

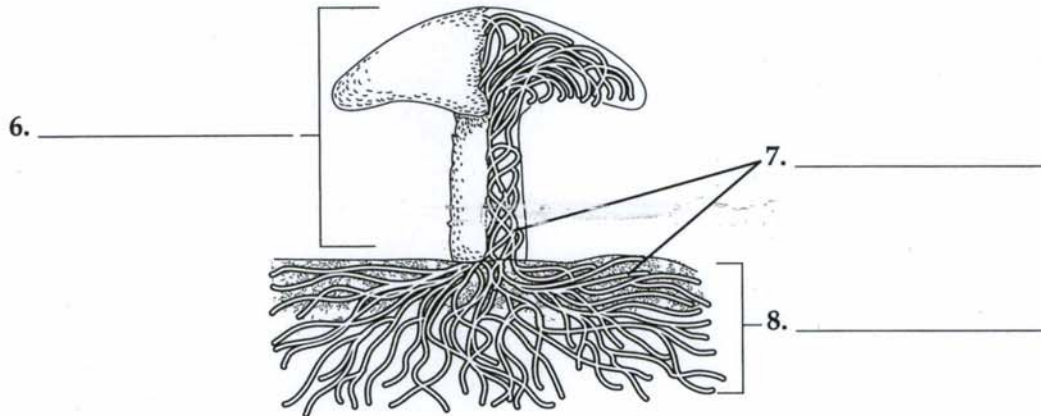
**Chapter 21 Fungi** **Section Review 21-1**

**Reviewing Key Concepts**

**Multiple Choice** *On the lines provided, write the answer that best completes the sentence or answers the question.*

- \_\_\_\_\_ 1. Which term describes the cells of fungi?
  - a. prokaryotic
  - b. eukaryotic
  - c. protistlike
  - d. phototropic
  
- \_\_\_\_\_ 2. Which term best describes how fungi obtain energy?
  - a. phototrophic
  - b. chemoautotrophic
  - c. autotrophic
  - d. heterotrophic
  
- \_\_\_\_\_ 3. Fungi have cell walls composed of
  - a. hyphae.
  - b. sporangia.
  - c. chitin.
  - d. mycelium.
  
- \_\_\_\_\_ 4. The body of a multicellular fungus is composed of a mass of hyphae called a
  - a. mycelium.
  - b. gametangium.
  - c. sporangia.
  - d. spore.
  
- \_\_\_\_\_ 5. How do most fungi reproduce?
  - a. only sexually
  - b. only asexually
  - c. both sexually and asexually
  - d. fungi do not reproduce

**Identifying Structures** *On the lines provided, identify the structures of a multicellular fungus as one of the following: fruiting body, hyphae, or mycelium.*



