbooks, schools are limited their emphasis in mathematics to computational skills as noted in the article "Curriculum and Evaluation Standards for School Mathematics" (National Council of Teachers of Mathematics, NCTM, 1989). With the mathematics textbook used currently in the San Bernardino School District, students practice the same skills in three grades: 6th, 7th, and 8th. Mathematical concepts which involve higher levels of thinking are often found at the back of the textbook. Teachers often do not have time to thoroughly cover those topics (NCTM, 1989).

Although students' computation scores on standardized tests have improved, there has been a decline in the ability of students to apply those skills in any practical sense. Eileen Marzola (1987), cites Roy Forbes, director of the National Association of Education Progress, as saying "students do not have the analytical or comprehension skills they did ten
Since there is a general consensus among the middle school mathematics teachers in San Bernardino that the average student's curriculum needs to be evaluated more closely, a committee of volunteer math teachers was formed by this writer. Curriculum specialist, Joann Tortorolla of the San Bernardino City Unified School District, authorized the committee to meet to discuss the curriculum and develop a supplementary mathematics unit for these average students.

The committee members analyzed 288 sample CTBS scores from students in grades six through eight at Golden Valley Middle School in San Bernardino. The data indicated that 64% of the students in the sample scored lower on the application section than on the computation section, while only 34% scored higher on the application section, and 2% scored the same on both sections. The committee concluded that it was necessary to develop a curriculum unit that would address the utilization of application skills in mathematics.

The committee members discussed the characteristics of these average students and generated ideas for supplementary curriculum units. It is the responsibility of the educator to make learning as exciting and interesting as possible. Low achieving students need to be particularly motivated as they have generally not been successful in school work.

Most students go through phases in which they are interested in particular styles of clothing, places to visit, foods to eat, and so forth. By appealing to the students' interests, teachers are assuming that the students will become motivated. One approach would be to link mathematics to the interests of middle school students. At the present time there are very few supplementary materials which enable students to see direct uses for the mathematics they are learning. The problems developed to be used as part of
this real-life skills curriculum unit will be an attempt to increase students' interest and enthusiasm. Mathematics is a part of everyday life. A knowledge of mathematics is needed to deal with the many situations that students may face now or later in life. If a practical, useful approach is utilized, numbers can become exciting as the students become involved in activities that are real, personal and meaningful.

The procedure for developing this curriculum unit has included a thorough review of existing literature including the purpose of real-life skills activities, the use of manipulatives, reallia and calculators. The literature involving the middle school student focused on the changes a student of this age goes through, the students' self concept, and the need for changes in curriculum to meet the needs of the middle school students.

In reviewing the literature of the field, one position included the indicators of program achievement and the importance of schools being held accountable for the education of students. The writer also focused on the recommendations from the National Council of Teachers of Mathematics (NCTM) 1989 publication "Curriculum Evaluation Standards for School Mathematics," as well as that committees' social goals for education and for all students. Lists of mathematical concepts that seem to need increased and decreased attention will also be discussed.

The writer also found it necessary to include the roles and responsibilities of administrators in developing a curriculum unit. The roles of the superintendent, assistant superintendent for curriculum and the principal who was involved in the project will be discussed in detail. The writer also included the significance of each of their roles in relation to the development of the real-life skills unit shown in Chapter 8 and a comparison of their performances in relation to what authorities state are
appropriate contributions. Although the unit is the primary purpose of this project, the above considerations must be addressed if the implementation of the unit is to be successful.
CHAPTER 2: REVIEW OF THE LITERATURE

Choosing activities that are relevant to students who lack motivation and whose performance in mathematics has been poor is an important factor in selecting a topic for a curriculum unit. Many students have had very negative experiences with mathematics. A student who has known nothing but frustration and failure may quickly abandon hope and fail again (Raymond A. Zember and Jasper B. Selwynn, 1980). Teachers must help these students to prepare for life outside of school. One approach would be to incorporate more vocational type units which teach students basic life and employment skills as well as the value of academic lessons. Martin Haberman and Lois M. Quinn (1986), state that youths are often disciplinary problems because they do not know how to cope with everyday situations and these skills are vital if students are to adapt to the real world.

Materials that provide for practical arithmetic uses such as banking, purchasing and reading tables should be included. Reading scales and charts are needed both for measurement exercises and in other aspects of everyday life. Students need to develop confidence in interpreting them (Price, et. al., 1979).

Another important issue for average students is motivation and interest. A unit on real-life skills can offer an excellent opportunity to review, reinforce, and apply previously learned mathematical concepts. Research shows teachers should stop trying to force disruptive students to adapt to schools but adapt schools to the needs of the students instead. Troublesome students can frustrate the best efforts of teachers. If classes are designed around students' needs, more students will acquire important mathematical knowledge and enjoy it. This attitude allows problem youths a new chance for the future.
Haberman and Quinn, 1986).

Low achieving and disinterested youths seldom finish high school, but these same students might learn enough to acquire a high school equivalency certificate if taught academic lessons using materials that are relevant. Students can display enormous task commitment if they choose to work on meaningful tasks that relate to real-life situations. According to Price (et. al., 1979), research has shown that learning improves when the student is interested in the material being presented and understands the value of the material. Proficiency and understanding will follow as the student is given practice in real world and relevant problem situations. A change in approach is necessary. Instead of figuring the percents of arbitrary numbers, students can calculate finance changes and sales taxes. Instead of adding arbitrary weights and measures they can add shipping and handling charges of items on catalog order forms. A textbook can still be used as well as drill, but a supplementary unit on real world math will reinforce the lessons.

Manipulatives play an important role in mathematics. The first manipulative to be considered is the use of the calculator. Calculators eliminate differences in computational abilities. Estimation, mental computation and calculators need to be accepted as legitimate computational methods. Paul R. Trafton (1986) cites the NCTM as recommending that calculators be integrated into all aspects of school mathematics.

According to Marzola (1987), Jean Piaget stressed that children's concept development is based on their own interactive experiences with the world of objects. Manipulatives are "concrete models that incorporate mathematical concepts, appeal to several senses, and can be touched and moved around by students." They range from structured materials complete with their own curriculum to common household materials used to support and develop a variety
Children need to experience mathematics firsthand to understand how it affects their daily lives and to draw mathematical conclusions about the world around them. Recent research has shown that while instructional use of manipulative materials can improve the mathematical achievement of students at different grade and ability levels, it may be particularly relevant for handicapped or low-achieving students (Marzola, 1987).

There should be little wonder why good students get bored: they do the same thing year after year. Average or slower-than-average students become complacent. They know that if they do not learn a certain skill now, it will be retaught next year.

Computation dominates our thinking about school mathematics classrooms. Teachers often equate the curriculum with the computational topics they teach; administrators worry greatly about computational performance on standardized tests (while virtually ignoring concepts and problem solving); students feel that they have been taught mathematics if computation is not involved; and the public still believes mathematical literacy means computational skills (James Flanders, 1987).

The schools teach far more computation than is required in a technological society. The evidence is strong that the fundamental problems students have with fractions and decimals is not computation, but a lack of understanding of what a fraction or decimal is. Activities that involve real-life situations and focus on students' interest will help students understand and appreciate mathematics. Through hands-on experiences students will see that what they are learning has an obvious use; as a result, they show more interest in their lessons (Trafton, 1986).

The Students

Middle school students undergo vast changes in their intellectual,
psychological, social and physical development during the three to four years they are in attendance at this level. Students in grades five through eight begin to develop their abilities to think and reason more abstractly (NCTM, 1989). Students at the middle school level are restless, energetic, responsive to peer influence, and unsure about themselves. A students' self-concept is a vital factor in determining success or failure in school, on the job, or in social interaction (James Slezak, 1984).

In the transition to adulthood, middle school students are forming lifelong values and skills. People seek what they value and avoid what they do not. Students who value what they are being taught are eager learners (Slezak, 1984). The decisions students make about what they will study and how they will learn can dramatically affect their future. Failure to study mathematics can hinder entrance into vocational-technical schools or college. Teachers and administrators must encourage all students to pursue mathematics. To this end, the curriculum must be interesting and relevant, must emphasize the usefulness of mathematics, and must foster a positive disposition toward mathematics. The current curriculum excludes many students from appreciating the useful, exciting and creative aspects of mathematics. Changes must be made to attempt to give all students the opportunity to appreciate the full power and beauty of mathematics and acquire the mathematical knowledge and intellectual tools necessary for its use in their lives (NCTM, 1989).

Although the curriculum unit shown in Chapter 8 has no affect on the students' physical development, it does have some impact on the students' intellectual, physical and social development. Intellectually, the students will learn to utilize many mathematical skills in real-life situations. Most of the mathematical concepts have been taught to the students in previous years and through this unit, students will learn when and where to apply these
skils. This unit is designed to show students the importance of mathematics and how the skills they have learned will be used in the future.

The unit relates to the students' social development through the interaction students will have with each other throughout the activities. Students will be working in small groups and peer tutoring will often be utilized. It is believed by the writer that students who can teach others what they have learned have mastered the skills that have been taught. Another social goal is that the students will learn to work with others cooperatively.

The greatest impact the unit has is on the students' psychological development. The writer has attempted to reinforce mathematical concepts utilizing activities which the committee felt would be interesting to students at the middle school level. These concepts include activities such as purchasing clothes, ordering from a menu, taking a trip, ordering items from a catalog as well as others. The unit shows the students how they can successfully use their mathematical skills in completing the activities listed above. The writer hopes the students will have a more positive attitude towards mathematics when the students realize that they can perform the mathematical skills which are used in everyday life situations and in ones which are needed to survive.

Indicators of Program Achievement

Education is one of many institutions in our society which requires support from the public at large. The parents and the students have a right to help evaluate the quality of education. People in the community are already saying through newspaper articles and editorials, television, and informal interviews that schools should be held accountable for what they spend, what they teach, and how they govern. Two of the most frequently raised
questions are: How are our students doing on state and standardized tests? Why are these students not offered more vocational courses? (Jerry J. Herman, 1979). The taking of vocational courses is supported by the Commission on Standards for School Mathematics which has proposed a core curriculum providing equal access and equal opportunities to all students. Mathematics is essential for students to lead meaningful and productive lives. There is no longer the need for a computations-based general mathematics program. The core curriculum allows for flexibility among individuals. As students mature, their interests, goals, and achievements change. "In choosing not to trap students in one of the two conventional linear patterns, we ensure that doors to college programs and vocational training are kept open for all students (NCTM, 1989).

Program success is often measured by standardized tests. In California, the CTBS and local districts' proficiency tests are currently used to measure achievement. The CTBS was the basis for developing the curriculum unit on real-life skills in mathematics shown in Chapter 8. The mathematics portion of the test is comprised of two sections, computation and application. In the San Bernardino City Unified School District, CTBS scores are compared with those of other middle schools within the district. The principals are held accountable to parents, students and the superintendent for results. Each year the principal reviews the standardized test scores and makes recommendations for adjustments in the curriculum to improve areas which need further attention. The conventional yardsticks of judging an organization's performance depend on efficiency and effectiveness. A local school is efficient if in comparison to other local schools its output is relatively high compared to its input. On the other hand, a local school is effective when it achieves its own goals (Wiles, et. al., 1981).
Mathematical Standards

Recommendations from the publication entitled "Curriculum and Evaluation Standards for School Mathematics," guided the development of the unit included in this project. As a function of the NCTM's leadership in current efforts to reform school mathematics, the Commission on Standards for School Mathematics was established by the board of directors of the NCTM and charged with two tasks: (1) create a coherent vision of what it means to be mathematically literate both in a world that relies on calculators and computers to carry out mathematical procedures and in a world where mathematics is rapidly growing and is extensively being applied in diverse fields; and, (2) create a set of standards to guide the revision of the school mathematics curriculum and its associated evaluation toward this vision.

A standard is a statement that can be used to judge the quality of mathematics curriculum or methods of evaluation. Thus, standards are statements about what is valued. Groups meet formally to adopt a set of standards to ensure quality, to indicate goals and to promote change. In this sense, standards should be seen as "criteria for excellence." Schools must reflect the important consequences of the current reform movement if our students are to be adequately prepared to live in the twenty-first century. Calls for reform in school mathematics suggest that new goals are needed.

