

## 5.5 Living Systems

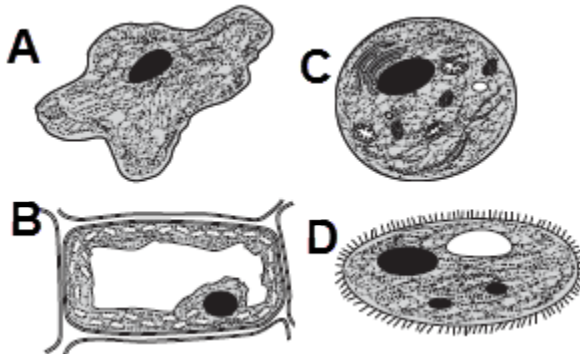
The student will investigate and understand that organisms are made of one or more cells and have distinguishing characteristics that play a vital role in the organism's ability to survive and thrive in its environment. Key concepts include

- basic cell structures and functions;
- classification of organisms using physical characteristics, body structures, and behavior of the organism; and
- traits of organisms that allow them to survive in their environment.

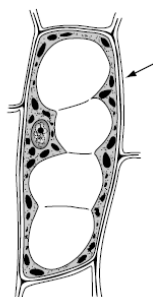
## CELLS

- Which of these organisms has **cells** with cell walls?  
(2011 test – question 32)
  - A bluebird
  - A pine tree
  - A ladybug
  - A fox squirrel
- Which structure does a plant **cell** have that an animal cell does not have?  
(2010 test – question 9)
  - Vacuole
  - Cytoplasm
  - Cell membrane
  - Cell wall
- Which structure surrounds and protects an **animal cell**?  
(2009 test – question -11)
  - Nucleus
  - Vacuole
  - Cytoplasm
  - Cell membrane
- Which part of a **plant cell** is responsible for controlling the activities of the other parts of the cell?  
(2008 test – question 30)
  - Vacuole
  - Nucleus
  - Cell wall
  - Chloroplast
- Which of these is the main function of a **cell wall**?  
(2008 test – question 31)
  - To make food
  - To store water
  - To provide support
  - To make the plant green

- Which of these **cells** most likely came from a plant? (b)  
(2007 test – question 40)



- What part of the **plant cell** is shown at the arrow?  
(2002 test – question 3)
  - Cell wall



- Cell membrane
- Vacuole
- Nucleus

- The part of a **plant cell** that gives the cell its green color is the —  
(2004 test – question 31)
  - nucleus
  - cytoplasm
  - vacuole
  - chloroplast
- The internal parts of a **cell** are suspended in a jelly-like liquid called the —  
(2001 test – question 23)
  - nucleus
  - cell membrane
  - cytoplasm
  - chloroplasts

## VASCULAR / NONVASCULAR

- A student sees many plants around a pond. The student can determine which plants are **nonvascular** by —  
(2007 test – question 38)
  - observing if they lack true stems, roots, or leaves
  - examining the plants for spores
  - counting the number of leaves on each stalk
  - noticing if the plants are near rocks

11. **Trees**, wild flowers, and grasses are all considered to be (2004 test – question 34)

- a. vascular plants
- b. nonvascular plants
- c. woody plants
- d. nonwoody plants

12. **Moss** is best classified as — (2010 test – question 36)

- a. a type of mold
- b. an evergreen plant
- c. a species of fungus
- d. a nonvascular plant

13. Which of these plants does not have special tissues to deliver food and water to its cells?

(2005 test – question 20)

- a. Maple
- b. Dogwood
- c. Tomato
- d. Liverwort

14. Which of the following plants is an example of a **nonvascular plant**?

(2002 test – question 20)

- a. Dogwood
- b. Moss
- c. Ginkgo
- d. Pine tree

15. Redwood **trees** can grow to be very tall. They can grow so tall because they are —

(2003 test – question 27)

- a. vascular
- b. deciduous
- c. nonvascular
- d. flowering

## VERTEBRATES/ INVERTEBRATES

16. Which of these would best describe the tube worms shown?

(2011 test – question 39)

- a. Mammals
- b. Vertebrates
- c. Amphibians
- d. Invertebrates

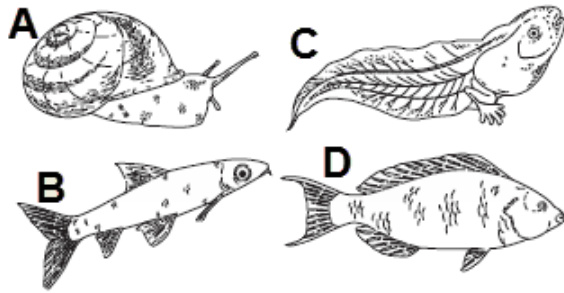


17. Which of the following animals is an invertebrate?

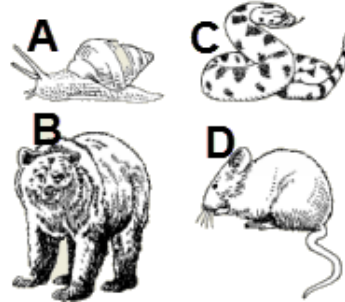
(2007 test – question 21)

