

## Life; Ch. 12; Structure & Function of Vertebrates

### Multiple Choice

*Identify the choice that best completes the statement or answers the question.*

- \_\_\_\_\_ 1. At some point in their lives, all chordates have a flexible supporting rod in their backs called a
  - a. notochord.
  - b. gill.
  - c. nerve cord.
  - d. backbone.
- \_\_\_\_\_ 2. To which phylum do vertebrates belong?
  - a. Arthropoda
  - b. Chordata
  - c. Porifera
  - d. Echinodermata
- \_\_\_\_\_ 3. What does the backbone surround and protect in a vertebrate?
  - a. the heart and lungs
  - b. vertebrae
  - c. the spinal cord
  - d. the gill slits
- \_\_\_\_\_ 4. If an animal is an ectotherm, it has
  - a. a skeleton on the outside of its body.
  - b. a skeleton on the inside of its body.
  - c. a body that regulates its own internal temperature.
  - d. a body that does not produce much internal heat.
- \_\_\_\_\_ 5. When the temperature of the environment changes, the body temperature of a reptile
  - a. changes.
  - b. stays the same.
  - c. always increases.
  - d. always decreases.
- \_\_\_\_\_ 6. Fishes take in oxygen through their
  - a. fins.
  - b. gills.
  - c. scales.
  - d. vertebrae.
- \_\_\_\_\_ 7. Most fishes reproduce by means of
  - a. budding.
  - b. asexual reproduction.
  - c. external fertilization.
  - d. internal fertilization.
- \_\_\_\_\_ 8. Which of the following fishes has a skeleton made of hard bone?
  - a. a shark
  - b. a ray
  - c. a goldfish

- d. a hagfish
- \_\_\_\_\_ 9. What type of fish is a lamprey?
  - a. a bony fish
  - b. a jawless fish
  - c. a cartilaginous fish
  - d. an endothermic fish
- \_\_\_\_\_ 10. If a fish's swim bladder was destroyed, the fish would be unable to
  - a. stabilize its body at different depths.
  - b. eliminate excess oxygen.
  - c. digest food.
  - d. process body wastes.
- \_\_\_\_\_ 11. Most adult amphibians can obtain oxygen through
  - a. gills.
  - b. gills and lungs.
  - c. lungs and thin, moist skin.
  - d. lungs only.
- \_\_\_\_\_ 12. An adaptation that helps amphibians move from place to place on land is
  - a. eggs covered by jelly.
  - b. moist skin.
  - c. a transparent membrane that keeps the eyes from drying out.
  - d. a strong skeleton.
- \_\_\_\_\_ 13. Amphibians are especially sensitive to changes in the environment because
  - a. few amphibians have camouflage.
  - b. their eggs are tough and leathery.
  - c. they do well only in sunny areas.
  - d. their skin is delicate.
- \_\_\_\_\_ 14. An adult reptile can survive on dry land because its kidneys
  - a. help support the weight of the reptile's body.
  - b. produce concentrated urine.
  - c. help the reptile obtain oxygen.
  - d. keep the reptile's skin from drying out.
- \_\_\_\_\_ 15. Which of these organs help a reptile keep water in its body?
  - a. skin and heart
  - b. skin and kidneys
  - c. heart and kidneys
  - d. heart and lungs
- \_\_\_\_\_ 16. How is a reptile egg different from an amphibian egg?
  - a. It is covered with protective jelly.
  - b. It has a shell and internal membranes.
  - c. It must be kept in shallow water.
  - d. It does not release carbon dioxide.
- \_\_\_\_\_ 17. One major difference between lizards and snakes is that lizards
  - a. have legs.
  - b. are herbivores.
  - c. can live in very cold climates.