**Reviewing Key Skills**

**9. Comparing and Contrasting** How are asexual and sexual reproduction in fungi different?

\_\_\_\_\_

\_\_\_\_\_

**10. Applying Concepts** Describe three ways that fungi have adapted to increase the successful distribution of spores.

\_\_\_\_\_

\_\_\_\_\_

**Chapter 21 Fungi**

**Section Review 21-2**

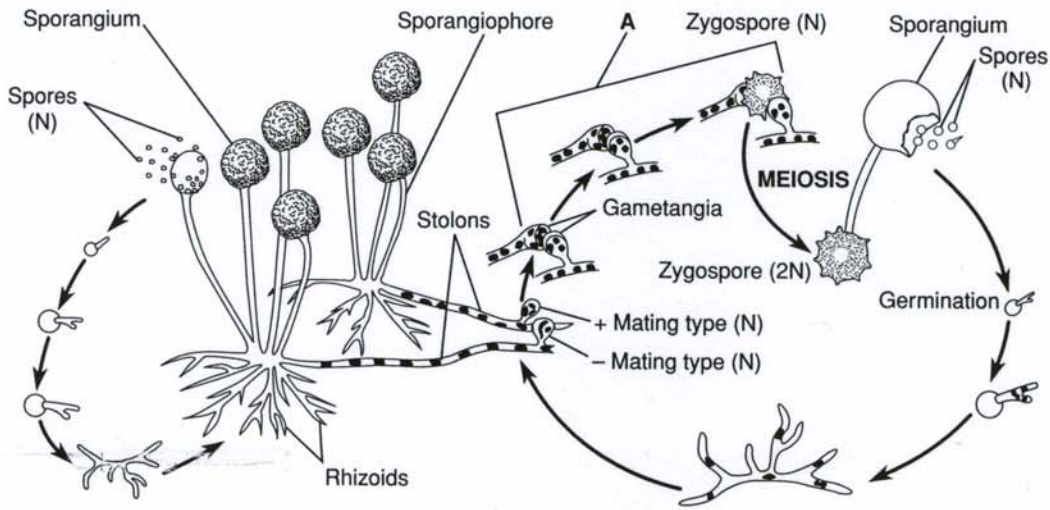
**Reviewing Key Concepts**

**Matching** On the lines provided, match each phylum with its description. A letter may be used more than once.

- |  |                   |
|--|-------------------|
| _____ 1. The life cycles of these fungi include a zygospore.                             | a. Zygomycetes    |
| _____ 2. Sexual reproduction involves the formation of an ascus.                         | b. Basidiomycetes |
| _____ 3. This phylum has a specialized reproductive structure that resembles a club.     | c. Deuteromycetes |
| _____ 4. The reproductive structure is called a basidium.                                | d. Ascomycetes    |
| _____ 5. Fungi in this phylum do not appear to have a sexual phase in their life cycles. |                   |

**Reviewing Key Skills**

**Interpreting Graphics** Use the diagram to answer the following questions on the life cycle of a zygomycete.



- Which part of the diagram shows asexual reproduction?  
\_\_\_\_\_
- Explain what is happening in the portion of the cycle labeled A.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- Three specialized types of hyphae are shown in the diagram. Name each one and describe its function.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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**Chapter 21 Fungi**

**Chapter Vocabulary Review**

**Matching** *On the lines provided, write the letter of the definition that best matches each term on the left.*

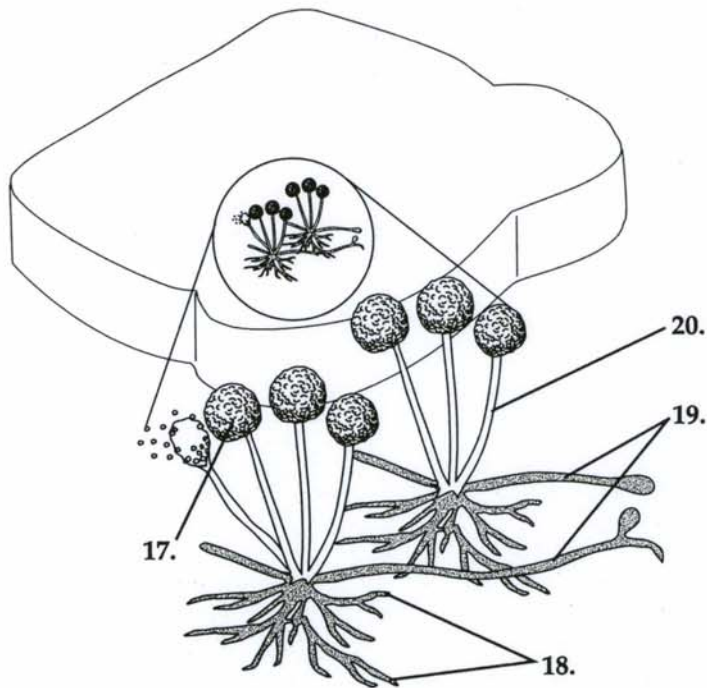
- |                         |   |
|-------------------------|---|
| _____ 1. hyphae         | a. rootlike hypha that penetrates food surfaces                             |
| _____ 2. chitin         | b. stemlike hypha that runs along food surfaces                             |
| _____ 3. mycelium       | c. complex carbohydrate found in cell walls of fungi                        |
| _____ 4. sporangium     | d. structure in which spores are produced                                   |
| _____ 5. sporangiophore | e. thick mass of hyphae   |
| _____ 6. gametangium    | f. tiny spores formed at the tips of specialized hyphae                     |
| _____ 7. rhizoid        | g. contains zygotes formed during the sexual phase of the mold's life cycle |
| _____ 8. stolon         | h. specialized hypha that ends in a sporangium                              |
| _____ 9. zygospore      | i. tiny filaments that make up multicellular fungi                          |
| _____ 10. conidia       | j. gamete-forming structure   |

**Multiple Choice** *On the lines provided, write the letter of the answer that best completes the sentence or answers the question.*

