

Project 1 - LIVING A MINIMUM LIFESTYLE ON MINIMUM WAGE

Introduction: For many of us, our very first job consists of some entry level, minimum wage job. This type of job is a great way to earn spending money, but could we support ourselves making a minimum wage? What does it actually cost to live by ourselves, pay all of our own bills, and buy all of our own food? In this project, you will compute yearly expenses for a person who lives a modest lifestyle. Then you will prepare your own budget.

Procedure:

1. Listed here are the expenses of a person who lives on a tight budget. Note that this person does not have money budgeted for movies, vacations, or going out to eat. Using the data given here, calculate the yearly expenses.

EXPENSES

Water - \$12.04/month

Electricity - \$20.02/month

Heat - \$33/month (year-round average)

Food - \$28/week (using coupons)

Household Cleaners, Soap, etc. - \$30/month

Laundry - \$5.00/week

Gas for Car - \$15/week

Auto - (Older Model) \$100/year (cost)
\$120 per 6 months (insurance)
\$500/year (maintenance)

Medical - \$80/month insurance

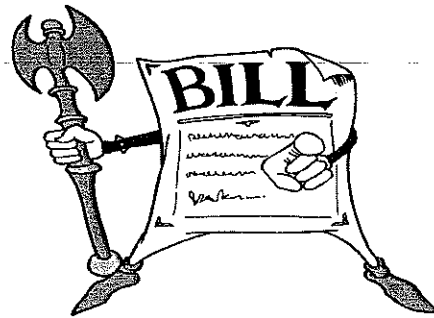
Clothes, Shoes, etc. - \$100/year (second hand)

Furniture, Kitchenware, etc. - \$100/year (second hand)

Rent - \$290/month (1 bedroom apartment)

CALCULATIONS

YEARLY EXPENSES \$ _____



2. Compute the yearly income of a person who has a \$4.35/hour job. Use fifty-two 40-hour weeks and take 10% (one tenth) out for taxes.

CALCULATIONS

YEARLY INCOME AFTER TAXES \$ _____

3. Is the income calculated in step 1 enough to pay for the expenses calculated in step 2? If it is, then you made a mistake – go back and check your work! How could you modify your lifestyle in order to make ends meet? Give specific calculations to back up your answer.

CALCULATIONS

4. Calculate the yearly expenses for a more desirable lifestyle. Do this by adding the following to the expenses in step 1. Note: Only add the items that you personally would like to have. Fill in the table on the following page.
- a. Movies, or going out (per week times 52)
 - b. New clothes, furniture and other household items (per year)
 - c. Eating out (per week times 52)
 - d. Eating foods like steak, snack foods and other nonessentials (per week times 52)
 - e. Trips out of town (as, food, lodging, etc., . . .) (per year)
 - f. New cars (12 monthly payments + \$170/year extra insurance)
 - g. Sports and hobbies
 - h. Other

BUDGET ITEM	YEARLY EXPENSE
TOTAL COST	

5. Approximately what yearly income would you need to pay for your personal lifestyle calculated in step 4? Keep in mind that about 20% or 1/5 of your yearly income will be taken out for taxes.

Example: If you need \$25,000 per year, then your yearly income must be about \$31,000 since $1/5$ of 31,000 = 6,200 and $31,000 - 6,200 = 24,800$.

CALCULATIONS

YEARLY INCOME \$ _____

Project 2 - DIETARY PLANNING TO REDUCE FAT

Introduction: People are always trying to lose weight. There are probably dozens of different methods of weight loss. Some extreme methods involve fad diets while others involve complicated exercise equipment. A successful method of weight loss combines exercise and diet management. Research, in recent years, indicates that a low fat diet works best. In this project, you will look at many different foods and their fat contents. You will also recommend a menu for breakfast, lunch, and dinner for a single day.

Procedure:

1. Pick four of your favorite processed snack items that contain significant fat or significant amounts of sugar and fat (e.g., cookies, chips, candy bars, etc.). Pick four of your favorite food items from the following categories: fruits, vegetables, breads/cereals/rice/pasta items, milk/yogurt/cheese items, and meat/poultry/non-meat substitutes (e.g., nuts, lentils, etc.). Also pick four of your favorite entrees which contain several food categories (e.g., lasagna, casseroles, etc.). You should have picked a total of 28 different food items and entrees. Write the names of these items below.

4 SNACK ITEMS _____

4 FRUITS _____

4 VEGETABLES _____

4 BREADS/CEREALS/PASTA _____

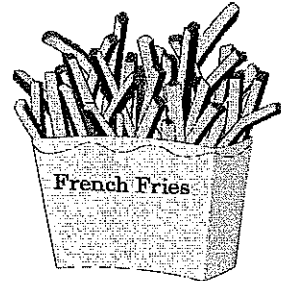
4 MILK/YOGURT/CHEESE _____

4 MEAT/PROTEIN _____

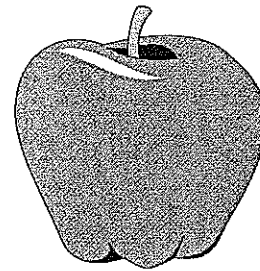
4 ENTREES _____

2. For each of the food items picked, you must find the **grams of fat per serving**. For the snack items, the fat gram information will be given on the package. For other food items, the fat gram information is available in most cook books, or in most dietary planning books found in the library.
3. Fill in the seven tables on the following pages. There is one table for each of the seven categories listed in step 1. Write in the name of each food, and list the fat grams per serving.

