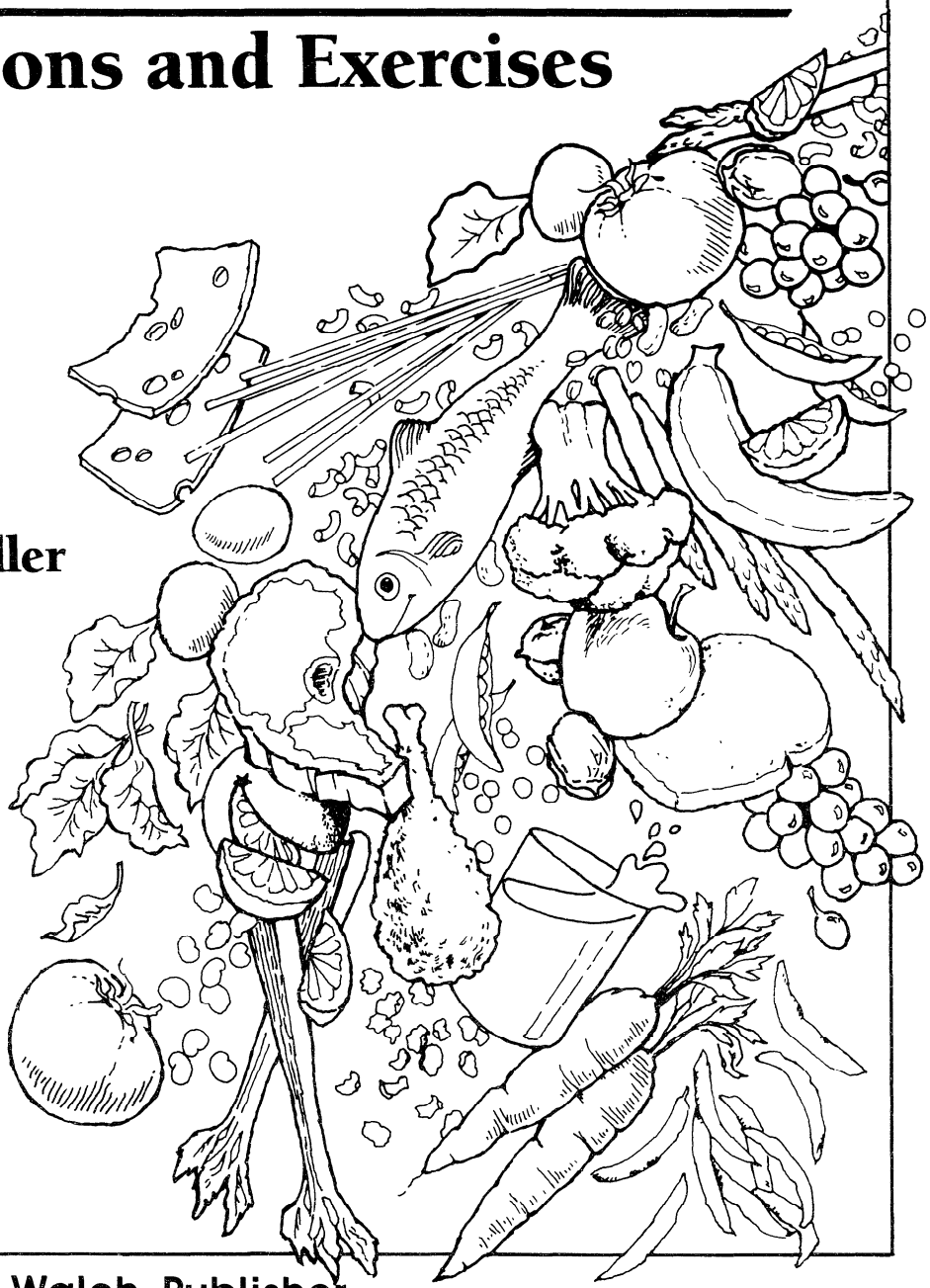
NUTRITION and FITNESS

50 Lessons and Exercises



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J. Weston Walch, Publisher
Portland, Maine

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REPRODUCIBLE MASTERS

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Introduction

Nutrition research, nutrition knowledge, and interest in nutrition have been increasing rapidly. Students are more interested in nutrition than they have been in the past. These worksheets have been designed to highlight current nutrition knowledge, beyond the basic four food groups, and to help students increase their understanding of current nutrition-related issues. The worksheets will provide activities that will help students learn the information and develop the skills needed to choose healthier diets for themselves and their families.