- \_\_\_\_\_ 11. What is the name of the reproductive structure in ascomycetes that contains spores?  
 a. sporangium                      c. conidium  
 b. ascus                              d. basidium
- \_\_\_\_\_ 12. In ascomycetes, the eight cells produced after meiosis and mitosis are known as  
 a. ascospores.                      c. basidia.  
 b. conidium.                        d. gametangia.
- \_\_\_\_\_ 13. In basidiomycetes, what is the reproductive structure that resembles a club called?  
 a. a stolon                            c. a basidium  
 b. a sporangiophore                d. an ascospore
- \_\_\_\_\_ 14. What structure forms at the edge of a basidium?  
 a. a rhizoid                            c. a basidiospore  
 b. a conidium                        d. a gametangium
- \_\_\_\_\_ 15. What is the name of the symbiotic association between a fungus and a photosynthetic organism?  
 a. conidia                              c. stolon  
 b. chitin                                d. lichen
- \_\_\_\_\_ 16. What is the association of a plant root and a fungus called?  
 a. gametangium                      c. sporangiophore  
 b. mycorrhiza                        d. rhizoid

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**Labeling Diagrams** On the lines provided, label the different parts of the diagram of the bread mold below.



- 17. \_\_\_\_\_
- 18. \_\_\_\_\_
- 19. \_\_\_\_\_
- 20. \_\_\_\_\_

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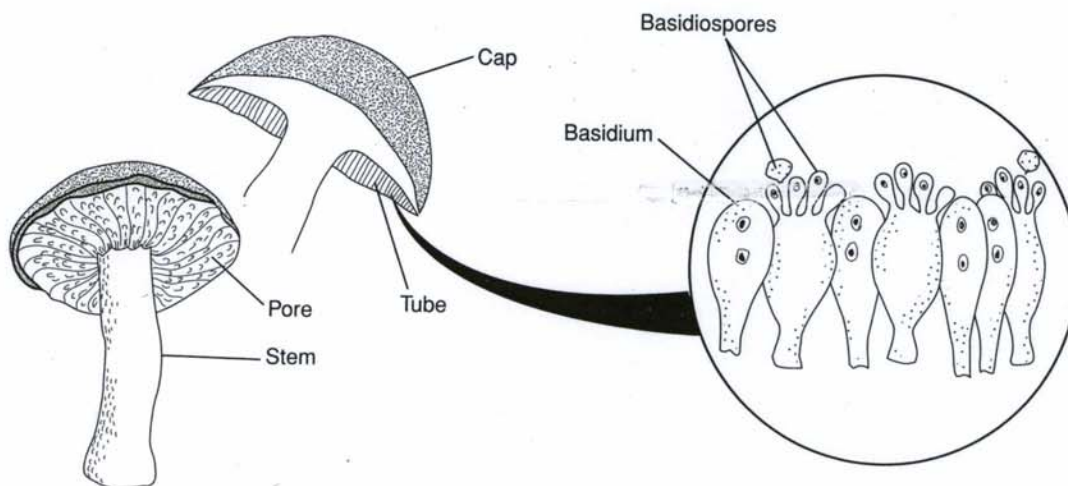
### Basidiomycota on Your Pizza?

Do you like Basidiomycota on your pizza? Basidiomycota is a division of fungi, some types of which are edible. *Basidion* is Greek for "small base" and *mykes* means fungus. The basidiomycetes include smuts, rusts, jelly fungi, puffballs, stinkhorns—and mushrooms. There are approximately 25,000 different species of basidiomycetes, some of which are the mushrooms you put on your pizza.

The Basidiomycota are different from all other fungi because they have microscopic, clublike reproductive structures called basidia. Each basidium bears haploid sexual spores called basidiospores. All basidiomycetes produce a primary and secondary mycelium. The primary (haploid) mycelium is called the monokaryon. The secondary mycelium, the dikaryon, contains pairs of parental nuclei. The parental nuclei replicate by conjugate division.

There are two classes of basidiomycetes. One class, the Homobasidiomycetae, includes two subclasses. The subclass Hymenomycetes includes common mushrooms, shelf fungi, and coral fungi. The other subclass, Gasteromycetes, includes the puffballs, earthstars, stinkhorns, and bird's nest fungi. The other class of basidiomycetes is the Heterbasidiomycetae, which includes the jelly fungi, rusts, and smuts.

The spores of many basidiomycetes mature inside a structure called a basidiocarp. The spores are released when the basidiocarp is ruptured or decays. Rusts and smuts produce a spore on the secondary mycelium. This spore produces the basidium. Rusts and smuts are parasites. They do not produce fruiting bodies but develop teliospores in the tissues of higher plants. Some rusts cause diseases of cereal crops.