- d. are endotherms.
- \_\_\_\_\_ 18. Which of the following statements is true of the feeding behavior of all snakes?
  - a. They are carnivores.
  - b. They inject venom through fangs.
  - c. They chew their prey with sharp fangs.
  - d. They strangle their prey.
- \_\_\_\_\_ 19. All turtles obtain food by
  - a. spreading their jaws wide apart as they swallow.
  - b. feeding on large plants, including cactuses.
  - c. using sharp-edged beaks to tear food.
  - d. capturing and eating small animals.
- \_\_\_\_\_ 20. Evidence indicates that birds are descended from
  - a. reptiles.
  - b. mammals.
  - c. insects.
  - d. amphibians.
- \_\_\_\_\_ 21. A bird's nearly hollow bones help it to
  - a. store extra oxygen.
  - b. deliver oxygen to its cells.
  - c. be lightweight in the air.
  - d. defend itself against predators.
- \_\_\_\_\_ 22. Some birds swallow small stones, which help them to
  - a. fly faster.
  - b. keep warm.
  - c. get more oxygen.
  - d. grind food.
- \_\_\_\_\_ 23. Which characteristic is NOT common to all mammals?
  - a. They are ectotherms.
  - b. Their hearts have four chambers.
  - c. Their skin is covered with hair or fur.
  - d. Their young are fed with milk produced by organs in the mother's body.
- \_\_\_\_\_ 24. The large muscle that enables mammals to breathe in and out is called the
  - a. lung.
  - b. respiratory muscle.
  - c. air sac.
  - d. diaphragm.
- \_\_\_\_\_ 25. Salamander and frog larvae differ in that
  - a. salamander larvae have tails.
  - b. the larvae of salamanders look like adults.
  - c. frog larvae have lungs.
  - d. salamander larvae have lungs.
- \_\_\_\_\_ 26. What characteristic is used to classify a mammal as a monotreme, marsupial, or placental mammal?
  - a. the environment in which it lives
  - b. how much hair or fur it has

- c. the structure of its brain
  - d. the way in which its young develop
- \_\_\_\_\_ 27. A mammal's gestation period is the length of time
- a. during which the mammal depends on its parents to bring it food.
  - b. between fertilization and birth.
  - c. between egg-laying and hatching.
  - d. for which it drinks its mother's milk.
- \_\_\_\_\_ 28. Where does a placental mammal develop before its body systems can function independently?
- a. inside its mother's body
  - b. in a pouch on its mother's body
  - c. in a nest near its mother
  - d. inside an egg that is protected by the mother
- \_\_\_\_\_ 29. Which of the following sets of organisms is listed in the probable order of evolution?
- a. reptiles, birds, amphibians
  - b. jawless fishes, bony fishes, cartilaginous fishes
  - c. reptiles, mammals, birds
  - d. bony fishes, reptiles, amphibians
- \_\_\_\_\_ 30. Sixty-five million years ago, meat-eating dinosaurs may have gone hungry because
- a. climate change had caused the death of many plants, killing off plant-eating dinosaurs that were the meat-eating dinosaurs' prey.
  - b. at that time all meat-eating dinosaurs had evolved front limbs that were too short to capture prey.
  - c. all the plant-eating dinosaurs, such as *Brachiosaurus*, were too big for a meat-eating dinosaur to kill alone.
  - d. meat-eating dinosaurs were ectotherms, not endotherms.

### Modified True/False

*Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.*

- \_\_\_\_\_ 31. Part or all of the notochord of vertebrates is replaced by a(n) nerve cord as the animal becomes an adult. \_\_\_\_\_
- \_\_\_\_\_ 32. The temperature of a(n) endotherm usually doesn't change much even when the temperature of its environment changes. \_\_\_\_\_
- \_\_\_\_\_ 33. The waste product carbon dioxide is removed from a fish's blood through its gills. \_\_\_\_\_
- \_\_\_\_\_ 34. Most fishes are cartilaginous. \_\_\_\_\_
- \_\_\_\_\_ 35. Amphibians are declining in number because of habitat destruction and predators in the environment. \_\_\_\_\_
- \_\_\_\_\_ 36. Reptiles have moist, tough skins covered with scales. \_\_\_\_\_
- \_\_\_\_\_ 37. Snakes move by contracting bands of scales connected to their ribs and backbone. \_\_\_\_\_

- \_\_\_\_ 38. All birds have hearts with four chambers. \_\_\_\_\_
- \_\_\_\_ 39. Marsupial mammals are born at a(n) later stage of development than placental mammals.  
\_\_\_\_\_
- \_\_\_\_ 40. During reproduction, an amphibian adapts to living on land instead of living in water.  
\_\_\_\_\_

