

# Proteins: The Body's Building Blocks

# 7

## Building Blocks of Protein

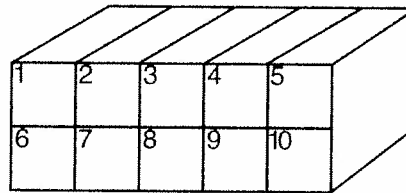
### Activity A

Name \_\_\_\_\_

### Chapter 7

Date \_\_\_\_\_ Period \_\_\_\_\_

Choose the best response to complete each multiple choice statement. Write the letter for each answer in the block below containing the same number as the statement. Your answers will reveal an essential component of proteins.



- \_\_\_\_\_ 1. Protein differs from carbohydrates and fats because of the \_\_\_\_\_ it contains.  
A. nitrogen      B. oxygen      C. hydrogen      D. carbon
- \_\_\_\_\_ 2. Protein makes up about \_\_\_\_\_ percent of your body.  
L. 12 to 15      M. 18 to 20      N. 20 to 25      O. 30 to 40
- \_\_\_\_\_ 3. When proteins change shape and take on new characteristics, \_\_\_\_\_ has occurred.  
G. balance      H. completion      I. denaturation      J. coagulation
- \_\_\_\_\_ 4. To say the body can synthesize a compound means that it can \_\_\_\_\_ it.  
L. destroy      M. digest      N. make      O. complement
- \_\_\_\_\_ 5. There are \_\_\_\_\_ indispensable amino acids.  
L. 20      M. 19      N. 11      O. 9
- \_\_\_\_\_ 6. Proteins that defend the body against infection and disease are \_\_\_\_\_.  
A. antibodies      B. buffers      C. enzymes      D. hormones
- \_\_\_\_\_ 7. The liver converts nitrogen waste from proteins into \_\_\_\_\_.  
A. enzymes      B. lipoproteins      C. urea      D. urine
- \_\_\_\_\_ 8. Plants that can capture nitrogen from the air and transfer it to their protein-rich seeds are \_\_\_\_\_.  
G. grains      H. hummus      I. legumes      J. tofu
- \_\_\_\_\_ 9. Complete proteins come from \_\_\_\_\_ sources.  
A. plant and animal      B. only plant      C. only mineral      D. only animal
- \_\_\_\_\_ 10. Two incomplete proteins that together provide all the indispensable amino acids are said to be \_\_\_\_\_.  
Q. complete      R. animal      S. complementary      T. valuable

# A Billboard for Proteins

Activity B

Name \_\_\_\_\_

Chapter 7

Date \_\_\_\_\_ Period \_\_\_\_\_

In the space provided below, list the six basic functions of protein in the body. Then design a billboard to advertise one of the functions. Choose a function and write a summary of the message of your design. Use the box at the bottom of the page to illustrate your billboard. Be sure to use an attention-getting slogan, logo, and layout.

## Functions of Protein

- |          |          |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 6. _____ |

## Summary of Message

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# Protein Balance

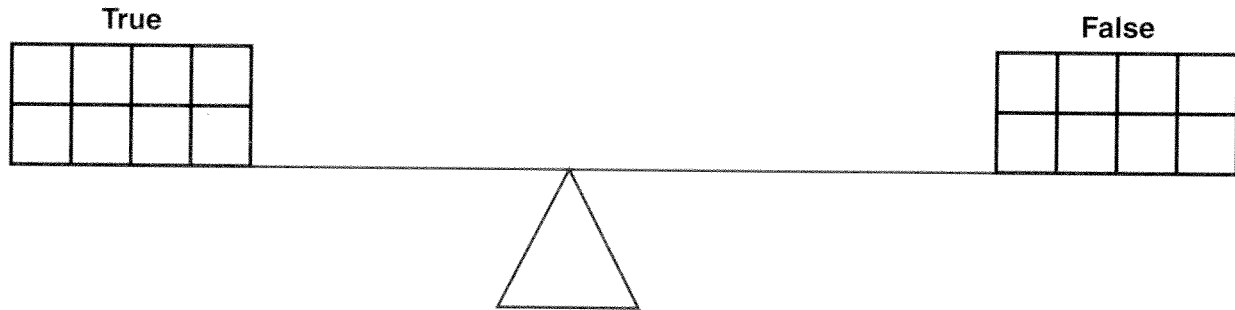
## Activity E

### Chapter 7

Name \_\_\_\_\_

Date \_\_\_\_\_ Period \_\_\_\_\_

Decide which of the following statements about protein needs are true and which are false. Write the numbers of statements that are true inside the blocks on the left end of the scale. Write the numbers of those that are false on the right end. If you have identified the statements correctly, you will have the same number on each end, thus preserving the "protein balance."