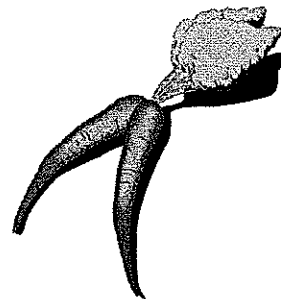
NAMES OF SNACK ITEMS	GRAMS OF FAT



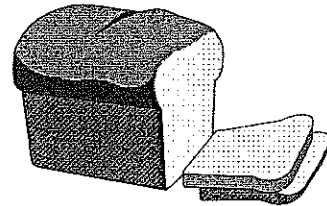
NAMES OF FRUITS	GRAMS OF FAT



NAMES OF VEGETABLES	GRAMS OF FAT



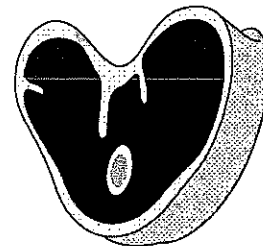
NAMES OF BREADS/CEREALS/PASTA	GRAMS OF FAT



NAMES OF MILK/YOGURT/CHEESE ITEMS	GRAMS OF FAT



NAMES OF MEAT/PROTEIN ITEMS	GRAMS OF FAT



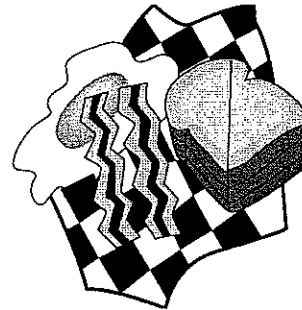
NAMES OF ENTREES	FOOD GROUPS REPRESENTED	GRAMS OF FAT



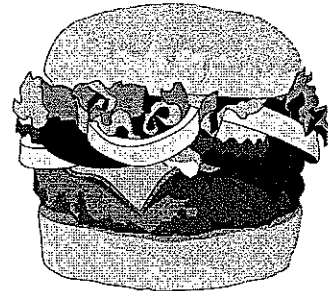
4. Design a single day's menu including breakfast, lunch, and dinner. Minimize the fat content and use the following guidelines:
- Each day you should eat 6 to 11 servings from the bread, cereal, rice and pasta category.
 - Each day you should eat 2 to 4 servings from the fruit group.
 - Each day you should eat 3 to 5 servings from the vegetable group.
 - Each day you should eat 2 to 3 servings from the milk, yogurt, and cheese group.
 - Each day you should eat 2 to 3 servings from the meat, poultry, or meat substitute group.
 - Each day you should eat a minimum of snack foods containing fats, or fats and sugar.

Record your menu on the following tables.

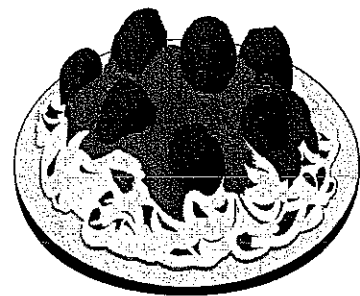
BREAKFAST	
FOOD ITEMS	GRAMS OF FAT



LUNCH	
FOOD ITEMS	GRAMS OF FAT



DINNER	
FOOD ITEMS	GRAMS OF FAT



5. Using your menu, calculate the total grams of fat for the day.

TOTAL GRAMS OF FAT _____

6. Based on this investigation, what three suggestions would you give to someone who is trying to lose weight through dietary planning?

7. Describe three ways in which this investigation could have been improved?

Project 3 - INSTANT WINNER LOTTERY OR LONG TERM LOSER?

Introduction: Many people play instant-win lottery games with the hopes of winning large prizes and occasionally, you hear of someone actually winning \$10,000 or \$20,000. Considering that these instant-win tickets usually cost only \$1, it seems that if a person played these games on a regular basis, then sure fortune would result. Or would it? In this investigation, you will use some fairly simple arithmetic to find out what one would expect to win by playing the instant-win lottery tickets. You will calculate the expected winnings of a given instant-win lottery ticket. This expected amount is the average amount you would win per ticket in the long run.

Procedure:

1. You must select three different types of instant-win lottery tickets and obtain the information booklet for each ticket. The information booklet will have the odds of winning each type of prize. You can easily obtain these information booklets at any convenience store where tickets are sold. **Remember, the odds of winning each type of prize must be given.**
Note: When most instant-win tickets list the odds, they are actually listing the probabilities. In any case, the use of odds will yield a close estimate of the expected winnings.
2. Calculate the expected winnings for each of the three tickets. The expected winnings are calculated in the following way:
 - a. Multiply the probability times the prize amount for each prize listed.
 - b. Add all of these products together.