### **Completion**

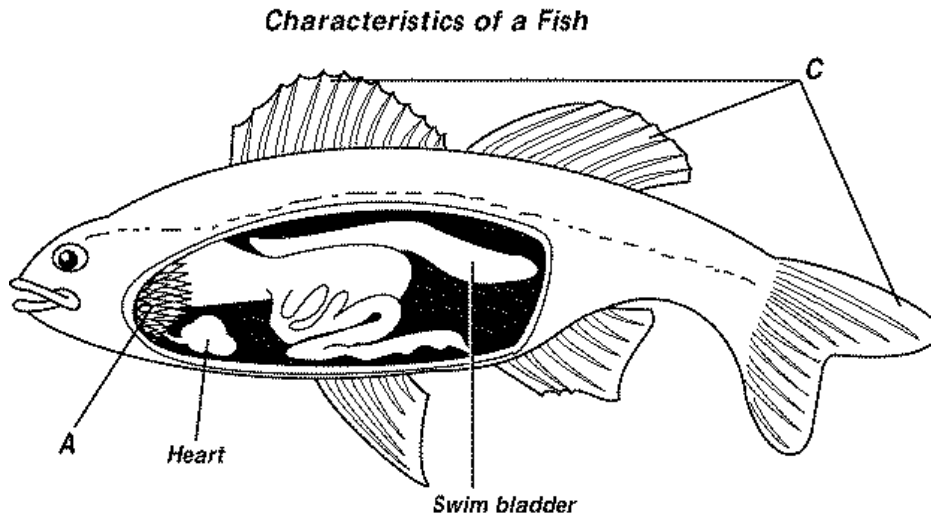
*Complete each statement.*

41. Pharyngeal slits may also be called \_\_\_\_\_.
42. Mammals and \_\_\_\_\_ are the two groups of vertebrates that are endotherms.
43. Structures that help fish move are called \_\_\_\_\_ and typically consist of a thin membrane stretched across bony supports.
44. Sharks, rays, and skates have skeletons made of \_\_\_\_\_.
45. Most bony fishes have an organ called a(n) \_\_\_\_\_, which allows a fish to stabilize its body at different depths.
46. Strong skeletons and \_\_\_\_\_ are adaptations of amphibians for movement on land.
47. A reptile's kidneys excrete wastes in a watery fluid called \_\_\_\_\_.
48. Tiny holes in the shell of a reptile's egg allow the embryo to get rid of a waste gas called \_\_\_\_\_.
49. The \_\_\_\_\_ inside a reptile's egg provides the embryo with food.
50. A turtle's \_\_\_\_\_ includes the turtle's ribs and backbone.
51. Birds have \_\_\_\_\_ feathers that give shape to their bodies.
52. A bird's \_\_\_\_\_ squeezes and grinds food.
53. A bird's two-loop circulatory system is efficient at delivering \_\_\_\_\_ to cells.
54. A large muscle called the \_\_\_\_\_, which is located at the bottom of the ribs, helps mammals to breathe.
55. The number of chambers in a mammal's heart is \_\_\_\_\_.
56. Mammals have an insulating material called \_\_\_\_\_ beneath their skins.
57. A group of mammals that includes only three species is the \_\_\_\_\_.
58. Pregnant female monotremes and marsupials lack a(n) \_\_\_\_\_, which is an organ that passes materials between an embryo and its mother.
59. As a tadpole becomes a frog, its circulatory and \_\_\_\_\_ systems undergo significant changes that will allow it to live on land.

60. Examining molecular evidence allows scientists to determine evolutionary relationships based on similarities in the structure of proteins and \_\_\_\_\_.

### Short Answer

*Use the diagram to answer each question.*



61. Identify the structure labeled A and describe its function.
62. Describe the structure of a fish's heart.
63. Identify the structures labeled C and describe their function.
64. Describe the path followed by blood after it leaves a fish's heart.
65. Is the animal in the diagram a cartilaginous fish or a bony fish? Explain your reasoning.
66. What does the swim bladder contain? What is the function of the swim bladder?