I have found that students who are active in athletics and those who are concerned about physical fitness are the students who are most interested in nutrition. Therefore, I have tried to emphasize, whenever possible, the relationship between nutrition and physical fitness. Since the nutrition needs of active teens are not too different from other, less-active teens, all students can benefit from this information.

Even the simplest meal or snack is a combination of nutrients and should be chosen to meet the complex nutritional needs of the person eating it. Thus, it seems appropriate to start teaching nutrition by introducing the individual parts of nutrition, the nutrients, and then work up to the skills needed to put the nutrients together into meals and diets.

Following this philosophy, I have divided these worksheets into these three parts.

Part I: *Individual Components of Nutrition*

This section includes activities to help students understand what is currently known about the nutrients and related matters. The relationship of nutrients to health is emphasized. When these individual topics are mastered, the students will have the tools to apply nutrition knowledge to the complexities of choosing foods that meet daily needs.

Part II: *Putting the Components Together*

With an understanding of the basics of nutrition, the students should be able to apply this knowledge to the selection of a healthy diet.

Section A

Activities in Section A are designed to help students evaluate daily eating situations. Students should be able to assimilate the best advice to choose healthy diets.

Section B

Activities in Section B help the students apply nutrition knowledge to weight control, which is an area of interest to almost everyone. Statistics tell us that 75% of 19-year-old females admit to having been on a diet to lose weight. Wrestlers and gymnasts are constantly watching their weight. Weight control is also a popular topic for adults. Manufacturers advertise "lite" products. The media conveys the latest ways to slim down. Nutrition students need to discern information about weight control.

Section C

The popularity of nutrition has not been overlooked by business. Section C activities are designed to help students become wiser consumers of nutrition-related items.

Part III: *Evaluation of Knowledge and Attitudes*

The evaluation devices in this section may be used either as pretests to determine strengths and weaknesses, or as posttests to evaluate knowledge acquired.

Name _____ Date _____

1. Protein Sources: Complete and Incomplete

Human beings need to eat protein that provides all the amino acids that cannot be produced by the body. Proteins that provide all the essential amino acids are known as complete proteins. These proteins come from animals. Plants also contain protein. No one plant protein has all the essential amino acids, so plant proteins are known as incomplete proteins.

Directions: This a list of foods that are all good sources of protein. Indicate which come from an Animal source and contain Complete proteins [AC] and which come from a Plant source and contain Incomplete proteins [PI].

	Animal or Plant? A/P	***Complete or Incomplete?*** C/I		***Animal or Plant?*** A/P	***Complete or Incomplete?*** C/I
1. Dried beans	_____	_____	16. Chicken	_____	_____
2. Milk	_____	_____	17. Cheese	_____	_____
3. Haddock	_____	_____	18. Cashews	_____	_____
4. Tuna	_____	_____	19. Tofu	_____	_____
5. Eggs	_____	_____	20. Lentils	_____	_____
6. Peanut butter	_____	_____	21. Pork	_____	_____
			22. Turkey	_____	_____
7. Bread	_____	_____	23. Chick-peas	_____	_____
8. Cereal	_____	_____	24. Tortilla	_____	_____
9. Hamburger	_____	_____	25. Noodles	_____	_____
10. Soybeans	_____	_____	26. Rice	_____	_____
11. Wheat germ	_____	_____	27. Meatballs	_____	_____
12. Beef	_____	_____	28. Roll	_____	_____
13. Peas	_____	_____	29. Macaroni	_____	_____
14. Peanuts	_____	_____	30. Black beans	_____	_____
15. Pasta	_____	_____			

Combining an incomplete plant protein with a small amount of complete animal protein provides food containing excellent protein. This combining of plant and animal protein also increases the variety in our diets while it usually decreases the amount of saturated fat in the diet.

Challenge: See how many plant-animal combinations you can make from the above list. You can use combinations that are familiar to you, such as a peanut butter sandwich and a glass of milk. To really increase your list, you can find combinations that may be better known in other parts of the world, such as fried rice with egg. Be sure to indicate the protein-rich ingredients and tell if they are plant or animal. *Example:* peanut butter and bread [PI], milk [AC] or rice [PI], egg [AC].

Name _____ Date _____

2. Complementary Proteins

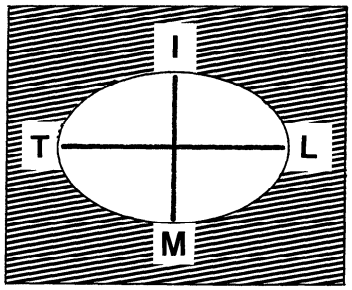
The protein in egg white is considered nearly perfect because it contains 100% of all eight essential amino acids. In this diagram, four of the essential amino acids are represented by spokes.

