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ABSTRACT

This guide is intended to assist home economics teachers in designing lessons and activities that will reinforce mathematics skills in consumer and homemaking education programs. Included in the guide are a total of 55 mini-lessons on the following areas of home economics: child development; family relationships; foods and nutrition; consumer education; housing, home furnishings, and equipment; and clothing and textiles. Each activity contains some or all of the following: content area, level of difficulty, home economics content objective, mathematics objective, learning activity, and source. An appendix contains the answers to all activities. Also included is a matrix that details (1) the number(s) of the learning activities in which a particular mathematics skill is reinforced and (2) whether a given mathematics skill is required to pass the New Jersey High School Proficiency Test. (MN)

Vocational Home Economics Education

Mathematics in Consumer and Homemaking Education Programs

...A Guide for Reinforcing Basic Skills

State of New Jersey
Department of Education
Division of Vocational Education

Department of Home Economics
Glassboro State College
Glassboro, New Jersey

CE

Vocational Home Economics Education

Mathematics in Consumer and Homemaking Education Programs

A Guide for Reinforcing Basic Skills

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TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

FOREWORD

MATHEMATICS IN CONSUMER AND HOMEMAKING EDUCATION PROGRAMS: A GUIDE FOR REINFORCING BASIC SKILLS presents a process that will enable home economics teachers to design lessons and activities for the purpose of reinforcing mathematics skills in Consumer and Homemaking Education Programs. Reinforcing basic skills in Consumer and Homemaking Education Programs is not new. The Vocational Home Economics Coalition in **A QUEST FOR QUALITY: CONSUMER AND HOMEMAKING EDUCATION IN THE 80's** points out:

> Application of mathematics skills is made in Consumer and Homemaking Education in such areas as consumer education, food and nutrition, clothing and textiles, and housing and home furnishings. Consumer education provides many opportunities for using mathematical skills. Among them are calculating interest on savings and loans, determining the cost of credit, figuring the cost of an automobile, balancing a personal budget,and itemizing total income and expenditures.
>
> Mathematical skills are critical in the foods and nutrition area as students increase and decrease standardized recipes, measure quantities of dry and liquid ingredients, comprehend and use devices such as clocks and dials, and compute the costs of foods and recipes.
>
> ...In the clothing and textiles area, mathematical skills are crucial as students plan a wardrobe for a specific amount of money, compare the cost of wardrobe purchases, and compare costs of products for care and upkeep of garments.
>
> ...Mathematical skills are required in computing the costs of furnishings, furniture, household appliances, and other goods and services related to housing (1985, pp. 7-8).

In child development, mathematical skills are required in keeping records of children's growth rate and temperatures, in calculating the costs of birthday celebrations, baby food, clothing and toys. In the family relations area, mathematical

skills are required to compute the costs of weddings, special entertainment and recreational events and planning a budget to meet the needs and wants of a family.

What is new about the process presented here is that the lessons and activities are designed to meet the content objectives outlined in the **CURRICULUM GUIDE FOR CONSUMER AND HOMEMAKING PROGRAMS IN NEW JERSEY** as well as mathematics skills selected from those required to pass the New Jersey High School Proficiency Test. The lessons and activities presented here are not intended to be recipes for reinforcing mathematics skills, but rather examples of how classroom teachers can use this process to design lessons to meet the specific needs of students in their classrooms.

The project was supported by a grant awarded to the Department of Home Economics at Glassboro State College by the New Jersey Department of Education, Division of Vocational Education. Many professionals contributed to the success of this project. Rosemary Harzmann, Program Specialist in Home Economics and Consumer Education, served as Project Manager from the State Department of Education. Her guidance in the planning and administration of this project contributed greatly to its success. Dr. Lois L. Winand, Project Director and Chairperson, Department of Home Economics, Glassboro State College, provided the overall supervision needed to successfully conduct the project within the college setting.

Jocelyn C. Walton, Supervisor of Mathematics, Plainfield High School, Plainfield, New Jersey, developed the lessons and activities presented here and conducted the workshops for home

economics educators on reinforcing mathematics skills through home economics education. Dr. Doris Palzer, Assistant Professor of Home Economics, Glassboro State College, served as the home economics consultant for this project, which included editing the lessons and activities to ensure that the home economics content was accurate and appropriate for the target population.

Members of the Advisory Committee gave valuable advice and counsel on the development of the lessons and activities. The committee included: Elsie Anderson, Supervisor of Home Economics, Elizabeth Board of Education; Dr. Doris Dopkin, Program Specialist in Home Economics and Consumer Education, New Jersey State Department of Education; Susan Gaston, Home Economics Teacher, Quibbletown Middle School at Piscataway; Judy Graef, Supervisor of Home Economics, Bloomfield High School; and Robert Seyfarth, Principal of Cranford High School.

Recognition is extended to the teachers who field tested and evaluated materials for this publication.

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Vivian Gunn Morris, Ph.D.
March, 1987

INTRODUCTION

MATHEMATICS IN CONSUMER AND HOMEMAKING EDUCATION PROGRAMS: A GUIDE FOR REINFORCING BASIC SKILLS provides strategies for reinforcing mathematics skills in grades 7-12 home economics classes. Both teacher-managed and student-managed activities are included in the content areas of child development, family relationships, foods and nutrition, consumer education, housing, home furnishings and equipment and clothing and textiles. Teachers are encouraged to adapt the ideas and concepts presented to meet the specific needs of students in their classrooms.

This guide includes several features designed for easy use. Teachers can identify the specific mathematics skills reinforced in each activity by using the matrix at the beginning of the guide. To assist the teacher in selecting activities that are most appropriate for the students served, each activity addresses the following items:

- o Content area. One of the six home economics subject areas included in a comprehensive program.
- o Content objectives. Home economics objectives adapted from those outlined in the **CURRICULUM GUIDE FOR CONSUMER AND HOMEMAKING PROGRAMS IN NEW JERSEY.**
- o Level. The difficulty of the activity. The activity may be designated as introductory, intermediate or advanced.
- o Mathematics objectives. Mathematics skills selected from those required to pass the New Jersey High School Proficiency Test.

Included at the beginning of the guide is a series of three "mini-lessons" on the mathematics concepts most often covered in the activities: solving proportions, solving percent problems, and rounding numbers. When you feel comfortable that students understand the mathematics' concept or process, you may allow them to use calculators.

Each content area is introduced with a sample lesson including suggestions for using the activities in the classroom setting. Lesson plans should be developed by the classroom teacher to use the other activities in each content area to meet the specific needs of students served. Activities may be used to initiate a unit, as part of developmental activities or used to culminate a unit of study. Some activities may vary in the amount of time required for completion. For example, one activity may require only fifteen minutes of a class period while another may be used for an entire class period or two or be appropriate for use as a short-term or long-term homework assignment. The Appendix contains answers for the activities.

MATHEMATICS SKILLS MATRIX

HSPT MATHEMATICS SKILLS[1]		HOME ECONOMICS CONTENT AREAS					
		CHILD DEVELOPMENT	FAMILY RELATIONSHIPS	FOODS AND NUTRITION	CONSUMER EDUCATION	HOUSING, HOME FURNISHINGS AND EQUIPMENT	CLOTHING & TEXTILES
GENERAL CONDITIONS USED TO CONSTRUCT TEST ITEMS							
CLUSTER I: COMPUTATION - FRACTIONS							
SKILL AREA	CONDITIONS USED TO CONSTRUCT TEST ITEM						
The student will be able to:							
a. Add fractions	with: - like/unlike denominators - with/without regrouping - vertical/horizontal format - two or three fractions						
b. Subtract fractions	with: - like/unlike denominators - with/without regrouping - vertical/horizontal format - two or three fractions - fractions/mixed numbers/ whole numbers			25[2]			49
c. Add/subtract 3 fractions	- additions followed by subtraction - horizontal format				31		50
d. Multiply fractions	with: - whole numbers/proper fractions - mixed numbers/improper fractions - horizontal format						
e. Divide fractions	with: - whole numbers/proper fractions - mixed numbers/improper fractions - horizontal format						

[1]HSPT Mathematics skills are those required to pass the New Jersey High School Proficiency Test.

[2]The numerals designate the number of the activity in which a particular mathematics skill is reinforced.

LP = Lesson Plan

MATHEMATICS SKILLS MATRIX

HSPT MATHEMATICS SKILLS			Under ECONOMICS CONTENT AREAS					
			CHILD DEVELOPMENT	FAMILY RELATIONSHIPS	FOODS AND NUTRITION	CONSUMER EDUCATION	HOUSING, HOME FURNISHINGS AND EQUIPMENT	CLOTHING & TEXTILES
CLUSTER II: COMPUTATION - DECIMALS								
SKILL AREA	CONDITIONS USED TO CONSTRUCT TEST ITEM							
The student will be able to:								
a. Add and subtract decimals	with:	- decimals or whole numbers and decimals - with/without regrouping - with/without unequal place value - vertical/horizontal format	3	15		32	39 42	48
b. Multiply decimals	with:	- decimals or whole numbers and decimals - equal or unequal place value - zero as a place holder with one factor a power of ten - vertical/horizontal format	11			35	38 39 42	48
c. Divide decimals	with:	- whole number divisor, decimal divisor - decimal divisor/quotient less than one - divisors of 10, 100, 1000 etc. - zero embedded in the quotient between two numerals - whole number by a decimal-answer to 2 decimal places (no rounding)				35		
CLUSTER III: COMPUTATION - PERCENTS								
SKILL AREA	CONDITIONS USED TO CONSTRUCT TEST ITEM							
The student will be able to:			5		23	30 33	39 40	
a. Find a percentage of a number		- percents greater than/less than 100	10	13	27	38		

MATHEMATICS SKILLS MATRIX

HSPT MATHEMATICS SKILLS		HOME ECONOMICS CONTENT AREAS					
		CHILD DEVELOPMENT	FAMILY RELATIONSHIPS	FOODS AND NUTRITION	CONSUMER EDUCATION	HOUSING, HOME FURNISHINGS AND EQUIPMENT	CLOTHING & TEXTILES
b. Find the percent one number is of another	- percents greater than/less than 100	2 8 10	18	23	37	43	55
c. Find the total number when a percentage of that number is known	- percents greater than/less than 100	10		23			
CLUSTER IV: NUMBER CONCEPTS							
SKILL AREA	CONDITIONS USED TO CONSTRUCT TEST ITEM						
The student will be able to:							
a. Find the number which completes a proportion	- given a missing value in a sequence of ratios			LP3 21 20 24			54
b. Identify place value in decimal numerals	- thousands to ten-thousandths						
c. Determine the correct ordering of a set of rational numbers	- comparing positive fractions - comparing integers - smallest to largest/largest to smallest						
d. Identify a set of prime numbers or the prime factorization of a number	- given four sets of numbers using one- or two-digit numerals						
e. Demonstrate an understanding of scientific notation	- select the scientific notation of a numeral - evaluate an expression in scientific notation given a number greater than one thousand						

MATHEMATICS SKILLS MATRIX

HSPT MATHEMATICS SKILLS		HOME ECONOMICS CONTENT AREAS: CHILD DEVELOPMENT	FAMILY RELATIONSHIPS	FOODS AND NUTRITION	CONSUMER EDUCATION	HOUSING, HOME FURNISHINGS AND EQUIPMENT	CLOTHING & TEXTILES
f. Round decimal numerals	- any place value from thousands to thousandths						
g. Demonstrate an understanding of set theory	- union, intersection, subset, null set, Venn diagram	4	18 19		LP4 28		
h. Demonstrate an understanding of fraction/decimal/percent equivalency	- convert fractions to decimals, decimals to fractions, fractions to percent, percent to fractions, decimals to percent, percent to decimals	7					
i. Estimate using the sums, differences, products, quotients and square roots	- one or more operations		12				
CLUSTER V: MEASUREMENT AND GEOMETRY							
SKILL AREA	CONDITIONS USED TO CONSTRUCT TEST ITEM						
The student will be able to:							
e. Add, subtract, multiply and divide measures using metric and U.S. standard units	- weight, liquid and linear measures - denominate numbers - regrouping within the system - problem-solving format - converting measures within the system including square units		14			44	
b. Identify and define acute, obtuse and right angles	- visual or verbal format						LP6 47

MATHEMATICS SKILLS MATRIX

HSPT MATHEMATICS SKILLS		HOME ECONOMICS CONTENT AREAS					
		CHILD DEVELOPMENT	FAMILY RELATIONSHIPS	FOODS AND NUTRITION	CONSUMER EDUCATION	HOUSING, HOME FURNISHINGS AND EQUIPMENT	CLOTHING & TEXTILES
c. Demonstrate an understanding of complementary/supplementary angles	- given two parallel lines cut by a perpendicular line/ transverse line - given an angle less than 90 degrees						
d. Demonstrate an understanding that the sum of the measures of the angles of a triangle is 180 degrees	- given two angles of a triangle						
e. Find the volume of a cylinder, cone, pyramid, rectangular solid or sphere	- sketch of figure is presented - definitions of variables are presented, but values of the variables are to be determined from the figure - formula given for cylinder, cone, pyramid and sphere, but not for rectangular solid					41	
f. Find the perimeter of a polygon	- given a regular polygon and the length of one side - given an irregular figure and the length of all sides						51
g. Compute the area of a specified region	- given two figures (rectangle, triangle or circle and a shaded region); no formula given					46	
h. Compute the area of an irregular figure	- no formula given; using combination of rectangles						

MATHEMATICS SKILLS MATRIX

HSPT MATHEMATICS SKILLS		HOME ECONOMICS CONTENT AREAS: CHILD DEVELOPMENT	FAMILY RELATIONSHIPS	FOODS AND NUTRITION	CONSUMER EDUCATION	HOUSING, HOME FURNISHINGS AND EQUIPMENT	CLOTHING & TEXTILES
i. Identify similar figures	- given sketches of figures, two of which are similar						
j. Identify points on a coordinate plane	- given points on a coordinate plane	LP1					
k. Demonstrate an understanding of parallel and perpendicular lines	- item could be visual or verbal - given two parallel lines cut by a perpendicular line					LP5	
CLUSTER VI: PRE-ALGEBRA							
SKILL AREA	CONDITIONS USED TO CONSTRUCT TEST ITEM						
The student will be able to:							
a. Evaluate an expression	- with two variables and their respective whole number values - expressions with exponents						
b. Simplify an expression	- with two variables and no parentheses - using distributive property with one variable						
c. Solve an equation using multiple operations	- given a two-step problem with one variable (variable is a whole number or fraction)						
d. Perform arithmetic operations on signed numbers	- given several signed numbers and specified arithmetic operations						

MATHEMATICS SKILLS MATRIX

HSPT MATHEMATICS SKILLS		HOME ECONOMICS CONTENT AREAS					
		CHILD DEVELOPMENT	FAMILY RELATIONSHIPS	FOODS AND NUTRITION	CONSUMER EDUCATION	HOUSING, HOME FURNISHINGS AND EQUIPMENT	CLOTHING & TEXTILES
CLUSTER VII: PROBLEM SOLVING							
SKILL AREA	CONDITIONS USED TO CONSTRUCT TEST ITEM						
The student will be able to:							
a. Read and interpret data from graphs	- given a line, bar or circle graph, including percent of change	9	16	22 26			
b. Estimate the shortest route between two points	- given a scaled road map showing expressways, primary and secondary roads, determine the distance between two cities by traveling the shortest route					45	
c. Compare the percent and the fraction discount	- given different retail prices for the same object, one discounted in the form of a fraction and the other in terms of a percent, comute the least expensive; sales tax will be specified				34		
d. Solve a percent problem involving sales tax	- multi-step problem		17				
e. Solve a problem involving percent	multi-step problem - given two numbers, find percent one is of another - given a number and a percent discount, find sale price - given a percent and the amount saved, find original price - given a word problem requiring changing to a percent						53

MATHEMATICS SKILLS MATRIX

HSPT MATHEMATICS SKILLS		HOME ECONOMICS CONTENT AREAS: CHILD DEVELOPMENT	FAMILY RELATIONSHIPS	FOODS AND NUTRITION	CONSUMER EDUCATION	HOUSING, HOME FURNISHINGS AND EQUIPMENT	CLOTHING & TEXTILES
f. Solve a probability problem	- interpret and analyze data; draw inferences; make generalizations, predict outcomes and determine combinations						
g. Identify the missing number of a set given the average and the other number values and compute the average of a series of numbers	- given four or more numbers; do not state the number which indicates the divisor; given the the average and all but one of the numbers	6					
h. Solve a problem involving proportions	- given information identifying three terms of a proportion, solve for the missing term						
i. Solve a word problem involving area and/or money	- multi-step involving conversion of units, price/unit and total cost				29	42 46	
j. Solve a problem involving time and/or temperature	- multi-step problem	2					52

MINI-LESSONS

MINI-LESSON 1 - Solving Proportions

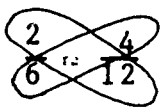
SOLVING PROPORTIONS

Notice that in the proportion

$$\frac{2}{6} = \frac{4}{12}$$

That $6 \times 4 = 2 \times 12$

These are called "cross products"



$$6 \times 4 = 2 \times 12$$

$$24 = 24$$

<u>In a proportion, cross products are equal</u>

$\frac{32}{150} = \frac{n}{100}$ This is a proportion so its cross products are equal

$150n = 32 \times 100$

$150n = 3200$

$\frac{150n}{150} = \frac{3200}{150}$ Divide both sides by 150 to get n alone $\left(\frac{150}{150} = 1\right)$

$n = 21\ \frac{1}{3}$

NOTE: <u>any</u> letter can be used for the unknown quantity. "n" is used here to distinguish it from the multiplication (x) sign.

MINI-LESSON 2 - Solving Percent Problems

SOLVING PERCENT PROBLEMS

All percent problems can be solved by using the percent proportion. $\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$

e.g.: 40% of 5 is 2

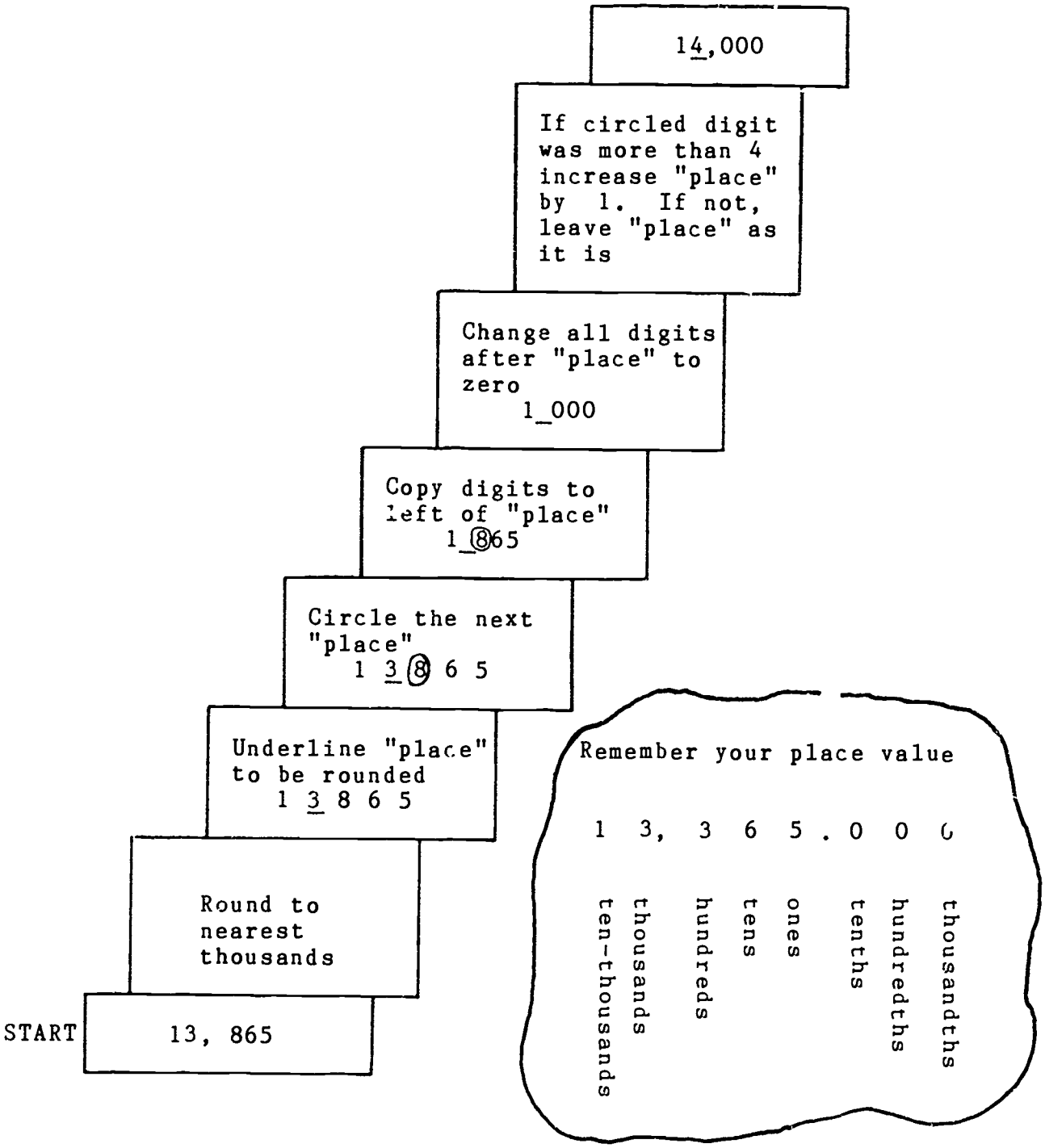
Since % means hundredths, 40 out of 100 is the same as 2 out of 5

$$\frac{40}{100} = \frac{2}{5} \text{ since, } \frac{\% \ (40)}{100} = \frac{(2) \text{ is part}}{\text{of whole } (5)}$$

If one unit is missing, the proportion can still be used.

a) ? % of 5 is 2	b) 40% of ? is 2	c) 40% of 5 is ?
$\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$	$\frac{?}{100} = \frac{\text{is part}}{\text{of whole}}$	$\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$
$\frac{x}{100} = \frac{2}{5}$	$\frac{40}{100} = \frac{2}{x}$	$\frac{40}{100} = \frac{x}{5}$
cross multiply: $5x = 200$	$40x = 200$	$120x = 200$
divide: $x = 40$	$x = 5$	$x = 2$
40% of 5 is 2	40% of 5 is 2	40% of 5 is _

STEPS TO ROUNDING NUMBERS



CHILD DEVELOPMENT

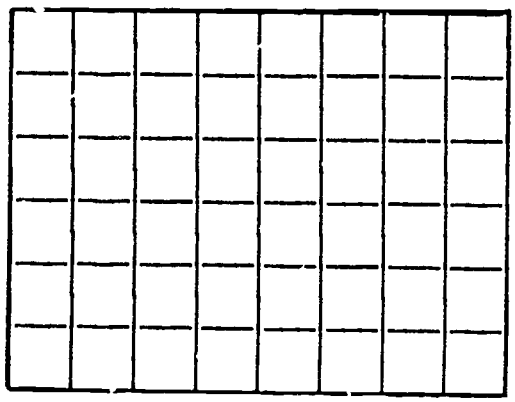
Lesson Plan 1

CONTENT AREA: Child Development
LEVEL: Introductory
CONTENT OBJECTIVE: Identify common health and safety hazards for children and suggest methods of protecting children when babysitting.
MATHEMATICS OBJECTIVE: Identify points on a coordinate plane.

MATERIALS NEEDED: Worksheet, graph paper

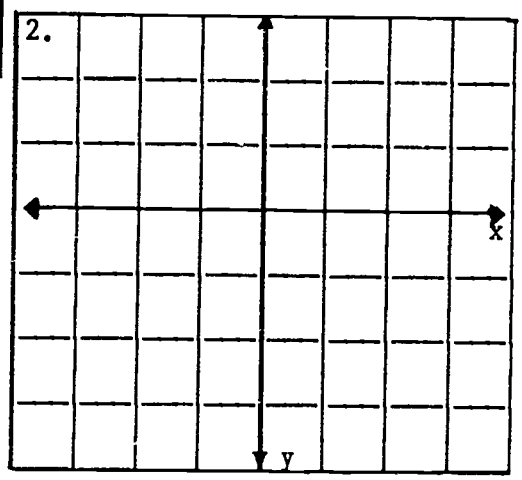
MOTIVATION: When you babysit a youngster, have you ever thought of hazards that might arise? Have you had some safety or health emergencies with a child you've been babysitting? Let's list some on the board, then put them on a grid.

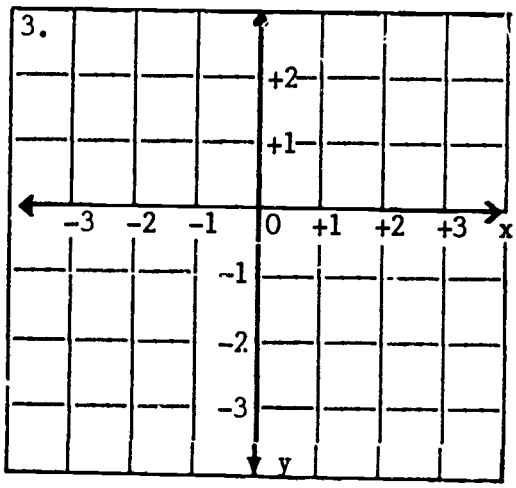
(You may need to review this with students)

1. 

1. This is called a coordinate grid (or graph)

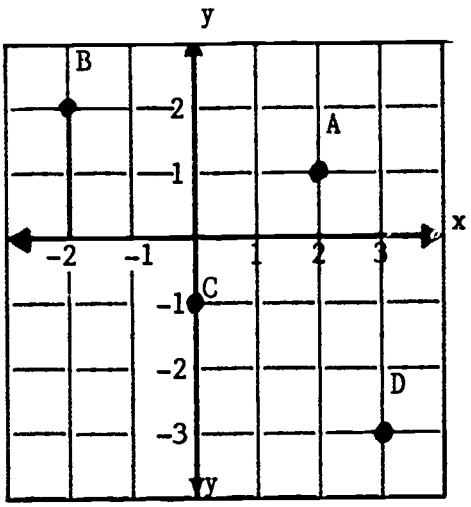
2. To identify points on the grid, draw a horizontal line "x" and a vertical line "y". Each line is called an axis





3. The intersection of axis x and axis y is at point 0 on each axis. The top of "y" and the right of "x" are positive. The The bottom of "y" and the left of "x" are negative. Note that the numbers are the same distance apart on each axis.

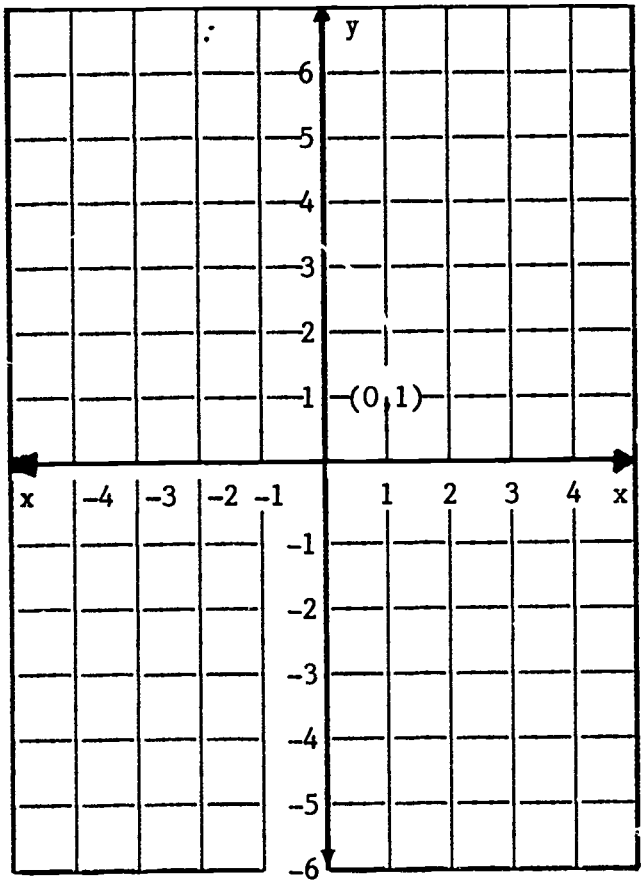
Now you are ready to locate points on a coordinate graph.