1. The human body can store excess amino acids as a protein source.
2. The most important factor in determining how much protein a person needs is his or her activity level.
3. Most people in the United States eat more protein than they need.
4. Children need proportionally more protein than adults.
5. Extra protein is needed to support the growth of unborn babies in pregnant women and the production of milk in breast-feeding mothers.
6. In general, females require more protein than men of the same age and size.
7. A large, tall person needs more protein than a small, short person.
8. Sick people require extra protein to build antibodies.
9. The RDAs for protein include a margin of safety.
10. For people between the ages of 4 and 18, the DRI for protein is 20 percent of calories.
11. The Nutrition Facts panel on food products can help people estimate how much protein they consume each day.
12. People who exercise occasionally need extra protein to build muscle and supply energy.
13. Athletes should consume more calories from protein than from carbohydrates.
14. The grains and vegetable groups of the MyPlate system are the primary food sources of protein.
15. One-fourth cup of cooked legumes counts as a one ounce-equivalent of protein.
16. People can avoid health risks by choosing protein sources that are high in saturated fats.

# Not Too Little—Not Too Much

Activity F

Name \_\_\_\_\_

Chapter 7

Date \_\_\_\_\_ Period \_\_\_\_\_

Use the clues provided to identify conditions brought on by too little or too much protein in the diet. Write one letter in each space; do not leave blank spaces between words. Note the first four answers are in the "plus zone," reflecting too much protein intake. The last four answers are in the "minus zone," reflecting too little protein intake.

**"Plus Zone"**  


1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_ a n d \_\_\_\_\_
4. \_\_\_\_\_

**Protein•Protein•Protein•Protein•Protein•Protein•Protein•Protein•Protein•Protein**

5. \_\_\_\_\_ - \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_

**"Minus Zone"**  


1. Since many high-protein foods are also high-fat foods, the result of a high-protein diet may be excess \_\_\_\_\_.
2. When a person consumes a diet high in protein from animal sources, he or she may develop \_\_\_\_\_ in the bones.
3. A high-protein diet creates extra work for the \_\_\_\_\_ and \_\_\_\_\_, the organs responsible for handling nitrogen waste.
4. A person who takes in more protein than he or she excretes is in \_\_\_\_\_.
5. A lack of calories and proteins in the diet causes a condition called \_\_\_\_\_ - \_\_\_\_\_.
6. A person who loses more nitrogen than he or she consumes is in \_\_\_\_\_.
7. When mothers in poor countries wean older children to begin breast-feeding newborns, the older children may develop \_\_\_\_\_.
8. The muscles and tissues of people suffering from starvation begin to waste away due to a PEM disease called \_\_\_\_\_.

# Animal vs. Plant Proteins

Activity C

Name \_\_\_\_\_

Chapter 7

Date \_\_\_\_\_ Period \_\_\_\_\_

Complete the following chart to contrast plant and animal proteins. Supply the information called for in each row of the chart. Then answer the question at the bottom of the page.

	Animal Sources of Protein	Plant Sources of Protein
Examples		
Protein Quality		
Advantages		
Disadvantages		

Do you choose more protein from plant sources or animal sources? Explain your response.

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# Complementary Proteins—A “Good Match”

Activity D

Chapter 7

Name \_\_\_\_\_

Date \_\_\_\_\_ Period \_\_\_\_\_

For each of the following recipes, circle the ingredients that are complementary sources of protein. Use a recipe book to find a third example of a recipe containing complementary proteins. Write the name of the recipe on the tab of the third recipe card below. List the ingredients for the recipe on the lines of the card. Then circle the complementary sources of protein contained in the recipe.

## Vegetarian Chili Mac

- |   |                            |
|---|----------------------------|
| 3 cups canned tomatoes                          | 1 tablespoon oil           |
| $\frac{3}{4}$ cup uncooked whole-grain macaroni | 2 teaspoons chili powder   |
| $\frac{3}{4}$ cup chopped onion                 | 1 teaspoon dried basil     |
| 2 cloves garlic, crushed                        | 3 cups canned kidney beans |
| $\frac{1}{4}$ cup chopped green pepper          |                            |

## Stir-Fried Vegetables and Tofu

- |                           |                                     |
|---------------------------|-------------------------------------|
| 1 cup orange-ginger sauce | 1 medium red bell pepper            |
| 2 tablespoons peanut oil  | $\frac{1}{2}$ pound mushrooms       |
| 1 medium onion            | 1 cup bean sprouts                  |
| 2 carrots                 | $1\frac{1}{2}$ cups diced firm tofu |
| 2 ribs celery             | 6 cups cooked brown rice            |
| 2 cups broccoli florets   |                                     |

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