T = Tryptophane

L = Lysine

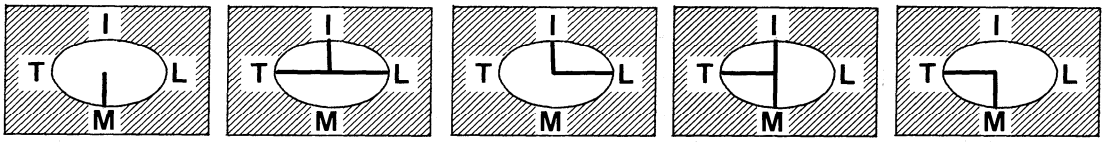
I = Isoleucine

M = Methionine



Egg

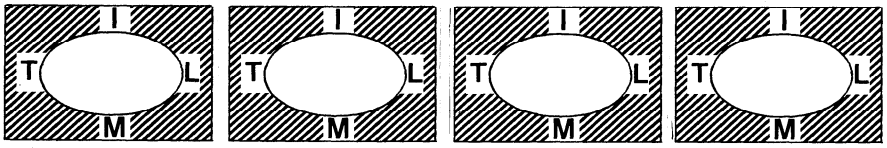
Plant proteins, as shown in the diagrams below, do not contain all the essential amino acids. That is why they are known as incomplete proteins.



Corn Tofu Beans Rice Wheat

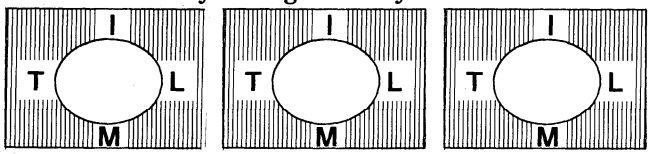
By combining plant proteins that complement each other, people all over the world have made dishes that provide very high-quality protein.

A. Directions: On each blank circle, draw the spokes to represent the amino acids present in the ingredients found in the dish listed under the circle.



Rice and beans | Felafel (beans and wheat) | Fried rice and tofu | Burrito (beans and wheat)

B. Directions: Now that you understand how these combinations work, create your own combinations. Be sure to identify the ingredients you use.



Your own combination _____ & _____ | Your own combination _____ & _____ | Your own combination _____ & _____

Directions: Answer these questions on the back of this sheet.

1. Do any of your combinations have missing essential amino acids? If they do, what could be eaten with these dishes to provide the missing amino acids?
2. What happens if you do not eat all eight essential amino acids within 24 hours?
3. Why would people choose to eat incomplete plant proteins instead of complete animal proteins?

Name _____ Date _____

3. How Much Protein Is Enough?

A. Directions: From the list below (or a more complete list from your teacher), choose foods to represent the amount of protein-rich foods you eat in a typical day. Add up the amount of grams of protein you eat in an average day.

Food	Amt.	Protein (g)	Food	Amt.	Protein (g)	Food	Amt.	Protein (g)
Milk	1 cup	8	Cheese	1 oz	7	Fish	1 oz	7
Poultry	1 oz	7	Bread	1 slice	2	Egg	1 large	7
Cereals	1 cup	4	Pizza	1 slice	15	Fruit	1 large	2
Vegetables	1 cup	2	Beef stew	1 cup	16	Spaghetti/ meatballs	1 cup	19
Taco, beef	1	9	Hamburger	3 oz	21	Steak	3 oz	22
Baked beans	1 cup	15	Milk shake	10 oz	11	Ice cream	1 cup	5
Peanut butter	1 tbsp	5	Chili	1 cup	26	Chop suey	1 cup	26
Enchilada	1	20	Macaroni and cheese	1 cup	17	Hot dog	1	5
Lean meat	1 oz	7						

Total protein eaten on an average day is _____ grams.

How much protein do I need each day?

Each day a teenage girl will need about 46 grams of protein, a teenage boy about 56 grams. Very active growing teens, in training for a sport, and weighing 150 pounds would not need more than 68 grams of protein each day.

B. Directions: Compare the amount of protein you normally *eat* each day to the amount of protein you *need* each day. Considering the fact that we allowed more than enough protein per day to cover all needs, including athletic training and growth, what is your opinion about the necessity for you to eat extra protein-rich foods and/or to take protein supplements?

What happens to extra protein eaten?