The Standards Committee states that the educational system of the industrial age does not meet the economic needs of today. New goals for education include mathematically literate workers. Employees must be prepared to understand the complexities and technologies of communication, to ask questions, to assimilate unfamiliar information, and to work cooperatively in teams. Lifelong learning and problem solving must be central to schooling so that students can explore, investigate, accommodate to changed conditions, and
actively create new knowledge over the course of their lives (NCTM, 1989).

The society of today expects schools to ensure that all students have an opportunity to become mathematically literate. Schools need to be capable of extending students' learning by providing an equal opportunity for all to produce informed citizens capable of understanding issues in a technological society. As society changes, so must its schools (NCTM, 1987).

"Educational goals for students must reflect the importance of mathematical literacy. The K-12 national standards articulate five general goals for all students: (1) that they learn to value mathematics; (2) that they become confident in their ability to do mathematics; (3) that they become mathematical problem solvers; (4) that they learn to communicate mathematically; and, (5) that they learn to reason mathematically. These goals imply that students should be exposed to numerous and varied interrelated experiences that encourage them to value the mathematical enterprise, to develop mathematical habits of mind, and to understand and appreciate the role of mathematics in human affairs. They should be encouraged to explore, to guess, and even to make and correct errors so that they gain confidence in their ability to solve complex problems. They should read, write, and discuss mathematics. They should conjecture, test, and build arguments about a conjecture's validity" (NCTM, 1989).

If students are exposed to the kinds of experiences outlined above, they will have a better opportunity to gain mathematical power. And this power can be translated to better daily living skills, better jobs, and better careers. For each individual, mathematical power also involves the development of personal self-confidence.

Classrooms are places where interesting problems should be regularly explored using important mathematical ideas. What a student learns depends greatly on how he or she has learned it. Students will still be studying much of the same mathematics currently taught but the emphasis will change. One of the features of mathematics embedded in the commission's report is that 'knowing' mathematics is 'doing' mathematics. This active process is a necessary part of the mathematics curriculum as well as the use of technology. Calculators should be available to students, and students should be able to
decide when they need them (NCTM, 1989).

The committee recommends that all students have the opportunity to engage in problem situations related to important mathematics topics. Activities should grow out of problem situations so that learning will occur in both active and passive involvement with mathematics. Knowledge should emerge from experience with problems. Instruction should vary and include opportunities for appropriate project work, group and individual assignments, discussion between teacher and students and among students, practice on mathematical methods, and exposition by the teacher. The commission vision sees "teachers encouraging students, probing for ideas, and carefully judging the maturity of a student's thoughts and expressions" (NCTM, 1989).

The committee developed three separate sets of standards: grades K-4; 5-8, and 9-12. In grades 5-8, mathematics is a useful, exciting, and creative area of study that can be appreciated and enjoyed by all students. Mathematics can help students develop their abilities to solve problems and reason logically. Mathematics offers students a way to explore and make sense of the world around them. However, "many students view the current mathematics curriculum as irrelevant, dull and routine. Instruction has emphasized computational facility at the expense of a broad, integrated view of mathematics and has reflected neither the vitality of the subject nor the characteristics of the student (NCTM, 1989).

A comparison of the tables of contents of mathematics textbooks shows little change in topics and approach over grades 5-8. The chapters which contain new material are covered in the last half of the books and these sections are often skipped by teachers due to lack of time. The result is "an ineffective curriculum that rehashes material students already have seen" (NCTM, 1989). This type of curriculum promotes a negative attitude towards
mathematics and fails to give students an adequate background for secondary school mathematics.

The 5-8 curriculum should include the following:

- Problem situations that establish the need for new ideas which motivate students. In developing problem situations, teachers should emphasize the application of mathematics to real-world problems as well as to other settings relevant to middle school students.
- Communication with and about mathematics and mathematical reasoning.
- A broad range of topics should be taught.
- Technology, including calculators, computers, and videos, should be used when appropriate.

The committee (NCTM, 1989), lists over thirty items which are in need of increased attention within the 5-8 curriculum. Those relevant to the curriculum unit developed in Chapter 8 are listed below.

- Connecting mathematics to other subjects and to the world outside the classroom
- Connecting topics within mathematics
- Applying mathematics
- Actively involving students individually and in groups in exploring, conjecturing, analyzing and applying mathematics in both a mathematical and real-world context
- Using appropriate technology for computation and exploration
- Using concrete materials
- Being a facilitator of learning
- Assessing learning as an integral part of instruction

In addition to the thirty items in need of increased attention, the
committee lists nearly three dozen items which should receive decreased attention. Those relevant to the curriculum design in Chapter 8, follow.

- Learning topics in isolation
- Developing skills out of context
- Practicing tedious paper-and-pencil computations
- Practicing rounding numbers out of context
- Teaching computations out of context
- Being the dispenser of knowledge

The real-life skills curriculum unit included as part of this project, reflects the standards and goals discussed in this paper. Our district committee believes that if the NCTM guidelines are followed, a new mathematics program can be developed and implemented.

Administrative Roles and Responsibilities

The role of the superintendent is largely a function of the policies and procedures of the employing board of education. In nearly all local school districts, the superintendent alone reports directly to the board. All other district administrators are responsible to the superintendent and report directly to him or her. According to the law in most jurisdictions, the school board makes policy and the superintendent, as the chief executive, assists the board in making and carrying out said policies (Ralph B. Kimbrough and Michael Y. Nunnery, 1988).

The superintendent is responsible for selecting competent teachers, budgeting for the educational program, providing for supervision (and consultant help when necessary), and providing for educational evaluation and research. The best superintendents are committed to problem solving as a way of improving education and select subordinate staff who are also committed to identifying and dealing with problems, and who see problems as opportunities
for improvement (Daniel and Laurel Tanner, 1987).

According to Arthur and Phyllis Blumberg (1985), the superintendent is the chief executive officer of a public educational enterprise. The superintendent's job can be divided into four parts:

1. Improving educational opportunities
2. Obtaining and developing personnel
3. Maintaining effective relationships with the community
4. Providing and maintaining funds

Among the expectancies often associated with the superintendent's role, those which relate to curriculum are:

- To advise, counsel and keep the school board informed regarding the achievements, needs, and problems of the school district.
- To serve as a leader of the staff and board in long-range planning.
- To ensure that needed steps are taken in planning, maintaining, and evaluating instructional programs and services.

To fulfill these expectancies, the superintendent does not work alone. This person often relies on assistance from the central office staff of the district, outside consultants, lay citizen groups, and pupil groups (Kimbrough, 1988).

The superintendent should use all local resources. Usually colleges and universities can be relied on for assistance. Other local specialists should be enlisted. Curriculum planning, experimental pilot studies, and study groups can stimulate and encourage continued professional growth in a school system.

Leadership is the superintendent's major in-service responsibility. Individual teachers should be encouraged to identify problems, to seek help, and to try out solutions. The superintendent should create an atmosphere
which helps others see problems, get started, make decisions, put plans into action, evaluate, and improve both group and individual performances. The superintendent should develop a framework for a cooperative approach to effective supervision. Time and materials must be provided, staff relationships taken into account, and a flexible organization provided that will develop staff potential through shared responsibility. The superintendent should try to improve the instructional program so that teachers are given authority for adapting content, method, and organization of learning experiences to meet the students' needs. School should also be given the authority and responsibility for improving instruction (Sir James Robert Marks, et. al., 1985).

Superintendents need to have the ability to conceptualize and develop a plan for their school district and "above all have a basic attitude of respect for the worth and dignity of others (Blumberg, 1985).

A very small school district may have only one person working in the area of supervision and curriculum improvement, and that person may be called a supervisor. In larger school districts the supervisor may be called the superintendent of curriculum and instruction. Whatever the title, this person is a member of the superintendent's team and is concerned with the function of improving curriculum and teaching. An important responsibility of the assistant superintendent is articulation of the educational program at all levels. In carrying this task out, the assistant superintendent depends on the ability to work well as a team with many people including principals, teachers, parents, and outside consultants, and is able to utilize their talents in developing ever-improving school programs (Tanner, 1987).

According to Tanner (1987), the assistant superintendent for curriculum is responsible for providing the leadership to improve the educational
The development of a desirable educational program depends on implementing a strong program of professional growth in which teachers learn to use instructional resources and services and understand the theories behind what they are doing. The assistant superintendent is effective only to the extent that he or she views the basic job responsibilities of curriculum development, teachers' professional development, and instructional services as they interrelate.

Successful programs in one or more schools should be extended throughout the district, and it is the responsibility of the assistant superintendent for curriculum to provide the necessary direction. The quality of the educational program depends on the quality of the teachers in the school system. There are two principal means of improving the quality of the teaching staff: selecting the best available teachers, and providing for teachers' continuous professional development (Tanner, 1987). The latter is the responsibility of the assistant superintendent for curriculum. However, it should be kept in mind that this person does not work alone. The assistant superintendent works with the superintendent, principals, teachers, as well as others. In improving the educational programs, the recommendations are made to the superintendent.

Teachers bring professional knowledge to their work, but much of it is soon outdated. Yet teachers are responsible for utilizing the best available knowledge of the present day. "The welfare of children and youth, and our society, demands no less of teachers" (Tanner, 1987). Inservice programs have been severely reduced through budget cutbacks. Regenerating these programs depends on the leadership of the assistant superintendent for curriculum. He or she has the responsibility for continuously improving the school program which includes enhancing curriculum, teachers' professional development and
providing instructional resources. An effective inservice education program is both school and university related. Classroom supervision and workshops conducted by supervisors and outside consultants are essential for curriculum improvement, but teachers should also be required to take university courses to keep up with developments in their fields. In no way can school districts provide the university function themselves (Tanner, 1987).

The basic function of the assistant superintendent for curriculum is to administer the district's educational program. Among the major responsibilities cited by Richard W. Hostrop, et. al., 1990), those relating specifically to curriculum include:

1. Coordinating district curriculum development and implementation.
2. Organizing new instructional programs and improve existing programs. Developing or revising instructional guides.
3. Administering district and staff development activities.
4. Selecting textbooks, other instructional materials and instructional equipment.
5. Assessing changing student needs, staff and parent opinion, community demography and other considerations as they impinge on curriculum and instruction. Recommending action to the superintendent.
6. Drafting board policies and administrative regulations dealing with curriculum, instruction, and pupil personnel.
7. Consulting with school principals on administration and their instructional programs.

It is assumed that school leaders must possess or acquire the ability to develop a systematic curriculum that provides for mastery of the fundamentals and enhances extensive cultural enrichment activities. Administrators are especially concerned with supervising the curriculum throughout the system.
The curriculum is seen as the means to the end of improved performance and the accomplishment of educational goals. For this reason, administrators must approach curriculum development with the entire school system in mind (John R. Hoyle, 1985).

One of the most important functions of schooling is to prepare students to participate effectively in the economic environment of the future - the future of their generation, not that of their administrators or teachers. This function demands two things of administrators. Firstly, they must be able to anticipate occupational conditions of the future. Secondly, they must be able to design and implement a curriculum that enables students to survive and succeed in the occupations of the future (Hoyle, 1985). Awareness of trends in future occupations is necessary to permit educators sufficient time to design an appropriate curriculum and provide inservice education to prepare teachers to implement a curriculum for the future.

According to Marks (1985) and Tanner (1987), the main role of the principal is to establish a creative environment wherein the learning process can most effectively be achieved. The principal's chief role lies in being able to effect such an environment through dynamic leadership.

If principals are working effectively, they should perform on the building level many of the same functions that the central office supervisor does on a district-wide basis (Tanner, 1987). Both are engaged in supervision and the improvement of education. Principals must assume the primary responsibility for assisting teachers and strive to develop and improve the total instructional program.