*Use the diagram to answer each question.*

### Characteristics of Birds and Mammals

<i>Animal A</i>	<i>Animal B</i>	<i>Animal C</i>
Cannot fly	Can fly	Can fly
Lays eggs	Lays eggs	Does not lay eggs
Has a diaphragm	Has a gizzard	Has hair
Has webbed feet	Has webbed feet	Has webbed fingers
Has a bill	Has a bill	Has teeth

67. Is animal B a bird or a mammal? Explain your reasoning.

68. Are any of the animals in the table ectotherms? Explain.
69. Is animal A a bird or a mammal? Explain your reasoning.
70. Is animal C a bird or a mammal? Explain your reasoning.
71. In which of the animals in the table do the females produce milk?
72. Decide whether mammal A is a monotreme, a marsupial, or a placental mammal. Explain your reasoning.

## **Essay**

73. What is an endotherm? How do sweating, fur, and feathers affect the body temperatures of endotherms?
74. Compare and contrast the mouths and skeletons of the three major groups of fish.
75. How might a large farm that uses many pesticides affect amphibian populations living downstream? Why do amphibians experience these effects?
76. Identify two ways in which snakes and lizards are alike. Then identify two ways in which they are different from one another.
77. How do parent birds usually care for their eggs? Why is this care necessary?
78. Describe the path that blood follows through a bird's circulatory system. Begin with the right side of the heart. In your answer, explain where the blood picks up oxygen and where it releases the oxygen to the bird's body cells.
79. How are monotremes similar to birds in the way that they reproduce? Identify three ways in which monotremes are different from reptiles.
80. If an animal does not have four legs, can it be a mammal? Explain.

## Life; Ch. 12; Structure & Function of Vertebrates

### Answer Section

#### MULTIPLE CHOICE

1. ANS: A                      PTS: 1                      DIF: L1  
OBJ: CaLS.12.1.1 List the characteristics of chordates and vertebrates.  
STA: S 7.5.c                      BLM: knowledge
2. ANS: B                      PTS: 1                      DIF: L1  
OBJ: CaLS.12.1.1 List the characteristics of chordates and vertebrates.  
BLM: knowledge
3. ANS: C                      PTS: 1                      DIF: L2  
OBJ: CaLS.12.1.1 List the characteristics of chordates and vertebrates.  
STA: S 7.5.c                      BLM: comprehension
4. ANS: D                      PTS: 1                      DIF: L1  
OBJ: CaLS.12.1.3 Describe how vertebrates differ in the way they control body temperature.  
STA: S 7.5.a                      BLM: knowledge
5. ANS: A                      PTS: 1                      DIF: L2  
OBJ: CaLS.12.1.3 Describe how vertebrates differ in the way they control body temperature.  
STA: S 7.5.a                      BLM: comprehension
6. ANS: B                      PTS: 1                      DIF: L2  
OBJ: CaLS.12.2.1 Name the main characteristics of fishes.                      STA: S 7.5.b  
BLM: comprehension
7. ANS: C                      PTS: 1                      DIF: L1  
OBJ: CaLS.12.2.1 Name the main characteristics of fishes.                      STA: S 7.2.a  
BLM: knowledge
8. ANS: C                      PTS: 1                      DIF: L2  
OBJ: CaLS.12.2.2 Name the major groups of fishes and describe how they differ.  
STA: S 7.5.b                      BLM: analysis
9. ANS: B                      PTS: 1                      DIF: L1  
OBJ: CaLS.12.2.2 Name the major groups of fishes and describe how they differ.  
STA: S 7.5.b                      BLM: knowledge
10. ANS: A                      PTS: 1                      DIF: L2  
OBJ: CaLS.12.2.2 Name the major groups of fishes and describe how they differ.  
STA: S 7.5.b                      BLM: comprehension
11. ANS: C                      PTS: 1                      DIF: L2  
OBJ: CaLS.12.3.2 Examine how adult amphibians are adapted for life on land.  
STA: S 7.5.a                      BLM: comprehension
12. ANS: D                      PTS: 1                      DIF: L2  
OBJ: CaLS.12.3.2 Examine how adult amphibians are adapted for life on land.  
STA: S 7.5.c                      BLM: comprehension
13. ANS: D                      PTS: 1                      DIF: L2  
OBJ: CaLS.12.3.2 Examine how adult amphibians are adapted for life on land.  
STA: S 7.3.e                      BLM: comprehension