C. Directions: Each gram of protein eaten provides 4 calories (the same as carbohydrate). Calculate how many calories were in the protein you ate for one day.

_____ grams of protein I ate

× 4 (calories in one gram of protein)

= _____ calories from protein

Each gram of extra protein provides extra calories. The body stores extra calories as fat. What does this tell us will happen to extra calories eaten as protein?

Name _____ Date _____

27. Importance of Breakfast

Nutritionists and consumers do not always agree about breakfast. Nutrition experts know that breakfast is an important part of a balanced diet. Many consumers are breakfast skippers.

Directions: Your job is to write a radio or TV ad that will try to convince people they should include breakfast in their daily eating pattern. First, do some consumer research. Survey at least ten friends, family members, or other acquaintances to figure out what may convince breakfast skippers to change. Include the following questions in your survey:

1. How often do you eat breakfast?

   A. Never
   B. Seldom
   C. Only on weekends
   D. Almost every day
   E. Every day
   F. Other _____

2. When you skip breakfast, what is the reason?

   A. No time
   B. Makes you feel sick
   C. Not hungry
   D. Nothing available to eat
   E. Too many calories
   F. Other _____

3. When you eat breakfast, what is the reason?

   A. Have time
   B. Hungry
   C. Parent makes me.
   D. It's made for me.
   E. There's food available.
   F. It's good for me.
   G. Other _____

4. When you eat breakfast, what do you eat?

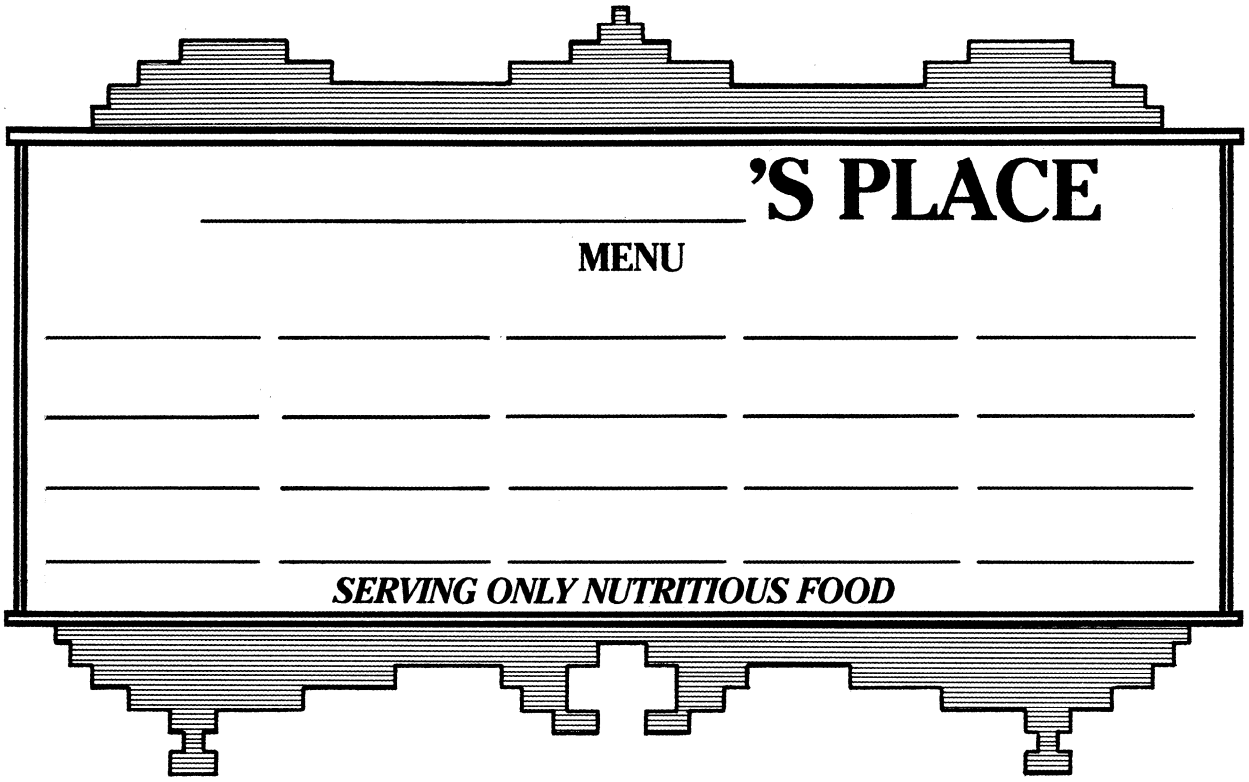
   List answers.