It is the principal who provides day-to-day supervision and who should know the teacher's needs. The principal must get inside the classroom offering the teachers the support they need. That attitude, in itself, is
helpful. Teachers must bring enthusiasm and excitement to their teaching (Tanner, 1987). They are more likely to do when the principal is optimistic and enthusiastic - and really provides concrete assistance. This help may be in the form of people as an effective principal can identify supervisory personnel to assist the teacher. Assistance may also be in the form of materials because the lack of curriculum materials has been consistently viewed by teachers as the leading curriculum problem. One of the principal's most important responsibilities is allocating resources to facilitate the work of the teacher (Tanner, 1987).

The principal should coordinate his/her work with others in the improvement of instruction. The people who contribute to the instructional program are the most important resources for continued improvement. Consequently, the principal must possess skills in human relations in order to secure the maximum contributions from each individual (Marks, 1985).

The leadership role in curriculum research and design must not be identified as a position of status: the principal must assume the role of a member of the group. He/she must be able to guide fellow staff members to gain new insights into the problem on which they are working. He/she should create an atmosphere conducive to curriculum improvement by encouraging faculty members to cooperate and use their abilities, interests, and aptitudes to solve curricular problems (Marks, 1985). Involvement of the faculty in making the major decisions that affect what they are doing together, the more likely they are to implement the decisions (Tanner, 1987). Successful principals are able to communicate the confidence in teachers and convey the feeling that they are part of a team. By helping the staff in this way, the principal discovers the talents and resources of each staff member and curriculum improvements can be achieved smoothly and successfully.
According to Tanner (1987), there is no question that principals should use their department heads more effectively. The curriculum improvement role of many department heads is confined to textbook adoption and scheduling classes. The department head should encourage and assist individual teachers in improving their teaching effectiveness and should recognize their departmental meetings "as opportunities for problem solving rather than merely treating routine administrative details." They should work with other departments to coordinate their fields by creating interdisciplinary curriculum units. Students do not make the integration between and among the isolated subjects. All departments should be concerned with the total development of the learner, and this requires that the curriculum be seen and treated in its totality. Supervisors and principals are responsible for curriculum improvement in order to achieve state educational goals and must find better ways to achieve this.

Administrators are often not as knowledgeable as they ought to be in terms of learning styles, research findings, management techniques and problem solving methodologies (Herman and Quinn, 1979). An ideal leader uses effective interpersonal skills. Among the necessary interpersonal skills is knowing how to involve the staff in the operation of the school and in the decision-making process. Many decisions are handed down to the teacher; placing decision making as close to the learner as possible gives the greatest results (Slezak, 1984). Since teachers are responsible on a day-by-day basis for the classroom instruction of students, they should have a major say in the development of instructional objectives (Herman, 1979).

Teachers are probably more aware of new trends, individual student needs, and techniques and materials for instruction than any other individuals dealing with the students' educational program. Teachers also have a
responsibility for efficient and effective use of district resources (Herman, 1979). With this in mind, teachers should be given as much flexibility as possible in creating a stimulating environment.

Delegation is affected greatly by the attitude of the principal toward delegation, awareness of when one should delegate, understanding of subordinate attitudes toward accepting delegation, and skills assigning tasks (Paul R. Timm, 1984). The willingness and ability of a principal to delegate responsibilities effectively will have an important bearing on his or her use of time. Delegating work to others involves some risk. But administrators have no choice, some of the work must be delegated. The more one delegates, the more time one will have for other activities (Timm, 1984).

Timm (1984) and Wiles and Bondi (1984), agree that to be an effective delegator, a supervisor must be willing to:

- Entrust others with responsibility. Principals must rely on personal professional relationships with teachers and other subordinates to gain adequate information.
- Give subordinates the freedom necessary to carry out expanded tasks.
- Spend the time to bring people along from easy to more complex tasks.
- Let subordinates participate increasingly in decisions which affect them.

An effective, time-conscious supervisor must delegate responsibilities to strengthen the organization. Without delegating, people are limited to accomplishing only that which they can do in a limited amount of time before exhaustion sets in. With delegation, opportunities for accomplishments are almost unlimited.
CHAPTER 3: THE ROLE OF THE ADMINISTRATORS IN RELATION TO THE REAL-LIFE MATHEMATICAL SKILLS CURRICULUM UNIT

The role of the superintendent in relation to the curriculum unit shown in Chapter 9 in the future will be to review the recommendations from the assistant superintendent of curriculum and to determine whether or not to formally adopt the unit within the San Bernardino City Unified School District. If he feels the unit will enhance the present mathematics curriculum, his role will be to bring this to the attention of the school board. The superintendent may call in the assistant superintendent of curriculum, the principals, the writer of the unit, or its committee members to answer specific questions in relation to the Real-Life Mathematical Skills Unit.

The initial task by the assistant superintendent of curriculum was to grant permission to the writer to form a committee to create a unit to help motivate students in mathematics at the middle school level. The writer met periodically with the assistant superintendent to inform her of the progress of the committee. The assistant superintendent set up a few guidelines in relation to developing a curriculum unit which included the following:

1. The curriculum unit must be in line with the goals of the San Bernardino City Unified School District as well as the California State Framework for Mathematics.
2. The writer must inform the assistant superintendent when each of the committee meetings will be held.
3. The minutes from each committee meeting will be submitted to the assistant superintendent in no more than seven days following each meeting.
4. The writer will meet with the assistant superintendent as needed to discuss the curriculum unit.

The assistant superintendent has reviewed the Real-life Mathematics Skills Unit and approved the piloting of the unit during the 1991-92 school year. She is awaiting the results from all committee members who will be involved in this process. The assistant superintendent will then meet with the committee to discuss its findings and assist in any revisions which may be necessary. The assistant superintendent will also meet with the principals and will have the final determination whether or not to recommend the unit to the superintendent and the board of education for formal adoption by the district.

The principals of each school are responsible for curriculum changes and improvements. The principal of Golden Valley Middle School was instrumental in initiating the development of this unit. He recognized the vast difference in the scores from the computation section of the CTBS test as compared to the application section of the test. The principal asked the writer as head of the mathematics department, to explore a means of improving the application scores on the CTBS test. The principals of the six middle schools involved in developing the this unit supported their staff members by meeting individually with representatives during the development of the unit and giving specific suggestions for the lessons shown in it.

The principals' encouragement and support will play an important role in implementing the developed curriculum unit. After the final document has been printed and distributed to the mathematics teachers who will be piloting the unit, the principals will assist in setting up an inservice answer questions teachers may have in regard to the curriculum and to demonstrate its approach. The principal of each middle school will also assist teachers in obtaining the
necessary materials to be used throughout the unit. During the implementa-
tion of the curriculum, the principal will play an active role in evaluating
the unit by observing and interviewing both teachers and students. He/she
will be invited into the classrooms periodically during the piloting of the
unit where he/she will have an opportunity to observe, participate and ask
questions of the students. The principal will provide teachers with
opportunities to observe consultants teaching this unit as well as
opportunities to discuss with these people their concerns about the unit.
The principal may have to release the teachers from their classrooms in order
to achieve these observations. He/she will be an active participant in the
follow-up meetings to evaluate and revise the curriculum unit as needed and
will attend one or more follow-up meetings and report to the committee
observations and revisions for the unit. The principal may also be asked to
meet with the assistant superintendent for further evaluation of the total
process.

Given the numerous roles and responsibilities of the superintendent,
assistant superintendent and principals as discussed in Chapter 2, they often
delegate the task of curriculum writing to teachers. In order to complete the
unit the writer found it necessary to assume a temporary middle management
position. The principal indicated a need for improvement in the application
section of the test and asked the writer to discuss this issue with other
mathematics teachers in order to develop a plan to raise the application
scores. The writer met with several other interested mathematics teachers
throughout the San Bernardino City Unified School District and formed a
committee which eventually developed the Real-life Mathematical Skills Unit.

The writer was responsible for gathering the sample of CTBS scores to be
analyzed as well as creating, distributing and compiling a survey to all
middle school mathematics teachers in regards to specific units teachers felt should be developed. The writer scheduled and conducted all meetings, informed committee members of the time and place, and kept the minutes of each meeting. The writer also met periodically with her principal as well as the assistant superintendent of curriculum to discuss the progress of the committee.

As the unit began to be formulated, the writer found it necessary to delegate responsibilities to other members of the committee. She divided the group into three pairs of teachers, each pair working on specific lessons for the unit. The writer also actively participated in this process and was responsible for gathering all materials to be used in the unit as well as the distribution of the unit in its final form to all committee members planning to pilot the unit. She wrote specific behavioral objectives, material lists, and procedures for teachers to follow when implementing the unit. She was also one of the first persons to pilot the unit in the fall of 1991.

The writer will be responsible for compiling the responses from teacher and student evaluations. Ideally she would like to be given release time to observe each committee member and consult with them while they are piloting the unit. The writer must also schedule and conduct additional meetings for discussions and revisions if necessary when all committee members have completed the piloting phase.

The writer is hopeful that the assistant superintendent will approve the curriculum and recommend to the superintendent that the unit will be formally adopted by the San Bernardino City Unified School District.

Comparing Administrative Roles in San Bernardino

The superintendent's role in San Bernardino will not be evaluated until it is determined whether or not the unit will be formally adopted by the
The superintendent does not become actively involved in the development of a curriculum unit until the unit has been approved for use at all middle schools in the district. As authorities prescribe, the superintendent should meet with the committee and take an active role in implementing and evaluating the unit by observing students completing activities and offering assistance in obtaining materials as well as the necessary resources to make the unit successful. Release time will be needed for the writer to train other teachers in how to implement the unit. The superintendent's role will be to determine how much inservice will be needed for the teachers and to authorize the release time.

The assistant superintendent of curriculum in San Bernardino has stated that she supports the committee's development of the Real-life Mathematical Skills Unit. She has met several times with the writer and has offered suggestions for obtaining the necessary materials to make the unit successful. Ideally, according to what the author cited previously in this chapter, the assistant superintendent should be part of the team. Although the assistant superintendent of curriculum has met with the writer, she has not participated in the committee meetings. She did not help to organize the committee or the unit itself, and she has not yet consulted with any of the middle school principals as the research authorities suggest. In order for the unit to be successful, the writer feels that the assistant superintendent of curriculum must become more involved in developing specific curriculum units.

The writer's principal at Golden Valley Middle School in San Bernardino has played a key role in proposing a change to the mathematics curriculum at the middle school level. He was the initial person to discover the difference in test scores between the computation and application sections of the CTBS test. He has acted in accordance with authorities, such as Tanner (1987), in
delegating the responsibilities of changing the curriculum to the writer, who is head of the mathematics department at Golden Valley. He has assumed the role of a member of the group. He has approved all aspects of developing the unit and has attended several meetings with the committee. He has also met with the writer to assist in gaining approval from the assistant superintendent of curriculum for developing a real-life skills unit. He has been actively involved in making decisions regarding specific lessons and materials to be utilized.

During the spring of 1992, while the writer was piloting the unit, the principal made several visits to the classroom. He became actively involved with the students by asking questions, looking at sample student work, and assisting students. He also met with the writer following his visits and discussed his observations, including suggestions for revisions. After all committee members have piloted the unit, the principal has stated that he will meet with other principals to discuss the unit and determine whether to recommend to the assistant superintendent of curriculum that the unit be formally adopted by the San Bernardino City Unified School District. It is the opinion of the writer that the principal of Golden Valley has been the ideal role model in developing this curriculum unit, as described by authorities in the research.
CHAPTER 4: STATEMENT OF OBJECTIVES

The main purpose in developing this curriculum unit is to motivate students in the area of mathematics by creating activities that involve real-life skills. Motivation and interest will, in turn, facilitate the students' learning of the necessary math skills to live in the adult world.

The following are specific objectives which this curriculum unit will address:

1. Provides activities for student to apply mathematics to everyday situations so they can function in society.
2. The use of real-life and concrete manipulatives which are readily available in the district.
3. Provide a basic structure which can be expanded and modified to accommodate the needs and interests of individual students.
4. Provide for individual as well as small group lessons.
5. Raise student interest in mathematics.
6. Increase standardized test scores.