14. ANS: B PTS: 1 DIF: L1  
OBJ: CaLS.12.4.1 Identify adaptations that allow reptiles to live on land.  
STA: S 7.5.a BLM: knowledge
15. ANS: B PTS: 1 DIF: L1  
OBJ: CaLS.12.4.1 Identify adaptations that allow reptiles to live on land.  
STA: S 7.5.a BLM: knowledge
16. ANS: B PTS: 1 DIF: L2  
OBJ: CaLS.12.4.1 Identify adaptations that allow reptiles to live on land.  
STA: S 7.5.a BLM: analysis
17. ANS: A PTS: 1 DIF: L1  
OBJ: CaLS.12.4.2 Contrast the characteristics of each of the three main groups of reptiles.  
STA: S 7.5.a BLM: knowledge
18. ANS: A PTS: 1 DIF: L1  
OBJ: CaLS.12.4.2 Contrast the characteristics of each of the three main groups of reptiles.  
STA: S 7.5.a BLM: knowledge
19. ANS: C PTS: 1 DIF: L1  
OBJ: CaLS.12.4.2 Contrast the characteristics of each of the three main groups of reptiles.  
STA: S 7.5.a BLM: knowledge
20. ANS: A PTS: 1 DIF: L1  
OBJ: CaLS.12.5.1 Identify the common characteristics of birds. STA: S 7.3.a  
BLM: knowledge
21. ANS: C PTS: 1 DIF: L2  
OBJ: CaLS.12.5.1 Identify the common characteristics of birds. STA: S 7.5.a  
BLM: comprehension
22. ANS: D PTS: 1 DIF: L2  
OBJ: CaLS.12.5.1 Identify the common characteristics of birds. STA: S 7.5.a  
BLM: comprehension
23. ANS: A PTS: 1 DIF: L1  
OBJ: CaLS.12.6.1 Describe the characteristics common to all mammals.  
STA: S 7.5.a BLM: knowledge
24. ANS: D PTS: 1 DIF: L1  
OBJ: CaLS.12.6.1 Describe the characteristics common to all mammals.  
STA: S 7.5.a BLM: knowledge
25. ANS: B PTS: 1 DIF: L2  
OBJ: CaLS.12.3.1 Describe the life cycle of an amphibian. STA: S 7.5.a  
BLM: application
26. ANS: D PTS: 1 DIF: L1  
OBJ: CaLS.12.6.2 List the main groups of mammals and tell how they differ in their reproduction.  
STA: S 7.2.a BLM: knowledge
27. ANS: B PTS: 1 DIF: L1  
OBJ: CaLS.12.6.2 List the main groups of mammals and tell how they differ in their reproduction.  
STA: S 7.2.a BLM: knowledge
28. ANS: A PTS: 1 DIF: L1

OBJ: CaLS.12.6.2 List the main groups of mammals and tell how they differ in their reproduction.

STA: S 7.2.a BLM: knowledge

29. ANS: C PTS: 1 DIF: L2

OBJ: CaLS.12.1.2 Explain how scientists have been able to infer the relationships of major groups of vertebrates. STA: S 7.3.d BLM: application

30. ANS: A PTS: 1 DIF: L3

OBJ: CaLS.12.4.3 Describe one environmental change that may have caused the extinction of dinosaurs. STA: S 7.3.e BLM: synthesis

## MODIFIED TRUE/FALSE

31. ANS: F, backbone

PTS: 1 DIF: L2

OBJ: CaLS.12.1.1 List the characteristics of chordates and vertebrates.

STA: S 7.5.c BLM: knowledge

32. ANS: T PTS: 1 DIF: L1

OBJ: CaLS.12.1.3 Describe how vertebrates differ in the way they control body temperature.