- a. Squirrel
- b. Sea gull
- c. Cricket
- d. Lizard

18. Which of these animals is an invertebrate? (a) (2008 test – question 24)

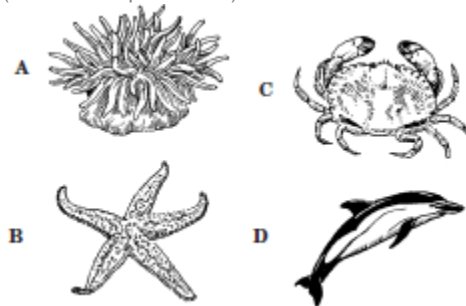


19. Which of the following is an invertebrate? (a) (2002 test – question 29)



20. Which of the following would be classified as a **vertebrate**? (d)

(2005 test – question 33)



21. How is a fish different from a jellyfish?

(2004 test – question 4)

- a. A fish has a backbone.
- b. A fish is in the animal kingdom.
- c. A fish can reproduce.
- d. A fish lives in water.

22. Which of the following sea animals would be classified as an **invertebrate**?

(2003 test – question 28)

- a. Sea horse
- b. Squid
- c. Shark
- d. Seal

23. The jellyfish is an **invertebrate** because it lacks —

(2001 test – question 2)

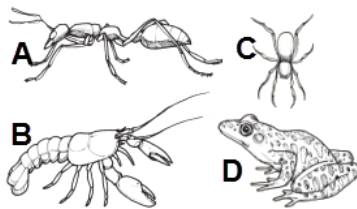
- a. eyes
- b. bones
- c. blood
- d. cells

24. In which chart are all the organisms sorted correctly? (c)  
(2010 test – question 29)

Vertebrates	Invertebrates	Vertebrates	Invertebrates
<b>A</b> 		<b>C</b> 	
Vertebrates	Invertebrates	Vertebrates	Invertebrates
<b>B</b> 		<b>D</b> 	

25. Which of these animals has a different body support system than the others? (d)

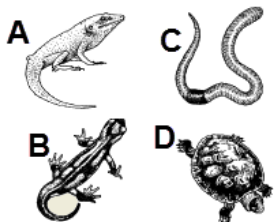
(2009 test – question 37)



Group 1	Group 2

26. Which animal belongs in **group** one? (d)

(2006 test – question 5)



27. The picture shows a bumblebee. Which part of the bumblebee is most helpful in identifying it as an insect?

(2005 test – question 30)

- Shape of eyes
- Number of legs
- Presence of wings
- Location of antennae



**NOTE – the 2010 VDOE Curriculum Framework no longer mentions the five kingdoms, so the following questions do not reflect the current content.**

28. A student made a list of examples of each of the **five kingdoms**. The list contains two examples from the same kingdom. Which one of these should be removed from the list?

(2007 test – question 6)

- Worm
- Mushroom
- Sunflower
- Amoeba

Student Examples of the Five Kingdoms

- Elephant
- Worm
- Mushroom
- Sunflower
- Amoeba

29. A kingdom is the largest classification of living things. What other organisms, besides plants and animals, make up the **five kingdoms**?

(2006 test – question 7)

- Fungi, protists, and monerans
- Fungi, protists, and viruses
- Monerans, protists, and viruses
- Monerans, protists, and vertebrates

30. The picture shows a Venus's flytrap. This unusual organism can trap flies with its leaves, but it gets most of its food from photosynthesis. To what **kingdom** does this organism belong?

(2003 test – question 18)

- Monera
- Protista
- Fungi
- Plantae



31. The American dogwood is a member of which **kingdom** of living things?

(2002 test – question 36)

- Monera
- Animal
- Protist
- Plant

32. Although the mushroom looks like a plant, it is in a different kingdom. The main difference between the **fungi kingdom** and the plant kingdom is that fungi —

(2008 test – question 23)

- Use chlorophyll to make sugar
- have special tissues
- absorb nutrients from other organisms
- depend on the Sun for energy



33. Which of these belong to the **kingdom** Monera?

(2001 test – question 16)

- Ferns
- Mosses
- Mushrooms
- Bacteria