The curriculum is also constructed to fulfill the following district goals:

1. All students will have the opportunity to reach their potential.
2. Students will be provided with a curriculum that allows them to develop skills beneficial to society and themselves.
3. Students will be provided with an environment that will develop democratic attitudes including responsibilities of citizenship.
4. Students will be better prepared to live in an adult world.
CHAPTER 5: DESIGN OF THE PROPOSED PROJECT

The first step in writing a curriculum unit is to analyze the purpose of the curriculum. Through meetings and conversations with several mathematics teachers in the San Bernardino city Unified School District, it has been found that teachers express the difficulties and frustrations of teaching average students in the middle grades. CTBS test scores show that students do not perform as well on the application section as they do on the computation section.

After the writer consulted with curriculum specialist Joanne Tortorolla, authorization was given to form a committee to design a mathematics unit which would address application skills. The initial activity for the committee was to review the problem and to decide on an appropriate topic on which to develop a curriculum unit. The decision to create a Real-life Mathematical Skills Unit emphasizes the district's philosophy that students need to develop skills beneficial to society and themselves so they can function successfully in an adult world.

The second step in the curriculum writing process is to design a program. The writer asked committee members to solicit ideas from other teachers for the specific types of lessons to be included in the unit. A list of ideas was compiled for the specific lessons to be included. A major emphasis was on the use of realia and manipulatives such as menus, utility bills, trip brochures and banking materials. Manipulatives are "concrete models that incorporate mathematical concepts, appeal to several senses, and can be touched and moved around by students" (Marzola, 1987). These activities that involve hands-on experiences and focus on students' interests will help them develop an understanding of mathematical concepts used in everyday life as well as an
Committee members were then assigned to collect the specific types of materials to be utilized. The committee wrote specific procedures, material lists and behavioral objectives for each lesson. Task sheets and answer keys were developed where needed. The teachers met monthly to work on specific lessons. When all of the lessons were designed, the teachers presented their lessons to the entire committee. The committee analyzed each lesson, discussed and added or deleted items from the lessons. Based on the feedback, teachers revised the lessons as needed. A pre- and post-test for the curriculum unit was then devised.

The third step in the curriculum writing process is implementation. Upon completion of all rough drafts the writer submitted the curriculum to key administrators for approval. Revisions were made and the unit was resubmitted. Each teacher on the committee received a copy. In the fall of 1991, two committee members piloted the program as it appears in Chapter 6. Other middle school mathematics teachers will pilot the program in the spring of 1992. In June of 1992, the program will be further evaluated and revised as needed. The writer will then distribute copies to all mathematics teachers and principals of the middle schools in the San Bernardino City Unified School District.

In September of 1992, the writer will request release time to conduct an inservice for all seventh and eighth grade mathematics teachers to present the Real-life Mathematical Skills Curriculum Unit, distribute materials, and to train teachers how to use the curriculum to best meet the needs of their students.

Each committee member will become a consultant at his or her school site. These consultants will meet with the teachers in September of 1992 to develop appreciation of mathematics.
a timeline for further implementation. The writer will hold additional meetings at each school site to organize the collecting of materials, to answer any questions teachers may have, and to demonstrate specific lessons teachers request prior to beginning the unit.

Consultants will attempt to observe each teacher once while they are using the unit. A follow-up conference will be held with each teacher to discuss the curriculum. A meeting will be scheduled at each school site immediately following the implementation of the curriculum. This meeting will be used to obtain immediate feedback. The consultants will make a written report to be discussed at the next committee meeting.

The final step in the curriculum writing process is to evaluate the curriculum's effectiveness. A follow-up meeting will be held in late December of 1992, for those teachers who used the unit and for those who may be interested in using it in the future. The writer will solicit feedback from the teachers and administrators. In addition, the following data will be gathered and analyzed as part of the evaluation process:

1. CTBS test scores
2. Real-life Mathematical Skills Unit pre- and post-tests
3. Real-life Mathematical Skills Unit student and teacher evaluations

The results of these findings will be compiled into a report by the writer to be distributed to all key administrators and middle school mathematics teachers in the San Bernardino City Unified School District. This report will include comparisons of test scores, strengths and weaknesses of the unit and further suggestions to aid in the implementation and dissemination of the unit throughout the district.
Statement of Limitations

The Real-life Mathematical Skills Unit is based on the needs of the students in grades seven and eight in the San Bernardino City Unified School District in San Bernardino, California. The curriculum has been constructed to fulfill this district's goals and may or may not apply to the goals of other locations. The lessons can be modified to meet the needs of students in other districts. One unit may not necessarily affect CTBS scores, either positive or negatively. Teachers may need to teach this unit more than once to become proficient in using it.
CHAPTER 6: AN OVERVIEW OF THE REAL-LIFE MATHEMATICAL SKILLS CURRICULUM UNIT

The committee analyzed the limited research available and proceeded to develop a real-life skills unit for the average students in the middle school. In addressing this topic, the committee adapted Haberman’s (1986) view that classes should be designed around the needs of the students and Price’s (1979) view that learning improves when the student is interested in the material and understands the value of the material. The unit is designed to take up to three weeks to complete using an experimental, informal, activity-based hands-on approach. The teacher may condense the unit choosing those activities which are most relevant to each group of students or expand the unit to include additional activities (i.e., interest, withholding taxes, etc.) as needed.

The first part of the curriculum consists of the entire class participating in the same activities. The purpose of this procedure is to create interest and motivation among the students and to introduce the individual activities they will later complete. A rotating schedule of individual activities will be available for the students to follow. The teacher can regulate the number of students working on a single activity at one time, either in a small group or individually. Harold Schoen (1986) and Stephen Krulik (1982), state that individuality allows for students to work at their own pace while working in small groups allows for peer tutoring and often creates motivation and encouragement. Teachers should examine the needs of the student before making a decision or comply with student preference.

Students will be using real materials that are up to date. This makes
the unit more life-like. Worksheets may need to be revised periodically as you continue to gather recent materials. Many of the materials such as catalogs, menus, utility bills, trip brochures, etc., will need to be gathered by the teacher and/or students two weeks prior to beginning the unit.

The unit in its final form will include a list of materials needed, objectives and specific procedures for each activity. The relevant real-life applications and the clear colorful visual materials are intended to keep students interested and highly motivated. This approach, combined with a carefully controlled readability level and sound pedagogy can provide the student every opportunity for success. Accordingly, children who use manipulatives may better understand mathematical ideas and their applications to real-life situations. When used appropriately, manipulatives are highly motivating tools which can greatly increase on-task behavior and attention spans (Marzola, 1987). Hands-on materials can have a long-lasting positive effect in helping to stimulate, enrich, and intensify learning.
CHAPTER 7: RESULTS OF THE PILOT

Two teachers from Golden Valley Middle School piloted the program in the fall of 1991. They found the 222 students involved to be more positive and enthusiastic when attempting to complete the activities. The results of the student evaluations are displayed in Table 1. Over half of the students who participated in the unit "liked it very much" or thought it was "great."

Table 1
Results of Student Evaluations

<table>
<thead>
<tr>
<th>Question</th>
<th>Great (%)</th>
<th>Very Much (%)</th>
<th>Alright (%)</th>
<th>Did not Like (%)</th>
<th>Never Again (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How well did you like the unit?</td>
<td>18%</td>
<td>38%</td>
<td>34%</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>2. Were most instructions clear?</td>
<td>Yes 92%</td>
<td>No 8%</td>
<td>Sometimes --</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Were there enough activities?</td>
<td>Yes 84%</td>
<td>No 16%</td>
<td>Sometimes --</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Were you able to finish in class?</td>
<td>Yes 70%</td>
<td>No 19%</td>
<td>Sometimes 11%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Would you enjoy doing something like this again?</td>
<td>Yes 95%</td>
<td>No 5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Did you prefer this over the textbook?</td>
<td>Yes 98%</td>
<td>No 2%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In response to the question "Which activities did you like best?", teachers were surprised to find that all activities were mentioned by the students. The trip tic, menu or catalog ordering were mentioned 80% of the time as the best activities. All other activities were listed with nearly equal frequency at approximately 15% each.

When students were asked "Which activities did you not like?", 10% responded by saying either "none" or by not listing any activities. Seven percent of the students indicated they did not like the menu activity and 27% disliked the billing questionnaires. All other activities ranged between 15-20% as least liked.

The students were also asked to list three things they learned from the unit. Forty-five percent of the student indicated they had learned how to write checks and withdrawal slips; 25% learned how to find the best buys, pay bills and the importance of having a job. Other skills mentioned included: how to plan a trip; order from a catalog; use a menu; find the tax; budget money; use coupons; find a place to live; find a job; and work with other people.

The students were also asked for input on ideas for additional types of activities to be included in this unit. Sixty percent of the students indicated they were satisfied with the unit as it is. Fifteen percent of the students said they would like to add buying a car while 12% said they would like to add buying a house. Other activities suggested by the students included establishing a business, going on a shopping spree, comparing food and clothing prices with other countries, taking a trip to an amusement park, and filling out a job application. These responses will be taken into consideration when revising the unit or developing additional units.
The students were also given a pre- and post-test on the mathematical skills involved in the unit. As displayed in Table 2, 73% of the students scored 60% or higher on the post-test than on the pre-test. None of the students received 90% or higher on the pre-test, however 43% scored about 90% on the post-test. In all, 98% of the students scored higher on the post-test than on the pre-test. Only 2% scored the same.

<table>
<thead>
<tr>
<th>Test Score Bands</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>16%</td>
<td>43%</td>
</tr>
<tr>
<td>80-89%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>70-79%</td>
<td>40%</td>
<td>14%</td>
</tr>
<tr>
<td>60-69%</td>
<td>14%</td>
<td>10%</td>
</tr>
<tr>
<td>Below 60%</td>
<td>14%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Table 2
Results of Student Pre- and Post-Tests
8th Grade - N=222

The writer concludes from the student responses and student test data that this unit was a success with the students. The unit seems to contain a well-balanced variety of activities which appeal to the students at the middle school level. Both of the teachers who piloted the unit indicated that the students enjoyed the use of the hands-on materials as evidenced by informal comments made by many of them. Both teachers plan to use the unit again in the near future.
CHAPTER 8: REAL-LIFE MATHEMATICAL SKILLS UNIT

Introduction

This unit is designed for students in grades seven and eight based on a needs assessment which showed that students are below grade level in application of previously learned mathematical skills. Through this unit students will be exposed to real life skills activities including reading menus and bills, finding a job and a place to live, budgeting, purchasing items through a catalog, comparing prices, and learning banking skills.

The entire unit takes approximately three weeks to complete. The first four days consist of the entire class participating in activities of finding a job, finding a place to live, and learning banking skills. On the fifth day, each individual or small group activity will be explained. At this time a schedule prepared by the teacher will be provided to regulate the number of students working on specific activities on a given day. The schedule needs to be followed daily because students will be using actual menus, catalogs, flyers, and brochures. These hands-on materials make the unit more life-like to the students. These materials need to be gathered by the teacher with the help of the students two weeks prior to beginning the unit. A list of general materials is attached. Since the worksheets correspond to these materials, some worksheets may need to be revised to adhere to the materials a teacher chooses. For example, all teachers may not be able to obtain Bob Big Boy menu's. Teachers will also need to photocopy catalog order forms from the catalogs they choose to utilize.

During the remaining days, students will follow the provided daily schedule and work on the specific activities assigned. A final test and evaluation is to be completed at the end of the unit followed by project
presentations, wrap up, and final discussions.

The materials that are provided can be used throughout the unit, however each teacher will need to gather specific items to meet the individual needs of their students. Students can be very helpful in obtaining materials which will reflect upon their particular interests. Sample materials are provided in the Appendix of this project. Teachers are to feel free to expand and modify activities to accomodate the needs of their classes.

Pre-requisite Skills for the Entire Unit

1. Ability to compute basic math facts including addition subtraction, multiplication, and division.
2. Ability to write numbers in numerical and word form.
3. General knowledge of fractions.
4. Ability to round decimals to the nearest hundredth.
5. Ability to use the basic functions on a calculator.
6. To be familiar with the following conversions:
   a. There are 12 months in a year.
   b. There are 4 weeks in a month (generally)
   c. There are 40 hours in a work week.