Every point has two names, an "x" name and a "y" name. Point A lies on 2 for the x axis and 1 for the y axis. The coordinates of point A are (2,1). The x name is always given first. The coordinates of point B are (-2,2). Notice that by following -2 on x and moving up 2 on y, you will find B at the intersection. What are the coordinates of point C? answer: (0,-1) of D: answer: (3,-3)

Use graph paper to locate the following points:

1. (0,1)
2. (2,-3)
3. (-2,6)
4. (4,-3)
5. (-2,-6)
6. (1,0)
7. (-1,3)
8. (-3,-4)
9. (0,0)
10. (3,4)

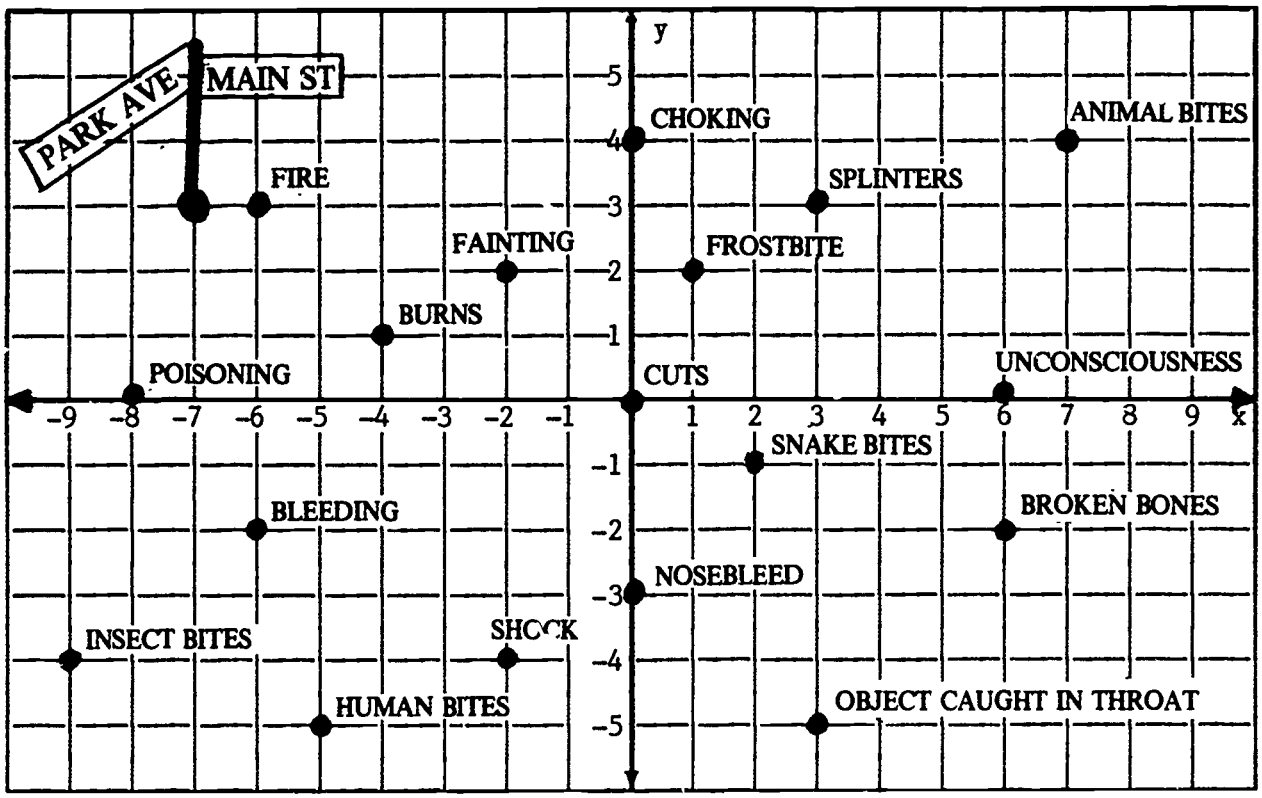


Teacher: now you are ready to use Activity 1 Worksheet with class

Activity 1 - Child Development Vocabulary

CONTENT AREA:	Child Development
LEVEL:	Introductory
CONTENT OBJECTIVES:	Identify common health and safety hazards for children and suggest methods of protecting children when babysitting.
MATHEMATICS OBJECTIVE:	Identify points on a coordinate plane

If you are babysitting in a house at the Corner of Park Avenue and Main Street and you needed an ambulance, what numbers would you give the rescue squad to help them find the house? (Answer is (-7,3)).



I. Find each point on the grid. Write the type of emergency located at each point.

1. (0,0) CUTS	7. (-8,0) _____	13. (6,-2) _____
2. (2,-1) _____	8. (-4,1) _____	14. (6,0) _____
3. (-6,-2) _____	9. (1,2) _____	15. (-5,-5) _____
4. (7,4) _____	10. (0,-3) _____	16. (-6,3) _____
5. (-2,-4) _____	11. (-9,-4) _____	17. (3,3) _____
6. (0,4) _____	12. (3,-5 _____	18. (-2,2) _____

II. Put the first letter of each emergency above the same coordinate to complete the following statement. The first letter, C = (0,0), is done for you.

A _____
(3,3)

a

_____a_____y_____ _____tter, yo_____ are
(-6,2) (-4,1) (2,-1) (-9,-4) (6,0)

res_____onsi_____le _____or the _____a_____ety _____
(-8,0) (6,-2) (-6,3) (-2,-4) (-2,2) (3,-5)

_____each C _____ild i_____ your _____ _____.
(1,2) (0,0) (-5,-5) (0,-3) (0,4) (7,4)

Activity 2 - Selected Needs of Infants

CONTENT AREA: Child Development
LEVEL: Intermediate
CONTENT OBJECTIVE: Analyze factors which contribute to an infant's intellectual development.
MATHEMATICS OBJECTIVES: Find what percent one number is of another. Solve a problem involving time.

TIME SPENT IN 24 HOUR DAY

AGE*	EATING	SLEEPING	PLAYING
6 weeks			
6 months			
1 year			
2 years			
3 years			

PERCENT OF DAY

EATING	SLEEPING	PLAYING

1. Complete the chart by interviewing parents, neighbors or friends, visiting a child care center or using your local library.

2. Compare your results with the rest of the class and draw conclusions about changes that take place as children get older.

3. Why do these changes take place?

4. Why do children appear to need less sleep and more playing time as they get older?

5. What important socialization skills are babies learning as they play with others?

6. Watch a baby play by itself. What does it learn about its body and its environment?

7. What are some possible consequences when a baby does not get enough sleep? Enough food? Enough playing time?

* Teachers should use their own judgement as to the number of ages on which to collect information. Perhaps all students will not be able to complete for all ages.

8. Keisha is 3 years old. She attends a day care center from 8:00 A.M. until her father picks her up at 2:40 P.M. If she played all day except for three 15 minute snack breaks and a 50-minute nap break, how much time did she actually spend playing?

9. Aaron had a hernia operation and had to rest each afternoon for a week after the surgery. He rested Monday through Friday from 1:45 P.M. to 5:00 P.M. each day, on Saturday and Sunday from 11:30 A.M. to 3:15 P.M. How many hours did he rest in all?

10. Rosa played with her cousins from 9:15 A.M. to 12:45 P.M. on Monday, Tuesday and Wednesday. On Saturday, they played from 10:30 A.M. to 1:00 P.M. How long did they play these four days?

Activity 3 - Books for the Young Child

CONTENT AREA:	Child Development
LEVEL:	Introductory
CONTENT OBJECTIVE:	Select books* that will meet the developmental needs, abilities, and interests of children at different stages of development.
MATHEMATICS OBJECTIVE:	Add and subtract decimals.

Rashon has $20 and plans to give books as Christmas presents to his three younger brothers. All prices include tax.

1. He chose Green Eggs and Ham, Dictionary for Children and Where the Sidewalk Ends. Did Rashon have enough money? If not, how much more did he need?

2. If he chose Wee Sing and Santa's Sleigh, how much money would he have for his third brother's gift?

3. If the salesperson only had single bills, quarters and pennies, how much of each would he get for change? (Please don't give him only quarters or pennies!)

4. If Rashon wanted to buy The Chronicles of Narnia, how much would he have left?

5. Which books are recommended for his brother David who is three years old? How much would he need to buy all of them?

6. What would it cost to buy all the books?

7. How much more is The Chronicles of Narnia than the two books Green Eggs and Ham and Wee Sing?

8. How much does Rashon save by buying Questron, Richard Scarry's Best Word Book Ever, and Green Eggs and Ham while they are on sale?

9. If Rashon got hungry before he got to the bookstore and spent $3.95 at McDonald's, what three books could he buy? How much change would he have left?

10. If you had three brothers ages 4, 7 and 12, which three books would you buy for them? How much would they cost?

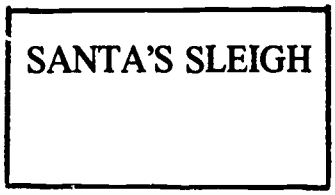
* (toys, games and activities)

GIFTS FOR CHILDREN

This holiday season we're offering you more. More children's books and more value. Here are ten holiday favorites, at your favorite prices.

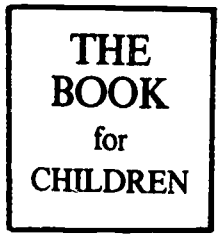
SALE $3.79

SALE $5.99

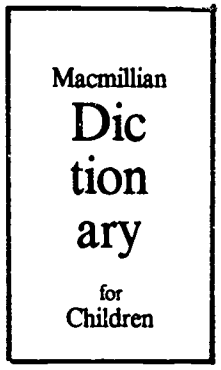


SALE $4.49

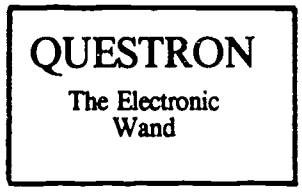
SALE $4.99



SALE $7.79

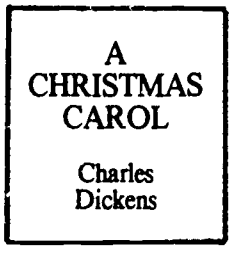


SALE $9.99

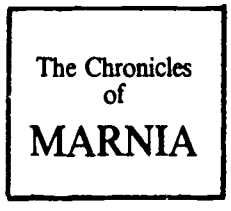


SALE $9.99

SALE $10.99



SALE $9.99



SALE $12.99

Activity 4 - Child Care Careers

CONTENT AREA: Child Development
LEVEL: Introductory
CONTENT OBJECTIVE: Identify career opportunities in five settings in child care.
MATHEMATICS OBJECTIVE: Round decimals.

ROUNDING DECIMALS

Please Round .....to the nearest		Your Answer	Child Care Facility
1.) 535.6927	hundred		family day care homes
2.) 535.6927	thousandths		group day care homes
3.) 535.6927	tens		kindergarten and nursery schools
4.) 535.6927	hundredths		head start
5.) 535.6927	tenths		home start

The correct answers are given below. (But not in the same order.) Beside each answer is the description* of the corresponding "child care facility."

540 - offers enrichment programs through instruction or special emphasis on early development and learning.

535.693 - provide care for groups ranging from 1-15 children.

535.69 - Federal government program for children with disadvantaged backgrounds.

500 - provide child care for a fee in the home of a family - usually maximum of five children.

535.7 - Federal program focusing on educating parents.

Given the five settings, discuss types of jobs, educational requirement, certification, salaries and federal funding involvement.

Activity 5 - Cost of Operating a Nursery School

CONTENT AREA: Child Development
LEVEL: Introductory
CONTENT OBJECTIVES: Given a nursery school business, identify sources of income and expenses for any given year.
MATHEMATICS OBJECTIVE: Find a percentage of a number.

The following is a 1979 budget* for a nursery school servicing 100 children. Find the cost of each category for each year since 1979. Years of inflation increased costs by 37 % in 1984. Find the 1984 cost for each category. The first two are done for you. Use a calculator if available.

1. INCOME	1979 COST	1984 COST 37% INFLATION
A. Fees for Children Weekly or monthly fee for each child to participate in the program	$150,000	150,000 x .37 = $205,985
B. Funds from Federal or State sources Welfare under Title XX of the Social Security Act	$ 24,000	$\frac{37}{100} = \frac{x}{24,000}$ $ 32,880
C. Funds from Other Organizations or Individuals United Fund Donations from service clubs and individuals	$ 4,000	
D. Milk Fund U. S. Department of Agriculture reimbursement per one-half pint of milk	$,800	
E. Other Memorials Cash Gifts	$ 3,000	
Total Income	**$182,800**	**$250,436**

SOURCE: Draper, M.W. & Draper, H.E., Caring For Children. Copyright © 1979 by Glencoe Publishing/Bennett & McKnight Division, Peoria, IL. Material reproduced by permission of the publisher.

2. EXPENSES	1979 COST	1984 COST 37% INFLATION
A. Personnel Salaries and wages of all persons employed by the center Salaries and wages for substitutes during vacations, in-service training, illness, and other staff absences	$ 91,660	$125,544
B. Employment Benefits Social Security Workmen's Compensation Accident and health insurance Retirement Unemployment insurance Allowance for conferences, training, other	$ 16,365	
C. Insurance and Bonding Liability for each child Accident and health for each child Fidelity bond Vehicle liability Owner's and tenant's insurance	$ 600	
D. Consumable Supplies Program supplies - paper, art materials clay, paper towels, napkins, etc. Office supplies - paper, duplicating materials, pencils, forms, etc. Maintenance supplies - mops, brooms, soap, light bulbs, toilet paper, etc. Food - meals and snacks	$ 19,820	$ 27,153
E. Occupancy Rent or lease of facility or purchase payments Utilities Maintenance and repairs Renovation	$ 18,740	$ 25,675

SOURCE: Draper, M.W. & Draper, H.E., Caring For Children. Copyright © 1979 by Glencoe Publishing/Bennett & McKnight Division, Peoria, IL. Material reproduced by permission of the publisher.

2. EXPENSES (continued)	1979 COST	1984 COST 37% INFLATION
F. Equipment - Rental and Purchase Program furniture Office furniture Office machines Durable equipment for programs, such as record players, blocks, games, autoharp, piano,and tape recorders Durable equipment for operating and maintaining center, such as janitorial and kitchen equipment - vacuum cleaners, electrical appliances, etc. Buses, automobiles, vans	$ 3,900	
G. Telephone and Telegraph Cost of installation Rental of equipment Local service Long distance service	$ 900	
H. Postage Stamps Other postal service	$ 180	$ 247
I. Services Food (if not included under consumables) such as catering Diapers Laundry	$ 5,640	$ 7,727
J. Travel Allowance for staff if not included above Transportation of children	$ 9,800	$ 13,426
K. Consultant and Contract Services Part-time physicians, nurses, child care specialists, nutritionists, others (may be included under personnel) Health, social, and psychological services	$ 6,150	$ 8,426

SOURCE: Draper, M.W. & Draper, H.E., Caring For Children. Copyright © 1979 by Glencoe Publishing/Bennett & McKnight Division, Peoria, IL. Material reproduced by permission of the publisher.

2. EXPENSES (continued)	1979 COST	1984 COST 37% INFLATION
L. Other Publications - professional, newsletters bulletins, etc. Visual aides, exhibits, displays Membership in professional organizations Legal services Annual audit Advertising Miscellaneous	$ 8,688	$ 11,903
Total Expenses	$182,443	$249,918

SOURCE: Draper, M.W. & Draper, H.E., Caring For Children. Copyright © 1979 by Glencoe Publishing/Bennett & McKnight Division, Peoria, IL. Material reproduced by permission of the publisher.

Activity 6 - Babysitter's Income

CONTENT AREA:	Child Development
LEVEL:	Introductory
CONTENT OBJECTIVES:	Calculate the average income a babysitter needs to earn in order to purchase a desired item.
MATHEMATICS OBJECTIVES:	Identify the missing number of a set given the average and the other number values. Compute the average of a series of numbers.

Mario has been babysitting for his nephew Juan since September. Find his average income for each week for the past five weeks.

	MON.	TUES.	WED.	THURS.	FRI.	AVERAGE
1. Week 1	$5.26	$4.35	$3.25	$4.20	$1.65	$\frac{18.71}{5} = \$3.74$
2. Week 2	3.45	6.20	1.75	3.60	4.50	
3. Week 3	2.30	4.65	3.10	2.40	1.50	
4. Week 4	4.40	2.70	3.25	2.65	5.85	
5. Week 5	3.55	1.85	3.35	1.75	5.95	

Mario plans to purchase a turntable for his stereo. He needs to make an average of $3.50 each day for the next 5 weeks so he can purchase a new turntable. How much must be made by Friday of each week to make this average? (Hint: First find what his total weekly income would be if he earned $3.50 each day.)

	MON.	TUES.	WED.	THURS.	FRI.
1. Week 1	$2.65	$4.75	$4.90	$3.25	
2. Week 2	1.50	3.85	5.30	2.45	
3. Week 3	3.90	3.45	2.25	3.50	
4. Week 4	4.80	3.50	4.85	2.65	
5. Week 5	2.75	2.65	3.95	2.70	

Activity 7 - Developmental Needs of Children

CONTENT AREA:	Child Development
LEVEL:	Introductory
CONTENT OBJECTIVE:	Identify the four major aspects of human development which impact upon the development of children.
MATHEMATICS OBJECTIVE:	Demonstrate an understanding of fraction and percent equivalents.

STAGES AND AGES OF DEVELOPMENT*

STAGE	APPROXIMATE AGE
Prenatal	conception to birth
Infancy	birth to 18 months
Toddler	18 months to 3 years
Romper	3 and 4 years old
Kindergarten	5 year olds
Primary	6 through 8 years
Preadolescence	9 through 12 years
Adolescence	13 through 19 years

FACTS:

1. The chart represents the first 19 years of life and pre-birth. In this activity, we will consider the first 19 years only.

2. $2\frac{1}{2}$ years out of 19 years represents the toddler age.

3. $\frac{2}{19}$ represents the romper age.

4. $\frac{3}{19}$ or $19\overline{)3.00}$ $.15\ \frac{15}{19}$ represents the primary years.

SOURCE: Facts from Caring For Children, by M.W. Draper and H.E. Draper.

5. $\frac{4}{19}$ or $19\overline{)4.00}$ $\begin{matrix}.21\ \frac{1}{19}\end{matrix}$ = $21\ \frac{1}{19}\%$ represents the pre-adolescence years.

6. The adolescent years represent $36\ \frac{16}{19}\%$ of the first 19 years of life. That is more than $\frac{1}{3}$ of the first 19 years!

Interesting comparisons like these can be easily obtained from tables and charts if you know fraction, decimal and percent equivalents.

Here is a puzzle for you to solve.

1. Match the equivalent fractions and percents (ex: $\frac{1}{3}$ -> $33\ \frac{1}{3}\%$)

2. On the line beside each example, write the letters that appear beside the equivalents. (PHY for ex. 1).

3. Write these letters again at the bottom of the page
P H Y
1

4. If you have correctly matched the fraction and percent equivalents, your answers will be four aspects of human development which impact upon the development of children.

FRACTION	PERCENT
1. $\frac{1}{3}$ = PH	40% = I
2. $\frac{3}{4}$ = SI	25% = NT
3. $\frac{5}{6}$ = A	75% = C
4. $\frac{2}{5}$ = SO-	50% = AL
5. $\frac{1}{2}$ = I	$87\ \frac{1}{2}\%$ = O
6. $\frac{7}{8}$ = EM	$33\ \frac{1}{3}\%$ = Y
7. $\frac{1}{8}$ = T	70% = L
8. $\frac{7}{10}$ = NA	$12\ \frac{1}{2}\%$ = IO
9. $\frac{1}{4}$ = I	$16\ \frac{2}{3}\%$ = AL
10. $\frac{2}{3}$ = E	$66\ \frac{2}{3}\%$ = LL
11. $\frac{1}{5}$ = EC	20% = T
12. $\frac{1}{6}$ = U	$83\ \frac{1}{3}\%$ = L

Here's How

Ex 1. $\frac{1}{3} = 3\overline{)1.00}$ $\begin{matrix}.33\ \frac{1}{3}\end{matrix}$

$.33\ \frac{1}{3} = 33\ \frac{1}{3}\%$

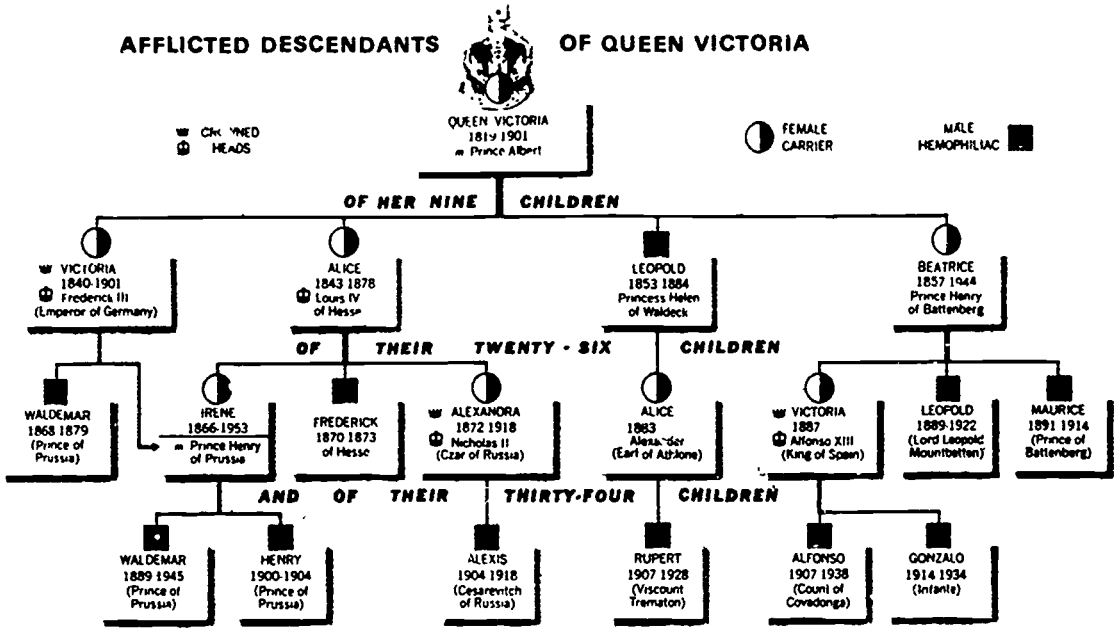
(move decimal point two places [hundredths] to the right to change to a percent)

P H Y | 2 | 3
4 | 5
6 | 7 | 8
9 | 10 | 11
12

Activity 8 - Heredity Vs. Environment

CONTENT AREA: Child Development
LEVEL: Intermediate
CONTENT OBJECTIVE: Discuss the influence of heredity on the child's growth and development.
MATHEMATICS OBJECTIVE: Find what percent one number is of another.

Activity 1:



Hemophilia, an hereditary disease of the blood, was passed to many of Europe's royal families. Women were carriers of the disease but rarely suffered from it:

1. What percent of Queen Victoria's nine children were carriers? What percent of her children had the disease?

2. What percent of Queen Victoria's twenty-six grandchildren had the disease?

3. What percent of Queen Victoria's great grandchildren had the disease?

SOURCE: Chart reproduced from Evolution: Life Nature Library by R. Moore. New York: Time Incorporated. Copyright © 1964, p. 177. Reprinted by permission of publisher.

INHERITED CHARACTERS OF THE FACE AND HEAD

Inherited characters are governed by an interplay of dominant and recessive genes. This table shows which features of the human face and head are dominant (D) and which are recessive (R).

Roman nose (D)
Concave nose (R)
Straight-tip nose (D)
Turned-up nose (R)
Wide nostrils (D)
Narrow nostrils (R)
Full lips (D)
Thin lips (R)
Dimpled chin (D)
Nondimpled chin (R)
Clockwise hair whorl (D)
Counterclockwise hair whorl (R)
Dark hair (D)
Light hair color (R)
Baldness in men (D)
Baldness in women (R)

Free ear lobes (D)
Attached ear lobes (R)
Dark eye color (D)
Light eye color (R)
White blaze in hair (D)
Red hair (R)
Prematurely gray hair (D)
Body hairlessness (R)
Widow's peak (D)
Freckles (D)
Excessively pointed ears (D
Drooping eyelids (ptosis) (D)
Ability to roll tongue (D)

4. How many characters are listed? _____

5. What percent of the characters...

   a) are related to the hair? _____
   b) are related to the nose? _____
   c) are dominant? _____
   d) are recessive? _____

6. Do you have any of those listed as a character trait?

   _____

7. Describe the difference between dominant and recessive traits.

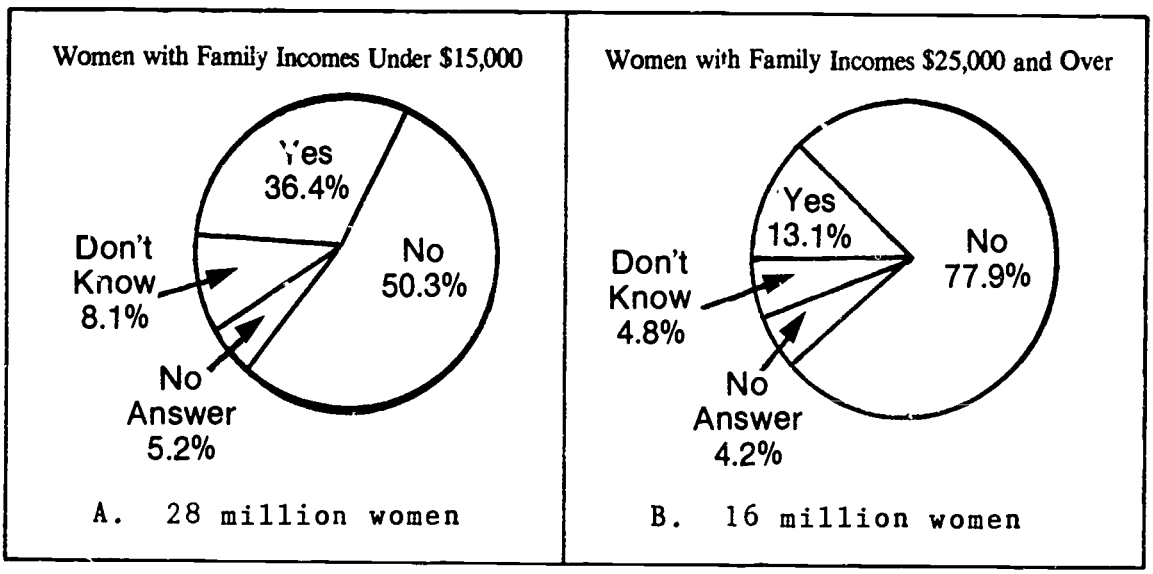
SOURCE: Facts from Evolution: Life Nature Library by R. Moore. New York: Time Incorporated. Copyright © 1964, p. 177. Repritned by permission of publisher.

Activity 9 - Employment with Child Care Facilities

CONTENT AREA:	Child Development
LEVEL:	Introductory
CONTENT OBJECTIVE:	Given two levels of income, analyze willingness of mothers to seek employment where child care was available.
MATHEMATICS OBJECTIVE:	Read, interpret data from a graph.

PERCENTAGE OF MOTHERS NOT IN LABOR FORCE WHO WOULD LOOK FOR WORK IF CHILD CARE WERE AVAILABLE AT A REASONABLE COST

Data limited to women with a child under 5 years old



SOURCE: Child Care Arrangements of Working Mothers. Washington, D.C.: U. S. Department of Commerce, Bureau of the Census, June 1982.

Use the graphs to find the number of mothers in each category. Round off to the nearest million. Example (1) is done for you.

Would You Look For Work At This time If Child Care Were Available At A Reasonable Cost?

	Family Income Under $15,000	Family Income $25,000 and Over
Response: **YES**	1) 36.4% $\frac{36.4}{100} = \frac{n}{28}$ $100n = 36.4 \times 28$ $100n = 1019.2$ $n = 10.192$ 10 million	5)
NO	2)	6)
DON'T KNOW	3)	7)
NO ANSWER	4)	8)

9. Why do you feel mothers would look for work if there was child care available at a more reasonable cost?

10. Do you feel that the government or employers should offer families child care assistance? Why or why not?

Activity 10 - Child Care Arrangements for Working Mothers

CONTENT AREA:	Child Development
LEVEL:	Introductory
CONTENT OBJECTIVE:	Determine increase of mothers in the work force and list types of child care arrangement used.
MATHEMATICS OBJECTIVES:	Find the percent one number is of another. Find the percent of increase. Find the percentage of a number.

"Future generations may someday describe the "traditional" American family of the 1980's as one where both the husband and wife are employed and their young children are cared for by a nonfamily member while the mother and father are at work. This might be a likely assessment since by 1980 almost one-half of the 11 million wives who had children under the age of 6 were in the labor force. In 1980, there were 7.5 million pre-school-age children in the United States whose mothers were in the labor force; this number is projected to increase to over 10 million by 1990.

The decisions and difficulties families with two working parents encounter today are not that different from the problems these families faced a generation ago. What is different is the increasing number of families with working parents who must face these problems." [1]

WORKING MOTHERS

Year	1977	1982
Number of Mothers	**12 million***	**13 million**
Number of Working Mothers (18-44 years old) with children under 5 years old	**5 million**	**6 million**

*Rounded to nearest million

1. What percent of mothers (18-44 years old with children under 5 years old) were working in 1977? What percent worked in 1982?

2. What is the percent of increase from 1977 to 1982?

[1]SOURCE: Trends in Child Care Arrangements of Working Mothers. Washington, D.C.: U. S. Department of Commerce, Special Studies, 1982, No. 117, p. 23.

3. Complete the chart by finding the number of mothers who used each type of child care.

DISTRIBUTION OF PRINCIPAL TYPES OF CHILD CARE ARRANGEMENTS

	June 1977		June 1982	
Total Employed		**5 million**		**6 million**
ARRANGEMENT	**%**	**Number: to nearest million**	**%**	**Number: to nearest million**
a. Care in child's home	32%	$\frac{32}{100} = \frac{x}{5}$ $100x = 160$ $x = 1.6$ 2 million	31%	
b. Care in another home	40%		40%	
c. Group care center	13%		15%	
d. Mother cares for child while working	11%		9%	
e. Other arrangements (includes child taking care of self	1%		.2%	

4. In 1977 there were 2 million mothers using day care centers. In 1982, there were 2.4 million using day care centers. This is an increase of .4 million mothers. What was the percent of increase?

5. Do you anticipate that there will be a greater or a lesser need for child care facilities in 1987?

6. What impact will that need have on your community?

7. What dangers are there in having a young child take care of themselves?

Activity 11 - Child Care Services

CONTENT AREA:	Child Development
LEVEL:	Introductory
CONTENT OBJECTIVE:	Calculate cost of out-of-home child care services.
MATHEMATICS OBJECTIVE:	Multiply decimals.