5. What food, if available, would tempt you to eat breakfast?

Directions: After you have done the consumer research, write a radio or TV ad that might tempt the people you surveyed to eat breakfast regularly. If possible, include some menu ideas.

Name _____ Date _____

28. Eating Well When Eating Out



As the owner and chef of your own restaurant,

1. Name your restaurant in the blank space above the menu.

2. Plan a menu in the blanks on the menu. You may include any food that is nutritious. Do not include any empty-calorie foods.

3. Describe at least five things that you as owner and chef could do to ensure that your customers are offered nutritious food.

_____

_____

_____

_____

4. List what you would order from your menu and explain why you would choose these items.

_____ _____

_____ _____

_____ _____

_____ _____

Name _____ Date _____

48. The Nutrients

Directions: Below the six nutrient names there are blanks. Below these are 30 statements, each of which describes a characteristic or fact related to one of the nutrients. Put the number that is to the left of each statement on the blank under the nutrient to which it applies.

Carbohydrate	*Fat*	*Protein*
_____ _____ _____	_____ _____ _____	_____ _____ _____
_____ _____	_____ _____	_____ _____
Vitamins	***Water***	***Minerals***
_____ _____ _____	_____ _____ _____	_____ _____ _____
_____ _____	_____ _____	_____ _____

Statements

1. It is needed for growth, repair, and maintenance of body tissues.
2. It is the most critical nutrient for active people.
3. Sodium and potassium can be lost by heavy sweating.
4. Its major role is supplying energy.
5. It is the most concentrated energy source.
6. Increased need for ascorbic acid can easily be met by the diet.
7. It is essential for *all* body processes.
8. Sodium and potassium are examples.
9. These are the best source of additional calories for active people.
10. Excess water-soluble ones are excreted by the body.
11. It carries vitamins A, D, E, and K.
12. It is not true that eating extra amounts of this will increase muscle mass.
13. It is necessary for controlling body temperature.
14. The use of salt tablets is not recommended for replacement of this.
15. Like carbohydrate, it is changed to fat when there is too much for the body to use.
16. Complex ones include breads, pasta, fruit, and vegetables.
17. It is the most slowly digested nutrient.
18. Fat-soluble ones are retained and stored.
19. A gram of this or of protein has the same number of calories.
20. Large quantities of A or D can be toxic and sometimes fatal.
21. This nutrient may need to be limited before strenuous activity.
22. Calcium is an example.
23. If used as a fuel source, it will cause fatigue faster than fat or carbohydrate.
24. If not replaced, it can lead to heat exhaustion.
25. Iron is an example and is often deficient in people's diets.
26. Should be drunk before, during, and after hot-weather exercise.
27. Two servings of meat a day will provide extra _____ .
28. Simple ones include sugar, molasses, honey, and corn syrup.
29. This nutrient should not provide more than 30% of the calories for a day.
30. Dark green and yellow fruits and vegetables are a good source of these.

Name _____ Date _____

49. Is It Nutrition Fiction or Nutrition Fact?

Directions: For each statement, circle *T* for *true* or *F* for *false*. Change each false statement so it will be a true statement.

T F 1. Extra protein in the diet is used to build extra muscles.

T F 2. Protein has the same number of calories per gram as carbohydrate (sugar or starch).

T F 3. A peanut butter sandwich served with milk provides protein of the same quality as that found in a steak.

T F 4. Foods that contain no cholesterol are lower in fat and calories than foods that contain cholesterol.

T F 5. Polyunsaturated fat and saturated fat have the same number of calories per gram.

T F 6. Potatoes are fattening.

T F 7. Honey or a candy bar can provide quick energy.

T F 8. Water is the most critical nutrient for athletes and they should drink it before, during, and after exercise.

T F 9. Physical activity increases the need for most vitamins.

T F 10. Megadoses of vitamin E can increase physical performance.

T F 11. A banana is better than a steak when you need potassium.

T F 12. People who exercise frequently need to take salt tablets.

T F 13. The American diet often has too few calories from carbohydrate.

T F 14. An empty-calorie food has no nutrients.

T F 15. The most effective way to lose weight is to burn up more calories than you take in.

T F 16. It is possible for a person to lose five pounds of fat during a strenuous workout.

T F 17. Fiber content should be considered when planning a daily diet.

T F 18. Steak and eggs would be a good breakfast before participating in an athletic event.

T F 19. Skipping breakfast is a good way to cut calories, thus helping a person lose weight.

T F 20. The best diet for all people is a balanced diet supplied from a variety of foods.