General Materials Needed

1. Copies of all task sheets for each student (samples can be found in Tables 3-20.
2. Copies of all pre-requisite skill sheets for each student (samples are located in the Appendix)
3. Overhead projector
4. Index cards
5. Overhead transparencies
6. Newspapers
Days 1 and 2: Deposit Slips, Withdrawal Slips and Checks

There are two objectives for days one and two of this unit:

1. Students will be able to state the uses and importance of deposit slips, withdrawal slips and checks.
2. Students will be able to correctly complete a bank deposit slip, savings account withdrawal slip and a check.

Materials needed (some may be obtained at a local bank):

1. Task sheet for deposit slips, withdrawal slips and checks
2. Photocopies of or actual deposit slips, withdrawal slips and checks.

Procedure for a Deposit Slip

- Distribute the entire packet for days one and two which includes deposit and withdrawal slips, checks and the task sheet displayed in Table 3.
- Discuss the meaning of the word "deposit." Be sure to explain that a deposit will add money to an account.
- Have students look at their deposit slips and locate the following using the overhead projector as the students look at their own copies: date,
Deposit Slips - For each deposit slip use today's date.

1. Mary deposited a check she received for her birthday in the amount of $50.00. She also deposited $20.00 in cash.

2. Sally counted the money in her change jar. She deposited $10.00 in quarters, $7.00 in dimes, $3.50 in nickles and $.38 in pennies.

3. Steve deposited $12.35 in change, a refund check from the Internal Revenue Service for $125.00, his paycheck for last week for $540.21, and his bonus check for the month for $75.00.

Withdrawal Slips - For each withdrawal slip use today's date. Also be sure to sign your own name and use your own address and account number.

1. You want to withdraw $140.00 to spend at the mall on Christmas presents.

2. You need money for your weekend trip to San Diego. You need $10.00 for gas, $30.00 for food, $30.00 for admission to Sea World for you and your friend, and $5.00 for extra spending money. Write a withdrawal slip for the total amount.

3. You need money for yourself and a friend for the evening out. You will need $40.00 for food, $10.50 for a movie, and $5.00 for gas. Write a withdrawal slip for the total amount.

Checks - Use today's date for each check and sign your own signature.

1. Write a check for $9,050.00. You just bought a new car from Foreign Auto Imports.

2. It's time to pay your telephone bill. You talked too much to your friend who lives in Colorado. Your total bill to General Telephone of California is $64.93.

3. You need a stereo for your new house. Just your lucky day! Circuit City is having a sale. You purchase a Kenwood stereo receiver and Cerwin-Vega speakers for $1,257.89.
depositor's address, name and address of the bank and the account number. Be sure to discuss the importance of each.

- Discuss and point out the following parts of the deposit ticket: the difference between cash and checks, number of checks one can list, where to list remaining checks, total from other side and total deposit.

- Point out that the line between dollars and cents is representing a decimal point.

- Fill out the first deposit ticket together based on the instructions from the task sheet provided. Do this step by step, allowing students the time to check their own ticket as you complete one on the overhead projector.

- Students can fill out the other two deposit tickets in class or for homework, depending on the remaining class time.

Procedure for a Savings Account Withdrawal Slip

- Discuss the meaning of a withdrawal slip. Be sure to explain that a withdrawal will subtract money from an account.

- Discuss the following parts of a withdrawal slip and locate the parts using the overhead projector as students look at their own copies: space for the account number, space to write the amount in numbers, space to write the amount in words, signature and address. Be sure to point out that signature means to write in cursive.

- Have students write in their own account numbers. Students can choose these numbers, the teacher can assign them, or they can use their telephone numbers so no duplicate account numbers are used.

- Have students fill out the first withdrawal slip based on the task sheet provided. Do this step by step on the overhead as the students complete it at their seats. Allow students time to check their work.

- Students can fill out the remaining two withdrawal slips in class or
for homework.

Procedure for Writing a Check:

- Have students compile a list of why they would write out a check or to whom they would write a check to. Record responses on the overhead projector.

- Discuss the following parts of a check and locate each using the overhead projector as students look at their own copies: check number, date, space to write the person or company you are writing the check to, space to write amount in numbers, space to write amount in words, memo, signature line, bank number and account number. Discuss the importance of each.

- Practice writing numbers in numerical form and word form. Show students how to write cents as a fraction. Also point out the importance of using the carry-over line between the amount in words and the fraction.

- Have students fill out the first check based on the task sheet provided in Table 3. Do this step-by-step on the overhead projector as the students complete it at their seats. Allow students time to check their work. Help students with spelling if needed.

- Students can fill out the remaining two checks in class or for homework.

- During the first two days, prepare students for the next two days by telling them to look in the newspaper for a job they would like to have and a place to live. The job must state a salary. Students are also to look for a place to rent by themselves. They may choose either a house or an apartment, but must be sure that the rent is stated. Students are to cut out the ads and attach them to index cards. A folder with several jobs and places to live should be available for students who do not have access to a newspaper or teachers may look into obtaining a class set of newspapers.
The objectives for day 3 are:

1. Students will have a broader knowledge of types of jobs.
2. Students will be able to list the importance of having a job.
3. Students will be able to compute their salary for an hour, week, month, and year.
4. Students will be able to list skills needed for specific jobs.

Materials needed:
1. Index cards
2. Job descriptions from newspaper
3. Sample Job descriptions for overhead
4. Job Hunting Task Sheet

Procedure for Job Hunting

- Solicit responses to the following questions and ideas:
  1. Name some types of jobs.
  2. What are the skills you would need to be a ________?
  3. What are the responsibilities for maintaining a job? Be sure to cover items such as attendance, punctuality, respect for authority, etc.
  4. Define salary. Demonstrate how to convert from hourly to weekly to monthly to yearly.

- Display sample overhead job description entitled "1st Class Cooks." (Appendix)

- Solicit oral responses to questions shown in Table 4, Job Hunting Task Sheet.

- Demonstrate and compute the following conversions on the overhead projector:
  1. Hourly pay times 40 (hours in a work week) equals weekly pay.
Table 4
Job Hunting Task Sheet for Day 3

Task: Find a job in the newspaper that you would like to have. Be sure the job states a salary. Cut out the job and attach it to an index card. Fill out the following questionnaire about your job ad.

Job title: __________________________________________________________________________

Skills needed: ______________________________________________________________________

Amount of schooling needed: ______________________________________________________________________

Person to contact: __________________________________________________________________________

Address of person to contact: __________________________________________________________________

Phone number of person to contact: __________________________________________________________________

How much money will you make?

Per hour? ________________

Per week? ________________

Per month? ________________

Per year? ________________

Why do you want this particular job? ________________________________________________________________________

______________________________________________________________________________________

______________________________________________________________________________________
2. Weekly pay times 4 (weeks in a month) equals monthly pay.
3. Monthly pay times 12 (months in a year) equals yearly pay.

- Display sample overhead job description of "Data Processing Consultant." (Appendix)

- Solicit oral responses to questions shown on the Job Hunting Task Sheet.

- Demonstrate and compute conversions for each of the following. Be sure to round answers to the nearest cent. A review of rounding may be necessary.

1. Yearly pay divided by 12 (months in a year) equals monthly pay.
3. Weekly pay divided by 40 (hours in a work week) equals hourly pay.

- Have students complete Job Hunting Task Sheet during class or for homework.

- Remind students to bring in their living ad tomorrow attached to an index card.

Day 4: Living

The Living part of this unit has three main objectives:
1. Students will be able to list options of places they can live.
2. Students will be able to state the difference in the cost of renting and buying a house during their first year of employment without any supplemental income.
3. Students will be able to recognize abbreviations when reading a rental ad.

Materials needed:
1. Index cards
2. Sample rental advertisements from newspapers attached to index cards
3. Sample overhead rental ads (Appendix)
4. Living Task Sheet
5. Abbreviation list (Appendix)

Procedure for Living

- Solicit responses to the following questions and ideas. Use the overhead projector to record responses.

1. What type of housing is available? (renting a house or an apartment, buying a house or condominium, mobile home, living at home, sharing an apartment or a house, etc.)

2. Discuss the costs of buying a house and what it takes to own a house. (down payment, furniture, mortgage payment, food, bills, landscaping, taxes, etc.)

3. Compare the cost of buying a house to the cost of renting. What does it take to rent? What costs are eliminated when renting instead of buying?

4. When considering the house or apartment you want to rent, what will you look for? (area or neighborhood, number of rooms, price, close to work, etc.)

5. Convert the cost of one month’s rent to the cost for the entire year. Demonstrate the conversion on the overhead projector.

6. What are some of the “extras” places offer? (free parking, free first month’s rent, pool, solar heating or hot water, some utilities may be included, etc.)

- Display the sample overhead rental advertisement "2 Bedroom Luxury Apartments" found in Appendix. Read together and point out the abbreviations. Use the abbreviation list (Appendix), if necessary.

- Solicit oral responses to questions shown on the Living Task Sheet in
Table 5.

- Demonstrate and compute the rental rate from one month to a year.

Cost per month x 12 (months in a year) equals yearly cost.

- Repeat with second sample of "2 Bedroom House" found in Appendix.

- Have students complete task sheet during class or for homework.

Day 5: Scheduling

Objectives for scheduling are:

1. Students will be able to locate material needed for each activity.
2. Students will place material back in its proper place upon completion of activity.
3. Students will be able to read the schedule. They will be able to locate their group number and the activity they are to participate in on a given day.

Materials needed for this part of the unit include:

1. Schedules prepared by the teacher. It is suggested that students be divided into nine groups since there are nine activities.
2. All materials should be ready to go. File folders or cabinets are good storage compartments for activities. All folders should be labeled.

Procedures for Scheduling

- The teacher should pull out each activity one at a time and briefly explain what the student is expected to complete.

- Explain the pre-requisite sales tax and unit pricing sheets. Examples can be found in Appendix. These must be completed prior to beginning an activity.

- Remind students they must read and follow all instructions.

- The activities are designed to be completed within a forty-minute class
Table 5
Task Sheet for Living - Day 4

Task: Now that you have a job, look in the newspaper for a place to rent. You may choose either a house or an apartment to rent. Be sure the monthly rent is stated. Cut out the ad and attach it to an index card. Fill out the following questionnaire concerning your ad.

Did you rent a house or an apartment? __________________________

What is the location? __________________________________________

How many bedrooms are there? _________________________________

Is there a deposit required? ______ If yes, how much is the deposit? ________________________________

What is the name of the person to contact? ______________________

What is the address or phone number listed? ____________________

How much is the rent for one month? ____________________________

How much is the rent for one year? ______________________________

Are there any other features this place has to offer? For example, a pool or some utilities included with the rent. List them.

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________
period.

- Hand out the schedule for the activity days as exampled in Table 6. Students are to locate their group and the activity which they will begin on the following day.

- It is suggested that the teacher choose leaders for each group and assist with the handing out and returning of materials.

- Many activities call for the use of calculators. It is suggested that the teacher determine which activities students will be allowed to use a calculator on.

Activities

There are nine activities for student groups to complete. The objectives, materials, and task sheets are explained below. While task sheets will be found as Tables, other materials such as pre-requisites, coupons and advertisements will be located as part of the Appendix for this Project.

Menu

Objectives:

1. Students will be able to define the following: subtotal, tax and total.
2. Students will be able to change a percent to a decimal.
3. Students will be able to compute sales tax using a given whole percent.
4. Students will be able to compute a subtotal, tax, and total for a meal from a given menu.
5. Students will be able to locate prices on a menu.