STA: S 7.4.g BLM: knowledge

33. ANS: T PTS: 1 DIF: L2

OBJ: CaLS.12.2.1 Name the main characteristics of fishes. STA: S 7.5.b

BLM: comprehension

34. ANS: F, bony

PTS: 1 DIF: L1

OBJ: CaLS.12.2.2 Name the major groups of fishes and describe how they differ.

STA: S 7.5.b BLM: knowledge

35. ANS: F

poisons

chemicals

PTS: 1 DIF: L1

OBJ: CaLS.12.3.2 Examine how adult amphibians are adapted for life on land.

STA: S 7.3.e BLM: knowledge

36. ANS: F, dry

PTS: 1 DIF: L1

OBJ: CaLS.12.4.1 Identify adaptations that allow reptiles to live on land.

STA: S 7.5.a BLM: knowledge

37. ANS: F, muscles

PTS: 1 DIF: L1

OBJ: CaLS.12.4.2 Contrast the characteristics of each of the three main groups of reptiles.

STA: S 7.5.a BLM: knowledge

38. ANS: T PTS: 1 DIF: L1  
OBJ: CaLS.12.5.1 Identify the common characteristics of birds. STA: S 7.5.a  
BLM: knowledge
39. ANS: F, earlier
- PTS: 1 DIF: L2  
OBJ: CaLS.12.6.2 List the main groups of mammals and tell how they differ in their reproduction.  
STA: S 7.2.a BLM: comprehension
40. ANS: F, metamorphosis.
- PTS: 1 DIF: L2  
OBJ: CaLS.12.3.1 Describe the life cycle of an amphibian. STA: S 7.5  
BLM: comprehension

## COMPLETION

41. ANS: gill slits
- PTS: 1 DIF: L1  
OBJ: CaLS.12.1.1 List the characteristics of chordates and vertebrates.  
STA: S 7.5.a BLM: knowledge
42. ANS: birds
- PTS: 1 DIF: L2  
OBJ: CaLS.12.1.3 Describe how vertebrates differ in the way they control body temperature.  
BLM: comprehension
43. ANS: fins
- PTS: 1 DIF: L1  
OBJ: CaLS.12.2.1 Name the main characteristics of fishes. STA: S 7.5.c  
BLM: knowledge
44. ANS: cartilage
- PTS: 1 DIF: L1  
OBJ: CaLS.12.2.2 Name the major groups of fishes and describe how they differ.  
STA: S 7.5.a BLM: knowledge
45. ANS: swim bladder
- PTS: 1 DIF: L1  
OBJ: CaLS.12.2.2 Name the major groups of fishes and describe how they differ.  
STA: S 7.5.b BLM: knowledge
46. ANS: muscular limbs
- PTS: 1 DIF: L1

- OBJ: CaLS.12.3.2 Examine how adult amphibians are adapted for life on land.  
STA: S 7.5.c BLM: knowledge  
47. ANS: urine
- PTS: 1 DIF: L1  
OBJ: CaLS.12.4.1 Identify adaptations that allow reptiles to live on land.  
STA: S 7.5.a BLM: knowledge  
48. ANS: carbon dioxide
- PTS: 1 DIF: L1  
OBJ: CaLS.12.4.1 Identify adaptations that allow reptiles to live on land.  
STA: S 7.5.a BLM: knowledge  
49. ANS: yolk
- PTS: 1 DIF: L1  
OBJ: CaLS.12.4.1 Identify adaptations that allow reptiles to live on land.  
STA: S 7.5.a BLM: knowledge  
50. ANS: shell
- PTS: 1 DIF: L1  
OBJ: CaLS.12.4.2 Contrast the characteristics of each of the three main groups of reptiles.  
STA: S 7.5.a BLM: knowledge  
51. ANS: contour
- PTS: 1 DIF: L1  
OBJ: CaLS.12.5.1 Identify the common characteristics of birds. STA: S 7.5.a  
BLM: knowledge  
52. ANS: gizzard
- PTS: 1 DIF: L1  
OBJ: CaLS.12.5.1 Identify the common characteristics of birds. STA: S 7.5.a  
BLM: knowledge  
53. ANS: oxygen
- PTS: 1 DIF: L1  
OBJ: CaLS.12.5.1 Identify the common characteristics of birds. STA: S 7.5.a  
BLM: knowledge  
54. ANS: diaphragm
- PTS: 1 DIF: L1  
OBJ: CaLS.12.6.1 Describe the characteristics common to all mammals.  
STA: S 7.5.a BLM: knowledge  
55. ANS: four
- PTS: 1 DIF: L1