MONTHLY CHILD CARE FEES AT LOCAL YMCA

TYPE			COST
Cradle Care (3-6 months)		5 days	$450
Toddler Care (18 months-2 years)		5 days	$340
Kiddie House (2-4 years old)			
Full day	7:30 A.M. - 6:00 P.M.	5 days	$230
		4 days	$200
		3 days	$182
Half-day	7:20 A.M. - 12:30 P.M.	5 days	$125
	or	4 days	$110
	1:00 P.M. - 6:00 P.M.	3 days	$100
Latch Key (1st thru 5th grades)			
After school pickup - 5:30 P.M.		5 days	$ 95
		4 days	$ 80
		3 days	$ 65

You are the parent of two children whose ages are three and eight. The 8 year old is in the second grade. As a working parent, you are in need of child care and send your children to the local "Y" from September to June while school is in session. During the summer you rely upon a neighborhood teenager.

1. How much does it cost for your three year old to attend "Kiddie House" 5 days - full days for the 10 months, from September to June?

2. How much do you pay for your eight year old to attend "Latch Key" for the 10 months after school for five days per week?

3. How much per week does the baby sitter make if she makes $1.50 per hour and works from 8:00 A.M. - 5:00 P.M., Monday-Friday?

4. The babysitter works 7 weeks in July and August. How much does she make? (Use the weekly salary from ex. 3.)

5. What is the total amount you pay for child care? (Use answers from ex. 1, 2, 4.)

   Use the total amount from example 5 to answer the next two questions:

6. If you and your spouse earn a total of $20,000 per year, what % is spent on child care? Do you consider this to be a reasonable amount to spend or too much? If it is too much, how could you lower the expense?

7. If you and your spouse earned $15,000, what % would be spent on child care? Do you consider this to be a reasonable amount to spend or too much? If it is too much, how could you lower the expense?

FAMILY RELATIONSHIPS

Lesson Plan 2

CONTENT AREA:	Family Relationships
LEVEL:	Introductory
CONTENT OBJECTIVES:	List reasons people do not work and compare these reasons for two different years between males and females.
MATHEMATICS OBJECTIVE:	Estimation (this is a prerequisite for the HSPT skill which requires estimation of a sum, product, difference, quotient or square root).

MOTIVATION: Discuss with students the following vignettes and have them draw conclusions as to the reason the person(s) is not working.

1. After closing the front door rather hard, Cheryl threw herself into a chair in the living room. She was so disgusted; she didn't even take off her coat, but just sat with a worried frown on her face. She had been "pounding" the sidewalks all day looking for a job. Nothing had "jelled" and she was not looking forward to job hunting again tomorrow.

2. Juan had been a Marine fighting in Viet Nam when he was struck with shrapnel from a mortar. After a long stay in the Naval hospital he was released, but was not able to get around except in a wheel chair. What was he going to do with the rest of his life?

3. Bob was not going to quit high school like his brother did. He wanted to get his diploma before he got a full time job. He knew that after graduation he had the rest of his life to work.

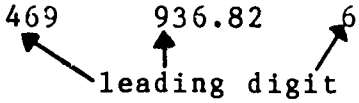
4. Robin married soon after graduating from high school and then found she was pregnant. She worked until a month before little Paul was born. She and her husband agreed that she should not return to her computer job until Paul was 5 years old.

5. Sergeant Jones closed his eyes for a minute. He couldn't believe the recruits who stood before him were so thick-headed. Half of them didn't know right from left.

6. Mr. & Mrs. Shaw had worked all their adult lives. Now they were hitting the road in their new trailer. They were 65 years old and their golden years stretched before them.

Any guess is better than not doing the problem at all but some guesses are better than others. Of course, the best answer is the exact one but sometimes it is appropriate to estimate:

Leading digit estimation is probably the most general rule to follow:



The first digit (from left to right) is called the "leading digit."

In each case, round off to the first digit to get an estimation.

469 is between 400 and 500 and is nearer 500.
Estimation: 500

936.82 is between 900 and 1,000 and is nearer 900.
Estimation: 900

6,569,523 is between 6,000,000 and 7,000,000 and is nearer 7,000,000.

(It is agreed that although 6,500,000 is in the middle, we round it up to 7,000,000).

	TRY THESE	ESTIMATION
1.	4786	5,000
2.	3924	
3.	2345	
4.	1299	
5.	9546	

Use "activity" worksheet.

SUMMARY:

A method of estimating is "Leading Digit Estimation" - What digit is the "leading" digit? What method do we use to estimate? When might it be appropriate to estimate?

Activity 12 - Reasons for Not Working

CONTENT AREA:	Family Relationships
LEVEL:	Introductory
CONTENT OBJECTIVE:	Given reasons people do not work, compare these reasons for two different years between males and females.
MATHEMATICS OBJECTIVE:	Estimation (this is a prerequisite to the HSPT skill which requires estimation of a sum, product, difference, quotient or square root).

Use the chart on the back of this page and estimate all numbers to the leading digit. Then answer the following questions:

1. In 1980, what percent of people not working were males?

2. What is the greatest reason they did not work?

3. Not being able to find work appears to be a large problem.

   a) What number of males could not find work in 1980? ___ 1983? ___

   b) What number of females could not find work in 1980?___ 1983? ___

   c) Why do you feel there is such a difference between the number of males not finding work in 1983 compared to the number of females who could not find work?

   d) What impact might a continued increase have upon males and their choices?

   e) If you know anyone who has looked for a job but could not find one, share the reasons why with the class.

MAIN REASONS FOR NOT WORKING

Nonworkers 15-24 years old

Note: All numbers in thousands
(eg: 12,049 x 1000 = 12,049,000)

	YEAR: 1980		YEAR: 1983	
GROUP: BOTH SEXES	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE
TOTAL	12,049	10,000	12,925	
COULD NOT FIND WORK	847	800	1,302	
ILL OR DISABLED	318	300	237	
GOING TO SCHOOL	8,759		9,248	
KEEPING HOUSE	1,731		1,818	
IN ARMED FORCES	56		-	
RETIRED	-		2	
ALL OTHER REASONS	338		318	
GROUP: MALES	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE
TOTAL	5,024		5,588	
COULD NOT FIND WORK	430		771	
ILL OR DISABLED	153		143	
GOING TO SCHOOL	4,217		4,475	
KEEPING HOUSE	19		36	
IN ARMED FORCES	50		-	
RETIRED	-		-	
ALL OTHER REASONS	155		163	
GROUP: FEMALES	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE
TOTAL	7,025		7,334	
COULD NOT FIND WORK	417		531	
ILL OR DISABLED	165		94	
GOING TO SCHOOL	4,542		4,773	
KEEPING HOUSE	1,712		1,779	
IN ARMED FORCES	6		-	
RETIRED	-		2	
ALL OTHER REASONS	183		155	

SOURCE OF DATA: U.S. Department of Commerce. Money and Income of Households in U.S. 1983. Series P 60 #146. Washington, D.C.

Activity 13 - Family Living Patterns

CONTENT AREA: Family Relationships
LEVEL: Intermediate
CONTENT OBJECTIVE: Identify social and cultural changes which may affect the structure and functions of the family.
MATHEMATICS OBJECTIVE: Find the percentage of a number.

Did you know that 76% of the total United States population lives in metropolitan* areas like New York, Newark, Philadelphia and Trenton.

Using this information, provide the figures for the following 1983-84 census data. Example 1 is done for you. Round all answers to the nearest whole number.

1. In 1984, the U.S. Census was 235,627,000. That is approximately 236 million people. How many people lived in metropolitan areas? (use 236.)

$$\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}} \qquad \frac{76}{100} = \frac{n}{236}$$

1) set up proportion

$$100\,n = 76 \times 236$$

2) cross multiply

$$100\,n = 17936$$

$$n = 179.36$$

3) divide by 100

179.36 million is approximately 179 million.

2. Major metropolitan cities such as New York, Chicago, San Francisco and Philadelphia shared 21% of the population. How many people lived in these areas?

Complete the chart below.

FARM POPULATION

Year	U.S. Population	Farm Population	Number of People
3) 1920	106 million	30%	3)
4) 1984	236 million	3%	4)

5. What impact will a continued decline in farms and farmers have on your family?

*Metropolitan defined as over 50,000 people.

SOURCE: U.S. Bureau of the Census, jointly with U.S. Department of Agriculture, Current Population Reports, Series P-27, No. 58, Farm Population of the U.S. 1984, Washington, D.C. 1985.

In 1984, there were a little over 85 million households in the United States:

Find how many represented each type of household listed.

Type of Household	% of Type	Number of Type
6. Married couple families	59%	6)
7. Other family, male head of household	2%	7)
8. Other family, female head of household	12%	8)

In 1984 there were 62 million children under 18 years of age.

Find the number of children who lived with:

		PERCENT	NUMBER
9.	both parents	75%	9.)
10.	Mother only	20%	10.)
11.	Father only	2%	11.)
12.	Other relative	2%	12.)
13.	Non-relative only	.5%	13.)

There are 30 million 18-24 year olds living in the U.S. according to the 1984 census and approximately 42% are living at home. In 1970, when there were 25 million citizens in the 18-24 age bracket, 35% were living at home.

14. Approximately how many 18-24 year olds lived at home in 1984? in 1970?

15. Why do you think more young adults are living at home now than in earlier years?

SOURCE: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 398. Household and Family Characteristics: March 1984, Washington D.C., 1985.

Activity 14 - Comparing Patterns of Growth

CONTENT AREA: Family Relationships
LEVEL: Introductory
CONTENT OBJECTIVE: Discuss physical differences and similarities between males and females.
MATHEMATICS OBJECTIVE: Add, subtract, multiply and divide measures.

"Comparing Patterns of Growth"

1. Collect the height measurements of anyone you know in the following categories:

MALE/AGE	6 mos.	1 yr.	3 yrs.	6 yrs.	8 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.
HEIGHT (FT/INCHES)									
FEMALE/ AGE	6 mos.	1 yr.	3 yrs.	6 yrs.	8 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.
HEIGHT									

2. Tabulate the data for the whole class and find the <u>average</u> height for each age.

   Use the data collected and the accompanying chart to find the differences in the class's average and the averages given in the chart.

AVERAGE HEIGHT FOR CHILDREN

Boys			Girls		
Age Years	Height ft.	Height in.	Age Years	Height ft.	Height in.
(Birth)	1	8	(Birth)	1	8
1/2	2	2	1/2	2	2
1	2	5	1	2	5
2	2	9	2	2	9
3	3	0	3	3	0
4	3	3	4	3	3
5	3	6	5	3	5
6	3	9	6	3	8
7	3	11	7	3	11
8	4	2	8	4	2
9	4	4	9	4	4
10	4	6	10	4	6
11	4	8	11	4	8
12	4	10	12	4	10
13	5	0	13	5	0
14	5	2	14	5	2

SOURCE: <u>The World Almanac & Book of Facts</u>, 1986 edition. Copyright © Newspaper Enterprise Association, Inc. 1985, New York, NY 10166. Reprinted by permission of the publisher.

Activity 15 - Contributions of "Special" Family Members

CONTENT AREA:	Family Relationships
LEVEL:	Intermediate
CONTENT OBJECTIVES:	Identify how family members who are different or have special needs can contribute to family life. Describe the ways in which teenagers can encourage their "special" family members to participate in family activities.
MATHEMATICS OBJECTIVES:	Round decimal numerals. Subtract decimals. Add decimals.

Buy Generics and Reap Big Savings

"Every drug has two main names: the generic and the trade or brand name. For example, the antibiotic with the generic name ampicillin is marketed by Parke-Davis, its manufacturer, under the trade name of Amcill.

Any manufacturer that develops and patents a new drug is allowed to sell it exclusively for seventeen years. After that, other companies may apply to the Food and Drug Administration to make the drug, but they still cannot use the original trade name. So they bring out an identical product under a new trade name or offer it less expensively under its generic name."

Granny, our 90 year old great-grandmother, lives with us. She bakes pies - apple mostly, and enjoys hearing us talk about our friends and school. She loves to tell stories about "the good old days." Because of arthritis, Granny must take medication regularly.

Prescription drugs are expensive. We compare the costs at different stores and also use generic drugs when we can. Help us by finding the least expensive store and the savings. The first drug is done for you. Round all numbers to the nearest dollar.

Remember: If the digit after the place to be rounded is less than 5, the digit to be rounded stays the same... If the digit after the place to be rounded is greater than or equal to 5, it goes up:

ex.: $13.65 \approx 14$ $13.45 \approx 13$

SOURCE: Woman's Day, December 26, 1985. Printed by permission of the publisher.

PRESCRIPTION SHOPPING: HOW STORES, GENERICS AND TRADE NAMES COMPARE*

TRADE NAME DRUG equivalent generic drug	Large chain #1	Large chain #2	Independent "corner drug"	Mail order (America's Pharmacy)
ALDOMET (250 mg)	$16.95	$16.39	$25.75	$16.49
methyldopa (250 mg)	$12.95	$14.39	$18.90	$14.96
ELAVIL (25 mg)	$15.95	$15.71	$23.00	$15.79
amitriptyline (25 mg)	$ 2.89	$ 5.99	$10.00	$ 5.47
LOMOTIL (5 mg)	$25.75	$23.09	$30.16	$27.33
diphenoxylate with atropine (5 mg)	$ 4.85	$ 8.20	$15.01	$ 6.98

*July 1985 prices for 100 tablets from Washington, (DC) area store

		Chain #1	Chain #2	Corner Drug	Mail Order
a	ALDOMET	$17	$16	$26	$16
b	GENERIC				
c	ELAVIL				
d	GENERIC				
e	LOMOTIL				
f	GENERIC				

2. Which store sells each of the following at the lowest price?
   a) Aldomet? _____ b) its generic? _____
   c) Elavil? _____ d) its generic? _____
   e) Lomotil? _____ f) its generic? _____

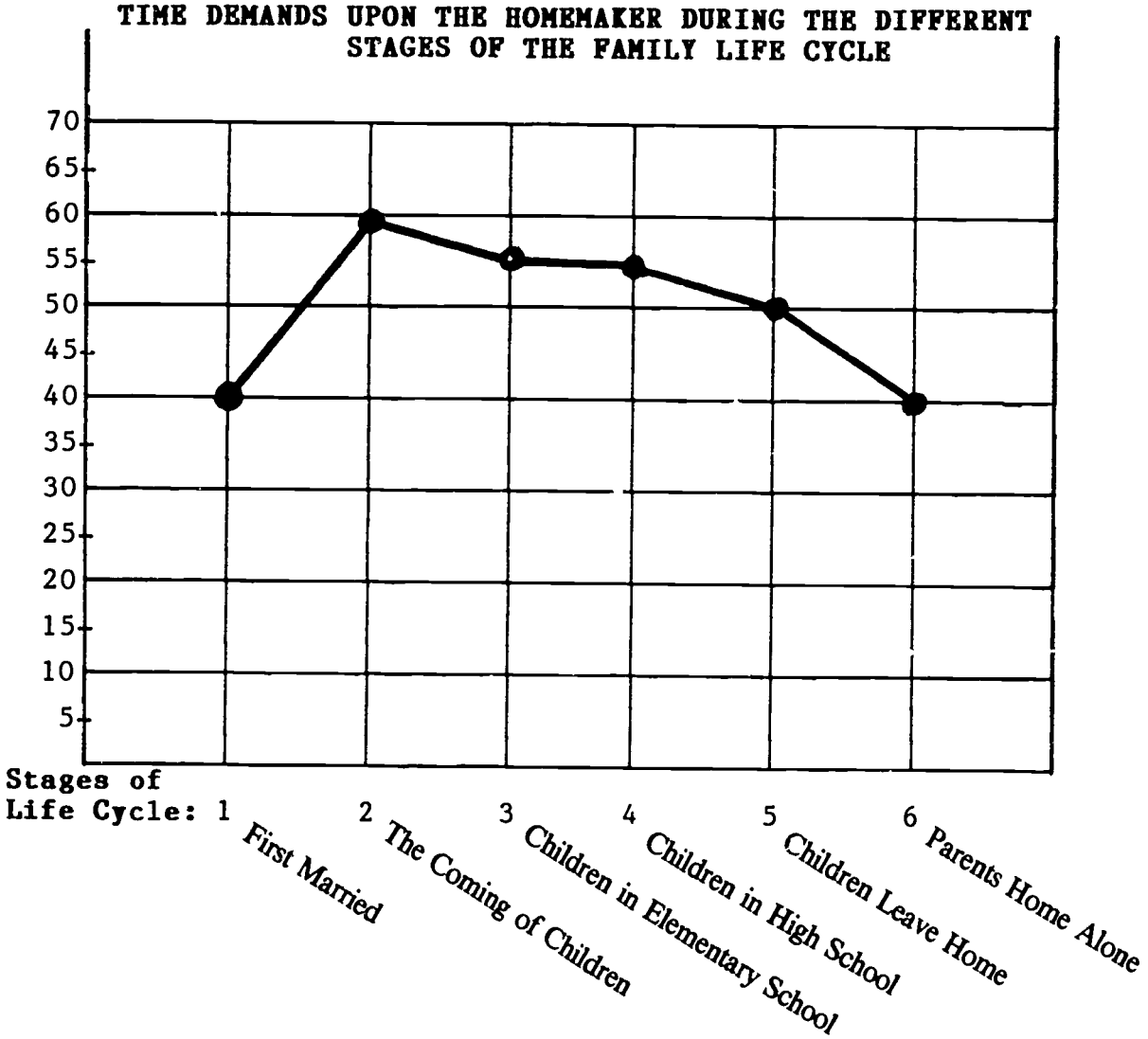
3. Which store <u>averages</u> the lowest price for each brand? Would you shop there? _____

4. How would you help Granny decide where her medicine should be purchased? _____

5. Why is the "corner drug" so much more expensive? What benefits are there to shopping at the corner drug?

Activity 16 - Time Demands and the Family Cycle

CONTENT AREA:	Family Relationships
LEVEL:	Intermediate
CONTENT OBJECTIVE:	Identify social, cultural, and economic changes which may affect the structure and functions of the family.
MATHEMATICS OBJECTIVE:	Read, interpret data from graphs.



1. During which stages were the same number of hours devoted to family responsibilities?

2. If the "waking" hours in a day are 16 hours per day, how many waking hours are there in a week?

   Use the weekly waking hours as a base and round off all percents to the nearest whole percent.

3. What percent of hours are spent by the homemaker during cycle 2?

   Hint: 60 is what % of weekly waking hours?

   Use percent proportion: $\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$

4. What percent of hours are spent by the homemaker during cycle 3?

5. What percent of hours are spent by the homemaker during cycle 4?

6. What is the percent of increase in the time demands between cycles 1 and 2?

7. What is the percent of decrease in the time demands between cycles b) 5 and 6?

8. The graph represents data collected prior to the 1980's. We have seen that more mothers are now working and not at home. How many hours per week do you think mothers and fathers now spend in the care of the children and home during the cycles given in the graph? Do you feel this time will increase or decrease by the year 2000? Why?

Activity 17 - Keeping the Family Secure

CONTENT AREA:	Family Relationships
LEVEL:	Introductory
CONTENT OBJECTIVE:	Determine the best possible security system to meet the needs of your family.
MATHEMATICS OBJECTIVE:	Solve a percent problem involving sales tax.

What are the different ways that families provide security for each other? The protection of property is an area of great concern, especially in urban districts. Although property crime decreased in 1984, seven percent of all households in urban areas had an attempted or completed burglary. This number represents seven out of every one hundred homes and apartments you pass each day! (In suburban areas, the figure is 4.8% and in rural areas the figure is 4.5%).

Families protect themselves in various ways and many use timers to turn lights and radios on and off at set times. This gives the illusion that the family is at home and burglars are less likely to rob an occupied home.

John's Discount Supply Store is stocking security devices for a big sale. The five types the store will have available are listed. Find the amount of tax the state collects on each one at the regular price and sale price. The state tax is 6%. Example 1 is done for you using the percent proportion method and the multiplication method.

SECURITY DEVICE	TAX ON THE SALE PRICE	TAX ON THE REGULAR PRICE
1. Sale Price $ 9.88 Regular Price $ 12.95	1) $\frac{6}{100} = \frac{x}{9.88}$ $100x = 59.28$ $x = .59$ 59¢	$ 12.95 x .06 $ .7770 $.78
2. Sale Price $ 8.47 Regular Price $ 10.95	2)	
3. Sale Price $ 6.97 Regular Price $ 8.95	3)	
4. Sale Price $12.97 Regular Price $ 16.95	4)	

5. Sale Price $ 9.97 Regular Price $ 11.95 5)

---

6. What is the final cost to the consumer at the sale price for ex. 3? ex. 4?

7. Since the state makes less money when a store has a sale, should the state prohibit or limit the number of "Sales" a store can have?

8. Why is it safer to chnge the time settings periodically?

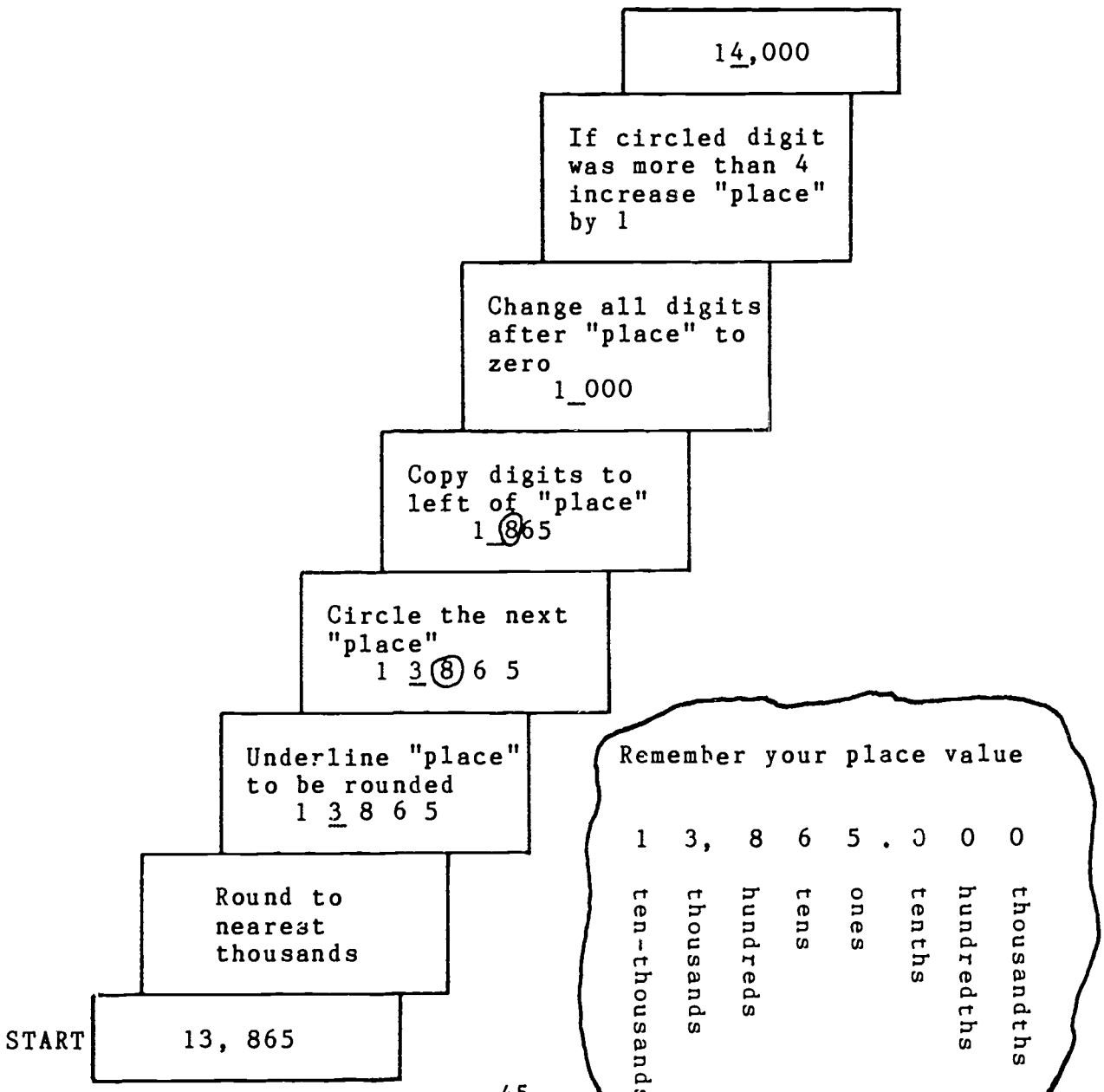
Activity 18 - How Much Does College Cost?

CONTENT AREA: Family Relationships
LEVEL: Introductory
CONTENT OBJECTIVES: Make a decision based on a profile of personal wants, needs, values, and attitudes and relate decisions to the family's values.
MATHEMATICS OBJECTIVE : Round decimal numerals.

Do you think about attending college? Do you have any sense of what colleges cost? Listed below are the costs of some colleges.

Often it is easier to discuss and compare numbers which are rounded off. Round each cost to the nearest hundreds, thousands and ten thousands. Example 1 is done for you.

STEPS TO ROUNDING NUMBERS



MOST EXPENSIVE COLLEGES

		1986 YEARLY COST	HUNDREDS	THOUSANDS	TEN THOUSANDS
1	BENNINGTON COLLEGE	$15,810	$15,800	$16,000	$20,000
2	SARAH LAWRENCE COLLEGE	15,435			
3	BARNARD COLLEGE	15,276			
4	MIT	15,230			
5	HARVARD UNIVERSITY	15,100			
6	YALE UNIVERSITY	15,020			
7	COLUMBIA UNIVERSITY (School of Nursing)	15,005			
8	TUFTS UNIVERSITY	14,983			
9	PRINCETON UNIVERSITY	14,940			
10	DARTMOUTH COLLEGE	14,919			

11. Write in name of local community college and research yearly costs.

12. Write in name of a state university and research yearly costs.

13. Write in name of nearest state college and research yearly costs.

14. Do you want to go to college?

15. How do you feel you would benefit from going to college?

16. How would your family benefit from your going to college?

17. What are some resources you would use to finance a college education?

Activity 19 - Marriage — with or without Consent

CONTENT AREA:	Family Relationships
LEVEL:	Introductory
CONTENT OBJECTIVE:	Examine data that a high school counselor would consider in advising students about marriage.
MATHEMATICS OBJECTIVES:	Find the percent one number is of another. Round decimal numerals.

If you were a counselor, would you use data on marriages and divorces to counsel high school students about marriage? What are some of the reasons why young people marry? What are some of the disadvantages you would raise as a counselor?

MARRIAGE INFORMATION

MARRIAGEABLE AGE REQUIREMENTS

STATE	WITH CONSENT		WITHOUT CONSENT		BLOOD TEST		WAIT FOR LICENSE
	MEN	WOMEN	MEN	WOMEN	Required	Other state Accepted	
1) Alabama	14	14	18	18	Yes	Yes	None
2) Colorado	16	16	18	18	Yes	...	None
3) District of Columbia	16	16	18	18	Yes	Yes	3 days
4) Florida	17	17	18	18	Yes	No	None
5) Hawaii	16	16	18	18	Yes	Yes	None
6) Idaho	16	16	18	18	No	Yes	None
7) Maryland	16	16	18	18	None	None	48 hours
8) Missouri	15	15	18	18	None	Yes	3 days
9) Montana	15	15	18	18	Yes	Yes	None
10) Nebraska	17	17	18	18	Yes	Yes	2 days
11) New Jersey	16*	16*	18	18	Yes	Yes	72 hours
12) New Mexico	16	16	18	18	Yes	Yes	None
13) Oklahoma	16	16	18	18	Yes	No	None
14) Oregon	17	17	18	18	Yes	No	3 days
15) Pennsylvania	16	16	18	18	Yes	No	3 days
16) South Carolina	16	14	18	18	None	None	24 hours
17) South Dakota	16	16	18	18	No	No	None
18) West Virginia	16	16	18	18	Yes	No	3 days
19) Puerto Rico	18	16	21	21	Yes	None	None
20) Virgin Islands	16	14	18	18	None	None	8 days

*Statute provides for obtaining license with parental or court consent with no state minimum age.

SOURCE: The World Almanac & Book of Facts, 1986 edition. Copyright © Newspaper Enterprise Association, Inc. 1985, New York, NY 10166. Reprinted by permission of the publisher.

Use the chart to answer the following. Round off answer to the nearest whole percent. The first one is done for you.

1. What percent of the states listed

   a) allow girls to marry with consent at age 14? 15? 16? 17?

Age 14	Age 15	Age 16	Age 17
Ex: $\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$ $\frac{x}{100} = \frac{3}{20}$ $20x = 300$ $x = 15$ 15% can marry at 14			

   b) allow men to marry without consent at age 18? 19? 21?

   c) require a blood test?

   d) require a waiting period for the license less than 2 days.

Number of Marriages and Divorces for selected states in 1984

STATE	MARRIAGES	DIVORCES
Alabama	47,487	25,483
Alaska	6,519	3,904
Connecticut	25,080	11,226
Hawaii	14,891	4,756
New Jersey	62,429	28,469
New York	176,654	61,075
Rhode Island	7,942	3,640

In the chart below round off the number of marriages and divorces to the nearest thousands.

	MARRIAGES	**DIVORCES**
a) Alabama		
b) Alaska		
c) Connecticut		
d) Hawaii		
e) New Jersey		
f) New York		
g) Rhode Island		

SOURCE: The World Almanac & Book of Facts, 1986 edition.

FOODS AND NUTRITION

Lesson Plan 3

CONTENT AREA: Foods and Nutrition
LEVEL: Introductory
CONTENT OBJECTIVE: Calculate personal average caloric intake.
MATHEMATICS OBJECTIVE: Solve a problem involving proportions.