Materials:

1. Pre-requisite menu sheets (Appendix)
2. Calculator (optional)
Table 6
Sample Schedule for Day 5

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
<th>Day 6</th>
<th>Day 7</th>
<th>Day 8</th>
<th>Day 9</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>Menu</td>
</tr>
<tr>
<td>Group 2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>Coupon 1</td>
</tr>
<tr>
<td>Group 3</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>Billings</td>
</tr>
<tr>
<td>Group 4</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>Trip Tlc</td>
</tr>
<tr>
<td>Group 5</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>Compare Grocery</td>
</tr>
<tr>
<td>Group 6</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>8</td>
<td>Compare Clothing</td>
</tr>
<tr>
<td>Group 7</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>Coupon 2</td>
</tr>
<tr>
<td>Group 8</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>Food Budget</td>
</tr>
<tr>
<td>Group 9</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>Catalog Ordering</td>
</tr>
</tbody>
</table>

Note: Students should be divided into nine groups. The numbers inside the boxes corresponds to student group numbers. Students should locate the day, go down the column until they find their group number and go across to the activity column on the right.
3. Menu Task Sheet (Table 7)

4. Menu (Provided by teacher)

Table 7 is a sample Menu Task Sheet. The teacher will need to provide a task sheet based on the menus he/she has collected.

Coupon #1

Objectives:
1. Students will be able to read the hours chart and compute the number of hours the park is open on a given day.
2. Students will be able to compute multi-step word problems.
3. Students will be able to compute admission prices for specific age groups.
4. Students will understand cost savings of coupons.

Materials:
1. Calculators (optional)
2. Coupon poster folder
3. Task sheet for coupons
4. Answer key for task sheet

The following three tables are offered as samples that can be used to complete this activity. Teachers may use these or they may choose to develop their own. Table 8 provides a sample ad for an amusement park which includes hours of operation, ages and admission price. Table 9 offers coupons for this amusement park. The Coupon 1 Task Sheet with the answer key is found in Table 10.

Billings

This activity is designed for utility bills such as telephone, electric and gas.

Objectives:
Table 7
Sample Menu Task Sheet

Find the price of each item on the menu, the subtotal, tax, and the total of the meal. Use 6% for the meal tax.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
<th>Subtotal</th>
<th>Tax</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Super Big Boy with Fries</td>
<td>Cup of Soup</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Large Sprite</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tax</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Hawaiian Chicken</td>
<td>Lemonade</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decadent Hot Fudge Cake</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Tax</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Traditional Club Sandwich</td>
<td>Soup and Salad</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chocolate Milkshake</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td>Subtotal</td>
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<td></td>
<td>Tax</td>
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<td></td>
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<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Spaghetti with Marinara Sauce</td>
<td>Regular Coca-Cola</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New York Style Cheesecake</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
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<td>Subtotal</td>
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<td></td>
<td>Tax</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Order a meal of your choice</td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>
Table 8
Amusement Park Ad

FAST AND FURIOUS AMUSEMENT PARK

<table>
<thead>
<tr>
<th>Hours</th>
<th>Admission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon.</td>
<td></td>
</tr>
<tr>
<td>Tues.-Fri.</td>
<td></td>
</tr>
<tr>
<td>Closed: 3:00 P.M.-</td>
<td>10:00 A.M.-</td>
</tr>
<tr>
<td>9:00 P.M.</td>
<td>9:00 P.M.</td>
</tr>
<tr>
<td>Sat.-Sun.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 2</td>
<td>Free</td>
</tr>
<tr>
<td>2-5</td>
<td>$1.25</td>
</tr>
<tr>
<td>6-18</td>
<td>$3.50</td>
</tr>
<tr>
<td>19-60</td>
<td>$5.00</td>
</tr>
<tr>
<td>Over 60</td>
<td>$3.00</td>
</tr>
</tbody>
</table>

Table 9
Amusement Park Coupons

- Buy One, Get One Free
- 62 off each ticket or the price of the ticket, which ever is less
  Good for no more than 2 tickets
  Only one coupon per visit

- 60 percent off each ticket
  Good for no more than 2 tickets
  Only one coupon per visit
| Table 10                                                                 |
|---------------------------|-------------------------------------------------------|
| **Task Sheet for Coupon 1**                                                                                     |
| 1. How many hours is the Fast and Furious Amusement Park open each week? (46 hours a week)                        |
| 2. On Tuesdays and Thursdays Alice works at the park after school. She begins work at four o'clock and stays until closing. How many hours does she work each week? (10 hours a week) |
| 3. Sergio works at the park on Friday, Saturday, and Sunday. He starts work when the park opens and finishes two hours before closing. How many hours does he work each week? (22 hours a week) |
| 4. How much will it cost for Rowena (age 4), Andy (age 10), Meredith (age 17), and Mrs. Ambler (age 42) to get into the park? ($13.25) |
| 5. How much would it cost for everyone that lives at your house to go to the Fast and Furious Amusement Park? (answers will vary) |
| 6. Ted and Ron (age 8) have a coupon entitling them to buy one ticket, get one free. How much will it cost them to get in? ($3.50) |
| 7. Anna and Megan (age 15) have a 60 percent-off coupon. How much will it cost them to get in? ($2.80) |
| 8. Sarah and Rebecca (age 5) have a $2.00-off coupon. How much will it cost them to get in? (0) |
| 9. Which of the three coupons is the best buy for two tickets if both people are:                                 |
| a. ages 2-5? ($2.00 off)                                                                                       |
| b. ages 6-18? (60% off)                                                                                       |
| c. ages 19-60? (60% off)                                                                                      |
| d. over 60? ($2.00 off)                                                                                        |
| 10. How much would it cost for everyone that lives at your house to go to the amusement park if you had a 60-cent-off coupon? (answers will vary) |

1. Students will be able to read bills for specific information and answer the questions correctly.

2. Students will be able to list at least five items common to each type of bill.

Materials:

1. Task sheets for each utility bill. Sample task sheets are found in Tables 11 through 14.

2. Copies of each of the following bills: telephone, gas, electric and cable. The teacher will need to collect these items as part of unit preparation. Each student in the group should receive a different bill with the corresponding task sheet. As students finish, they should trade bills and complete as many of the four task sheets as time permits.

All of the billing questionnaires were designed so that real bills could be used. If certain questions do not apply, please revise the task sheet to fit the bills you have collected. Students enjoy seeing what real utility bills look like. Teachers can use several different phone, gas, electric, water or cable bills but they are cautioned not to use their own.

Trip Tic

Objectives:

1. Students will be able to properly transfer the given information into correct columns of pay or earn.

2. Students will choose the correct operation of addition when earning money and subtraction when paying money.

3. Students will properly utilize the calculator when computing the balance for each transaction.

4. Students will compute multi-step word problems as well as single-
Table 11
Task Sheet for Electric Bill

Use the electric bill to answer the following questions.

1. To whom was the bill sent?

2. How many kwh were used?

3. What was the total amount due?

4. What is the name of the company that sent the bill?

5. What was the billing date?

6. What was the account number?

7. What was the service address?

8. What address do you mail the check to?

9. When is the service period? From _________ to _________

10. What period of time does the bill cover?

11. What number can you phone if you have questions?

12. What amount was the city tax?
Table 12
Task Sheet for Telephone Bill

Use the telephone bill and answer the following questions.

1. What is the monthly service rate?

2. What is the total amount due?

3. How much is the billing surcharge?

4. At what date will a late payment charge apply?

5. On what date was the first long distance call made?

6. What telephone number was dialed on the last long distance call made?

7. How much was the most expensive long distance telephone call?

8. What is the account number?

9. What number do you call for billing inquiries?

10. How much do the long distance calls total?

11. How much is the city tax?

12. What is the Division Code?

13. At what time was the latest telephone call made?

14. How many minutes was the longest telephone call?

15. Who was the telephone bill sent to?
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the name of the company who sent the bill?</td>
<td></td>
</tr>
<tr>
<td>2. What is the previous meter reading?</td>
<td></td>
</tr>
<tr>
<td>3. What is the present meter reading?</td>
<td></td>
</tr>
<tr>
<td>4. What is the date of the next meter reading?</td>
<td></td>
</tr>
<tr>
<td>5. What is the total amount due?</td>
<td></td>
</tr>
<tr>
<td>6. What is the name of the person to whom the bill was sent?</td>
<td></td>
</tr>
<tr>
<td>7. What is the service address?</td>
<td></td>
</tr>
<tr>
<td>8. What is the billing period?</td>
<td>from    to</td>
</tr>
<tr>
<td>9. What is the account number?</td>
<td></td>
</tr>
<tr>
<td>10. On what date was the bill mailed?</td>
<td></td>
</tr>
<tr>
<td>11. How many therms were used?</td>
<td></td>
</tr>
<tr>
<td>12. What is the tax rate?</td>
<td></td>
</tr>
<tr>
<td>13. How much is the tax?</td>
<td></td>
</tr>
<tr>
<td>14. Can you compare your gas usage with last year?</td>
<td></td>
</tr>
</tbody>
</table>
Table 14
Task Sheet for Cable Bill

Use the cable bill to answer the following questions.

1. What is the address of the cable company?

2. How much do the people owe?

3. What is the location of service?

4. What is the phone number to be called if you have questions about your cable service?

5. How many months does the bill cover?

6. On what date was the past payment received?

7. How much was the service for one month?

8. What is the phone number to be called if you have questions about the billing?

9. How much is the franchise fee?

10. What is the billing period? from _______ to _______
step word problems.

Materials:
1. Calculator (optional)
2. Trip Tic Cards
3. Trip Tic Brochures
4. Task Sheet for Trip Tic

Students are to obtain a trip brochure of their choice along with a set of Trip Tic Cards. Teachers should have five different trips from which the students may choose. Index cards or laminated paper are most durable. As the students read each card, they will record amounts of money in the appropriate columns of the task sheet, Table 15. Student instructions are located on the task sheet. Below is a sample trip to go along with a cruise brochure. See your local travel agent for brochures.

Day 1A - It's cruise time! You will board our fabulous luxury cruise liner with $5,000 in your pocket. Record your beginning balance under Day 1. Your task is to find out how much money you will have at the end of your trip. Bon Voyage!

Day 1B - It's time to pay for your cruise. If you don't have enough money, you must get off the ship! Your total price is $1,995. Remember, before you complain, this price includes all the food you can eat, your room, and even your entertainment.

Day 1C - The anchors are being brought up, the whistle just sounded - last chance to change your mind! You purchase streamers and confetti for the Farewell Party. Cost: $15.00. Wow! Sure is expensive at sea.

Day 2 - As you unpack your suitcase you discover you only brought one bathing suit. You purchase another suit in the gift shop for $42.00, tax free. (I know it is expensive, but there is no K-Mart around!)
Table 15
Task Sheet for Trip Tic

Task: Choose a trip you would like to take. Obtain the proper folder, Trip Tic Cards, and a calculator. Be sure your cards are in the proper order before you begin and put them back in order when you finish. Begin by recording your balance. Your balance is the money you have at the beginning of your trip (your cards will tell you the amount). Read each card, one at a time, and record the total amount under the proper column of either pay or earn. Once you have done this, find the balance for each day. Remember, if you pay money, you subtract from your balance. If you earn money, you add money to your balance. Have a fun trip!

<table>
<thead>
<tr>
<th>Day</th>
<th>Pay</th>
<th>Earn</th>
<th>Balance</th>
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</table>

How much money will you go home with?  

<p>| | | | |</p>
<table>
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</thead>
</table>


Day 3A - It's bright and sunny. You decide to go snorkeling. You rent equipment for $21.00. The tropical fish are beautiful and you won't even drown!

Day 3B - Later that evening you meet some friends you know who live on the island; they invite you over for dinner. (Hope you like what they are going to have.) Of course you bring them flowers. They cost $16.00 -- it's a big bunch!

Day 4A - You decide your clothes are a bit dull. At 3:00 p.m. you stroll into the gift shop and buy 3 new bell-bottom outfits. Oh, boy! You spent $450.00, but you will look marvelous!

Day 4B - To earn some of the money back that you have spent, you decide to try your luck at BINGO. You WIN!!! $25.00 is yours to keep.

Day 5A - It's shore excursion time. You are too cheap to take the bus tour, so instead you take the bike tour. On your tour you run into the vegetable stand. Clutz! The tour cost is $150.00, but now you must also pay for the vegetables and the stand. The cost of those items is $790.00. Expensive day! (Total both amounts before recording.)