- OBJ: CaLS.12.6.1 Describe the characteristics common to all mammals.  
STA: S 7.5.a BLM: knowledge
56. ANS: fat
- PTS: 1 DIF: L1  
OBJ: CaLS.12.6.1 Describe the characteristics common to all mammals.  
STA: S 7.5.a BLM: knowledge
57. ANS: monotremes
- PTS: 1 DIF: L1  
OBJ: CaLS.12.6.2 List the main groups of mammals and tell how they differ in their reproduction.  
STA: S 7.5.a BLM: knowledge
58. ANS: placenta
- PTS: 1 DIF: L1  
OBJ: CaLS.12.6.2 List the main groups of mammals and tell how they differ in their reproduction.  
STA: S 7.5.e BLM: knowledge
59. ANS: respiratory
- PTS: 1 DIF: L2  
OBJ: CaLS.12.3.1 Describe the life cycle of an amphibian. STA: S 7.5.a  
BLM: comprehension
60. ANS: DNA
- PTS: 1 DIF: L3  
OBJ: CaLS.12.1.2 Explain how scientists have been able to infer the relationships of major groups of vertebrates. STA: S 7.3.a BLM: synthesis

## SHORT ANSWER

61. ANS:  
A is a gill. Gills are the organs in which oxygen moves from the water into the blood and carbon dioxide moves from the blood into the water.
- PTS: 1 DIF: L2  
OBJ: CaLS.12.2.1 Name the main characteristics of fishes. STA: S 7.5.b  
BLM: application
62. ANS:  
A fish's heart is a simple two-chambered pump.
- PTS: 1 DIF: L2  
OBJ: CaLS.12.2.1 Name the main characteristics of fishes. STA: S 7.5.b  
BLM: comprehension

63. ANS:

The structures labeled C are fins, which help fish swim and stay upright in the water.

PTS: 1 DIF: L2

OBJ: CaLS.12.2.1 Name the main characteristics of fishes. STA: S 7.5.c

BLM: application

64. ANS:

Blood flows in one loop from the heart to the gills, to the rest of the body, and back to the heart.

PTS: 1 DIF: L2

OBJ: CaLS.12.2.1 Name the main characteristics of fishes. STA: S 7.5.b

BLM: comprehension

65. ANS:

It is a bony fish. Possible reasons: it has a swim bladder; bones are visible in the fins.

PTS: 1 DIF: L3

OBJ: CaLS.12.2.2 Name the major groups of fishes and describe how they differ.

STA: S 7.5.a BLM: synthesis

66. ANS:

The swim bladder contains gases. The swim bladder helps stabilize the fish at different depths.

PTS: 1 DIF: L2

OBJ: CaLS.12.2.2 Name the major groups of fishes and describe how they differ.

STA: S 7.5.b BLM: comprehension

67. ANS:

B is a bird. It has a gizzard, which is found in birds but not mammals.

PTS: 1 DIF: L2

OBJ: CaLS.12.5.1 Identify the common characteristics of birds. STA: S 7.5.a

BLM: analysis

68. ANS:

None of the animals are ectotherms. Each animal is either a bird or a mammal, and both birds and mammals are endotherms.

PTS: 1 DIF: L2

OBJ: CaLS.12.5.1 Identify the common characteristics of birds. | CaLS.12.6.1 Describe the characteristics common to all mammals. STA: S 7.5.a BLM: analysis

69. ANS:

A is a mammal. It has a diaphragm, which is a characteristic of mammals.

PTS: 1 DIF: L2

OBJ: CaLS.12.6.1 Describe the characteristics common to all mammals.

STA: S 7.5.a BLM: analysis

70. ANS:

C is a mammal. It has hair and teeth, which are characteristics of mammals.