MATERIALS NEEDED: Worksheet

MOTIVATION: Ask class to "guesstimate" how much they would have to walk, run or swim to burn off

1 hamburger
1 oz. potato chips
12 oz. cola
1 cup ice cream

LESSON:

It takes a person who weighs 150 lbs. 32 minutes of running to burn off the 418 calories contained in a single hamburger. Suppose someone weighs 100 lbs., will he have to run longer or less time to burn off the calories from that hamburger? We solve the problem by making a proportion:

$$\frac{\text{32 minutes for the 150 lbs.}}{} = \frac{\text{how many minutes for 100 lbs.?}}{}$$

$$\frac{32}{150} = \frac{n}{100}$$

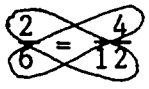
SOLVING PROPORTIONS

Notice that in the proportion

$$\frac{2}{6} = \frac{4}{12}$$

that $6 \times 4 = 2 \times 12$

These are called "cross products."



$6 \times 4 = 2 \times 12$
$24 = 24$

In a proportion the cross products are equal.

$\frac{32}{150} = \frac{n}{100}$ This is a proportion so its cross products are equal
$150n = 32 \times 100$
$150n = 3200$
$\frac{150n}{150} = \frac{3200}{150}$ Divide both sides by 150 to get n alone $\left(\frac{150}{150} = 1\right)$
$n = 21.3$

Substitute 21.3 for n

$\frac{32}{150} = \frac{21.3}{100}$ It takes a 100 lb. person 21.3 minutes to burn off the hamburger.

Let's try another one:

How long will it take a 120 lb. person to burn off the 150 calories gained from eating the potato chips if she walks it off?

$$\frac{39 \text{ minutes}}{150 \text{ lbs.}} = \frac{N \text{ minutes}}{120 \text{ lbs.}}$$

$$39 \times 120 = 150\ N$$

$$4680 = 150\ N$$

$$\frac{4680}{150} = \frac{150\ N}{150}$$

$$31.2 \text{ min.} = N$$

Do the worksheet, you might change your mind about some eating habits.

SUMMARY:

To compare things, we often use proportions. A proportion is a statement of equality between two ratios. In a proportion, the cross products are always equal.

Activity 20 - How to Burn Off Favorite Food Calories

CONTENT AREA:	Foods and Nutrition
LEVEL:	Introductory
CONTENT OBJECTIVE:	Calculate personal average caloric intake.
MATHEMATICS OBJECTIVE:	Solve a problem involving proportions.

Determine how much you have to run, walk, bike or swim to burn off your favorite foods. See example 1 below. Round all answers to the nearest whole minute.

RUN, WALK, BIKE OR SWIM OFF YOUR FAVORITE FOODS

Sample Foods	Calories	How to Burn Them (for the average 150 lb. Individual)	How to Burn Them Off at Your Weight - _____ (fill in your weight)
1) 1 slice pizza	145	Swim 18 minutes	
2) 4 oz. hamburger	418	Run 32 minutes	
3) 1 med. baked potato	145	Swim 18 minutes	
4) 1 ham & cheese sandwich	458	Bike 72 minutes	
5) 1 oz. potato chips	150	Walk 39 minutes	
6) 1 tbsp. peanut butter	35	Swim 12 minutes	
7) 1 oz. jelly beans	28	Bike 4 minutes	
8) 4 cookies	200	Walk 53 minutes	
9) 1 slice chocolate cake w/chocolate icing	365	Bike 60 minutes	
10) 1 cup ice cream	270	Walk 71 minutes	
11) 12 oz. cola	144	Swim 18 minutes	

ex 1: 1 slice pizza, your weight 120 lbs.

Step 1 $\frac{\text{Swim 18 min.}}{\text{150 lbs.}} = \frac{\text{Swim ? min.}}{\text{120 lbs.}}$

Step 2 $\frac{18}{150} = \frac{x}{120}$

Step 3 $150x = 2160$

Step 4 $x = 14.4$

Answer: Approximately 14 minutes

SOURCE: "Dieting Success Strategies", Family Circle Magazine, January 21, 1986. Reprinted by permission of publisher.

Activity 21- Burning Off Calories

CONTENT AREA:	Foods and Nutrition
LEVEL:	Intermediate
CONTENT OBJECTIVE:	Determine caloric needs for different activities and ages, and to calculate his/her own caloric needs.
MATHEMATICS OBJECTIVE:	Find a number which completes a proportion.

CALORIE BURN-OFF CHART

Activities	Calories Burned Per Hour	Activities	Calories Burned Per Hour
Aerobics	396	Shoveling snow	600
Archery	264	Singing	add 50 cal. per hour to whatever activity you're doing while singing
Badminton	396		
Basketball	564		
Bicycling (9.4 mph)	381		
Card playing	102	Skiing-cross country	582
Cleaning windows	240-300	Skiing-downhill	402
Climbing stairs	150	Snowshoeing	678
Cooking	75-80	Squash	864
Dancing-ballroom	210	Swimming	486
Dancing-rock	420	Stacking wood	294-312
Driving a car	70	Table tennis	276
Gardening-digging	516	Tennis	444
Gardening-mowing	456	Vacuum cleaning	100
Gardening-raking	222	Volleyball	204
Golf	348	Walking (3 mph)	228
Ironing	110-200	Walking while pushing a baby carriage	100-250
Mopping floors	240-300		
Running (9 minute mile)	786	Washing dishes	59

Most Americans feel they are either too fat, too thin or are afraid of being too fat or too thin The best way for some people to control their weight is through exercise (mopping floors works - help your mom and dad!)

SOURCE: "Dieting Success Strategies," Family Circle Magazine, January 21, 1986. Reprinted by permission of publisher.

Find the number of hours (or minutes: 60 min. = 1 hr.) you would have to perform each activity to burn off calories for one food you like from the food list below.

FOOD LIST (Choose one item)

	ITEM	CALORIES
1.	3 oz. beefsteak	330
2.	chicken	250
3.	pizza	145
4.	macaroni	430
5.	hamburger	418
6.	3 oz. potato chips	450
7.	cup ice cream	270

Ex: How much ironing would I have to do to burn off the calories from 1 cup of ice cream?

cup ice cream = 270 calories
ironing = 110 calories burned per hour

$$\frac{\text{ice cream } 270}{\text{ironing } 110} = \frac{?\text{ hours}}{1\text{ hour}}$$

$$\frac{270}{110} = \frac{x}{1} \text{ (cross multiply)}$$

$$110x = 270$$
$$x = 2.45$$

Round to nearest tenth
$x = 2.5$

It would take $2\frac{1}{2}$ hours of ironing to burn off the ice cream calories.

Use proportions to find how long it would take you to burn off the calories of the food you chose by each activity listed. Round off the nearest tenth.

Item Chosen Calories

CALORIES BURNED PER HOUR	Time to Burn
1) Aerobics (396)	
2) Washing dishes (59)	
3) Skiing-Downhill (402)	
4) Swimming (486)	
5) Basketball (564)	
6) Table Tennis (276)	
7) Dancing (Rock) (420)	
8) Vacuum cleaning (100)	
9) Ironing (110) (Yes, ironing!!)	
10) Shoveling snow (600)	
11) Mopping floors (240)	
12) Cooking (75)	

Activity 22 - Changing Eating Patterns

CONTENT AREA:	Foods and Nutrition
LEVEL:	Intermediate
CONTENT OBJECTIVE:	Identify certain values which influence the food one eats and associate different values to food selection and sound nutrition.
MATHEMATICS OBJECTIVE:	Calculate percent of increase/ decrease

Do you eat more or fewer red meats? Why? Does the country consume more fish than in previous years? Why?

CONSUMPTION OF MAJOR FOOD COMMODITIES PER PERSON

Source: Economic Research Services U.S. Agriculture Department

Commodity	1982	1983	1984
Meats	139.3	144.0	143.5
Beef	77.3	78.70	78.6
Veal	1.6	1.60	1.8
Lamb and mutton	1.5	1.5	1.4
Pork	59.0	62.20	61.7
Fish (edible weight)	12.3	13.10	13.6
Poultry products:			
Eggs	33.8	233.10	33.0
Chicken (ready-to-cook)	52.9	53.90	55.7
Turkey (ready-to-cook)	10.8	11.20	11.4
Dairy products:			
Cheese	20.0	20.10	21.7
Condensed and evaporated milk	7.1	7.00	7.5
Fluid milk and cream (product weight)	242	245	245
ice cream (product weight)	17.5	17.9	18.0
Fats and Oils-Total fat content	58.4	59.6	58.6
Butter (actual weight)	4.7	5.1	5.0
Margarine (actual weight)	11.1	10.4	10.4
Lard	4.1	1.8	2.1
Shortening	18.7	18.6	21.3
Other edible fats and oils	23.3	24.8	21.2
Fruits:			
Fresh	83.9	87.5	86.6
Citrus	24.0	27.7	23.0
Noncitrus	60.0	59.8	63.6
Processed:			
Canned fruit	16.0	16.0	NA
Canned juice	13.8	16.2	NA
Frozen (including juices)	14.1	15.0	13.5
Chilled citrus juices	3.5	4.1	NA
Dried	2.8	2.9	NA

SOURCE: The World Almanac & Book of Facts, 1986 edition. Copyright © Newspaper Enterprise Association, Inc. 1985, New York, NY 10166. Reprinted by permission of the publisher.

Commodity	1982	1983	1984
Vegetables:			
Fresh	71.2	71.0	75.4
Canned (excluding potatoes and sweet potatoes)	45.7	45.3	NA
Frozen	10.7	11.1	NA
Potatoes	115.4	120.3	-
Sweet potatoes	4.9	5.3	-
Grains:			
Wheat flour	114	116.0	118.0
Rice	11.8	9.8	NA
Other:			
Coffee	7.5	7.6	7.7
Tea	.8	.7	0.7
Cocoa	3.0	3.3	3.6
Peanuts (shelled)	6.7	6.5	6.9
Dry edible beans	6.6	6.5	NA
Melons	NA	NA	NA
Sugar (refined)	73.7	71.0	67.5

Find the percent of increase ↑ or decrease ↓ for the following items for the indicated years. Be sure to state (increase ↑) or (decrease ↓). Ex. 1 is done for you. (Round all answers to the nearest whole percent.)

ITEM	Amount Consumed 1982	Amount Consumed 1984	Difference ↑ or ↓	% of change
1. Meats	139.3	143.5	143.5 ↑ 139.3 4.2	amount of change / original amount = % / 100 4.2 / 139.3 = x / 100 3.01 = x Rounded x = 3
Answer: The consumption of meat has increased by 3%.				
2. Fish				
3. Chicken				
4. Margarine				
5. Butter				
6. Non-citrus				
7. Fresh Vegetables				

Activity 23 - Food Magic Rectangle

CONTENT AREA:	Foods and Nutrition
LEVEL:	Introductory
CONTENT OBJECTIVE:	Identify the Basic Four food groups and categorize foods according to these groups.
MATHEMATICS OBJECTIVE:	Solve percent problems.

SOLVING PERCENT PROBLEMS

All percent problems can be solved by using the percent proportion.

$$\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$$

e.g.: 40% of 5 is 2

Since % means hundredths, 40 out of 100 is the same as 2 out of 5

$$\frac{40}{100} = \frac{2}{5} \text{ since, } \frac{\%\ (40)}{100} = \frac{(2)\text{ is part}}{\text{of whole }(5)}$$

If one unit is missing, the proportion can still be used.

a) ? % of 5 is 2	b) 40% of ? is 2	c) 40% of 5 is ?
$\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$	$\frac{?}{100} = \frac{\text{is part}}{\text{of whole}}$	$\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$
$\frac{x}{100} = \frac{2}{5}$	$\frac{40}{100} = \frac{2}{x}$	$\frac{40}{100} = \frac{x}{5}$
cross multiply: $5x = 200$	$40x = 200$	$120x = 200$
divide: $x = 40$	$x = 5$	$x = 2$
40% of 5 is 2	40% of 5 is 2	40% of 5 is 2

A. Use proportions to solve these percent problems.

a) Yogurt (3 is what % of 15?)___

b) ice cream (What is 10% of 10?)___

c) cheese (What is 25% of 12?) ___

d) peas (12.5% of 48 is what?) ___

e) nuts (14 is what % of 200?) ___ i) strawberries (What is 20% of 25?)___

f) eggs (What is 20% of 55?) ___ j) spaghetti (1.5 is what % of 75? ___

g) tomato (2 is what % of 50?) ___ k) waffles (15% of 60 is ___?)___

h) carrots (3 is 20% of what) ___ 1) muffins (26 is 200% of ___?) ___

B. Put the answer and the corresponding name of the food in the magic rectangle. When you have correctly answered each problem, name the food group that each column represents. If you have answered correctly, the sum of each row will be 32 and the sum of each column will be 24. The first column is done for you.

MAGIC* RECTANGLE

a) 20 YOGURT	d)	g)	j)
b) 1 ICE CREAM	e)	h)	k)
c) 3 CHEESE	f)	i)	1)

FOOD GROUP: MILK _____ _____ _____

* The ancients believed that figures having special sums like this had magic powers.

Activity 24 - U.S. Recommended Dietary Allowance

CONTENT AREA:	Foods and Nutrition
LEVEL:	Introductory
CONTENT OBJECTIVES:	Explain the United States Recommended Dietary Allowance (U.S. RDA) and locate Recommended Dietary Allowance (RDA) information on food package labels.
MATHEMATICS OBJECTIVE:	Find the number which completes a proportion.

Recommended Daily Dietary Allowances For Selected Age Groups

	Age (years)	Weight (lbs.)	Protein(grams)	Fat Soluble Vitamins			Water Soluble Vitamins	
				Vitamin A[1]	Vitamin D[1]	Vitamin E[1]	Vitamin C (mg)	Vitamin B_1(6mg)
Males...	11-14	99	45	1000	10	8	50	1.8
	15-18	145	56	1000	10	10	60	2.0
	19-22	154	56	1000	7.5	10	60	2.2
	23-50	154	56	1000	5	10	60	2.2
	51+	154	56	1000	5	10	60	2.2
Females.	11-14	101	46	800	10	8	50	1.8
	15-18	120	46	800	10	8	60	2.0
	19-22	120	44	800	7.5	8	60	2.0
	23-50	120	44	800	5	8	60	2.0
	51+	120	44	800	5	8	60	2.0

SOURCE: The World Almanac & Book of Facts, 1986 edition.

I. Use proportions to determine your own RDA. Find your age and sex in the chart and develop this proportion:

How much protein do you need if you are a 12 year old male weighing 85 pounds?

$$\frac{\text{Male 11-14 weight}}{\text{nutrient allowance}} = \frac{\text{your weight}}{n} \quad \text{(Proportion)}$$

$$\frac{99}{45} = \frac{85}{n} \qquad \text{(RDA Protein = 45 grams)}$$

$$99n = 45 \times 85 \qquad \text{cross multiply}$$

$$99n = 3825$$

$$\frac{99n}{99} = \frac{3825}{99}$$

$$n = 38.6 \text{ (round off to nearest whole number)}$$

RDA Protein = 39 grams (for a 12 year old male weighing 85 pounds)

Complete for your age and sex.

My RDA for:

Vitamin A	Vitamin B	Vitamin C

Vitamin D	Vitamin E

II. Use labels from food products in your classroom to locate U.S. RDA information.

Activity 25 - Yummy Bread!

CONTENT AREA:	Food and Nutrition
LEVEL.	Introductory
CONTENT OBJECTIVE:	Identify abbreviations for five different types of measures commonly used in recipes and to demonstrate correct measuring techniques for solid, liquid and dry ingredients.
MATHEMATICS OBJECTIVE:	Multiply fractions and mixed numbers.

Use the recipe below to plan the following:

Indicate the amount of each ingredient you would need to:

GIVE A GREAT PARTY	1. Make 5 loaves	2. Make a loaf for each student in your class
PUMPKIN-PECAN BREAD		
1 $\frac{3}{4}$ cups all-purpose flour		
$\frac{3}{4}$ teas. salt		
1 teas. baking soda		
$\frac{1}{4}$ teas. baking powder		
$\frac{1}{2}$ teas. ground nutmeg		
$\frac{1}{4}$ teas. ground cinnamon		
1 $\frac{1}{3}$ cups granulated sugar		
$\frac{1}{3}$ cup vegetable shortening		
$\frac{1}{2}$ teas. vanilla		
2 large eggs		
1 cup canned solid-pack pumpkin		
$\frac{1}{3}$ cup water		
$\frac{1}{2}$ cup toasted chopped pecans		

Heat oven to 325°. Grease a 9x5x3 inch loaf pan. Mix flour, salt, baking soda, baking powder, nutmeg and cinnamon. Beat sugar, shortening and vanilla in large bowl with electric mixer until well blended. Add eggs one at a time, beating well after each. On low speed mix in pumpkin until well blended. Add dry ingredients alternately with water, then the nuts. Turn into prepared pan. Bake about 1 hour or until pick inserted in center comes out clean. Cool in pan on rack 10 minutes. Unmold on rack; cool completely. Makes 1 loaf, 18 slices. Per slice: 170 cal, 2 g pro, 26 g car, 7 g fat, 28 mg chol, 162 mg sod.

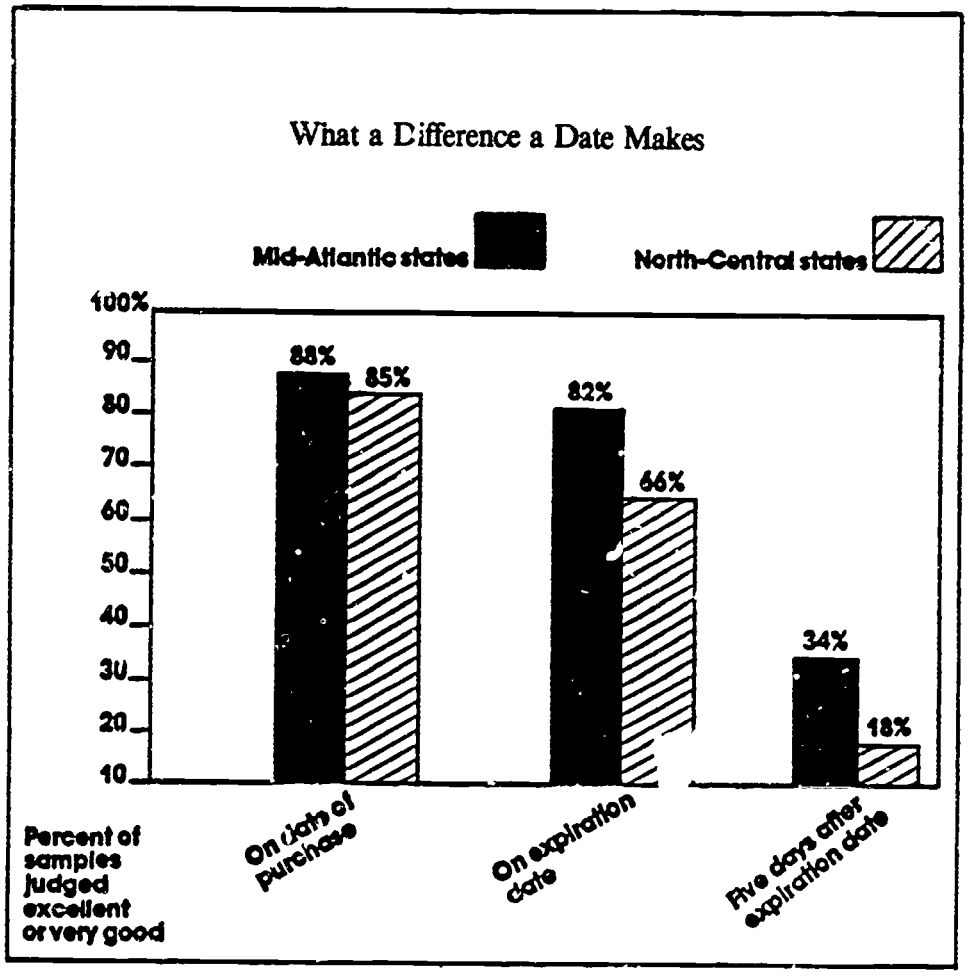
SOURCE: Woman's Day, December 26, 1985. Printed by permission of the publisher.

Activity 26 - Care and Storage of Milk and Milk Products

CONTENT AREA:	Foods and Nutrition
LEVEL:	Introductory
CONTENT OBJECTIVE:	Demonstrate correct procedures for preparation and storage of foods in the milk and milk products group.
MATHEMATICS OBJECTIVES:	Calculate percentage of a number. Find percent of increase, decrease. Read a graph.

QUALITY OF MILK VS. LENGTH OF STORAGE

Three hundred ninety-six (396) samples were judged for the test results cited in the graph. Half were from each section, Mid-Atlantic and North-Central states.



HOW MANY WERE RATED EXCELLENT OR VERY GOOD IN EACH CATEGORY? Round off to the nearest whole. Ex. 1 is done for you.

	Mid-Atlantic	North-Central
On Date of Purchase	1) 198 purchased and 88% were judged excellent or very good. What is 88% of 198? $\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$ $\frac{88}{100} = \frac{x}{198}$ $100x = 17424$ $x = 174.24$ $x = 174$ 174 samples were excellent or very good.	2)
On Date of Expiration	3)	4)
Five days after expiration date	5)	6)

7) What is the percent of decrease for the Mid-Atlantic States between the date of purchase and the expiration date? For the North-Central States? (Hint: find the amount of decrease then use proportion to find what percent the amount is of the original number of samples.)

8) Should there be more stringent laws governing the sale of milk after expiration dates? On setting expiration dates?

9) Why are there differences in different parts of the country? Should there be? Why or why not?

10) What kinds of problems arise when people use bad milk?

Activity 27 - Qualifications for a Career in the Food Industry

CONTENT AREA: Foods and Nutrition
LEVEL: Intermediate
CONTENT OBJECTIVE: Identify at least one personal characteristic that could influence the type of job with which he/she would be satisfied, and relate this to the foods industry.
MATHEMATICS OBJECTIVES: Round off numbers.
Estimate.
Find a percentage of a number.

JOBS: JOB OPENINGS TO 1995 AND CURRENT EARNINGS*			
OCCUPATION	EST. NO. OF JOBS 1982 (000)	% CHANGE 1982-95 (est)	Median Weekly Earnings (dollars)
Bartenders	384	30-49	199
Cooks & Chefs	1,200	30-49	178
Butchers	191	- 6	340
Waiters/Waitresses	1,770	30-49	158
Truck Drivers (local)	2,400	20-29	394
Dietitian	44	30-49	477

1. Round the estimated number of 1982 job openings to the nearest hundred (thousand). If a range is given, use the higher percent of change to estimate the number of openings in 1995.

2. Which job listed will have a decrease? Explain why that job might anticipate a decrease.

3. Why is it important to project the job market in 1995? Who might find this information useful? Would this information make you reconsider a particular job? Why?

4. List personal characteristics you think are necessary to be successful in one of the jobs listed.

*SOURCE: The World Almanac & Book of Facts, 1986 edition. Copyright © Newspaper Enterprise Association, Inc. 1985, New York, NY 10166. Reprinted by permission of the publisher.

CONSUMER EDUCATION

Lesson Plan 4

CONTENT AREA: Consumer Education
LEVEL: Intermediate
CONTENT OBJECTIVE: Identify the ways in which career choices influence an individual's choice as a consumer of goods and services.
MATHEMATICS OBJECTIVE: Round decimal numerals.

MATERIALS NEEDED: Worksheet

MOTIVATION: How many of you have ever had a job? Expect to have a job? Want a job? What kind of salary do you expect to make? What kind of salary do you need to afford the things you need? The things you want? Would you take a job you didn't like if it offered a large salary? Would you keep a job you liked for a small salary?

LESSON:

Often you will want or need to compare things without being terribly precise. Getting an estimate is sometimes sufficient to give you the information you need. Rounding a number such as 1313000 to the nearest hundred thousand gives you a close picture of the size of 1313000.

Place Value

millions		hundred thousands	ten thousands	thousands		hundreds	tens	ones		tenths	hundredths	thousandths	ten thousandths	hundred thousandths
1	,	3	1	3	,	0	0	0	.					

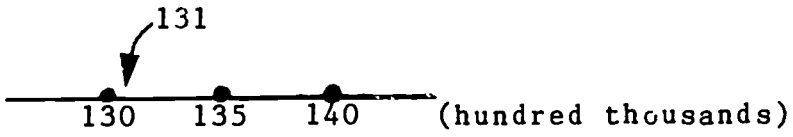
Round 1313000 to the nearest hundred thousand.

hundred thousands - all digits after this place will become a zero.

The hundred thousands place will stay the same or go up by one depending upon the number behind it. If the digit in the ten thousands place is less than 5, then 1313000 is closer to 1300000 than to 1400000. If the digit in the next place is greater than or equal to 5, then 1313000 is closer to 1400000.

Is this closer to 130 hundred thousands or 140 hundred thousands?

131 | 0000



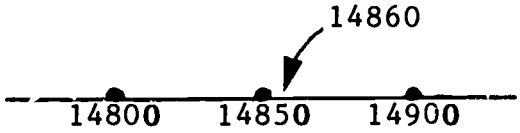
131 is closer to 130 so rounded off the answer is 130 hundred thousands or 1300000.

Try another:

round 14862 to the nearest hundreds. The 8 is in the hundreds place. 14862 Pay attention to the digit behind the 8.

148 6 | 0

Is this closer to 148 hundreds or 149 hundreds?



14860 is closer to 14900 so the answer is 14900

ACTIVITY SHEET: See Activity 28

SUMMARY:

Round off using the rule (greater than or equal to 5 goes up one unit, less than 5 stays the same) or use a number line to picture to which value the number is closer.

Activity 28 - Careers in Consumer Services

CONTENT AREA:	Consumer Education
LEVEL:	Intermediate
CONTENT OBJECTIVE:	Identify the ways in which career choices influence an individual's choices as a consumer of goods and services.
MATHEMATICS OBJECTIVE:	Pound decimal numerals.

JOBS: JOB OPENINGS TO 1995 AND CURRENT OPENINGS*

	Est. No. of Jobs 1982 (000)	% Change 1982-1995 (est.)	Median Weekly Earnings (Dollars)
LAWYERS	465	30-49	NA
PERSONNEL SPECIALIST	203	20-29	653
PURCHASING AGENT	191	20-29	453
BARTENDERS	384	30-49	199
CORRECTION OFFICERS	111	30-49	348
COOKS & CHEFS	1,200	30-49	178
COSMETOLOGIST	519	20-29	300
INTERIOR DESIGNERS	180	30-49	462
BUTCHERS/MEATCUTTERS	191	- 6	340
SOCIAL WORKERS	345	20-29	403
WAITERS/WAITRESSES	1,770	30-49	158
SCHOOL COUNSELORS	148	6- 9	471
SEC. SCHOOL TEACHERS	1,074	6- 9	405
COLLEGE FACULTY	744	- 6	490
INSURANCE AGENT, BROKER	361	20-29	673
REAL ESTATE AGENT, BROKER	337	30-49	327
RETAIL TRADE SALES WORKERS	3,367	20-29	300
TRAVEL AGENTS	62	30-49	NA
FLIGHT ATTENDANTS	54	20-29	404
CHEMISTS	89	20-29	635
APPLIANCE REPAIRERS	80	6- 9	340
DIETITIAN	44	30-49	477
URBAN PLANNER	21	6- 9	539
PSYCHOLOGIST	83	20-29	594
SOCIOLOGIST	6	20-29	594

Numbers in thousands e.g.: Accountants:
856 x 1000 = 856,000

SOURCE: The World Almanac & Book of Facts, 1986 edition.

1. Which job had the greatest number of openings in 1982?

2. Which job paid the highest salary in 1982?

3. Which job(s) will have the highest percent of positive change?

4. Which job(s) will have the greatest negative change?

5. Which jobs are in the consumer/homemaking field?

6. Take the five highest salaried jobs and estimate the salaries to the nearest hundreds. Rank order them from the highest to lowest paid jobs.

7. If you had one of the higher paying jobs, how would that affect your ability to purchase goods and services for your family?

8. If you had one of the lower paying jobs, how would that affect your ability to purchase goods and services for your family?

Activity 29 - Money, Money, Money!

CONTENT AREA:	Consumer Education
LEVEL:	Introductory
CONTENT OBJECTIVE:	List the values most important to him/her as these values relate to financial resources.
MATHEMATICS OBJECTIVE:	Solve a problem involving money.

In order to satisfy "wants" and "needs" that cost money, we must all find ways to accumulate money. Since most of us have to make money the "old fashioned way", from a very early age we are looking for ways to "EARN IT". Find out how much these young workers earn at their odd jobs.

1. If William makes $1.25 per hour cleaning rugs, how much money does he make for 3 hours, five days a week?

2. Keisha cleans second floor windows for $1.55 each. She cleans 7 windows for Mrs. Weaver, 8 windows for Mrs. Miller, and 6 windows for Mrs. Melvin. How much does she make?

3. Each week, for 8 weeks, Wanda mows lawns in the neighborhood. She is paid $3.50 per lawn. If she mows 6 lawns each week, how much does she make?

4. Maria takes the neighborhood dogs to the park for one hour each day. She charges $1.25 per dog and take 7 dogs. How much does she make each day?

5. If Chris makes $1.65 per hour baby sitting, how much money does he make for 4 hours, five days a week?

6. David cleans first-floor windows for $1.25 each. He cleans 6 windows for Mrs. Sanders, 9 windows for Mrs. Byrd, and 8 windows for Mrs. Williams. How much does he make?

7. Each week for six weeks, Kyle mows lawns in the neighborhood. He is paid $3.55 per lawn. If he mows 3 lawns each week, how much does he make?

8. Luis takes the neighborhood children to the park for one hour each day He charges $1.25 per child and takes 5 children. How much does he make each day?

9. Brian works each weekend collecting newspapers. If he makes $.50 per 100 lbs. and collects an average of 300 lbs. each week, how much does he make in a year (52 weeks)?