Day 5B - After your eventful day, you have a terrible headache. You go to the gift shop (again) and buy aspirin, a magazine, and a new toothbrush (yours fell in the toilet!). You spend $9.00, tax free.

Day 6 - Your last night. It's a dance contest. You win first prize of $150.00. You must pay port fees of $25.00 and parking fees of $35.00. Hope you had a great time!

Unit Pricing: Comparing Clothing and Groceries

Objectives:
1. Students will be able to define unit price.
2. Students will be able to find the unit price of a given item.
3. Students will be able to compare prices and compute the difference.

4. Students will be able to determine the "better buy" between two similar items.

5. Students will be able to choose quality merchandise that is similar from two different catalogs, or similar foods.

Materials:
1. Task Sheets for Unit Pricing, Tables 16 and 17.
2. Comparing Prices Pre-requisite Skills Sheet (Appendix)
3. Calculator (optional)
4. Two different catalogs or newspaper circulars for clothing and groceries.

Coupon #2

Objectives:
1. Students will be able to read coupons and answer general knowledge questions.
2. Students will be able to compute prices using discount coupons.
3. Students will be able to determine the most cost-effective item using a coupon.

Materials:
1. Coupon Task Sheet and answer key (Table 18)
2. Coupon Folder #2. Cut out coupons and glue onto card stock or a file folder so all members of the group can see the coupons.
   Sample coupons used for this task sheet can be found in Appendix.
3. Calculator (optional)
Table 16
Comparative Pricing - Clothing

**Task:** Be sure you have completed the pre-requisite sheet on unit pricing. Use one of the L.L. Bean catalogs and plan to purchase an entire outfit. Do not forget to include items such as shoes, socks, belts, etc. List each item separately and the price next to it. Find another catalog or flyer from a local department store or a discount store. Try to find the same or very similar items as you found in the L.L. Bean catalog and list their price. The third column is the amount you save on each item by purchasing at a discount store. Complete the chart below and then answer the questions below.

<table>
<thead>
<tr>
<th>Item</th>
<th>L.L. Bean</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>

1. How much is saved altogether? ______________
2. Which store had lower prices? ______________
3. Which store can you afford to shop at? ______________
4. Considering your salary, which will you shop at? ______________
5. On which item did you save the most? ______________
6. Why might you shop at L.L. Bean? ______________
7. Why might you choose to shop at the discount store? ______________
Table 17
Comparative Pricing - Groceries

Task: Be sure you have completed the pre-requisite sheet on unit pricing. Look up the following items in each of the food flyers and write the price. Be sure it is the exact item stated. Total the columns separately and write a statement of your findings. Include which store had the best prices overall, whether or not you will shop at Grocery Warehouse or why you will shop at Alpha Beta. (Remember: there are 16 ounces in a pound.)

<table>
<thead>
<tr>
<th>Grocery Warehouse</th>
<th>Items</th>
<th>Alpha Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Game Hens</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Avocados</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Delicious Apples</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Paper Towels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Corn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Top Sirloin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Colgate Toothpaste</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Toothbrush</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Whole Tomatoes</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTALS</strong></td>
<td></td>
</tr>
</tbody>
</table>

Statement: ________________________________
Table 10
Coupon Task Sheet #2

Task: Read and answer each of the following questions using the coupons found in Coupon Folder #2.

1. Palmolive dishwasher soap costs $3.29. How much will you have to pay after using the coupon? 

2. How much do you have to spend in order to use the Yams coupon? 

3. When does the Pizza Chalet coupon expire? 

4. A Colgate Plus Toothbrush costs $1.45. How much do you pay after using the coupon? 

5. What is the cash value of the Kool Aid coupon? 

6. How many bars of Dove soap must you purchase in order to use the coupon? 

7. A jar of Mrs. Richardson’s Hot Fudge Ice Cream Toppings costs $1.79. How much will you have to pay after using the coupon? 

8. How much do you save on one bar of soap? 

9. Can you buy just two boxes of Kleenex tissues and receive $.40 off the total price? 

10. On which days is the Yam’s coupon valid? 

11. Prince Curly Lasagna costs $1.45. How much will you save if you use the coupon? 

12. How many bottles of 16 oz. Pert do you need to buy in order to use the coupon? 

13. How many bottles of 16 oz. Head & Shoulders do you need to buy in order to use the coupon? 

14. Pert costs $2.59. How much will Pert cost when using the coupon? (Remember, you must buy two.) 

15. Head & Shoulders costs $2.20. How much will you spend if you use the coupon? 

16. Which shampoo is the better buy? 

Answer Key

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>$2.29</td>
</tr>
<tr>
<td>2.</td>
<td>$20.00</td>
</tr>
<tr>
<td>3.</td>
<td>6/24/86</td>
</tr>
<tr>
<td>4.</td>
<td>$1.20</td>
</tr>
<tr>
<td>5.</td>
<td>1/20 of a cent</td>
</tr>
<tr>
<td>6.</td>
<td>2 bars</td>
</tr>
<tr>
<td>7.</td>
<td>$1.59</td>
</tr>
<tr>
<td>8.</td>
<td>$.15</td>
</tr>
<tr>
<td>9.</td>
<td>no</td>
</tr>
<tr>
<td>10.</td>
<td>11/17-11/25/86</td>
</tr>
<tr>
<td>11.</td>
<td>$.35</td>
</tr>
<tr>
<td>12.</td>
<td>2</td>
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<tr>
<td>13.</td>
<td>2</td>
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<tr>
<td>14.</td>
<td>$4.68</td>
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<tr>
<td>15.</td>
<td>$4.00</td>
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<tr>
<td>16.</td>
<td>Hd &amp; Shdrs</td>
</tr>
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</table>
Food Budgeting

Objectives:
1. Students will be able to plan a well-balanced meal.
2. Students will be able to purchase the proper amounts of food for a given amount of people.
3. Students will be able to locate and compute costs of specific food items.

Materials:
1. Calculator (optional)
2. Food Budget Task Sheet, Table 19.
3. Food flyer - teacher will need to obtain flyers and may have to create prices for food items not listed.

Catalog Ordering

Objectives:
1. Students will be able to complete a catalog order form correctly.
2. Students will be able to compute sales tax on a given amount.
3. Students will be able to read and select appropriate shipping and handling costs where applicable.
4. Students will understand the importance of legibility when filling out a catalog order form.

Materials:
1. Calculator (optional)
2. Catalog Task Sheet, Table 20
3. Two different catalogs
4. Order forms from corresponding catalogs
Task: Use the food flyer to check prices for food. You will be buying food for Saturday and Sunday for 5 people. Prepare a menu for breakfast, lunch, and dinner for each of the days. Use the flyer to help you choose items. Price each item separately. Do not worry about condiments such as ketchup, salt, pepper, etc.

Important Hints:

1. When buying meat, buy one-half to three-fourths of a pound per person.
2. When buying fish, buy one-fourth to one-half of a pound per person.
3. Don’t forget about drinks.
4. Try to plan a well-balanced meal. Choose items from the four basic food groups: fruits/vegetables, bread, dairy products, and meat.
5. See me if items are not in the flyer, but try to select from the items you see.
6. Be organized. Make a menu and then price each item separately. Do not have the same meal both days.

<table>
<thead>
<tr>
<th>Saturday Breakfast Items</th>
<th>Price</th>
<th>Sunday Breakfast Items</th>
<th>Price</th>
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<table>
<thead>
<tr>
<th>Saturday Lunch Items</th>
<th>Price</th>
<th>Sunday Lunch Items</th>
<th>Price</th>
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<table>
<thead>
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<th>Saturday Dinner Items</th>
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<th>Price</th>
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Table 20
Catalog Ordering Task Sheet

Task: Choose two catalogs and obtain their order forms. Pick out five items from each catalog that you wish to order. Be sure you fill out each order from completely. Add tax if it applies. Add shipping and handling charges if they apply. Be sure your catalog numbers are correct.

Taxes: 1. Change each percent to a decimal - 6% = .06; 5% = .05
2. Multiply the subtotal by the correct decimal
3. Round your answer to the nearest cent and record.
4. Add the subtotal, tax, and postage or shipping and handling, if necessary, to find the amount owed.
REFERENCES


Haberman, Martin and Quinn, Lois M. You schools can benefit from what we learned working with jailed delinquents. the American School Board Journal, October, 1986.


Trafton, Paul R. Computation - it's time for a change. Arithmetic Teacher, November, 1986


1. Obtain a deposit slip and fill it out accordingly. You deposit $12.74 in coin, a paycheck for $685.20, and refund check for $96.00.

2. When you deposit money, do you add or subtract from your account?

3. When you write out a check, do you add or subtract money from your account?


5. At a restaurant you ordered the following items. Find the subtotal, tax, and total. Use a 6% tax rate.

   Cheeseburger $2.95
   Fries 1.25
   Large drink 1.09

   Subtotal =
   Plus tax =
   Total =

6. The balance in your account is $548.00. You spent $46.00 on clothes, $33.00 on food and $28.00 on entertainment last weekend. What is your new account balance? __________

7. Plan a well-balanced meal below.

__________________________________________________________________________

__________________________________________________________________________

8. Four people went out to dinner. They spent a total of $54.25 and split the bill equally. How much did each person spend? (Round to the nearest cent).

9. Which is the better buy? Three for $.96 or six for $1.80?

10. At a local store, you purchase bread for $1.18, chips for $1.89, milk for $2.04, and paper plates for $2.63. Your tax is $.46. You also use a $4.00 coupon for the chips. What is your final cost?

11. You rent an apartment with three bedrooms for $685.00 a month. What is the cost for six months?

12. It costs $7.00 per person to go to the movies. You have two coupons for yourself and a friend. One coupon says: "Buy one, get one free." The other coupon says: "60 percent off each ticket." Which coupon gives you the better deal?
13. Name five items found on utility bills, such as gas, electric, telephone.

14. How much would one can of soup cost if three cans cost $1.47?
SAMPLE JOB DESCRIPTIONS

1ST CLASS COOKS

Good full time opportunities await cooks with experience and desire to join growing business. Must be a high school graduate. Call Mr. Carson at Players Pub, Brookline. 734-4949.

DATA PROCESSING CONSULTANT

Los Angeles office of national firm. Assume project management responsibilities. Must know Cobol and Fortran languages. Must have bachelor’s degree in Computer Science. Contact: One Newton Park, Los Angeles, CA. 93969-4010.
SAMPLE HOUSING ADS

2 BEDROOM LUXURY APARTMENTS


2 BDRM HOUSE FOR RENT

ABBREVIATIONS FOR RENTAL ADVERTISEMENTS

1. a/c = air conditioned  
2. appt. = appointment  
3. avail. = available  
4. bdrm or BR = bedroom  
5. bth or B = bathroom  
6. D/W = dishwasher  
7. dep. = deposit  
8. eve. = evenings  
9. fam. = family  
10. furn. = furnished  
11. flr. = floor  
12. incl. = includes  
13. kit. or K. = kitchen  
14. livrm or LR = living room

15. lge. = large  
16. maint. = maintained  
17. mo. = month  
18. occpy = occupancy  
19. prkg. = parking  
20. refrig. = refrigerator  
21. refs. = references  
22. req. = required  
23. rm. = room  
24. sec. = security  
25. sm. or sml. = small  
26. unhtd. = unheated  
27. utl. = utilities
PRE-REQUISITE MENU SHEET 1

Obtain a calculator prior to beginning this lesson. To find the sales tax, meal tax, or a percentage of a given amount, read this sheet and complete the enclosed exercise. If your grade on the exercise is 80% or better, go on to complete the menu activity. If not, see your teacher for additional help.

You will often have to pay tax on items that you purchase, such as food, clothing, etc. You will be finding a percentage (%) of the amount that the item or items cost, which will determine how much tax you are to add on to the cost of the item.