PTS: 1 DIF: L2  
OBJ: CaLS.12.6.1 Describe the characteristics common to all mammals.  
STA: S 7.5.a BLM: analysis

71. ANS:  
A and C produce milk, because both are mammals.

PTS: 1 DIF: L2  
OBJ: CaLS.12.6.1 Describe the characteristics common to all mammals.  
STA: S 7.5.a BLM: analysis

72. ANS:  
A is a monotreme because it lays eggs.

PTS: 1 DIF: L2  
OBJ: CaLS.12.6.2 List the main groups of mammals and tell how they differ in their reproduction.  
STA: S 7.5.a BLM: analysis

## ESSAY

73. ANS:  
An endotherm is an animal whose body regulates its own temperature by controlling the internal heat it produces. An endotherm is cooled when sweat evaporates. Fur and feathers help keep endotherms warm on cool days.

PTS: 1 DIF: L2  
OBJ: CaLS.12.1.3 Describe how vertebrates differ in the way they control body temperature.  
STA: S 7.5.b BLM: comprehension

74. ANS:  
Jawless fishes have teeth but no jaws. Their skeletons are made of cartilage. Cartilaginous fishes have teeth and jaws, and their skeletons are made of cartilage. Bony fishes have teeth and jaws, and their skeletons are made of hard bone.

PTS: 1 DIF: L2  
OBJ: CaLS.12.2.2 Name the major groups of fishes and describe how they differ.  
STA: S 7.5.a BLM: analysis

75. ANS:  
Amphibians have thin, moist, delicate skin. Chemicals from pollution can pass through such skin more easily than they can through skin that is thick and dry. Because the eggs of amphibians lack shells, chemicals can easily affect the eggs. Even small amounts of chemicals can kill eggs. Populations of amphibians living downstream from a large farm that uses pesticides might be in more danger from these effects, especially if the pesticides enter the water.

PTS: 1 DIF: L3  
OBJ: CaLS.12.3.2 Examine how adult amphibians are adapted for life on land.  
STA: S 7.5.b BLM: analysis

76. ANS:

For similarities: both are reptiles, have skin with scales that is shed periodically, and generally live in warm areas. For differences, accept any two of the following: lizards have four legs and snakes have none; many lizards have movable eyelids, whereas snakes have no eyelids. Lizards have two lungs, whereas most snakes have only one lung. Lizards have external ears, whereas snakes do not.

PTS: 1

DIF: L3

OBJ: CaLS.12.4.2 Contrast the characteristics of each of the three main groups of reptiles.

STA: S 7.5.a

BLM: analysis

77. ANS:

Most birds care for their eggs by sitting on them to keep them warm. This care is necessary because the eggs will only develop at a temperature that is close to that of the body temperature of the parent bird.

PTS: 1

DIF: L2

OBJ: CaLS.12.5.1 Identify the common characteristics of birds. STA: S 7.5.a

BLM: comprehension

78. ANS:

The right side of the heart pumps oxygen-poor blood to the lungs. The blood picks up oxygen in the lungs. The oxygen-rich blood then goes to the left side of the heart, from which it is pumped to the body's cells, where it releases oxygen.

PTS: 1

DIF: L2

OBJ: CaLS.12.5.1 Identify the common characteristics of birds. STA: S 7.5.a

BLM: comprehension

79. ANS:

Monotremes and birds both lay eggs. For differences between monotremes and reptiles, accept any three of the following: monotremes feed their young with milk, have hair on their bodies, and have a diaphragm.

PTS: 1

DIF: L3

OBJ: CaLS.12.4.2 Contrast the characteristics of each of the three main groups of reptiles. |

CaLS.12.5.1 Identify the common characteristics of birds. | CaLS.12.6.1 Describe the

characteristics common to all mammals. | CaLS.12.6.2 List the main groups of mammals and tell how they differ in their reproduction. STA: S 7.5.a BLM: synthesis

80. ANS:

Yes, it can be a mammal, as long as it has hair on its body, feeds its young with milk, and is an endothermic vertebrate with a four-chambered heart. Some mammals, such as whales, do not have four legs.

PTS: 1

DIF: L3

OBJ: CaLS.12.6.1 Describe the characteristics common to all mammals.

STA: S 7.5.a

BLM: synthesis