10. Wayne works each weekend collecting bottles. If he makes $.65 per 100 lbs. and collects an average of 600 lbs. each week, how much does he make in a year (52 weeks)?

Using their hard earned money, our young workers went shopping to buy Christmas and Hanukkah gifts.

11. David bought two compact discs for $7.00 each, 3 packages of gift wrapped soap for $5.50 each and a game for $8.99. How much did he spend? If the sales tax is 6%, how much was charged for sales tax? How much change did he receive from a $50 bill?

12. Luis purchased a set of glassware for $12, a small bird feeder for $7.99, three footballs for $7.49 each, and a cassette tape on sale for $3.99. How much was his bill including 6% sales tax?

13. Keisha bought two video tapes for $5.99 each, 2 packages of socks for $4.99 each and a sweater for $24.95. There is no sales tax on clothing. What was the amount of sales tax charged on the tapes at 6%? (Round to the nearest penny) What was the total cost of her purchases? How much change did she receive if she gave the sales clerk $50.03?

14. If you have or would like a job, what kinds of purchases would you make for gifts? for yourself?

Activity 30 - Making a Budget

CONTENT AREA: Consumer Education
LEVEL: Intermediate
CONTENT OBJECTIVE: Develop a sample budget.
MATHEMATICS OBJECTIVE: Find a percentage of a number.

In the early 1970s, the following percents were given as averages for a yearly budget based upon an annual salary of $8760.

Food	20%
Clothing	15%
Shelter	20%
Home Operations	12%
Transportation	8%
Medical	5%
Savings	5%
Other	15%

Example
Food = 20 % of salary
What is 20% of $8760?

1. $\frac{20}{100} = \frac{x}{8760}$ 1. Percent proportion
2. $100x = 175200$ 2. Cross multiply
3. $x = 1752$ 3. Divide by 100

$1752 was spent on food annually.

CATEGORY	% OF EARNINGS	1. AMOUNT 1970	2. AMOUNT 1981	3. AMOUNT 1986
FOOD	20%	$1752		
CLOTHING	15%			
SHELTER	20%			
HOME OPERATIONS	12%			
TRANSPORTATION	8%			
MEDICAL	5%			
SAVINGS	5%			
OTHER	15%			

2. By 1981 the average household income (after taxes) had grown by 46% to $18,910. Find the amount spent yearly based upon the 1981 average. Put your answers in the chart above.

3. Research to find the average household income in 1986. Complete the chart (Use 1984, $25,401 if not available.)

4. Are these percents reasonable for your family? If not, what categories would you adjust and how much? Are there any categories which should be added? Deleted? What items would go into the "Other" category?

SOURCE: The World Almanac & Books of Facts, 1986 edition.

Activity 31 - Credit Borrowing

CONTENT AREA: Consumer Education
LEVEL.: Intermediate
CONTENT OBJECTIVE: Explain the concept of living on future income through the use of credit and borrowing.
MATHEMATICS OBJECTIVE: Divide fractions.

Are you using your money wisely when you borrow? When is it not sensible to use credit? How can you find the best "credit buy" so you are not DIVIDING up your assets?

A. Find the indicated quotients and match up the word or phrase under "Buying With Credit" with its correct description. Answers should be in lowest terms. Place the correct letter of the alphabet from Column II in the appropriate blank in Column I.

Column I. Buying With Credit			Column II. Vocabulary
___ 1.	$1\frac{7}{8} \div \frac{3}{4}$	An account which lets you pay for things at a later time.	a. 15 - finance charge
___ 2.	$4\frac{3}{5} \div \frac{1}{10}$	A record of things you have bought but not yet paid for.	b. 4 - installment buying
___ 3.	$5\frac{1}{2} \div \frac{1}{4}$	A promise to pay later.	c. 3 - promissory note
___ 4.	$8 \div 2\frac{1}{2}$	A card which identifies a person; a card that gives you the right to receive goods and services on credit.	d. $1\frac{1}{2}$ - interest
___ 5.	$3\frac{1}{2} \div \frac{1}{3}$	Paying a small amount toward something you are buying.	e. 22 - credit
___ 6.	$7\frac{1}{2} \div \frac{1}{2}$	A charge for paying a bill late.	f. $2\frac{1}{2}$ - charge account
___ 7.	$6 \div \frac{3}{2}$	Paying for something over a period of time.	g. $3\frac{1}{5}$ - credit card
___ 8.	$\frac{1}{2} \div \frac{1}{3}$	A charge for borrowing money.	h. $10\frac{1}{2}$ - down payment
___ 9.	$1\frac{1}{2} \div \frac{1}{2}$	A note you sign promising to pay back money you have borrowed.	i. 40 - budget
___ 10.	$8 \div \frac{1}{5}$	A plan for saving and spending.	j. 46 - charge statement

B. Discuss each of the above terms.

C. What are the charges for borrowing at banks? Department stores?

C

GLOSSARY OF CREDIT CARD TERMS

Billing Error – Any mistake in your monthly statement.

Credit Card – Any card, plate or coupon book used to borrow money or buy goods or services on credit

Credit History – The record of how you have borrowed and repaid debts

Debit Card – A plastic card, similar in appearance to a credit card, that can be used to make purchases, gain access to automatic teller machines and make other types of electronic transfers

Grace Period – The time between the purchase of a product or service, and the imposition of a finance charge

Finance Charge – The total dollar amount credit will cost

Transaction Fee – A fee charged to the card holder each time the card is used

For further information on credit cards contact your local consumer affairs office or:

Federal Reserve Board
Division of Consumer and Community Affairs
Washington, D.C. 20551
(202) 452-3946

Federal Trade Commission
Bureau of Consumer Protection
Division of Credit Practices
Washington, D.C. 20580
(202) 724-1139

AICPA

CONSUMERS EDUCATORS BUSINESS GOVERNMENT

Prepared by the American Institute of Certified Public Accountants in cooperation with the United States Office of Consumer Affairs, Washington, D.C. 20201.

American Institute of Certified Public Accountants
1211 Avenue of the Americas
New York, NY 10036-8775

THESE 25 TIPS MAY SAVE YOU MONEY

CHOOSING A CREDIT CARD?

1. Department stores and gasoline companies are good places to obtain your first credit card Pay your bills in full and on time, and you will begin to establish a good credit history

2. Bank cards are offered through banks and savings and loan associations Fees and finance charges vary considerably (from 12 5% to 21 6%), so shop around The average finance charge on bank cards for 1985 was 18 5%

3. If you usually pay your bill in full, try to deal with a financial institution with an interest-free grace period, which is the time after a purchase is made and before a finance charge is imposed, typically 25 to 30 days

4. If you're used to paying monthly installments, look for a card with a low monthly finance charge Be sure you understand how that finance charge is calculated For a list of banks offering low finance charges send $1 00, check or money order to BankCard Holders of America, 333 Pennsylvania Avenue, S E , Washington, D C , 20003 Request "Low Interest Rate List" A "No Annual Fee List," a list of banks offering cards with no annual fee, is also available for $1 95

5. Consider the option of obtaining a card from an out-of-state financial institution if it offers better terms than those locally

6. Be aware of some credit cards that offer "no fee" cards or low interest, but start charging interest from the day an item is purchased

7. Be aware of some credit cards that do not charge annual fees, but instead charge a "transaction fee" each time the card is used

8. If you re only paying the minimum amount on your monthly payments, you need to plan your budget more carefully The longer it takes for you to pay off a bill, the more interest you pay You could end up paying more in finance charges than the item is worth

9. With a grace period of 25 days, you are actually getting a free loan when you pay bills in full each month

10. Follow the card issuer's instructions as to where, how and when to make bill payments in order to avoid delays that may result in finance charges

11. If you have a bad credit history and have problems getting a credit card, look for a savings institution that will give you a card if you open a savings account with them Your line of credit will be determined by the amount you have on deposit

12. Travel and entertainment cards often charge higher annual fees than most credit cards Payment usually must be made in full within 30 days of receiving your bill or, typically, no further purchases will be approved on the account

13. Often, credit cards on your account for a spouse or child (over 18) are available with a minimum additional fee, or no fee at all

14. Be aware that "debit" cards are not credit cards, but simply a substitute for a check or cash The amount of the sale is immediately subtracted from your checking account

15. Keep an eye on your card when you give it to sales people Make certain they use it for your transaction only, and then be sure the card you receive back is yours

16. Tear up the carbons after you sign credit card receipts This will make it more difficult for anyone to steal your account number to use for fraudulent purposes

17. Do not give your credit card numbers over the phone to anyone unless *you* initiate the call Ask any caller to put their request to you in writing

18. Keep your receipts after you make any charges Compare them to your monthly statement Carefully read your monthly bill

19. If you find any incorrect charges on your monthly credit card statements notify your credit card issuer in writing

20. You may refuse to pay for unsatisfactory goods or services obtained on a department store credit card but you must attempt to solve the problem directly with the merchant first

21. You may refuse to pay for defective goods or services obtained with a bank card or a travel and entertainment card but only when the amount of the purchase is over $50 and the purchase was made in your home state or within 100 miles of your home

22. Keep a list of your credit card numbers and issuers phone numbers in a safe place for quick reference in case of loss or theft

23. Report your lost or stolen cards at once Most card issuers have toll-free telephone numbers for this purpose

24. Federal law limits your liability for unauthorized charges to $50 per credit card But you don t have to pay for any charges made after notifying card companies of your loss After calling follow up with a telegram or registered letter

25. It is illegal for anyone to send you an unsolicited credit card in the mail If you do get one, and don t want to use it, feel free to destroy it

GLOSSARY OF CREDIT CARD TERMS
(see back panel)

Activity 32 - Using Banking Services

CONTENT AREA: Consumer Education
LEVEL: Intermediate
CONTENT OBJECTIVE: Demonstrate a knowledge of how to use the services offered by banking institutions.
MATHEMATICS OBJECTIVE: Add and subtract decimals.

Use the attached forms and information below to write out checks and fill in the record book.

Check Number	YOUR CHECKING RECORD					
	Balance	Date	Amount	Pay To	Deposit	Bank Charge
1) 223	$ 24.36	1/12/86	$ 42.72	Cable TV	$ 346.85	-
2) 224		1/12/86	36.85	Macy's	-	-
3) 225		1/20/86	450.00	A-1 Rentals	850.00	$ 6.32
4) 226		1/22/86	175.00	Food Town	-	-
5) 227		1/25/86	26.75	Juan's Bock Store	-	-
6) 228		1/30/86	48.76	N.J. Bell	-	-
7) 229		2/15/86	15.00	Cancer Society	400.95	-
8) 230		2/15/86	150.00	Union Co. College	-	-
9) 231		2/15/86	75.75	Life Insurance	-	-
10) 232		2/15/86	138.62	Car Care Co.	-	-

As you start to pay your bills on 1/12/86, your check book balance is $24.36 (See column 2). You deposit $346.85, write a check for $42.72. Show your new balance in column 2 and write out check # 223. Now write out check #224 and find your new balance. Complete your record book making sure you add in all deposits and deduct all checks and charges.

Kansas City, Mo., ...19........ No..................

HAN NATIONAL BANK 18-17

PAY TO..OR ORDER, $..............

....Dollars

COLLECTIBLE AT PAR THROUGH THE
FEDERAL RESERVE BANK OF KANSAS CITY ....

Kansas City, Mo., ...19........ No..................

HAN NATIONAL BANK 18-17

PAY TO..OR ORDER, $..............

....Dollars

COLLECTIBLE AT PAR THROUGH THE
FEDERAL RESERVE BANK OF KANSAS CITY ....

Kansas City, Mo., ...19........ No..................

HAN NATIONAL BANK 18-17

PAY TO..OR ORDER, $..............

....Dollars

COLLECTIBLE AT PAR THROUGH THE
FEDERAL RESERVE BANK OF KANSAS CITY ....

Kansas City, Mo., ...19........ No..................

HAN NATIONAL BANK 18-17

PAY TO..OR ORDER, $..............

....Dollars

COLLECTIBLE AT PAR THROUGH THE
FEDERAL RESERVE BANK OF KANSAS CITY ....

Kansas City, Mo., ...19........ No..................

HAN NATIONAL BANK 18-17

PAY TO..OR ORDER, $..............

....Dollars

COLLECTIBLE AT PAR THROUGH THE
FEDERAL RESERVE BANK OF KANSAS CITY ....

Kansas City, Mo., ... 19..... No. ....

HAN NATIONAL BANK 18-17

PAY TO .... *OR ORDER,* $ ....

.... *Dollars*

COLLECTIBLE AT PAR THROUGH THE
FEDERAL RESERVE BANK OF KANSAS CITY ....

Kansas City, Mo., ... 19..... No. ....

HAN NATIONAL BANK 18-17

PAY TO .... *OR ORDER,* $ ....

.... *Dollars*

COLLECTIBLE AT PAR THROUGH THE
FEDERAL RESERVE BANK OF KANSAS CITY ....

Kansas City, Mo., ... 19..... No. ....

HAN NATIONAL BANK 18-17

PAY TO .... *OR ORDER,* $ ....

.... *Dollars*

COLLECTIBLE AT PAR THROUGH THE
FEDERAL RESERVE BANK OF KANSAS CITY ....

Kansas City, Mo., ... 19..... No. ....

HAN NATIONAL BANK 18-17

PAY TO .... *OR ORDER,* $ ....

.... *Dollars*

COLLECTIBLE AT PAR THROUGH THE
FEDERAL RESERVE BANK OF KANSAS CITY ....

Kansas City, Mo., ... 19..... No. ....

HAN NATIONAL BANK 18-17

PAY TO .... *OR ORDER,* $ ....

.... *Dollars*

COLLECTIBLE AT PAR THROUGH THE
FEDERAL RESERVE BANK OF KANSAS CITY ....

KANSAS CITY, Mo., ... 19..... No. .....

Discuss advantages and disadvantages of placing name/address/telephone # on checks

HAN NAT'ONAL BANK 18-17

PAY TO.....OR ORDER, $.....

.....Dollars

Discuss codes found on checks

COLLECTIBLE AT PAR THROUGH THE FEDERAL RESERVE BANK OF KANSAS CITY

Record Book

Name _____

RECORD ALL CHARGES OR CREDITS THAT AFFECT YOUR ACCOUNT

NUMBER	DATE	DESCRIPTION OF TRANSACTION	PAYMENT/DEBIT (−)	✓ T	FEE (IF ANY) (−)	DEPOSIT/CREDIT (+)	BALANCE
			$		$	$	$

Activity 33 - Credit Card Capers

CONTENT AREA: Consumer Education
LEVEL: Introductory
CONTENT OBJECTIVE: Give examples of the difference between needs and wants.
MATHEMATICS OBJECTIVE: Find a percentage of a number.

Ninety-one million Americans use credit cards for their purchases.

- Do you know a "credit card junkie"? What makes them buy the way they do?
- Would people with credit cards make fewer purchases if they had no credit cards? Explain.
- Do credit cards enable people to have a better lifestyle or are they an irresistible temptation to try things that they don't really need?
- What is your definition of a need? A want? Give several examples.

If you pay your credit card bills within the billing month, there are no charges. But suppose you have over spent and cannot pay the total bill or part of the bill within the billing month. You would be charged interest on what you left "on account". The same goes for loans you have made. Many banks, credit cards, store charges have different interest rates. Following you will find interest rates of some stores and banks as of 12/15/86. You can find more recent rates by calling companies directly. Find the amount of interest paid to each lender for the indicated balance. Example 1 is done for you.

LENDER	YEARLY CHARGE (Rate)	AVERAGE MONTHLY BALANCE A	AVERAGE MONTHLY BALANCE B
1. Sears, ... J.C. Penney	21%	$50.00	$150.00
	What is 21% of $50? 1) $\frac{21}{100} = \frac{x}{50}$ 2) $100x = 1050$ 3) $x = 10.50$	1) Percent Proportion 2) cross multiply 3) ÷ 100	
2. Montgomery Ward. . .	21.6%	$50.00	$150.00

LENDER	YEARLY CHARGE (Rate)	AVERAGE MONTHLY BALANCE A	AVERAGE MONTHLY BALANCE B
3. American Express	.18%	$50.00	$150.00
4. Chase Manhattan Bank	.19.8%	$50.00	$150.00
5. Manufacturers Hanover Trust	.17.8%	$50.00	$150.00

6. What is the best way to use charge cards?

7. When is it unwise to use charge cards?

8. What are the signs of a "credit card junkie?"

Activity 34 - Discount Disco

CONTENT AREA: Consumer Education
LEVEL: Intermediate
CONTENT OBJECTIVE: Explain ways in which knowledge and skills can be used to protect financial resources.
MATHEMATICS OBJECTIVE: Compare percent and fraction discount (problem solving).

I. A. Macy's sells their $22.00 jeans at a 20% discount. How much are their jeans?

1) What is 20% of $22?

SOLUTION

1) $\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$ 1) Percent Proportion

2) $\frac{20}{100} = \frac{x}{22}$ 2) substitute values

3) $100x = 440$ 3) cross multiply

The discount is $4.40. 4) $x = 4.40$ 4) Divide by 100

2) How much will the jeans cost?

SOLUTION

$22.00
-4.40
$17.60

The jeans will cost $17.60 at Macy's

B. Sterns sells the same jeans for $24.00 but with $\frac{1}{4}$ off. How much are their jeans?

1) What is $\frac{1}{4}$ of $24?

SOLUTION

$\frac{1}{4}$ of 24 means

$\frac{1}{4} \times 24 = 6$

The discount is $6

2) How much will the jeans cost?

SOLUTION

$24.00
-6.00
$18.00

The jeans will cost $18.00 at Sterns

C. At which store are the jeans less expensive and by how much?

SOLUTION

Stern's = $18.00
Macy's = -17.60
$ .40

The jeans are $.40 cheaper at Macy's

Now you try one:

II. A. Last week, Sears sold their $250.00 lawnmower at 30% discount.

1) What is 30% of $250? SOLUTION

Answer: _____

2) How much does the lawn mower cost? SOLUTION

Answer: _____

B. The catalog advertises the same lawnmower for $256 at $\frac{1}{3}$ off.

1) What is $\frac{1}{3}$ of $256? SOLUTION

Answer: _____

2) How much does the lawnmower cost? SOLUTION

Answer: _____

C. Is it cheaper to buy from the catalog or from the store? How much is saved?

SOLUTION

Answer: _____

1. A computer sells for $2450 but is on sale at a 10% discount at the Computer Outlet. Video One sells the same computer regularly for $2700, but is offering a special at $\frac{1}{5}$ off. At which store is the computer less expensive and by how much?

2. The television set at Big Boys usually sells for $400 but is on sale at a 30% discount. TVs R US regularly sells the same television set for $360, but it is now $\frac{1}{4}$ off.

   At which store is the television set less expensive and by how much?

3. The Watchung Market usually sells hot dogs for $1.50. This week, they are 15% off. Union Market sells hot dogs for $1.00 and is having a special for $\frac{1}{8}$ off. Which market has the cheaper "dog" and by how much?

4. Kyle's Bakery is having a sale on "Granny's Apple Pie". The pie is selling for 10% off the regular price of $8.50. David's Cake and Bake Shop sells Uncle B's Apple Pie for $\frac{1}{4}$ off the regular price of $10. Which pie is cheaper and by how much?

5. Light bulbs at A & P are .88¢. During the A & P half price sale, Shop Rite offers their .55¢ bulbs at 25% off. Which store gives you the best price and by how much?

6. The Record Shack sells their $6.99 albums at a 20% discount during their after-holiday sale. Big Sounds sells the same albums for $\frac{1}{5}$ off the regular price of $6.30.

   What is the lower price of the albums? Which store gives you the greater savings?

Activity 35 Fixed Vs. Flexible Finances

CONTENT AREA:	Consumer Education
LEVEL:	Introductory
CONTENT OBJECTIVES:	Explain the difference between fixed expenses and flexible expenses, give examples of each, and explain how this concept affects family or individual spending plans.
MATHEMATICS OBJECTIVES:	Dividing decimals. Multiply decimals.

David is 14 years old. The following represents his average weekly budget.

WEEKLY BUDGET for a 14 year old

WEEKLY INCOME:	$9.50 for regular family chores
WEEKLY EXPENSES:	$1.75 savings for Christmas presents and vacation
	$3.00 weekly payment for second-hand moped
	$4.00 records
	$0.75 miscellaneous snacks

1. Which of David's expenses are fixed?

2. Which are flexible?

3. How much does David make from his allowance for the year?

4. How much does he spend on records in a year?

5. At the end of the year, how much money will David have for vacation and Christmas?

6. David's parents bought the moped and he is repaying them $3 per week. If the moped cost $200.75, how many weeks will it take him to pay for the moped? How many months?

7. If David gets a job delivering newspapers, he can pay $5.00 per week. How many weeks will it take him to pay for the moped at the higher rate? How many months?

8. If David saves his "miscellaneous snacks" money, how long will it take him to purchase a turntable that costs $125?

If you were David, would you try to get a regular job to pay for the turntable or would you stop buying a record every week?

See the article, "Nine of 10 Parents Give Kids Allowance," The Courier News, Wednesday, November 19, 1986, for information on average allowances for teens.

Activity 36 - Money and Values

CONTENT AREA:	Consumer Education
LEVEL:	Introductory
CONTENT OBJECTIVE:	Define personal values.
MATHEMATICS OBJECTIVE:	Find a percentage of a number.

Think about how you and your family spend money and time. The way people spend money reflects their values. The following was taken from a 1986 weekly magazine.

Reader's Question:

I'm bothered by the amount of money I spend on items like food and clothing. Are there any guidelines that would tell me if I'm spending more than the average person does?

Response:

We asked the U.S. Department of Commerce to break down how people spend their money. Here are some of the percents,* based on after-tax income:

Food and tobacco	18%
Housing	14%
Transportation	12%
Household operation	12%
Medical care	11%
Clothing and jewelry	7%
Recreation	6%
Savings	5%
Interest	3%
Personal care	1%

These percents only add up to 89%. Where do you suppose the remaining 11% is spent? If the paper made a typographical error, which categories do you feel should have been higher?

*Percents rounded to the nearest whole number.

SOURCE: "Intelligencer Report," Parade Magazine, New York: Parade Publications, January 19, 1986. Reprinted by permission of the author, Lloyd Shearer.

CATEGORY	A Assume you have $20 to spend on the following categories. How much money would you spend on each one?	B Estimate how much you really spend weekly on these categories.	C The average person spends the indicated amounts weekly for every $10. Are you above or below the average?
1. Food/Tobacco 18%	$\frac{18}{100} = \frac{x}{12}$ $100x = 216$ $x = 2.16$ $2.16 weekly		$1.80 per $10
2. Recreation 6%			$ .60 per $10
3. Clothing/ Jewelry 7%			$ .70 per $10
4. Personal Care 1%			$ .10 per $10

5. Add any other category from the list that you use your money for and answer questions B and C.

6. Do values change as people get older? Why or why not?

Activity 37 - School Dropouts

CONTENT AREA:	Consumer Education
LEVEL:	Intermediate
CONTENT OBJECTIVE:	Explain ways in which knowledge and skills can be used to protect financial resources.
MATHEMATICS OBJECTIVE:	Find what percent one number is of another.

Students are encouraged to remain in school and develop knowledge and skills that will help them get jobs and become more resourceful and self sufficient. Some students, however, have other ideas.

1. In 1970, there were 5* million high school dropouts who were 16-24 years old. If there were 38 million students in that age bracket, what percent were high school dropouts?

STEPS TO SOLVING THIS PROBLEM

1) $\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$	1) percent proportion
2) $\frac{x}{100} = \frac{5}{38}$	2) substitute values
3) $38x = 500$	3) cross multiply
4) $x = 13.16$	4) divide by 38 $\left(\frac{38x}{38} = \frac{500}{38}\right)$
5) $x \approx 13\%$	5) round off to nearest whole

Answer - 13% of students 16 years and older dropped out in 1970.

2. In 1983, out of a total of 43 million students 16-24 years old, 5 million dropped out. What percent were high school dropouts?

*figures are approximate due to rounding.

SOURCE: The World Almanac & Book of Facts, 1986 edition. Copyright © Newspaper Enterprise Association, Inc. 1985, New York, NY 10166. Reprinted by permission of the publisher.

HIGH SCHOOL DROPOUTS: 1970 to 1983
16-17 years old
SOURCE: U.S. Bureau of the Census

NUMBER OF DROP OUTS		16-17 year old Population	
1970	1983	1970	1983
.6 million	.5 million	8 million	7 million

Find what percent of 16 and 17 year olds dropped out of school.

1970

.6 million is what percent of 8 million?

1983

.5 million is what percent of 7 million?

1. Give five reasons why people drop out of school.

2. List three advantages for dropping out of school.

3. What are some disadvantages of dropping out of school?

4. List three good reasons for completing high school.

5. What are some of the long term consequences for dropping out of school?

6. What impact does the number of dropouts have on the rest of the population?

7. What impact does the decision to drop out have upon the financial resources of the student? On his/her family?

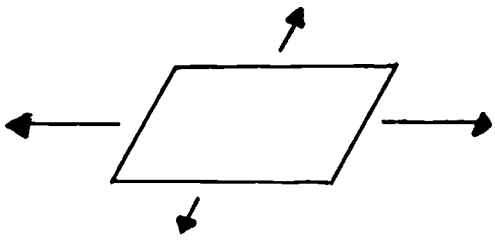
HOUSING, HOME FURNISHINGS AND EQUIPMENT

Lesson Plan 5

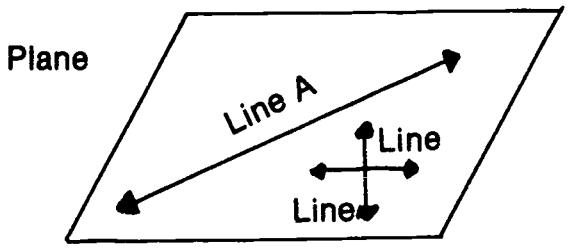
CONTENT AREA:	Housing, Home Furnishings and Equipment
LEVEL:	Intermediate
CONTENT OBJECTIVES:	Develop and/or evaluate a floor plan utilizing design theory, resource management principles, and space needs theory.
MATHEMATICS OBJECTIVE:	Identify parallel and perpendicular lines.
MATERIALS NEEDED:	Worksheet Pictures of houses, furniture, appliances

MOTIVATION: What kinds of lines are used in most homes? Why are most homes made following straight lines? Is this true for furniture as well? Explain.

A flat surface is called a plane. While the floor, ceiling, wall, blackboard or a piece of paper represent planes, a real plane has infinite length and width.

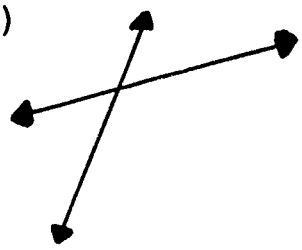


The plane is made up of points and the points form lines

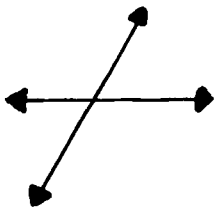


The lines in a plane intersect . . .

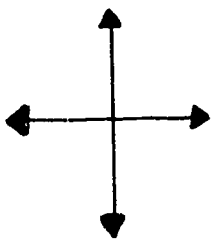
1)



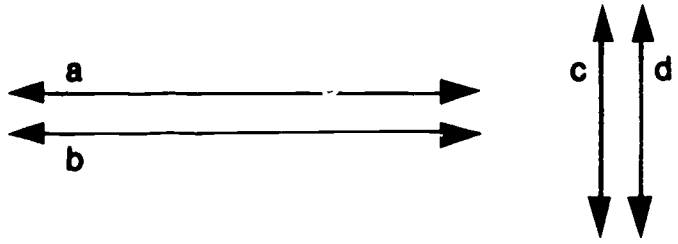
2)



3)



Or they may never intersect



a and b will never intersect since they remain the same distance apart. c and d will never intersect. Will a intersect c if they are extended?

a and b are parallel Symbol: (a||b)

c and d are parallel Symbol: (c||d)

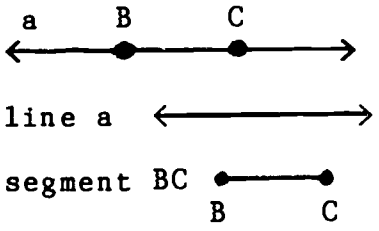
Parallel lines are lines in the same plane that do not intersect.

Symbol: ||

If lines intersect to form right angles (90°), the lines are called perpendicular lines.

Symbol: ⊢

The lines in 3) on the previous page appear to be perpendicular. You can use the corner of a piece of paper to find out if lines are perpendicular. If the corner fits into the intersection, the lines are perpendicular. Where else in your classroom can you find perpendicular lines? Parallel lines? Segments are parts of lines that have end points.



Now, with the picture you have, find the parallel lines and perpendicular lires and explain them to the class or to a partner.

Activity 38 - The Real Cost of Real Estate

CONTENT AREA: Housing, Home Furnishings and Equipment
LEVEL: Intermediate
CONTENT OBJECTIVES: Identify factors influencing one's concept of "good" housing and analyze priorities (individual, family unit and cultural) in the allocation of personal and material resources to the student's dwelling.
MATHEMATICS OBJECTIVE: Multiply decimals.

Shop around for a mortgage! Even one percent lower interest on a $30,000 loan over a twenty year period can save you more than $2,000 over the term of the mortgage!