1. A percentage is a part of 100. 6% means 6/100; 18% means 18/100.

2. The 100 means two places to the right of the decimal. To change the above examples into percentage, write 6/100 = .06 and 18/100 = .18

3. Multiply the decimal by the total of the items. This is called the subtotal. Example:
   
   Shirt = $5.00
   Shoes = $15.00
   Subtotal = $20.00
   
   To find 6% of the subtotal, multiply:
   
   $20.00
   x .06
   ______
   1.20

4. Add the tax to the subtotal to find the total you will pay. Be sure to think about money and line up the decimals.

   $20.00
   + 1.20
   ______
   Total = $21.20
**PRE-REQUISITE MENU SHEET 2**

Find the sales tax and total for the following problems using 6% sales tax. Round answers to the nearest cent.

<table>
<thead>
<tr>
<th>Subtotal</th>
<th>Tax (6%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$21.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$18.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$7.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$179.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$49.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$105.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$565.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$62.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$5.09</td>
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</tr>
</tbody>
</table>

Obtain the answer sheet from the teacher. Correct your answers before you move on to the Menu activity.

**Answer Key:**

<table>
<thead>
<tr>
<th>Tax</th>
<th>Total</th>
<th>Tax</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1.32</td>
<td>$23.30</td>
<td>$6.34</td>
<td>$112.07</td>
</tr>
<tr>
<td>$1.10</td>
<td>$19.51</td>
<td>$33.92</td>
<td>$599.25</td>
</tr>
<tr>
<td>$0.46</td>
<td>$190.79</td>
<td>$3.77</td>
<td>$66.63</td>
</tr>
<tr>
<td>$10.80</td>
<td>$190.79</td>
<td>$0.60</td>
<td>$10.62</td>
</tr>
<tr>
<td>$2.99</td>
<td>$52.78</td>
<td>$0.31</td>
<td>$5.40</td>
</tr>
</tbody>
</table>
MANUFACTURER'S COUPON  EXPIRES SEPT 30 '86

SAVE 20¢  ON ANY FLAVOR
OF Mrs. Richardson's™ Ice Cream Toppings

To The Customer  One coupon on purchase of the product indicated. No other coupons may be used in conjunction with this coupon. To The Retailer: Richardson Foods Corp. will reimburse you for the face value of this coupon plus 8¢ for handling provided that you and the consumer have completed the terms of this offer. Invoices showing purchase of sufficient stock to cover coupons presented must be shown. Richardson Foods Corp. upon request and notice to 00:00 on 1-1-91 will replace all coupons which have been tampered with, soiled, altered or expired. Richardson Foods Corp. 900 Bux 3241, Cinnaminson, N.J. 08077, has the sole right to interpret these terms of this offer. Good only in U.S.A. 4 1/2 PCS. Each value at 1 20 of 12.

72980 101496

STORE COUPON

SAVE 50¢  WHEN YOU BUY TWO ANY SIZE

50¢ OFF TWO

LIMIT ONE COUPON PER PURCHASE

SPECIAL OLYMPIC

STORE COUPON

SAVE 40¢  WHEN YOU HEAD & SHOULDERS

40¢ OFF TWO

LIMIT ONE COUPON PER PURCHASE

PROCTER & GAMBLE

MANUFACTURER'S COUPON  EXPIRES 10/20/86

Save 40¢ ON 3 KLEENEX

For 175's or Boutique Facial Tissues

50¢ OFF TWO

STORR COUPON

PROCTER & GAMBLE

HEAD & SHOULDERS

REGULAR OR CONDITIONING SHAMPOO

50¢ OFF TWO

LIMIT ONE COUPON PER PURCHASE

MANUFACTURER'S  EXPIRES 6/30/86

SAVE 20¢ ON ANY FLAVOR
OF Mrs. Richardson's™ Ice Cream Toppings

To The Customer  One coupon on purchase of the product indicated. No other coupons may be used in conjunction with this coupon. To The Retailer: Richardson Foods Corp. will reimburse you for the face value of this coupon plus 8¢ for handling provided that you and the consumer have completed the terms of this offer. Invoices showing purchase of sufficient stock to cover coupons presented must be shown. Richardson Foods Corp. upon request and notice to 00:00 on 1-1-91 will replace all coupons which have been tampered with, soiled, altered or expired. Richardson Foods Corp. 900 Bux 3241, Cinnaminson, N.J. 08077, has the sole right to interpret these terms of this offer. Good only in U.S.A. 4 1/2 PCS. Each value at 1 20 of 12.

72980 101496

STORE COUPON

SAVE 50¢  WHEN YOU BUY TWO ANY SIZE

50¢ OFF TWO

LIMIT ONE COUPON PER PURCHASE

SPECIAL OLYMPIC

STORE COUPON

SAVE 40¢  WHEN YOU HEAD & SHOULDERS

40¢ OFF TWO

LIMIT ONE COUPON PER PURCHASE

PROCTER & GAMBLE

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PROCTER & GAMBLE
PRE-REQUISITE SKILLS SHEET: COMPARING PRICES

Before one can compare prices, one must be able to find the unit price of an item. The unit price is the cost of one item. Often you go to a store and see a sign - 5 for $1.00. You may only want one. So how much is one?

Divide the number of items into the total price, like this:

$1.00 divided by 5 equals $.20

Complete the following problems before completing any of the comparing prices activities. Round your answers to the nearest cent. You may use a calculator if one is available.

1. 3 for $1.00 = ____________
2. 2 for $.50 = ____________
3. 4 for $.84 = ____________
4. 4 for $1.00 = ____________
5. 6 for $3.00 = ____________
6. 5 for $6.00 = ____________

See the teacher for the answer sheet before starting the activity.

Answer Key:
1. $.33  2. $.25  3. $.21  4. $.25  5. $.50  6. $1.20
**AVON FASHIONS**

If your name is not pre-printed below, simply fill in step 2.

**Avon Lane**

**Newport News, VA 23630**

**ORDER TOLL-FREE**

24 Hours • 7 Days

1-800-322-1119

**CUSTOMER SERVICE**

1-804-827-9000

Monday thru Friday

8:00 A.M. to Midnight, ET

For Federal Express Service, order by phone or mail, pay regular delivery charge plus the cost of the option you choose:

1. Economy Service—$6.00 extra in addition to regular delivery charge.
   Delivery in four business days or less after the date order is received.
2. Standard Service—$10.00 extra in addition to regular delivery charge.
   Delivery in three business days or less after the date order is received.

Sorry...Federal Express does not deliver to APO/FPO addresses or PO. Boxes.

**DAYTIME TELEPHONE ( )**

(In case we have a question)

**AREA CODE**

**SHIP TO A DIFFERENT ADDRESS**

(To have this order sent to your office or to a friend, relative, neighbor, etc.)

**NAME**

**FIRST**

**LAST**

**ADDRESS**

**NO. & STREET**

**APT/SUITE NO.**

**CITY**

**STATE**

**ZIP**

**PAGE**

**ITEM (Dress, shoes, etc.)**

**COLOR**

**QTY**

**ITEM NUMBER**

**SIZE**

**PRICE EACH**

**TOTAL PRICE**

**METHOD OF PAYMENT**

(For your protection, do not send cash or stamps. We do not accept C.O.D.’s.)

- **CHECK OR MONEY ORDER ENCLOSED**
- **PAYABLE TO AVON FASHIONS**
- **13 or 16 numbers**
- **VISA**
- **13 or 16 numbers**
- **MASTERCARD**
- **15 numbers**
- **AMERICAN EXPRESS**
- **15 numbers**
- **DISCOVER CARD**
- **16 numbers**
- **1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16**
- **GOOD THRU**
- **SIGNATURE**
- **DATE**

**DELIVERY CHARGE**

<table>
<thead>
<tr>
<th>Merchandise Total</th>
<th>Add</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP TO $30.00</td>
<td>$3.95</td>
</tr>
<tr>
<td>$30.01 to $60.00</td>
<td>$4.95</td>
</tr>
<tr>
<td>$60.01 to $100.00</td>
<td>$5.95</td>
</tr>
<tr>
<td>OVER $100.00</td>
<td>$6.95</td>
</tr>
</tbody>
</table>

**DELIVER CHARGES**

**Merchandise Total**

**Add**

**Shipment to NY & VA**

**Sales Tax on Merchandise**

**Delivery Charge**

**Federal Express Service**

(See details above)

**ORDER TOTAL**

**Thank you for your order!**
POST TEST

1. Obtain a deposit slip and fill it out accordingly. You deposit $14.85 in coins, a pay check for $520.18, and a refund check for $35.00.

2. When you deposit money, do you add or subtract from your account? ______

3. When you write out a check, do you add or subtract money from your account? ______

4. You make $8.00 per hour. How much do you make per week? ______ How much do you make per month? ______ How much do you make per year? ______

5. At a restaurant you purchase the following items. Find the subtotal, tax using 5%, and the total.

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamburger</td>
<td>$2.50</td>
</tr>
<tr>
<td>Salad</td>
<td>$1.50</td>
</tr>
<tr>
<td>Large Milk</td>
<td>$.70</td>
</tr>
</tbody>
</table>

Subtotal: ______
Tax: ______
Total: ______

6. The balance in your account is $863.00. You spent $34.00 on clothes, $42.00 on food, and $25.00 on entertainment last weekend. What is your new account balance? ______

7. Plan a well-balanced meal below.

8. Six people went out for dinner. They spent a total of $78.19 and split the bill equally. How much did each person pay? (Round to the nearest cent.) ______

9. Which is the better buy: 3 oranges for $.45 or 6 oranges for $.84? ______

10. At a local store you purchase spaghetti for $1.29, potato chips for $1.67, paper plates for $1.35, mile for $2.09, and carrots for $.75. Your tax is $.41. You also use a $.20 coupon for the potato chips. What is your final cost? ______

11. Rent for an apartment with 2 bedrooms costs $425.00. How much would rent be for six months? ______

12. It costs $5.00 per person to go to the movies. Sue and John have two coupons: Buy one ticket, get one free and a 50 percent off each ticket. Which should they use? ______
13. Name five items found on utility bills. 1.  
2.  
3.  
4.  
5.  

14. Three bars of soap cost $.84. How much would one bar cost?  

Answer Key:
1. Total = $570.03 and correctly filled out deposit slip.
2. Add
3. Subtract
4. $320 per week; $1,280 per month; $16,640 per year
5. Subtotal = $4.70; tax = $.24; Total = $4.94
6. $762.00
7. answers will vary
8. $13.03
9. 6 for $.84
10. $7.35
11. $2,550.00
12. 60 percent off
13. answers will vary
14. $.28
REAL-LIFE SKILLS STUDENT EVALUATION

How well did you like this unit?

Great  Very much  OK  Very Little  Never Again

Why did you like or not like the unit?

Which activities did you like best? Refer to your schedule.

1. 
2. 
3. 

Which activities, if any, did you not like?

1. 
2. 
3. 

Name at least 3 things you learned from this unit.

1. 
2. 
3. 

Were most instructions clear?  Yes  No

Were there enough activities?  Yes  No

Were you able to finish activities in class?  Yes  No

Would you enjoy doing something like this again?  Yes  No

Name something you would add to this unit.

How much homework was given compared to the rest of the year?

More  Same  Less

If you were the teacher, what would you have done differently?


What would you have done better? ________________________________

Do you prefer this active-type of unit, or do you prefer to work from the book? ____________ Why? ________________________________
REAL-LIFE SKILLS TEACHER EVALUATION

1. Were you able to use this unit? Yes ___ No ___

2. What grade did you use this unit with? ________________

3. When during the year did you use this unit? ________________

4. Were the objectives clear? Yes ___ Somewhat ___ No ___

5. List specific lessons for which the instructions were not clear:

6. Which activities did you allow students to use calculators for? ____________

7. Were there enough activities? Yes ___ No ___

8. How long did the unit take to complete? ________________

9. Did you use all of the activities? Yes ___ No ___

10. What kinds of activities would you add to this unit? ________________

11. Which activities would you delete and why? ________________

12. Were you able to obtain enough materials? Yes ___ No ___

13. List any materials you had trouble obtaining? ________________

14. Would you use this unit again? Yes ___ No ___

15. Would you be interested in joining the committee to evaluate and revise this unit? Yes ___ No ___

16. Please list comments and/or suggestions below: ________________