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**Evaluation** Answer the following questions on a separate sheet of paper.

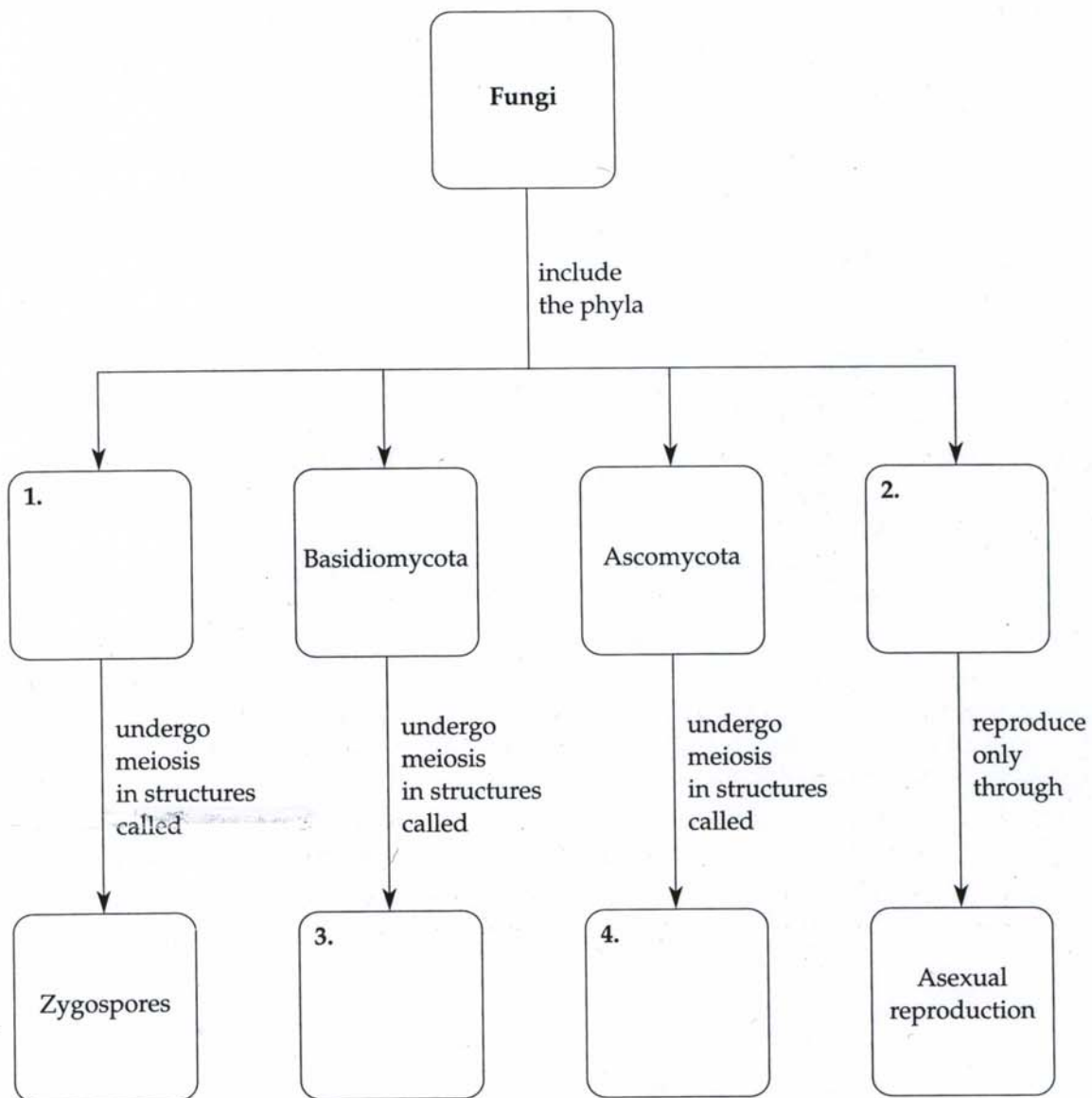
1. What makes basidiomycetes unique from other fungi?
2. Look at the illustration above, which shows reproduction of the mushroom *Boletus chrysenteron*. Write a paragraph that discusses reproduction in basidiomycetes.

**Chapter 21 Fungi**

**Graphic Organizer**

**Concept Map**

Using information from the chapter, complete the concept map below. If there is not enough room in the concept map to write your answers, write them on a separate sheet of paper.



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