PAYMENT TABLES*

12% Annual Percentage Rate

Amount Financed	Monthly Payments (Principal and Interest)* 5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
$ 25,000	556 11	358 68	300 05	275.28	263 31	257 16
30,000	667 33	430 42	360 06	330 33	315 97	308 59
35.000	778 56	502 15	420 06	385 39	368 63	360 02
40.000	889 78	573 89	480 07	440 44	421 29	411 45
45.000	1001.00	645 62	540 08	495 49	473 96	462 88
50,000	1112 22	717 36	600 09	550 55	526 62	514 31
60.000	1334 67	860 83	720 11	660 66	631 93	617 17
70.000	1557 11	1004 30	840 12	770 77	737 26	720 03
80,000	1779 56	1147 77	960 14	880 87	842 58	822 90
90,000	2002 00	1291 24	1080 15	990 98	947 90	925 75
100,000	2224 44	1434 71	1200 17	1101 09	1053 23	1028 62

13% Annual Percentage Rate

Amount Financed	Monthly Payments (Principal and Interest)* 5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
$ 25,000	568 83	373.28	316 32	292 90	281 96	276 55
30,000	682.60	447 94	379.58	351 48	338 36	331 86
35.000	796 36	522 59	442 84	410 06	394 75	387.17
40,000	910 13	597 25	506 10	468 64	451 14	442 48
45,000	1023 89	671 90	569 36	527 21	507 53	497 79
50,000	1137.66	746 56	632 63	585 79	563 92	553 10
60,000	1365 19	895 87	759 15	702 95	676 71	663 72
70,000	1592 72	1045 18	885 67	820 11	789 49	774 34
80,000	1820 25	1194 49	1012 20	937 27	902 27	884 96
90,000	2047 78	1343 80	1138 72	1054 42	1015 05	995 58
100,000	2275 31	1493 11	1265 25	1171 58	1127 84	1106 20

HOW MUCH WILL YOU PAY FOR YOUR LOAN?

AMOUNT OF LOAN	MORTGAGE RATE	20 YEARS MONTHLY PAYMENT	20 YEARS TOTAL PAID	30 YEARS MONTHLY PAYMENT	30 YEARS TOTAL PAID
$30,000	12%				
	13%				
$50,000	12%				
	13%				

*SOURCE: "The Mortgage Money Guide." Washington, D.C.: Federal Trade Commission, 1982.

1. What are the benefits/disadvantages of renting? Of paying a larger down payment?

2. What other options are there?

Activity 39 - Let Your Fingers Do the Shopping

CONTENT AREA:	Housing, Home Furnishings and Equipment
LEVEL:	Intermediate
CONTENT OBJECTIVES:	Formulate and analyze criteria to aid in the selection of furnishings and equipment for the home.
MATHEMATICS OBJECTIVES:	Multiply decimals. Find percentage of a number. Add and subtract decimals.

Use a newspaper,flyer or catalog to find ten items you would select to supply needed equipment for the home. Or use those below as sample items.

	ITEM	COST
1)	2-pack C,D, or one 9-volt alkaline battery	$1.49
2)	4-pack inside frost light bulbs	1.19
3)	Dial window thermometer	2.00
4)	Quick gel super glue	.99
5)	11 oz. net wt. spray enamel	1.00
6)	9 inch paint shield roller	1.99
7)	5 $\frac{1}{2}$ inch mini bar	1.69
8)	5 pc. utility screw driver set	3.99
9)	12 ft. 10 gal. battery booster cable	8.88
10)	clip-on gooseneck light	4.99

The "Mail Order Place" sells these items at 10% discount. What is the cost of each item through the catalog? If you bought two of each (they're such a good buy!) and paid the postage fee, would you save money?

STORE COST FOR TWO		CATALOG COST FOR TWO	
Item #	Tax 6%		No Tax
1.		1.	
2.		2.	
3.		3.	
4.		4.	
5.		5.	
6.		6.	
7.		7.	
8.		8.	
9.		9.	
10.		10.	
TOTAL		TOTAL	
TAX		TAX	
TOTAL		TOTAL	

POSTAGE

Add Shipping & Handling

If order totals:	$20.00 and under	$20.01 to $30.00	$30.01 to $40.00	$40.01 $55.00	$55.01 to $75.00	$75.01 to $100.00	$100.01 and over
Add	$3.25	$3.95	$4.95	$5.95	$6.95	$7.95	$8.95

Activity 40 - Purchasing by Mail

CONTENT AREA:	Housing, Home Furnishings and Equipment
LEVEL:	Intermediate
CONTENT OBJECTIVE:	Explain the rights and responsibility of a retail customer and describe consumer protection recourse.
MATHEMATICS OBJECTIVE:	Find the percentage of a number.

Americans buy almost $40 billion worth of merchandise through the mail!

Listed below are some advantages and disadvantages of buying home furnishings from a catalog company. This information is a summary of the responses of 100,000 people. How many gave each answer?

What is the main reason you buy from these companies?

Reason	Percent	Number of people responding
Merchandise not available elsewhere	32%	1)
Convenience	31	2)
High-quality merchandise	19	3)
Low prices	14	4)
Good return policy	3	5)

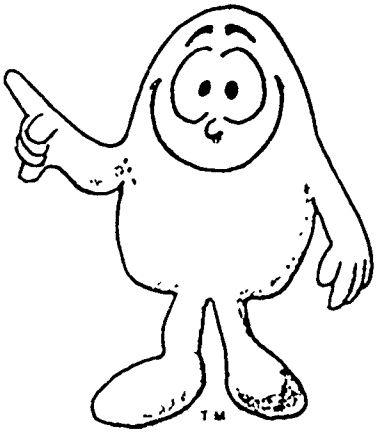
What is the major disadvantage of mail order buying?

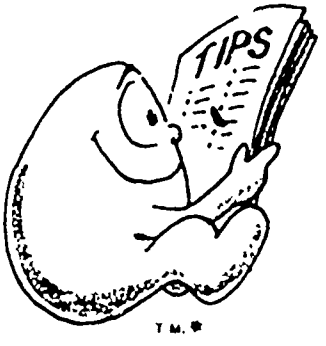
Disadvantage	Percent	Number of people responding
Can't see merchandise in advance	60%	6)
Have to wait for merchandise	13	7)
Postage and handling costs	13	8)
Difficult to return merchandise	9	9)
Difficult to comparison shop	5	10)

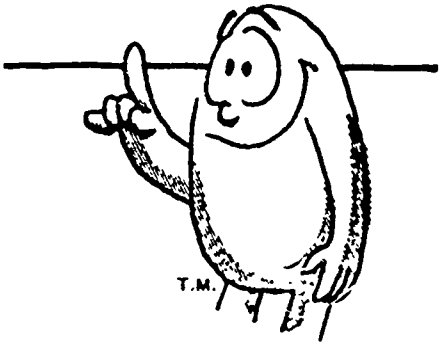
What if you have a problem with the purchase you buy through a catalog?

How To Be A Smart Consumer

Tips on How to Get the Most for Your Money and Avoid Purchasing Problems







Mail Order

1. Watch out for exaggerated product claims or unrealistically low prices.
2. Check with your state or local consumer protection agency or Better Business Bureau before ordering if you are in doubt about the company.
3. Find out about the firm's return policy. If it is not stated, ask before you order. Many companies have toll-free phone numbers.
4. Complete the order as directed. If you leave out needed information such as your full address, your order may be delayed.
5. Keep a complete record of your order, including the company's name, address and telephone number, the items you purchased, the price, the date you mailed the order, and your method of payment.
6. Understand that, under Federal law, you have more legal protection if you order by mail than if you order by telephone.
7. If you order by mail, your purchase must be shipped or a notice of delayed shipment with an option to cancel must be sent within 30 days after the company receives your completed order.

*This character is a trademark of the United States Office of Consumer Affairs

Consumers, Remember:

1. First, complain to the seller.
2. If that doesn't work, contact the company.
3. After that, contact an industry dispute program; the Better Business Bureau; or a local or state government office.
4. Finally, contact a trade association or Federal agency, as listed in the index under specific complaint topics.
5. The last resort is a small claims court or private lawyer

SOURCE: Consumer's Resources Handbook. 1985 Edition. Washington, D.C.: U.S. Office of Consumer Affairs.

Activity 41 - TV for a Teen

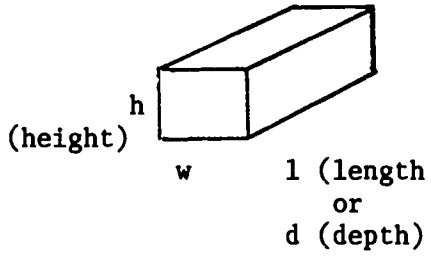
CONTENT AREA:	Housing, Home Furnishings and Equipment
LEVEL:	Introductory
CONTENT OBJECTIVE:	Identify furnishings and accessories which enhance personal living space.
MATHEMATICS OBJECTIVE:	Compute the volume of a rectangular solid.

You finally have your own room and have saved to buy a black and white TV for your own "space". "Consumer Reports" has the following listing - find the volume of each and list them in order from smallest to largest. Since each one has a 12" screen, you need the smallest size because your space is very limited. Use a calculator if available.

BRAND AND MODEL	PRICE	DIMENSIONS (HxWxD)	VOLUME	RANK SMALLEST	RANK LARGEST
1) RCA AFR120s	$120	10.75x15.25x12.5			
2) Toshiba T288	$130	11.25x15.5x12.5			
3) Zenith M121s	$110	11.5x16x12.5			
4) Panasonic TR1216T	$130	10.75x15x11.75			

Volume of a rectangular solid
Volume = length x width x height
V = l x w x h
or

Volume = depth x width x height
V = d x w x h



5) Compare these prices with today's prices. Is there an increase or decrease in the price? Why?

Activity 42 - Crafts for the Home

CONTENT AREA:	Housing, Home Furnishings and Equipment
LEVEL:	Introductory
CONTENT OBJECTIVE:	Make articles to enhance the home.
MATHEMATICS OBJECTIVES:	Multiply decimals. Add decimals. Solve problems involving money.

1. Angel lives on Nantucket and decided to make inexpensive hurricane candles for holiday gifts. He needed to make 15 candles. How much is the total cost of the materials if he needed the following:

   15 Heavy Glass Mugs with handles @$2.75
   15 5" Candles @$.69
   1 Box Carpet Tacks @$.69
   1 Tube Instant Glue @$1.79

2. Joyce made a Colombian Tote Bag and needed the following materials. Find the total cost of the materials.

   94 Yards Warp Cord, Gold @$.07
   47 Yards Warp Cord, Rust @$.07
   30 Yards Warp Cord, Yellow @$.07
   2 Brass Rings 1 $\frac{1}{2}$" diameter @$.35
   1 $\frac{3}{8}$" x 36" Handle @$1.99

3. Beverly made a Nairobi Basket for a wall in her mother's office. Find the total cost of the following materials.

   75 Yds. 5-ply Jute, Rust @$.08
   80 Yds. 5-ply Jute, Black @$.08
   50 Yds. 5-ply Jute, Natural @$.08

4. Al wanted to make his grandmother a plate holder in wood shop. Find the total cost of materials if he needed the following:

   2 Pieces $\frac{3}{8}$" Hardware @$1.95
   2 Hinges @$.49
   1 3" Chain @$.65
   1 Box Brads @$.59

5. Juan wanted to make candles for holiday presents. If he needed the following items, find the total cost of the materials.

1	Yd. Cheesecloth @$.79
1	Long handled spoon @$1.98
4	Molds @$.69
1	Can Turpentine @$1.29
20	Lbs. Paraffin @$.49 1b.
2	Balls of Cord @$1.69

6. Kali twined a wastebasket for her father's office. Find the cost of the materials if she bought the following items.

140	Yds. 5-ply Jute, Rust @$.09
40	Yds. 5-ply Jute, Brown @$.09
10	Yds. 5-ply Jute, Natural @$.09
10" x 15"	Metal Wastebasket @$3.99

7. Veronica makes candles to sell at Craft Shows. Find the total cost of her materials.

1	Yd. Cheesecloth @$.59
1	Can Turpentine @$1.29
20	Lbs. Paraffin @$.59 1b.
2	Balls of Cord @$1.89

8. Wendy made a macrame plant hanger for her mother's office. Find the total cost of the materials.

28	Lengths White Cord @$.22
1	3" Soldered Ring @$.35
4	6" Metal Rings @$.55
16	6" Beads @$.80
8	2" Beads @$.50

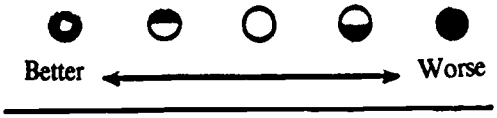
9. How much change would each person get from a $20 bill in examples 2, 3, 4, and 7?

Activity 43 - A Good Buy for a Steam Iron

CONTENT AREA:	Housing, Home Furnishings and Equipment
LEVEL:	Introductory
CONTENT OBJECTIVES:	Collect and evaluate consumer information about small appliances.
MATHEMATICS OBJECTIVE:	Find what percent one number is of another.

Use the ratings for steam irons and answer the questions that follow.

RATINGS FOR STEAM IRONS



Brand and Model	Price	Weight	Water capacity	Steaming: Rate	Steaming: Time	Steaming: Thermostat	Convenience: Steam/dry control	Convenience: Filling	Convenience: Water gauge
BRAND A	$35	3.3 lb.	7.5 fl. oz.	●	◒	◒	◒	◒	●
BRAND B	45	2.5	7	●	○	●	◒	◒	○
BRAND C	30	2.9	8	●	◒	○	○	○	◒
BRAND D	50	2.9	8	●	◒	○	○	○	◒
BRAND E	47	2.7	6	●	◒	●	◒	●	◒
BRAND F	52	2.7	5	◒	◒	●	◒	●	◒
BRAND G	33	1.9	3.5	◒	◒	●	◒	●	◒
BRAND H	44	2.4	6	○	○	○	○	◒	◒
BRAND J	35	2.5	7.5	●	○	◒	◒	◒	◒
BRAND K	34	2.6	7.5	●	○	◒	◒	◒	◒

1. What percent of steam irons are rated 0 for steaming rate?

Solution

How many irons are rated? 10

How many irons are rated 0 for steaming? 7

This questions asks: 7 is what percent of 10?

Solution	Explanation
1. $\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$	1. percent proportion
2. $\frac{x}{100} = \frac{7}{10}$	2. substitute values
3. $10x = 700$	3. cross multiply
4. $x = 70$	4. divide by 10 ($\frac{10x}{10} = \frac{700}{10}$)

70% of the irons are rated 0 for the steaming rate - that's good!

Now you try these

2. What percent of steam irons are rated 0 for steaming time?	3. What percent of steam irons cost less than $35?
4. Which steam iron has 0 as 50% of its ratings?	5. Which steam iron has 0 as a rating for 66% of the categories?

6. Which brand do you feel is the better buy? Why?

7. Are there any other features you would want to know before you bought a new steam iron?

8. Where could you get objective information?

Activity 44 - Floor Plan of a Home

CONTENT AREA: Housing, Home Furnishings and Equipment

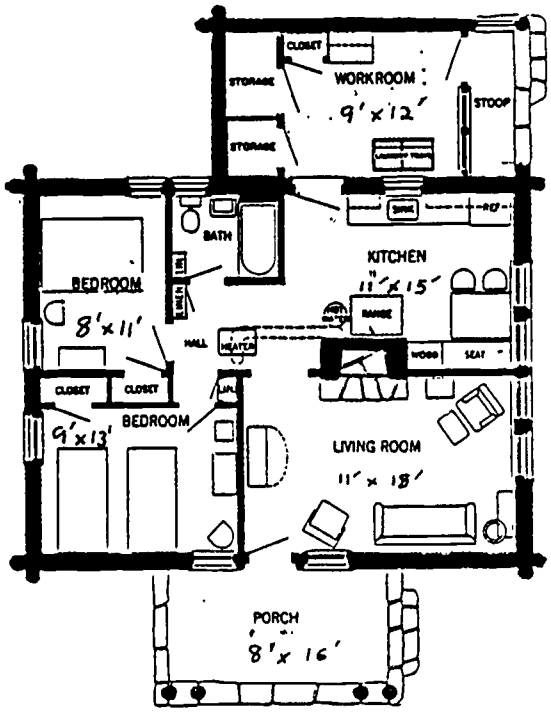
LEVEL: Intermediate

CONTENT OBJECTIVE: Diagram the floor plan of a home using scale as one art element.

MATHEMATICS OBJECTIVE: Convert measurements within the system.

Find the size of a new floor plan if the new scale is 1" = 6'.

ROOM	ACTUAL DIMENSIONS	CHANGE TO SCALE 1" = 6'
Small Bedroom #1	8' x 11'	8' x 11' $\frac{8}{6} = 1\frac{1}{3}$" $\frac{11}{6} = 1\frac{5}{6}$" The scaled room would be $1\frac{1}{3}$" x $1\frac{5}{6}$"



FLOOR PLAN

SOURCE of Floor Plan: "Recreational Buildings and Facilities No. 438", U.S. Department of Agriculture, Washington, D.C., 1972, pg. 19.

ROOM	ACTUAL DIMENSIONS	CHANGE TO SCALE 1" = 6'
Large Bedroom #2		
Living Room		
Kitchen		
Workroom		
Porch		

Activity 45 - Decisions of a Commuter

CONTENT AREA:	Housing, Home Furnishings and Equipment
LEVEL:	Introductory
CONTENT OBJECTIVE:	Describe individual values and needs relative to personal property and privacy.
MATHEMATICS OBJECTIVE:	Estimate the shortest distance between two points.

Would you work in Washington, DC and live in Plainfield? Would you live in Camden and work in New Haven, Connecticut? Would you work in Neptune and live in Ulster County, New York? While there are always exceptions and many reasons why people choose to live far from where they earn a living most people would prefer to live within a comfortable distance of where they work. Housing choices depend a great deal on many things. What are some other factors in addition to work place that affect housing choices?

1. Using 559 and the Garden State Parkway, what is the approximate distance from Scullville to Poplar Avenue?

2. What would be the shortest route from Birch Grove Park to the middle of Mt. Airy Rd.?

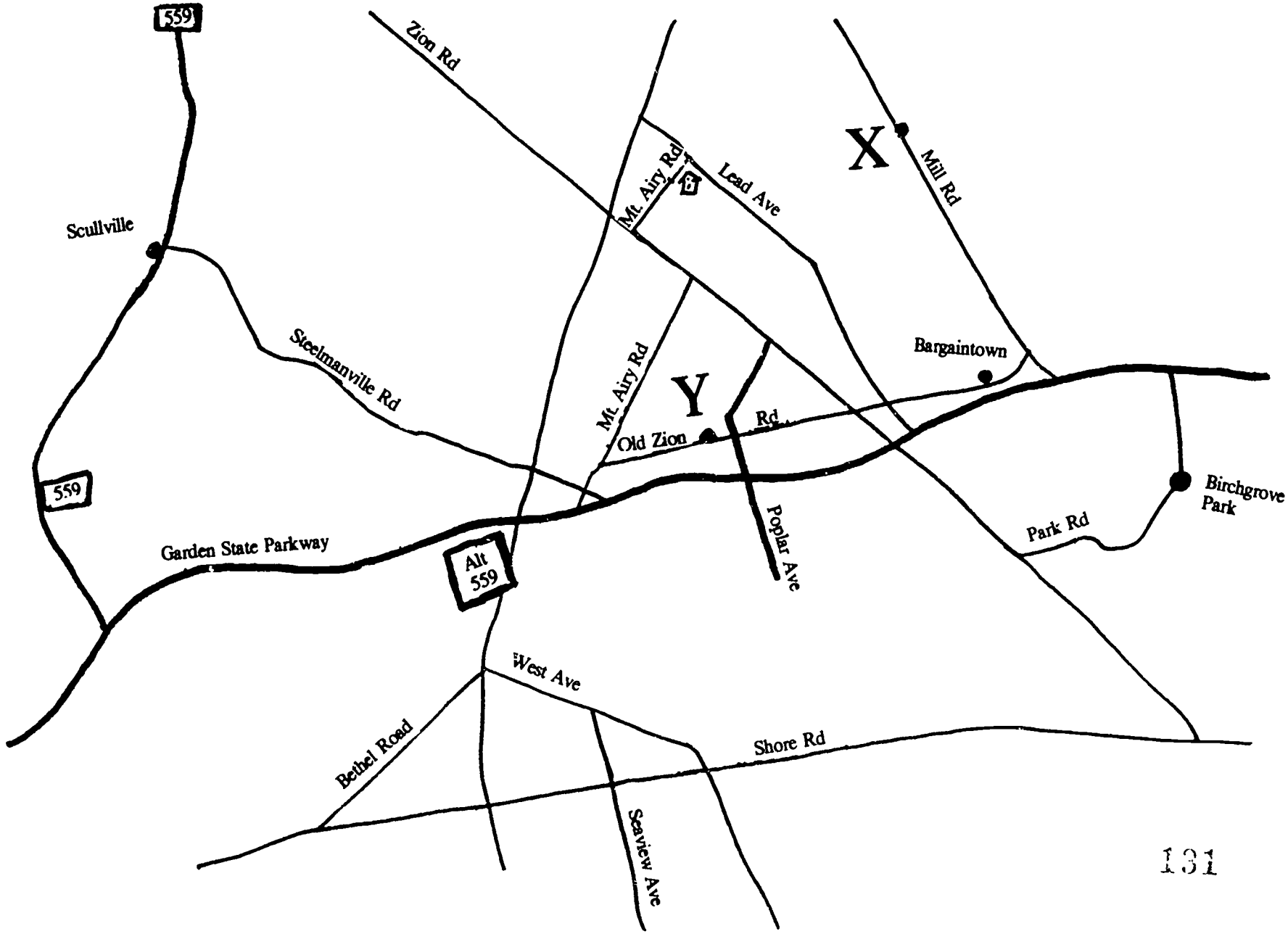
3. Using the Garden State Parkway, what is the approximate distance from 559 to Alt 559?

4. What would be the shortest route from the West Avenue/ Bethel Road intersection to the corner of Shore Road and Seaview Avenue?

5. Using Mill Road and Old Zion Road, what is the approximate distance from point X to point Y?

6. What is the shortest route from the house on the corner of Mt. Airy Road and Leap Avenue to the Garden State Parkway and Alt. Rt. 559?

7. What is the shortest route from Bargaintown to Scullville?


559
Zion Rd
Mt. Airy Rd
Lead Ave
X
Mill Rd
Scullville
Steelmanville Rd
Mt. Airy Rd
Y
Bargaintown
Old Zion
Rd
559
Garden State Parkway
Alt 559
Poplar Ave
Park Rd
Birchgrove Park
West Ave
Bethel Road
Shore Rd
Seaview Ave
Scale 2 1/2" = 1 mile

Activity 46 - Floor Coverings According to Budget

CONTENT AREA:	Housing, Home Furnishings and Equipment
LEVEL:	Intermediate
CONTENT OBJECTIVE:	Identify factors influencing one's concept of "good" housing and analyze priorities in the allocation of personal material sources.
MATHEMATICS OBJECTIVES:	Find the area of specified regions. Solve problems involving area and/or money.

I. Use the floor plan on the back of this page, the budgets below and any newspaper or store ads to identify materials (and costs) you would use to cover all floors with carpet, tile or linoleum (you may omit the porch and workroom). Be prepared to defend your choices.

WHAT FLOOR COVERINGS WOULD YOU BUY WITH THE FOLLOWING BUDGETS?

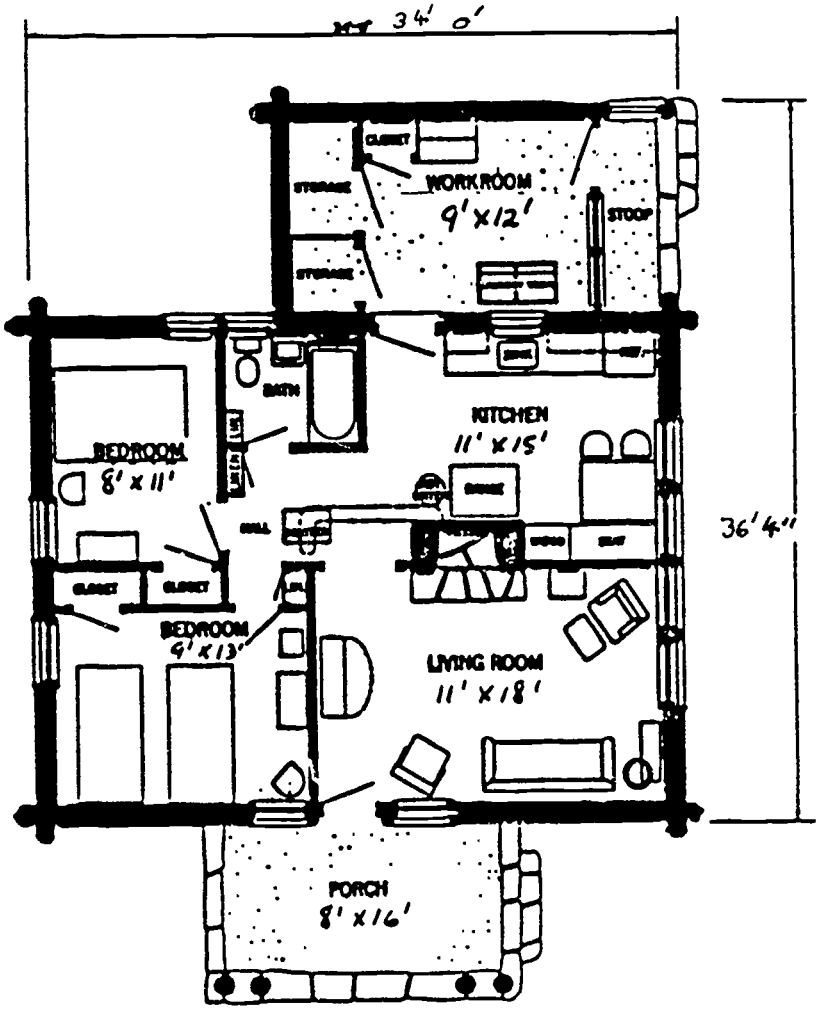
	DIMENSIONS 9 sq. ft. = 1 sq. yd.	$1,000 BUDGET TYPE	 COST	$2,000 BUDGET TYPE	 COST
Living Room	11' x 18'=____sq. ft.=____sq. yd.	_____	_____	_____	_____
Kitchen	11' x 15'=____sq. ft.=____sq. yd.	_____	_____	_____	_____
		TOTAL COST _____		TOTAL COST _____	

OR

II. Use the prices given below

	DIMENSIONS	TYPE	COST
Large Bedroom	9' x 13' = 117 sq. ft. 117 ÷ 9 = 13 sq. yd.	16.99 per square yard wool carpet	_____
Small Bedroom	9' x 13' = ___ sq. ft. ___ ÷ 9 = ____ sq. yd.	8.99 per square yard remnant	_____

FLOOR PLAN



SOURCE of Floor Plan: "Recreational Buildings and Facilities No. 438", U.S. Department of Agriculture, Washington, D.C., 1972, pg. 19.

CLOTHING AND TEXTILES

Lesson Plan 6

CONTENT AREA:	Clothing and Textiles
LEVEL:	Introductory
CONTENT OBJECTIVE:	Follow directions in laying out pattern pieces to construct a garment.
MATHEMATICS OBJECTIVE:	Identify and define acute, obtuse and right angles.

MOTIVATION: Look at patterns in this classroom (or select a fabric swatch or pictures in student text.) Look for different kinds of angles.

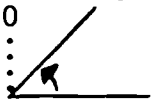
LESSON:

Many fabrics use angles as designs. We shall discuss three types of angles; acute, obtuse, and right. You will find that the right angle is also very important in laying out patterns.

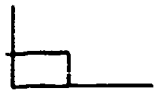
Ask students to name the types of angles they found. Solicit definitions and examples of construction lines such as darts, seams that cross one another, necklines, pockets, etc., that contain angles. In laying out patterns angles are used to get the correct "fall" of the garment. Some patterns are laid on the straight line, crosswise, or bias of the fabric. Knowing angles helps you in laying out patterns correctly. Basically, there are three types of angles: acute, obtuse and right.

To start:

<u>acute</u> angles: greater than 0° and less than 90°

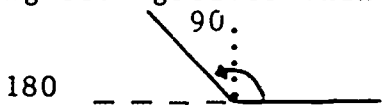


<u>right</u> angles: equal to 90°

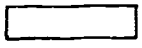


use corners of room, chalkboard, paper and textbook as examples

<u>obtuse</u> angles: greater than 90° and less than 180°

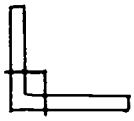


A textbook can be used to demonstrate angles in a <u>very</u> simple way



closed = 0°

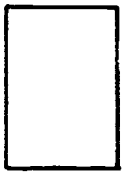
acute
less than 90°



right
90°

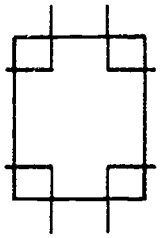
obtuse
greater than 90
less than 180

straight
180°

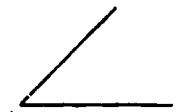


Take a piece of paper with even corners

The corners are each 90°

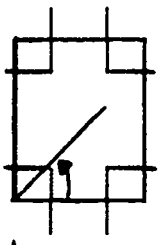


Use the paper to see if any angle is less than (acute or greater than (obtuse) a right angle



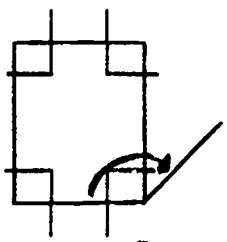
A

Match the corner of the paper with the angle



A

...if the angle is hidden, then it must be smaller than the corner and is less than 90°. ∢A is an acute angle.



B

...if part of the angle can be seen, it must be greater than the corner and is greater than 90°. ∢ B is an obtuse angle.

Activity: Worksheet

Activity 47 - Do You Have the Right Angle?

CONTENT AREA:	Clothing and Textiles
LEVEL:	Introductory
CONTENT OBJECTIVE:	Follow directions in laying out pattern pieces to construct a garment.
MATHEMATICS OBJECTIVE:	Identify and define acute, obtuse and right angles.

