35. Both celery and potato chips are composed of molecules that are polymers of glucose. Explain why celery is a good snack for people on a diet while potato chips are not.
36. Carbohydrates, fats, and proteins can provide energy for an organism.
    a. Which class of substances most rapidly provides energy?
    b. Which class can be used as a building material in the human body?
    c. Which is the most efficient as an energy storage system?
37. Describe the basic structure of the cell membrane. What is the cell membrane's main function?

CRITICAL THINKING

38. **Interpreting Concepts** A diet that consists primarily of corn can result in a protein-deficiency disease called *kwashiorkor*. What does this information indicate about the protein content of corn?
39. **Inferring Relationships** Explain how a similar reaction forms three kinds of biological polymers: polysaccharides, polypeptides, and nucleic acids.
40. **Evaluating Ideas** Some diets recommend severely restricting or eliminating the intake of carbohydrates. Why is it not a good idea to eliminate all carbohydrates from the diet?
41. **Using Analogies** Explain why the model of enzyme action is called the "lock and key" model.

RESEARCH & WRITING

42. Conduct library research about how Olestra® decreases fat and caloric content of potato chips. What are the advantages and disadvantages of Olestra in food products?
43. Write a summary discussing what you have learned about the four major classes of organic compounds found in living things—carbohydrates, lipids, proteins, and nucleic acids. Include a description of how these organic molecules are used by the body.

ALTERNATIVE ASSESSMENT

44. Amylase, the enzyme present in the mouth, catalyzes the digestion of starch. The pH of the mouth is almost neutral.
    a. Do you think that amylase is active in the stomach after you swallow the food? Why or why not?
    b. Design an experiment you could perform to test your answer to item a. Note: A common test for the presence of starch is the addition of tincture of iodine, which will produce a blue color if starch is present.