Example: A ticket has the following prizes: \$50,000 with a probability of 1:1,000,000, \$10,000 with a probability of 1:100,000, \$10 with a probability of 1:80, and \$1 with a probability of 1:3.

The expected winnings are $(50,000 \times 1/1,000,000) + (10,000 \times 1/100,000) + (10 \times 1/80) + (2 \times 1/3)$

$= (50,000 \times 0.000001) + (10,000 \times 0.00001) + (10 \times 0.0125) + (2 \times 0.333)$

$= 0.05 + 0.10 + 0.125 + 0.33 = \$0.605 = 60\frac{1}{2}$ cents.

If this ticket were purchased for \$1.00, then the expected winnings would be $60\frac{1}{2}$ cents, and you would lose $39\frac{1}{2}$ cents per ticket in the long run.

Note: The odds were converted to a fraction. Then, the fraction was converted to a decimal before calculations were done.

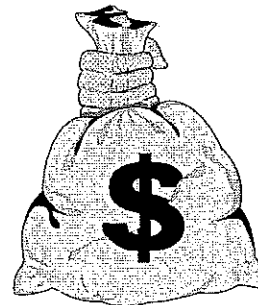
Calculations for ticket #1



Calculations for ticket #2



Calculations for ticket #3



3. Fill in the table listing the price of each instant-win ticket, the expected winnings for each ticket, and the expected money lost per ticket.

	TICKET #1	TICKET #2	TICKET #3
PRICE			
WINNINGS			
MONEY LOST			

4. Based on your findings, how much money would a person probably lose by buying \$10,000 worth of instant-win tickets?

CALCULATIONS

TOTAL AMOUNT LOST \$ _____

5. State three reasons why you think some people invest large amounts of money in instant-win tickets.

Project 4 - WATTS UP? - THE COST OF LEAVING A LIGHT ON ALL NIGHT

Introduction: Everyone knows that leaving a light on all night will increase your electric bill. But by how much will it increase your electric bill? Can we calculate the increase exactly? In this project you will learn how to calculate the costs of operating nearly every electrical appliance in your home. You will calculate the kilowatt-hours, and use the rate charged by your local electric company to calculate the dollar amounts required to operate electric lights and selected appliances.

Procedure:

1. In your home, take an inventory of all the electrical lights and appliances used in an average 24-hour day. This can be done by filling in the following inventory list.

__ 60W LIGHT BULBS USED FOR A COMBINED TOTAL OF __ HOURS

__ 75W LIGHT BULBS USED FOR A COMBINED TOTAL OF __ HOURS

__ 100W LIGHT BULBS USED FOR A COMBINED TOTAL OF __ HOURS

__ 150W LIGHT BULBS USED FOR A COMBINED TOTAL OF __ HOURS

OTHER WATTAGES OF LIGHT BULBS __ WATTS __ HOURS

OTHER WATTAGES OF LIGHT BULBS __ WATTS __ HOURS

Example: Four 100W light bulbs are used for 8 hours each. The combined total of hours is $4 \times 8 = 32$ hours. Also, three 40W bulbs are used for 6 hours each. The combined total of hours are $3 \times 6 = 18$ hours. You would complete the inventory in the following way:

4 100W LIGHT BULBS USED FOR A COMBINED TOTAL OF 32 HOURS

OTHER WATTAGES OF LIGHT BULBS 40 WATTS 18 HOURS

2. Select either an air conditioner or an electric space heater, and find out how many watts this appliance uses, and how many hours this appliance is used per day. If you do not have a space heater or an air conditioner, go to an appliance store and write down the watts used by a space heater or an air conditioner of your choice. Estimate how many hours you would use this appliance in a 24-hour day.

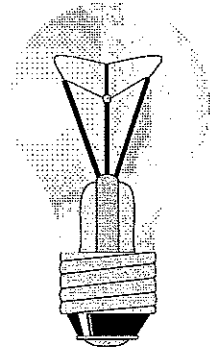
WATTS USED _____ HOURS USED PER DAY _____

3. The electric company calculates your electric bill based on the number of kilowatt-hours used. To calculate the kilowatt-hours, first calculate the total watt-hours. To do this, multiply the watt rating by the total number of hours the light or appliance is used in a 24-hour day.

Example: The 75 watt bulbs are used for a combined total of 30 hours a day. $30 \text{ hours} \times 75 \text{ watts} = 2,250 \text{ watt-hours}$.

Calculate the watt-hours for each type of light bulb. Also, calculate the watt-hours for the space heater or air conditioner. Add all of the watt-hours together.

CALCULATIONS



WATT-HOURS FOR AIR CONDITIONER OR HEATER _____

WATT-HOURS FOR 60W BULBS _____

WATT-HOURS FOR 75W BULBS _____

WATT-HOURS FOR 100W BULBS _____

WATT-HOURS (OTHER BULBS) _____

WATT-HOURS (OTHER BULBS) _____

WATT-HOURS (OTHER BULBS) _____

TOTAL WATT-HOURS PER DAY _____

4. Each kilowatt-hour = 1,000 watt-hours. Convert your total number of watt-hours into kilowatt-hours by dividing by 1,000. Record this figure.

TOTAL KILOWATT-HOURS PER DAY _____