Did you know that angles were important in sewing? If you want your garment to fit properly, you must form the correct angle when laying out your pattern pieces on the fabric.

The correct way to lay out the pattern piece illustrated below is found in figure A. When the arrows are equal distances from the selvage your right angles are formed, each equals 90°. Remember if you want your garment to fit properly, you must form the right angle!

Is the layout correct?

FIGURE A

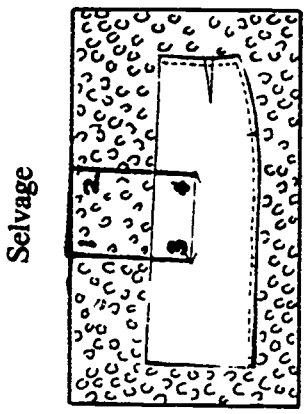
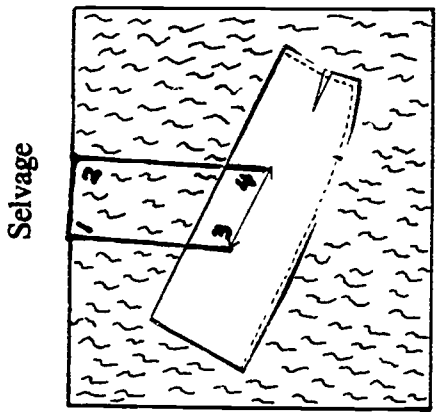


FIGURE B



∢ 1, ∢ 2, ∢ 3, ∢ 4 each = 90°
They are called _____angles.

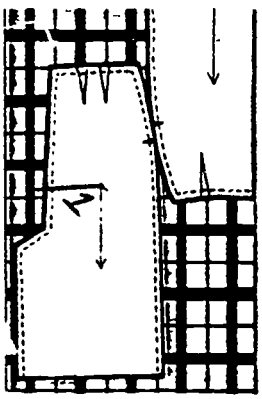
The layout (is, is not) correct.

∢ 4 is greater than 0° and less than 90°.
∢ 4 is an _____angle.

The layout (is, is not) correct.

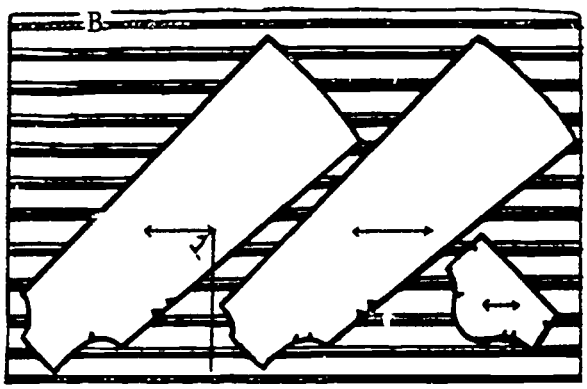
Is the layout correct: Is ∢ 1 acute, right or obtuse in each layout?

A



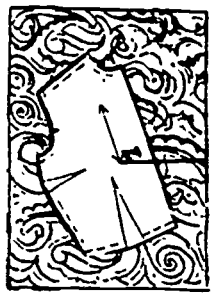
∢ 1 is _____

B



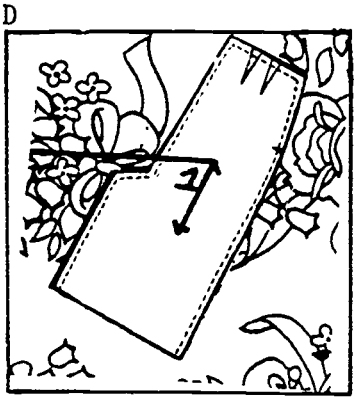
∢ 1 is _____

C



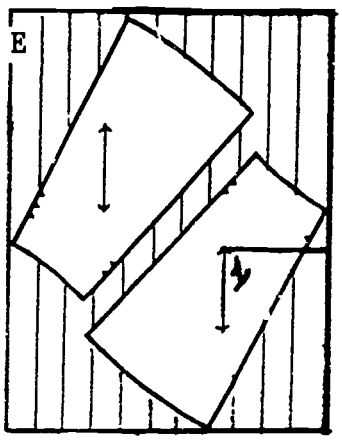
∢ 1 is___

D



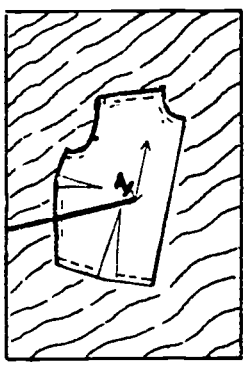
∢ 1 is _____

E



∢ 1 is _____

F



∢ 1 is_____

Circle the letter of each correct layout

A B C D E F

Activity 48 - Savings on Quantity Buying

CONTENT AREA:	Clothing and Textiles
LEVEL:	Intermediate
CONTENT OBJECTIVE:	Develop leisure time activities through creative sewing and textile related projects.
MATHEMATICS OBJECTIVES:	Multiply decimals. Subtract decimals.

Students in the home economics classes have decided to raise money for a needy family in town. They plan to purchase supplies and make and sell different kinds of crafts. How much will they save on each item by buying them in quantity? Show your work, the first example is done for you.

BURLAP IN DECORATOR COLORS

Colors: Red, Green, Royal Blue, Gold, Orange, Yellow, White, Black, Natural

Inexpensive; numerous uses: Make bags, mats, lampshades, scarfs, runners, etc. About 1 yd. sq.

BU-1	Burlap	1.75 yd.	18.90 dz.
BU-4	40 yd. bolt-1 color		58.89 ea.
RUG-25	Punch Needles	1.19 ea.	12.85 dz.

1) Find the savings on 1 dozen yards of burlap.

1 dozen @ 1.75 yd. costs
1.75
x 12
21.00
Bought in bulk costs $18.90
$21.00
-18.90 $2.10 savings
$ 2.10

MUSLIN

Unbleached, 100% cotton muslin has many craft uses: Embroidery, batik, stuffed toys, beanbags, liquid embroidery, tie-dying, etc.

FE-33	38" wide	1.60 yd.	1.44 yd.	12 or more
FE-33 B	50 yd. bolt	67.95 ea.		

2) Find the savings on 1 dozen yards of 38" muslin.

3) How much cheaper is it to buy the bolt rather than 50 separate yards?

FELT YARDAGE

choice of colors

FE-1	36" X 36"	2.98 ea.	
		29.80 dz.	

4) How much is saved by buying 1 dozen 36" x 36" felt?

STUFFING & BATTING

FE-4	100% Polyester Fiber Stuffing 16 oz.		2.19 ea.
FE-4A	Stuffing - Case of 24 bags		47.30 ea.
FE-49	Polyester Batting 45" x 60"	3.59ea.	39.85 dz.
FE-19	BOOK: Create A Craft (using stuffing)		3.25 ea.

5) How much is saved by buying a case of stuffing?

NEEDLES

FE-23	Sewing-Asstd. #s 3-9 Elongated eye. Package of 20	.60 ea.	6.50 dz.
FE-39	Embroidery-Elongated eye-Sharp #4 Package of 12	.60 ea.	6.50 dz.
FE-40	Tapestry #20 Blunt Package of 25	1.49 ea.	16.10 dz.
BEA-17	Beading Needles and Threader Package of 6	.60 ea.	6.45 dz.

6) How much is saved by buying 1 dozen #FE-23?

7) How much is saved by buying 1 dozen BEA-17?

SEWING THREAD

12 35-yard spools of #50 sewing thread in a standard assortment of colors. 100% polyester.

FE-22	12 spools/pkg.	1.85 ea.	1.67 ea.	12 or more

Cotton-wrapped polyester thread for all types of fabric. White or Beige.

FE-27	300 yd. spool	1.20 ea.	1.08 ea.	12 or more

Button & Carpet thread - Black, White, Beige.

RUG-24	70 yd. spool	.75 ea.	.67 ea	12 or more

8) How much is saved by buying 1 dozen #FE-22 (pkg.)?

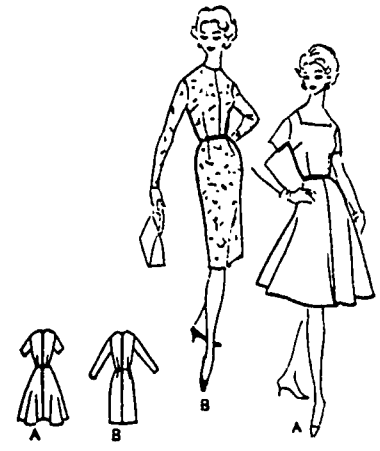
9) How much is saved by buying 1 dozen RUG-24?

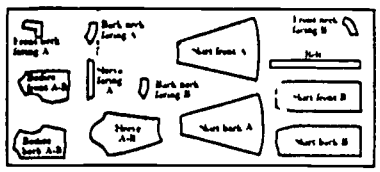
It usually pays to buy in quantity. Remember though, a bargain (no matter how inexpensive) is not a bargain if you can't use it.

Activity 49 - Dresses for the Church Choir

CONTENT AREA: Clothing and Textiles
LEVEL: Intermediate
CONTENT OBJECTIVE: Describe the variety of occupational/career opportunities in the clothing and textiles field.
MATHEMATICS OBJECTIVE: Multiply fractions.

Your summer job is to help a local dressmaker purchase fabric. The Church Choir has offered her the job of making dresses for the female members. Find how much fabric will be needed before she goes to the garment center to select the fabric.





FABRIC REQUIREMENTS

FABRIC REQUIRED Sizes	10	12	14	16	18
VIEW A					
35" Without Nap Yds.	$4\frac{7}{8}$	$4\frac{7}{8}$	$4\frac{7}{8}$	5	$5\frac{1}{8}$
39" Without Nap Yds.	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{7}{8}$	$4\frac{7}{8}$
45" Without Nap Yds.	$3\frac{7}{8}$	4	4	$4\frac{1}{4}$	$4\frac{1}{4}$

How much 45" width fabric is required for View A?

1) Size 10 - 3 dresses

2) Size 14 - 2 dresses

3) Size 18 - 5 dresses

4) Total yardage required

_____

5) What other types of jobs might you be asked to do while working for the dressmaker?

Activity 50 - Solve the Problem and Discover the Fabric

CONTENT AREA:	Clothing and Textiles
LEVEL:	Introductory
CONTENT OBJECTIVE:	Identify and describe some common textile fibers, methods of fabric construction, and textile finishes.
MATHEMATICS OBJECTIVE:	Divide fractions.

Match the name of the fabric to its appropriate description.

1. Complete the division example.
2. The correct answer will match the name of the fabric described.

Here's How

1) Cotton toweling fabric with loops on one or both sides. It is absorbent, and comes in many colors and designs. Available by the yard.

$$\frac{2}{3} \div \frac{4}{5} = \frac{2}{3} \times \frac{5}{4} = \frac{10}{12} = \frac{5}{6}$$

2) A lightweight fabric made of many fibers. It has a crinkled surface obtained either by use of weave, embossing, hard-twist yarns, or chemical treatment.

$$\frac{3}{4} \div 3 = \frac{3}{4} \div \frac{3}{1} = \frac{3}{4} \times \frac{1}{3} = \frac{1}{4}$$

3) A fabric woven or knitted with looped or knotted surface. It usually has a spongy effect.

$$4\frac{1}{2} \div 1\frac{1}{4} = \frac{9}{2} \div \frac{5}{4} = \frac{9}{2} \times \frac{4}{5} = \frac{18}{5} = 3\frac{3}{5}$$

$3\frac{3}{5}$ - Boucle

$\frac{1}{4}$ - Wool Crepe

$\frac{5}{6}$ - Terry Cloth

1. Made from the extremely soft hair of the Kashmir goat. _____ is most often used in combination with sheep's wool.

$\frac{3}{4} \div \frac{2}{3}$

FABRIC:

2. This fabric has a deep, fleece-like, napped surface. Fabric may be pile or fleece effect may be obtained by napping process.

$12 \div \frac{4}{5}$

FABRIC:

3. _____ a heavy, twill weave coating. It has a napped surface rolled into little tufts.

$2\frac{1}{3} \div \frac{1}{2}$

FABRIC:

4. Plain woven fabric from raw silk, comes in light and medium weight. Natural color is light tan, now printed and dyed many colors.

$\frac{6}{7} \div 2$

FABRIC:

5. _____ a fabric of medium weight, in plain or twill weave, with a slightly napped surface.

$\frac{1}{2} \div \frac{1}{4}$

FABRIC:

6. Strong, lustrous fabric made of smooth surfaced flax fibers. In plain weaves, from sheer handkerchief linen to heavy suiting.

$\frac{5}{6} \div \frac{5}{8}$

FABRIC:

7. Plain weave cotton fabric. Woven in checks, stripes, and plaids of two or more colors.

$1\frac{1}{2} \div 2\frac{1}{4}$

FABRIC:

8. Cotton-cloth made in satin weave. It is often treated for high luster and crease-resistance.

$\frac{1}{8} \div \frac{3}{4}$

FABRIC:

$\frac{1}{6}$ Sateen

15 Fleece

2 Flannel

$1\frac{1}{3}$ Linen

$1\frac{1}{8}$ Cashmere

$\frac{2}{3}$ Gingham

$\frac{3}{7}$ Pongee

$1\frac{5}{9}$ Chinchilla

Activity 51 - Trim for Baskets

CONTENT AREA:	Clothing and Textiles
LEVEL:	Introductory
CONTENT OBJECTIVE:	Contribute to the family's well-being through creative saving and textile-related, leisure time activities.
MATHEMATICS OBJECTIVE:	Find the perimeter of a polygon.

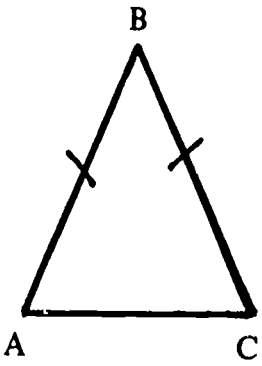
Jill and Frank's mother decorates baskets for the local florist. Jill and Frank are responsible for measuring out the trim needed to go around the edge of each basket. Find how much trim is needed for each basket pattern.

The distance around a closed straight sided figure is called the perimeter. These figures are called polygons.

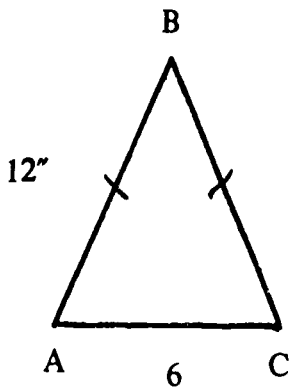
The perimeter of a polygon is the sum of the lengths of each side.

A regular polygon is a polygon with all sides equal. Slashes show equal sides.

eg:



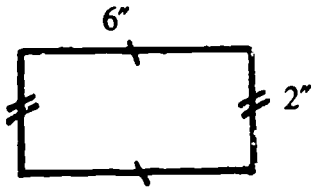
Side AB = Side BC



Perimeter =
AB + BC + AC
12 + 12 + 6
30"

Find the perimeter of each figure.

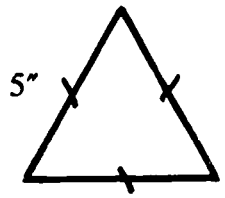
1)



If there are 4 baskets like this, how much trim is needed?

_____

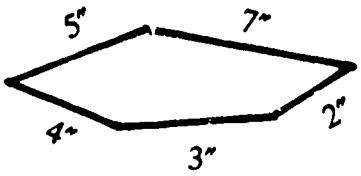
2)



If there are 3 baskets like this, how much trim is needed?

_____

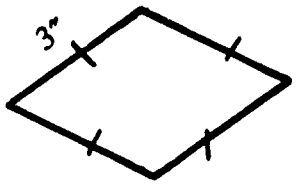
3)



If there are 8 baskets like this, how much trim is needed?

_____

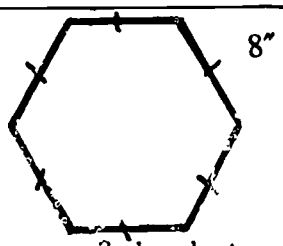
4)



If there are 12 baskets like this, how much trim is needed?

_____

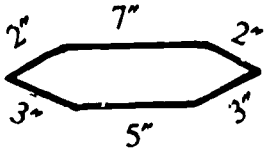
5)



If there are 3 baskets like this, how much trim is needed?

_____

6)

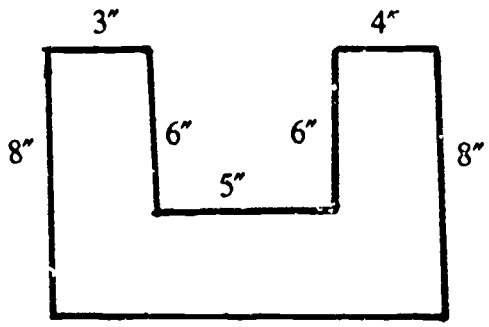


If there are 5 baskets like this, how much trim is needed?

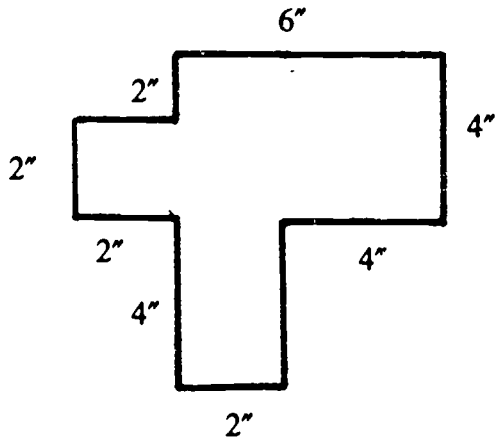
_____

These baskets got messed up! How much trim did they need?

7)



8)



Activity 52 - Retailing as a Career

CONTENT AREA:	Clothing and Textiles
LEVEL:	Introductory
CONTENT OBJECTIVE:	Identify some of the career opportunities in the clothing and textileS field.
MATHEMATICS OBJECTIVE:	Solve a problem involving time.

Your first job at "THAT FABRIC PLACE" is to complete the payroll for all employees. Fill in each employee's time card by finding the total hours each one worked.

Here's how:

PROBLEM

Punched in at 8:15. Punched out at 4:20. How much time worked?

SOLUTION

(Remember that 1 hour = 60 minutes)

8:15 - 9:00 = 45 minutes

9 AM - 4 PM = 7 hours

Worked 7 hours 45 minutes

- lunch 50 minutes (can't subtract)

borrow 1 from 7 hours: 6 hours 60+45 minutes = 105 minutes

105 minutes - 50 minutes

Total time working = 6 hours 55 minutes

(Remember that 1 hour = 60 min.)

What other types of jobs might you be able to do at "That Fabric Place?"

Name Kyle Joyner
Employee no. 21672

	Time In	Time Out	Hours Elapsed	Lunch Time	Hours Worked
Monday	8:00	4:00		30m	
Tuesday	8:00	4:30		30m	
Wednesday	7:50	5:00		1hr	
Thursday	8:00	5:00		45m	
Friday	8:15	6:00		45m	
Saturday	8:30	3:00		30m	
Sunday					

Total Hours Worked _____

Name David Wortham
Employee no. 22871

	Time In	Time Out	Hours Elapsed	Lunch Time	Hours Worked
Monday	8:15	3:50		1hr.	
Tuesday	8:00	4:00		30m	
Wednesday	8:20	4:30		1hr	
Thursday	8:00	5:00		45m	
Friday	8:30	6:00		1hr	
Saturday	8:00	4:15		45m	
Sunday					

Total Hours Worked _____

Activity 53 - Is the Discount for Real?

CONTENT AREA:	Clothing and Textiles
LEVEL:	Intermediate
CONTENT OBJECTIVE:	Identify shopping strategies which result in satisfactory purchases.
MATHEMATICS OBJECTIVE:	Given a percent and the amount saved, find the original price.

Discount stores advertise that their prices are always less than other retail stores. Many claim that they will "beat" the price advertised for any other store! Find the original price charged by the discount house for each sewing accessory.

SAVE 10% - 50% IN OUR FINAL CLEARANCE SALE

ITEM	PERCENT OFF	$SAVED	ORIGINAL PRICE
A) Brother Free Arm Sewing Machine	25%	$37.49	$149.96
B) Brother Deluxe Zig-Zag Free Arm Sewing Machine	15%	29.99	
C) Expandable Sewing Basket	$33\frac{1}{3}$%	14.83	
D) Expandable Sewing Basket	10%	2.99	
E) 7" All-Purpose Shears	20%	1.59	
F) 7 1/2" Barber Shears	30%	2.39	
G) 8" Standard Pinking Shears	25%	3.99	
H) 9" Dressmaker Shears	23%	2.29	
J) 3-Pc. Shear Set	16%	3.99	
K) Thread Bed	50%	5.98	

Item A: $37.49 is 25% of what number?

1)	$\frac{\%}{100} = \frac{\text{is part}}{\text{of whole}}$	1) percent proportion
2)	$\frac{25}{100} = \frac{37.49}{n}$	2) substitute
3)	$25n = (37.49) \times 100$	3) cross multiply
4)	$25n = 3749$	4) complete the multiplication
5)	$n = \$149.96$	5) divide both sides by 25

Are the original prices realistic?

Activity 54 - Retail Scramble

CONTENT AREA:	Clothing and Textiles
LEVEL:	Intermediate
CONTENT OBJECTIVE:	Identify shopping strategies which result in satisfactory purchases.
MATHEMATICS OBJECTIVE:	Find the number which completes the proportion.

Bargains Galore!

We use proportions to find sale prices when we are given the percent of discount. Practice the method of solving proportions and then check your knowledge of clothing textile terms.

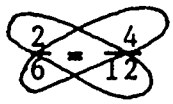
SOLVING PROPORTIONS

Notice that in the proportion

$$\frac{2}{6} = \frac{4}{12}$$

That $6 \times 4 = 2 \times 12$

These are called "cross products"



$$6 \times 4 = 2 \times 12$$
$$24 = 24$$

In a proportion, cross products are equal

$\frac{n}{3} = \frac{8}{12}$ This is a proportion so its cross products are equal

$12n = 8 \times 3$ Find the cross products

$12n = 24$

$\frac{12n}{12} = \frac{24}{12}$ Divide both sides by 12 so 12n becomes 1n

$n = 2$

TRY THESE

1) $\frac{x}{12} = \frac{15}{36}$

2) $\frac{7}{x} = \frac{14}{16}$

The solution to each proportion corresponds to the number in List B that describes the term. Example "a" is done for you.

a)	$\frac{x}{21} = \frac{1}{3}$ $3x = 21$	7 = Seal of approval	g)	$\frac{3}{6} = \frac{1}{x}$	Markdown
b)	$\frac{3}{6} = \frac{x}{2}$	Markup	h)	$\frac{x}{10} = \frac{27}{90}$	Dog
c)	$\frac{5}{x} = \frac{25}{30}$	Seconds	i)	$\frac{20}{36} = \frac{x}{9}$	Label
d)	$\frac{2}{5} = \frac{b}{20}$	Bargain	j)	$\frac{x}{105} = \frac{3}{35}$	Store brand
e)	$\frac{x}{5} = \frac{12}{15}$	As is	k)	$\frac{2}{24} = \frac{1}{x}$	Lay away
f)	$\frac{15}{50} = \frac{3}{x}$	Loss leader	l)	$\frac{44}{48} = \frac{x}{12}$	Charge Account

Answers

LIST B

_____ 1. Difference between wholesale price and retail price.

_____ 2. Price reduced for quick sale.

_____ 3. An item which for some reason, did not sell.

_____ 4. Item sold as clearance, no returns permitted.

_____ 5. Attached to item to give consumer information about the product.

_____ 6. Slightly imperfect items.

Seal of Approval 7. Identification given to the consumer that states item has been tested and evaluated by a non-biased organization.

_____ 8. An item that suits your needs at less than you planned to pay.

_____ 9. Private labels which a particular store uses to identify its products. Usually the cost is less than other brands.

_____ 10. An item priced very low to bring customers into the store.

_____ 11. A plan which lets a customer pay monthly. If payment is delayed, there is an interest charge.

_____ 12. A plan which permits a customer to make minimum payment with the understanding that the item will be held for later pick-up.

Activity 55 - "Made in the U.S.A."

CONTENT AREA:	Clothing and Textiles
LEVEL:	Introductory
CONTENT OBJECTIVE:	Identify some common textile fibers and their sources.
MATHEMATICS OBJECTIVE:	Find the percent one number is of another.

Cotton, Wool, Silk, and Man-Made Fibers Production

Source: Economics, Statistics and Cooperatives Service, U.S. Agriculture Department

Cotton and wool from reports of the Agriculture Department; silk, rayon, and non-cellulosic man-made fibers from Textile Organon, a publication of the Textile Economics Bureau, Inc.

						Man-made fibers			
	Cotton		Wool		Silk	Cellulosic		Non-cellulosic	
Year	U.S. (million bales)	World	U.S. million pounds	World	World (ml. lbs.)	U.S. (million pounds)	World	U.S. (million pounds)	World
1940	12.6	31.2	434.0	4,180	130	471.2	2,485.3	4.6	4.6
1950	10.0	30.6	249.3	4,000	42	1,259.4	3,552.8	145.9	177.4
1960	14.2	46.2	298.9	5,615	68	1,028.5	5,749.1	854.2	1,779.1
1965	14.9	55.0	224.8	5,731	72	1,527.0	7,359.4	2,062.4	4,928.9
1970	10.2	53.6	176.8	6,107	90	1,373.2	7,573.9	4,053.5	10,361.7
1975	8.3	54.0	125.5	5,911	104	749.0	6,523.2	6,432.2	17,344.6
1980	11.1	64.8	106.5	6,283	123	806.0	7,147.8	8,759.8	23,095.4
1981	15.6	70.8	110.9	6,367	126	770.1	7,083.8	9,047.0	23,869.2
1983	7.8	67.9	102.9	6,468	121	630.3	6,661.0	8,705.6	24,414.9
1984	13.0	85.8	92.9	6,539	121	620.1	6,784.2	8,865.7	26,216.6

"MADE IN THE USA"

Find the percent of USA production compared to the world. Round to nearest percent.

	YEAR	COTTON
1.	1940	
2.	1960	
3.	1970	
4.	1980	
5.	1984	

Example:

WOOL

1940 US = 434
World = 4180
434 is what % of 4180?

$$\frac{\%}{100} = \frac{434}{4180}$$

$$\frac{x}{100} = \frac{434}{4180}$$

$$4180x = 43400$$

$$x = 10.3$$

$$x \approx 10\%$$

6. When has there been an increase or decrease? a) What was the percent of increase in USA production of cotton between 1980 and 1984? b) What was the percent of decrease in USA production between 1940 and 1975?

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APPENDIX

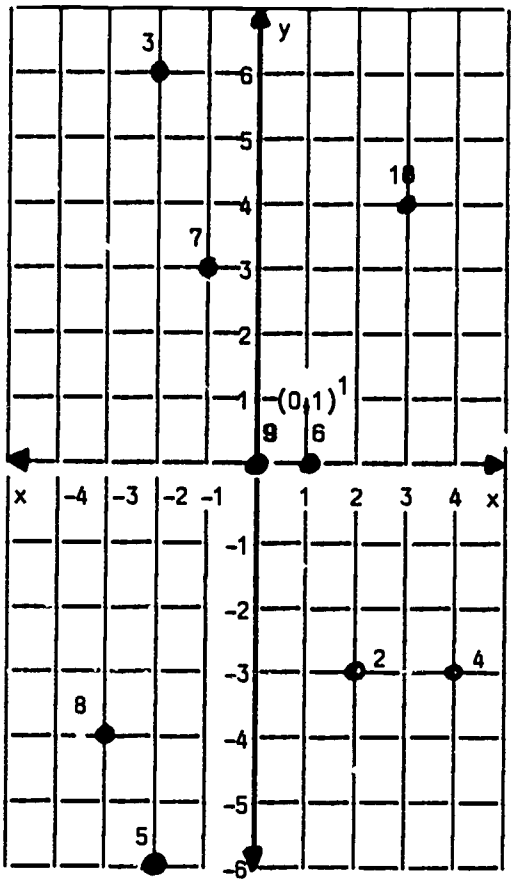
ANSWER KEYS

Child Development

Lesson Plan 1
(p. 6)

Use graph paper to locate the following points:

1. (0,1)
2. (2,-3)
3. (-2,6)
4. (4,-3)
5. (-2,-6)
6. (1,0)
7. (-2,3)
8. (-3,-4)
9. (0,0)
10. (3,4)



Activity 1 - Child Development Vocabulary
(p. 8)

I.
1. Cuts (0,0)
2. snakebites (2,-1)
3. bleeding (-6,-2)
4. animal bites (7,4)
5. shock (-2,-4)
6. choking (0,4)
7. poisoning (-8,0)
8. burns (-4,1)
9. frostbite (1,2)
10. nosebleed (0,-3)
11. insect bites (-9,-4)
12. object caught in throat (3,-5)
13. broken bones (6,-2)
14. unconsciousness (6,0)
15. human bites (-5,-5)
16. fire (-6,3)
17. splinters (3,3)
18. fainting (-2,2)

II. As a babysitter you are responsible for the safety of each child in your care.

Activity 2 - Selected Needs of Infants
(p. 10)

Students can round off to the nearest hour if teachers prefer. Using calculators is an acceptable procedure as long as students understand the processes involved in #9, 10, and 11.

EXAMPLE: percent of day

Eating 1 $\frac{1}{2}$ hours OR $\frac{1.5}{24}$ = 6%

Sleeping 21 $\frac{1}{2}$ hours OR $\frac{21.5}{24}$ = 90%

Playing 1 hour OR $\frac{1}{24}$ = 4%

Responses 1 through 7 will vary.

8. 3 x 15 = 45 minute snacks
+50 nap
95 TOTAL minutes

2:40 = 14:40 in a day care center

		60:40
14:40	*6:40 =	5:100
8:00		- :95
6:40		5:05
- :95		

*(borrow 1 hour; 1 hour = 60 minutes)

ANSWER: 5 hours and 5 minutes of play.

9. a) Monday-Friday

5:00 = *4:60
-1:45 = 1:45
3:15
x 5 days
15:75 = 16 hours & 15 minutes resting

*(borrow 1 hour; 1 hour = 60 minutes)

b) Saturday/Sunday

11:30 - 12:00 = 30 min.
12:00 - 3:00 = 3 hours
3:00 - 3:15 = 15 min.
3 hours 45 min.
x 2
6 hours 90 min. =
7 hours 30 min.

c) TOTAL
16 hrs. 15 min.
+ 7 hrs. 30 min.
23 hrs. 45 min. of rest

10. a) Monday/Tuesday/Wednesday

12:45
-9:15
3 hours 30 minutes
x 3 days
9 hours 90 minutes
= 10 hours 30 minutes of play

b) Saturday

10:30 - 11 = 30 min.
11:00 - 1 = 2 hours
= 2 hours 30 minutes of play

c) TOTAL
10 hours 30 min.
2 hours 30 min.
12 hours 60 min.
= 13 hours of play

Activity 3 - Books For The Young Child
(p. 12)

1. No. He needed $4.77.

3.79	$24.77	
9.99	-20.00	
10.99	$ 4.77	ANSWER
$24.77		

2. $9.52

5.99	$20.00	
4.49	-10.48	
$10.48	$ 9.52	ANSWER

3. 9 dollars
2 quarters
2 pennies

4. $7.01

$20.00	
-12.99	
$ 7.01	

5. $28.76

Wee Sing -	$ 5.99
Work Book-	4.99
The Book -	7.79
Questron -	9.99
	$28.76

6. $81.00

Activity 3 - Books For The Young Child (cont.)

7. $3.21

$12.89
- 9.78
$ 3.21

	Reg.Price	Sale Price	
8. $6.08	$12.95	$ 9.99	$24.85
	6.95	4.99	-18.77
	4.95	3.79	$ 6.08
	$24.85	$18.77	

9. Answers will vary.
$16.05 left for books

$20.00
- 3.95
$16.05

10. Answers will vary.

Activity 4 - Child Care Careers (p. 14)

1. 500

2. 535.693

3. 540

4. 535.69

5. 535.7

Activity 5 - Cost of Operating A Nursery School (p. 15)

1. INCOME 1984		EXPENSES 1984	
C.	$5,480.00	B.	$22,420.00
D.	2,466.00	C.	822.00
E.	4,110.00	F.	5,343.00
		G.	1,233.00

Activity 6 - Babysitter's Income (p. 19)

1. $\frac{18.71}{5} = 3.74$

2. $\frac{19.50}{5} = 3.90$

3. $\frac{13.95}{5} = 2.79$

4. $\frac{18.85}{5} = 3.77$

5. $\frac{16.45}{5} = 3.29$

Total needed per week =

$3.50 x 5 = $17.50

6. 2.65
4.75
4.90
3.25
15.55

$17.50
-15.55
1.95
(ANSWER)

7. $4.40

8. $4.40

9. $1.70

10. $5.50

Activity 7 - Developmental Needs of Children (p. 20)

Physical, Social, Emotional, Intellectual

Activity 8 - Heredity vs. Environment (p. 22)

1. $\frac{3}{9} = 33\frac{1}{3}\%$

$\frac{1}{9} = 11\frac{1}{4}\%$

2. $\frac{4}{26} = \frac{2}{13} = 15\frac{5}{13}\%$

Same % were carriers

3. $\frac{6}{34} = \frac{3}{17} = 17\frac{11}{17}\%$

4. 29

5. a) $\frac{11}{29} = 37\frac{27}{29}\%$

b) $\frac{6}{29} = 20\frac{20}{29}\%$

c) $\frac{17}{29} = 58\frac{18}{29}\%$

d) $41\frac{11}{29}\%$

Activity 9 - Employment With Child Care Facilities (p. 24)

1. 10 million
2. 14 million
3. 2 million
4. 1 million
5. 2 million
6. 12 million
7. 1 million
8. 1 million

Activity 10 - Child Care Arrangements For Working Mothers (p. 26)

1. 42%, 46%
2. 20%
3. a) 2 million
   b) 2 million
   c) 1 million
   d) 1 million
   e) .05 million
   f) 2 million
   g) 2 million
   h) 1 million
   i) 1 million
   j) .01 million
4. 20%
5-7. Answers will vary.

Activity 11 - Child Care Services (p. 29)

1. 230
   x 10
   2300

2. 95
   x 10
   950

3. 1.50
   x 9
   $13.50 per day
   x 5 days
   $67.50 per week - Answer

4. $ 67.50
   x 7 weeks
   $472.50 - Answer

5. $2300.00
   950.00
   472.50
   $3722.50 - Answer

6. $\frac{3722.50}{20,000}$ = 19% - Answer

7. $\frac{3722.50}{15,000}$ = 25% - Answer

Family Relationships

Lesson Plan 2 (p. 32)

1. 5000
2. 4000
3. 2000
4. 1000
5. 10,000

Activity 12 - Reasons For Not Working (p. 34)

Part 1		Both Sexes		Males		Females
1980	1.a	10,000	2.a	5,000	3.a	7,000
	b	800	b	400	b	400
	c	300	c	200	c	200
	d	9,000	d	4,000	d	5,000
	e	2,000	e	20	e	2,000
	f	60	f	50	f	6
	g	-	g	-	g	-
	h	300	h	200	h	200
1983	4.a	10,000	a	6,000	a	7,000
	b	1,000	b	800	b	500
	c	200	c	100	c	100
	d	9,000	d	5,000	d	5,000
	e	2,000	e	40	e	2,000
	f	-	f	-	f	-
	g	2	g	-	g	2
	h	300	h	200	h	200

Part 2

1. 5000
2. going to school

	1980	1983
3.a	5,024	5,588
b	7,025	7,334

Activity 13 - Family Living Patterns (p. 36)

1. 179 million
2. 49.6 million
3. 31.8 million
4. 7 million
5. 50 million
6. 1.7 million
7. 10.2 million
8. 46.5 million
9. 12.4 million
10. 1.2 million
11. 1.2 million
12. .3 million
13. 1984 - 12.6 million
14. 1970 - 8.6 million

Activity 14 - Comparing Patterns of Growth (p. 36)

Answers will vary.

Activity 15 - Contributions of "Special" Family Members (p. 39)

	CHAIN #1	CHAIN #2	CORNER DRUG	MAIL ORDER
1. a.	17.00	16.00	26.00	16.00
b.	13.00	14.00	19.00	15.00
c.	16.00	16.00	23.00	16.00
d.	3.00	6.00	10.00	6.00
e.	26.00	23.00	30.00	27.00
f.	5.00	8.00	15.00	7.00

2. a. Chain #2
   b. Chain #1
   c. Chain #2
   d. Chain #1
   e. Chain #2
   f. Chain #1

3. Chain #1

Activity 16 - Time Demands And The Family Cycle (p. 41)

1. 3 and 4
2. 16 x 7 = 112 hours
3. $\frac{x}{100} = \frac{60}{112}$

   $x = 54\%$
4. about $\frac{58}{98} = 59\%$ $\frac{x}{100} = \frac{55}{112}$

   $x = 49\%$
5. Same as 4.
6. cycle 1 = 40 hours 60 $\frac{20}{40} = 50\%$
   cycle 2 = 60 hours $\frac{-40}{20}$
7. cycle 5 = 50 hours $\frac{10}{50} = 20\%$
   cycle 6 = 40 hours

Activity 17 - Keeping The Family Secure (p. 43)

	SALE PRICE TAX	REGULAR PRICE TAX
1.	$.59	$ .77
2.	$.51	$ .66
3.	$.42	$ .54
4.	$.78	$ 1.02
5.	$.60	$ .72

6. $6.97 +.42 = $7.39 $12.97 +.78 = $13.75

Activity 18 - How Much Does College Cost? (p. 45)

	HUNDREDS	THOUSANDS	TEN THOUSANDS
1.	15,800	16,000	20,000
2.	15,400	15,000	20,000
3.	15,300	15,000	20,000

Activity 18 - How Much Does College Cost? (continued)

	HUNDREDS	THOUSANDS	TEN THOUSANDS
4.	15,200	15,000	20,000
5.	15,100	15,000	20,000
6.	15,000	15,000	20,000
7.	15,000	15,000	20,000
8.	15,000	15,000	10,000
9.	14,900	15,000	10,000
10.	14,900	15,000	10,000

11 - 17. ANSWERS WILL VARY

Activity 19 - Marriage -- With or Without Consent (p. 47)

1. a) Age 15

$\frac{x}{100} = \frac{2}{20}$

$x = 10\%$

Age 16

$\frac{x}{100} = \frac{12}{20}$

$x = 60\%$

Age 17

$\frac{x}{100} = \frac{3}{20}$

$x = 3\%$

b) Age 18

$\frac{x}{100} = \frac{19}{20}$

$x = 95\%$

1. b) Age 19

$\frac{x}{100} = \frac{0}{20}$

$x = 0\%$

Age 20

$\frac{x}{100} = \frac{1}{20}$

$x = 51\%$

c) $\frac{x}{100} = \frac{14}{20}$

$x = 70\%$

d) $\frac{x}{100} = \frac{11}{20}$

$x = 5.5\%$

2.

	Marriages	Divorces
a. Alabama	47,000	25,000
b. Alaska	7,000	4,000
c. Connecticut	25,000	11,000
d. Hawaii	15,000	5,000
e. New Jersey	62,000	28,000
f. New York	177,000	61,000
g. Rhode Island	8,000	4,000

Foods and Nutrition
(p. 50)

Activity 202 - How To Burn Off Favorite Food Calories, (p. 53)

Answers will vary according to students' weights.

Activity 21 - Burning Off Calories
(p. 54)

BEEFSTEAK

(1)	.8	(2)	5.6	(3)	.8	(4)	.7	(5)	.6	(6)	1.2
(7)	.8	(8)	3.3	(9)	3	(10)	.6	(11)	1.4	(12)	4.4

CHICKEN

(1)	.6	(2)	4.2	(3)	.6	(4)	.5	(5)	.4	(6)	.9
(7)	.6	(8)	2.5	(9)	2.3	(10)	.4	(11)	11	(12)	3.3

PIZZA

(1)	.4	(2)	2.5	(3)	.4	(4)	.31	(5)	.3	(6)	.5
(7)	.3	(8)	1.5	(9)	1.3	(10)	.2	(11)	.6	(12)	1.9

MACARONI

(1)	1.1	(2)	7.3	(3)	1.1	(4)	.9	(5)	.8	(6)	1.6
(7)	1.0	(8)	4.3	(9)	3.9	(10)	.7	(11)	1.8	(12)	5.7

HAMBURGER

(1)	1.1	(2)	7.1	(3)	1.0	(4)	.9	(5)	.7	(6)	1.5
(7)	1.0	(8)	4.2	(9)	3.8	(10)	.7	(11)	1.7	(12)	5.6

POTATO CHIPS

(1)	1.1	(2)	7.6	(3)	1.1	(4)	.9	(5)	.8	(6)	1.6
(7)	1.1	(8)	4.5	(9)	4.1	(10)	.8	(11)	1.9	(12)	6

ICE CREAM

(1)	.7	(2)	4.8	(3)	.7	(4)	.6	(5)	.5	(6)	1.0
(7)	.6	(8)	2.7	(9)	2.5	(10)	.5	(11)	1.1	(12)	3.6

Activity 22 - Changing Eating Patterns
(p. 56)

1. 3% ↑
2. 11% ↑
3. 5% ↑
4. 6% ↓
5. 6% ↑
6. 6% ↑
7. 6% ↑

Activity 23 - Food Magic Rectangle
(p. 58)

				SUM
a) 20 YOGURT	d) 6 PEAS	g) 4 TOMATO	j) 2 SPAGHETTI	32
b) 1 ICE CREAM	e) 7 NUTS	h) 15 CARROTS	k) 9 WAFFLES	32
c) 3 CHEESE	f) 11 EGGS	i) 5 STRAWBERRIES	l) 13 MUFFINS	32

FOOD GROUP	MILK	MEAT	VEGETABLES FRUITS	BREAD CEREAL
SUM	24	24	24	24

Activity 24 - U.S. RDA
(p. 60)

Answers will vary depending upon students' weight. Have students set up a few proportions and check them before doing any computation.

Activity 25 - Yummy Bread!
(p. 62)

1. $1\frac{3}{4} = \frac{7}{4}$ $\frac{7}{4} \times 5 = \frac{35}{4} = 8\frac{3}{4}$ cups

2. $3\frac{3}{4}$ t.

3. 5 t.

4. $1\frac{1}{4}$ t.

5. $2\frac{1}{2}$ t.

6. $1\frac{1}{4}$ t.

7. $6\frac{2}{3}$ c

8. $1\frac{2}{3}$ c

9. $2\frac{1}{2}$ t.

10. 10

11. 5 c

12. $1\frac{2}{3}$ c

13. $2\frac{1}{2}$ c

Activity 26 - Care and Storage of Milk and Milk Products, (p. 63)

METHOD FOR #

1) 88% of 198

$\frac{88}{100} = \frac{x}{198}$

$100x = 17424$
$x = 174.24$
$x \approx 174$

METHOD FOR #7

7) 174 $\frac{11}{174}$ 6% M-A (6.3)
-162
11

168 $\frac{37}{168}$ 22% N-C
-131
37

ANSWERS:

(88% of 198) (85% of 198)
1) 174 2) 168

3) (82% of 198) 4) (66% of 198)
162 131

5) (34% of 198) 6) (18% of 198)
67 36

Activity 27 - Qualifications For A Career In The Food Industry - (p. 65)

Questions:	1	2
Bartenders	400,000	596,000
Cooks/Chefs	1,200,000	1,788,000
Butchers	200,000	188,000
Waiters	1,800,000	2,682,000
Truck Drivers	2,400,000	3,096,000
Dietitians	100,000	149,000

Example:

1. BARTENDERS 384 ROUNDED = 400

% of change = 49%

$\frac{x}{400} = \frac{49}{100}$

$100x = 19600$

$x = 196$

400 + 196 = 596 thousand OR 596,000

2. "Butchers" will decrease

Items 3, 4 are open ended discussion questions with values implications. Home Economics teachers should be prepared to lead these discussions.

Consumer Education

Activity 28 - Careers in Consumer Services (p. 69)

1. Retail Trade, Sales Workers
2. Insurance Agent, broker
3. Lawyers, bartenders, correction officers, cooks & chefs, interior designers, waitress/waiters, real estate agent (broker), travel agents, dieticians.
4. Butchers, meat cutters, college faculty.
5. All of them.
6. Job salary to nearest hundred/per week.

1) Insurance agent, broker	$700
2) Personnel specialist	$700
3) Chemist	$600
4) Psychologist	$600
5) Sociologist	$600

Activity 29 - Money, Money, Money (p. 71)

1.	$ 18.75
2.	32.55
3.	168.00
4.	8.75
5.	33.00
6.	28.75
7.	63.90
8.	6.25
9.	78.00
10.	202.80
11.	Spent $39.49 Sales tax $2.37 Change $8.14
12.	$38.31 x 6% = 2.30 bill: $40.61
13.	$.72 sales tax on tapes $47.63 total $ 2.40 change

Activity 30 - Making A Budget
(p. 73)

Budget $8,760

1. Food	20% = $1752	$8760	
Clothing	15% = $1314	x.20	OR
Shelter	20% = $1752	$1752	
Home Operations	12% = $1051.20		
Transportation	8% = $ 700.80		
Medical	5% = $ 438	x 20	
Savings	5% = $ 438	8760 100	
Other	15% = $1314		

Budget $18,910

2. Food	$3782.00
Clothing	2836.50
Shelter	3782.00
Home Operations	2269.20
Transportation	1512.80
Medical	945.50
Savings	945.50
Other	2836.50

Activity 31 - Credit and Borrowing
(p. 74)

1. f. $2\frac{1}{2}$ - charge account

$$1\frac{7}{8} \div \frac{3}{4} = \frac{15}{8} \div \frac{3}{4}$$

$$= \frac{15}{8} \times \frac{4}{3}$$

$$= \frac{5}{2} \times \frac{1}{1} = \frac{5}{2}$$

$$= 2\frac{1}{2}$$

2. k. 46 - charge statement

$$4\frac{3}{5} \div \frac{1}{10} = \frac{23}{5} \times \frac{10}{1}$$

$$= \frac{23}{1} \times \frac{2}{1}$$

$$= 46$$

3. e 22 - credit

4. g - $3\frac{1}{5}$ credit card

5. h - $10\frac{1}{2}$ down payment

6. a - 15 finance charge

7. b - 4 installment buying

8. d - $1\frac{1}{2}$ interest

9. c - 3 promissory note

10. j - 40 budget

Activity 32 - Using Banking Services
(p. 76)

2. RECORD ALL CHARGES OR CREDITS THAT AFFECT YOUR ACCOUNT

NUMBER	DATE	DESCRIPTION OF TRANSACTION	PAYMENT/DEBIT	T	FEE (if any)	DEPOSIT/CREDIT	BALANCE
							$ 24.36
a. 223	1/12	Cable TV	$ 42.72			$ 346.85	413.93
b. 224	1/12	Macy's	36.85				377.08
c. 225	1/20	A-1 Rentals	450.00			850.00	777.08
d. 226	1/22	Foodtown	175.00				1502.08
e. 227	1/25	Juan's Book Store	26.75				1475.33
f. 228	1/30	N. J. Bell	48.76				1426.57
g. 229	2/15	Cancer Society	15.00	v		400.95	1040.62
h. 230	2/15	Union County College	150.00				890.62
i. 231	2/15	Life Insurance Co.	75.75				814.87
j. 232	2/15	Car Care Company	138.62				676.25

Activity 33 - Credit Card Capers, (p. 80)

		YEARLY CHARGE		AVERAGE MONTHLY BALANCE
			A	B
	Lender	Rate	$50.00	$150.00
1)	Sears, J.C. Penney	21%	10.50	31.50
2)	Montgomery Ward	21.6%	10.80	32.40
3)	American Express	18%	9.00	27.00
4)	Chase Manhattan Bank	19.8%	Citibank	
5)	Manufacturers Hanover Trust	17.8%	8.90	26.70

Activity 34 - Discount Disco
(p. 82)

II. A. $250.00 250-(250 x .30) = $175 Store
x .30
75.00 OR $75.00

B. 256 - (256 x $\frac{1}{3}$) = $170.67 Catalog

OR $85.33

C. Save: 175 - 170.67 = $4.33

1. $2450 - 245 = $2205 Computer Outlet
2700 - 540 = 2160 Video One

$45 savings at Video One

2. $400 - (400 x .30) = $280 BIG BOYS
360 - (360 x $\frac{1}{4}$) = $270 TV's R US

Save $10 at TV's R US

3. $1.50 - (1.50 x .15) = $1.28 Watchung
1.00 - (1 x .125) = $ .88 Union

Save $.40 at Union

4. $8.50 - (8.50 x .10) = 7.65 Granny's
10.00 - (10 x $\frac{1}{4}$) = 7.50 Uncle B's

Save $.15 for "Uncle B's" pie

5. A & P

$.88 x $\frac{1}{2}$ = $.44

Shop Rite

55 - (55 x $\frac{1}{4}$) = $.41

Shop Rite ($.03 less)

Activity 35 - Fixed vs Flexible Finances
(p. 85)

1. Savings/Mopad payment

2. Record/snacks

3. $9.50 x 52 = $494

4. $4.00 x 52 = $208

5. 1.75 x 52 weeks = $91

6. 67 weeks or 17 months

7. 41 weeks or 11 months

8. $\frac{125}{175}$ = 167 or 42 months

Activity 36 - Money And Values
(p. 86)

	$12 Allowance
Food/tobacco	2.16
Housing	1.68
Transportation	1.44
Household Operation	1.44
Medical care	1.32
Clothing/jewelry	.84
Recreation	.72
Savings	.60
Interest	.36
Personal care	.12

Activity 37 - School Dropouts
(p. 88)

ex 2. 12%
ex 3. 1970 = 7.5%
ex 4. 1983 = 7.1%

Housing, Home Furnishing and Equipment

Lesson Plan 5 (p. 92)

Activity 38 - The Real Cost of Real Estate
(p. 94)

ex. 30,000 12% rate for 20 years
monthly payment = $330.33
x 12 months
$3963.96 per year
x 20 years
$79279.20 Total

Answers:		20 years	30 years
30,000	12%	79,279.20	91,092.40
	13%	84,355.20	119,469.60
50,000	12%	132,132.00	185,151.60
	13%	140,589.60	199,116.00

Activity 39 - Let Your Fingers Do The Shopping (p. 96)

ITEM #	STORE COST FOR TWO	TAX 6%	ITEM #	CATALOG COST FOR TWO	NO TAX
1.	2.98	.18	1.	2.68	
2.	2.38	.14	2.	2.14	
3.	4.00	.24	3.	3.60	
4.	1.98	.11	4.	1.78	
5.	2.00	.12	5.	1.80	
6.	3.98	.24	6.	3.58	
7.	2.38	.14	7.	2.14	
8.	7.98	.48	8.	7.18	
9.	17.76	1.07	9.	15.99	
10.	9.98	.60	10.	8.98	
TOTAL	55.42	3.32	TOTAL	49.87	
TAX	3.32		POSTAGE	5.95	
TOTAL	58.74		TOTAL	55.82	

Activity 40 - Purchasing By Mail (p. 98)

1. 32000 = .32 x 100000
2. 51000
3. 19000
4. 14000
5. 3000
6. 60000
7. 13000
8. 13000
9. 9000
10. 5000

Use other figures such as the number of parents (households) in the class - in the school, etc., assuming the same percentages. Students will hopefully see relationships when multiplying by powers of 10. e.g.:

.32 x 100000 = .32000.00 = 3200

the decimal point moves spaces equivalent to the number of zeroes - the rule is less important than the computation or the answer so if students don't see it, do not demand it of them.

Activity 41 - TV For A Teen (p. 100)

	VOLUME	RANK
1.	V = LWH V = 10.75 x 15.25 x 12.5 V = 2049.22	2
2.	2179.69	3
3.	2300.00	4
4.	1894.69	1

Activity 42 - Crafts For The Home (p. 101)

1. 15 heavy glass mugs with handles @2.75	41.25
15 5" candles @.69	10.35
1 box carpet tacks @.69	.69
1 tube instant glue @1.79	1.79
	$54.08
2. 94 yards warp cord, gold @.07	6.58
47 yards warp cord, rust @.07	3.29
30 yards warp cord, yellow @.07	2.10
2 brass rings 1 $\frac{1}{2}$" diameter @.35	.70
1 $\frac{3}{8}$" x 36" handle @1.99	1.99
	$14.66
3. 75 yds. 5-ply jute, rust @.08	6.00
80 yds. 5-ply jute, black @.08	6.40
50 yds. 5-ply jute, natural @.08	4.00
	$16.40
4. 2 pieces $\frac{3}{8}$" hardware @1.95	3.90
2 hinges @.49	.98
1 3" chain @.65	.65
1 box brads @.59	.59
	$6.12
5. 1 yd. cheesecloth @ .79	.79
1 long handled spoon @1.98	1.98
4 molds @.69	2.76
1 can turpentine @1.29	1.29
20 lbs. paraffin @.49 lb.	9.80
2 balls of cord @1.69	3.38
	$20.00
6. 140 yds. 5-ply jute, rust @.09	12.60
40 yds. 5-ply jute, brown @.09	3.60
10 yds. 5-ply jute, natural @.09	.90
10" x 15" metal wastebasket @3.99	3.99
	$21.09
7. 1 yd. cheesecloth @.59	.59
1 can turpentine @1.29	1.29
20 lbs. paraffin @.59 lb.	11.80
2 balls of cord @1.89	3.78
	$17.46
8. 28 lengths white cord @.22	6.16
1 3" soldered ring @.35	.35
4 6" metal rings @.55	2.20
16 6" beads @.80	12.80
8 2" beads @.50	4.00
	$25.51

9. ANSWER: 2) $5.34 3) $3.60 4) $13.88 7) $2.54

Activity 43 - A Good Buy For A Steam Iron (p. 103)

1. $\frac{7}{10} = \frac{70}{100} = 70\%$

2. $\frac{1}{10} = \frac{10}{100} = 10\%$

3. $\frac{3}{10} = \frac{30}{100} = 30\%$

4. Brand E

5. Brand H

6. Answers will vary

Activity 44 - Floor Plan Of A Home (p. 105)

	ACTUAL	SCALE
Large bedroom	9 x 13	$1\frac{1}{2}" \times 2\frac{1}{6}"$
Living room	11 x 18	$1\frac{5}{6}" \times 3"$
Kitchen	11 x 15	$1\frac{5}{6}" \times 2\frac{1}{2}"$
Workroom	9 x 12	$1\frac{1}{2} \times 2"$
Porch	8 x 16	$1\frac{1}{3}" \times 2\frac{2}{3}"$

Activity 45 - Decisions Of A Commuter (p. 107)

1. 3 miles

2. Park Road and Zion Road

3. one mile +

4. West Avenue to Seaview Avenue

5. 2 miles

6. Zion Road to Delaware Road

7. Old Zion Road - Mt. Airy Road - Steelmanville Road

Activity 46 - Floor Coverings According To Budget (p. 109)

Answers will vary.

EXAMPLE

Living room carpet at $16.99/sq. yd.

Area = length x width

A = 11 x 18

A = 198 sq. ft.

Change to yards

$A = \frac{198}{9}$

A = 22 sq. yd.

EXAMPLE

Cost $16.99
x 22
$373.78

Kitchen

A - l x w

A = 11 x 15

A = 165 sq. ft.

Change to yards

$A = \frac{165}{9}$

A = 18.3 sq. yds.

Large bedroom $16.99
x 13
$220.87

Small bedroom 88 sq. ft. = 9.8 sq. yd.
$ 8.99
x 9.8
$88.10

Clothing And Textiles

Lesson Plan 6
(p. 112)

Activity 47 - Do You Have The Right Angle?
(p. 114)

Figure A - right angles
layout is correct

Figure B - acute angle
layout is not correct

A. right B. right C. obtuse

D. acute E. right F. obtuse

Correct layouts: A, B, E.

Activity 48 - Savings On Quantity Buying
(p. 116)

1. $ 2.10
2. 1.92
3. 12.05
4. 5.96
5. 5.26
6. .70
7. .75
8. 2.16
9. .96

Activity 49 - Dresses For The Church Choir
(p. 118)

EXAMPLE:

$3\frac{7}{8} \times 3 = \frac{31}{8} \times 3 = \frac{93}{8} = 11\frac{5}{8}$

SIZE	10(3)	14(2)	18(5)
45"	$11\frac{5}{8}$	8	$21\frac{1}{4}$

TOTAL: $40\frac{7}{8}$

Activity 50 - Solve The Problem And Discover The Fabric (p. 119)

1. $1\frac{1}{8}$ - cashmere
2. 15 fleece
3. $1\frac{5}{9}$ chinchilla
4. $\frac{3}{7}$ songee
5. 2 flannel
7. $\frac{2}{3}$ gingham
8. $\frac{1}{6}$ sateen

Activity 51 - Trim For Baskets
(p. 121)

1. 16"
2. 15"
3. 21"
4. 12"
5. 48"
6. 22"
7. 52"
8. 26"

Activity 52 - Retailing As A Career
(p. 123)

Kyle Joyner

	HOURS ELAPSED	HOURS WORKED
Monday	8 hours	7 hrs. 30 min.
Tuesday	8 hrs. 30 min.	8 hours
Wednesday	9 hrs. 10 min.	8 hrs. 10 min.
Thursday	9 hours	8 hrs. 15 min.
Friday	9 hrs. 45 min.	9 hours
Saturday	6 hrs. 30 min.	6 hours
TOTAL	46 hours 55 min.	

David Wortham

	HOURS ELAPSED	HOURS WORKED
Monday	7 hrs. 35 min.	6 hrs. 35 min.
Tuesday	8 hours	7 hrs. 30 min.
Wednesday	8 hrs. 10 min.	7 hrs. 10 min.
Thursday	9 hours	8 hrs. 15 min.
Friday	9 hrs. 30 min.	8 hrs. 30 min.
Saturday	8 hrs. 15 min.	7 hrs. 45 min.
TOTAL	46 hrs. 31 min.	

Activity 53 - Is The Discount For Real?
(p. 125)

ORIGINAL PRICE

A. $149.96

B. 199.93

C. 44.53

D. 29.90

E. 7.95

F. 7.97

G. 15.96

H. 9.96

I. 24.94

J. 11.96

Activity 54 - Retail Scramble
(p. 127)

1) $\frac{x}{12} = \frac{15}{36}$

$36x = 180$

$x = 5$

a. 7

b. 1

c. 6

d. 8

e. 4

f. 10

2) $\frac{7}{x} = \frac{14}{16}$

$14x = 112$

$x = 8$

g. 2

h. 3

i. 5

j. 9

k. 12

l. 11

Activity 55 - "Made In The U.S.A."
(p. 129)

1940 $\frac{12.6}{31.2}$ 40%

1960 $\frac{14.2}{46.2}$ 31%

1970 $\frac{10.2}{53.6}$ 19%

1980 $\frac{11.1}{64.8}$ 17%

1984 $\frac{13.0}{85.8}$ 15%

16. Decrease

1980	1984
11.1	13.0
13.0	$\frac{1.9}{11.1} = 34\%$
-11.1	% of decrease
1.9 amount of decrease	

b) 12.6 8.3

12.6 $\frac{4.3}{12.6} = 17\%$
- 8.3
4.3