

Unit # PHYLUM CHORDATA-**L.O. Chordata**

- ___ 1. What three things must all chordates possess at some point in their development to qualify them as being a chordate?
- ___ 2. Name two types of invertebrate chordates.
- ___ 3. All the rest of the chordates do possess a backbone, these fit into a subphylum called...
- ___ 4. Name all 7 classes of chordates that fit into this subphylum.
- ___ 5. Name the chordate structure (from embryonic stage) that has gone on to form the spiny backbone in the vertebrate chordates?
- ___ 6. What is the literal translation for "Agnatha"?
- ___ 7. Name two common members that belong to this class.
- ___ 8. List a couple of structures they lack that most fish possess
- ___ 9. Name two key evolutionary advancements seen in "Chondrichthyes"
- ___ 10. Which class of fish makes up the largest class of vertebrate chordates, and what percent of vertebrate chordates belong to this class?
- ___ 11. Bony fish use this organ to keep them more or less buoyant.
- ___ 12. Name a vital organ that a very few species of bony fish possess that allows them to live in very stagnant (oxygen depleted water)
- ___ 13. Almost all amphibians undergo metamorphosis between their aquatic larval stage and their terrestrial adult stage. Describe a few key structural changes that take place during this metamorphosis.
- ___ 14. Give at least two reasons why amphibians must remain near water.
- ___ 15. Although the origination of lungs is seen in the bony fish, name the structural adaptations that are credited to the amphibians making them better suited for terrestrial living than the fishes.
- ___ 16. List at least three structural adaptations that reptiles possess, that amphibians do not possess.
- ___ 17. What key characteristic do mammals share with birds?
- ___ 18. Describe the main advantage of possessing this characteristic.
- ___ 19. Describe one main disadvantage of possessing this characteristic.
- ___ 20. What is the scientific term for this type of body temperature control?
- ___ 21. Describe some structural adaptations that endotherms use to prevent heat loss?
- ___ 22. What is the difference between an oviparous chordate and a viviparous one?
- ___ 23. List two unique characteristics that birds possess that make them perfectly designed for flight.
- ___ 24. Name three types of bird feathers and give a specific function for each.
- ___ 25. How many chambers does a bird's heart have?
- ___ 26. What is the function of the hairs attached to the skin?
- ___ 27. Name the four different types of mammalian teeth.
- ___ 28. What teeth are found in the front of the mouth?

- ___ 29. What group (herbivores, omnivores or carnivores) of mammals have well-developed canines?
- ___ 30. What are the function of molars and premolars?
- ___ 31. List at least three unique characteristics common to mammals.
- ___ 32. What is a monotreme mammal and name one?
- ___ 33. What is a marsupial mammal and name one?
- ___ 34. What is a placental mammal and name one?
- ___ 35. Which of the above (30,31,or 32) are we?

Unit # PHYLUM CHORDATA- Subphylum Vertebrata

L.O. M –1 Characteristics

- ___ 1. To which phylum do mammals belong?
- ___ 2. What classification category does vertebrate refer to?
- ___ 3. How many orders are there in class mammalia?
- ___ 4. List 4 characteristics that differ between mammals and other vertebrates.
- ___ 5. What is a diaphragm?
- ___ 6. What characteristic do mammals share with birds?
- ___ 7. Name two other features that mammals share with all of the other vertebrates
- ___ 8. List 4 specialized features of mammalian skin.
- ___ 9. Where do hairs grow from?
- ___ 10. What is the function of the oil that is secreted by oil glands in the skin?
- ___ 11. What is the function of the hairs attached to the skin?
- ___ 12. What substances are found in sweat?
- ___ 13. The function of sweat is to remove what?
- ___ 14. What shape is the average uterus in mammals?
- ___ 15. Why is the uterus this shape?
- ___ 16. How is the primate uterus different?
- ___ 17. Why is the uterus this shape?
- ___ 18. What substances are exchanged between the mother and the developing fetus?
- ___ 19. Define “Reproductive Efficiency”
- ___ 20. Why are animals said to have a High Reproductive Efficiency?
- ___ 21. Give two reasons why mammal offspring are able to survive better than those of other animals.
- ___ 22. Name the four different types of mammalian teeth.
- ___ 23. What teeth are found in the front of the mouth?
- ___ 24. What group of animals have well-developed incisors?
- ___ 25. What is the function of the incisors?
- ___ 26. Name the type of teeth found next to the incisors.
- ___ 27. What are the function of molars and premolars?
- ___ 28. What is the function of the canines?
- ___ 29. What sort of mammals have well-developed canines?
- ___ 30. What sort of mammals have well-developed molars?

- ___ 31. how many chambers are found in the carnivore stomach?
- ___ 32. What is the function of the gastric glands in the lining of the stomach?
- ___ 33. What is a ruminant?
- ___ 34. How many chambers are found in their stomachs?
- ___ 35. Food is initially swallowed quickly and stored in what chamber?
- ___ 36. What happens to food while it sits in the rumen?
- ___ 37. What happens to food when it is passed on to the reticulum?
- ___ 38. When the cud is chewed and swallowed again, it passes into which chamber?
- ___ 39. What happens to food in the omasum?
- ___ 40. Where are the gastric glands located in a ruminant?
- ___ 41. How many chambers are in the mammalian heart?
- ___ 42. What does the right side of the heart service?
- ___ 43. Where does blood go after leaving the left side of the heart?
- ___ 44. What affects the strength of the heart contractions?
- ___ 45. List two events that happens when a blood vessel is damaged.
- ___ 46. When do arteries start to constrict?
- ___ 47. Why is the constriction of arteries a benefit to a mammal?
- ___ 48. What other factor causes arteries to constrict?
- ___ 49. What is the term used for the expansion of blood vessels?
- ___ 50. When the body is hot, how does the circulatory system respond?
- ___ 51. Why do you think that people are very cold that they take on a blue appearance?
- ___ 52. Given a diagram of the respiratory system of a mammal. Be able to list the important structures.
- ___ 53. What is located at the top of the trachea?
- ___ 54. The trachea branches into two _____.
- ___ 55. As the air tubes become narrower, what are they called?
- ___ 56. At the end of the air tubes are small air sacs called _____?
- ___ 57. What separates the abdominal cavity from the thoracic cavity?
- ___ 58. Be able to describe the process of inhalation and exhalation.
- ___ 59. What is the most internal portion of the brain responsible for?
- ___ 60. Which of the areas (internal, middle, outer) of the brain is most advanced?
- ___ 61. Which area of the brain is most primitive?
- ___ 62. Which area of the brain is responsible for emotions?
- ___ 63. Which area of the brain is responsible for processing ideas?
- ___ 64. What is the largest part of the mammalian brain?
- ___ 65. List three functions that the cerebral cortex is concerned with in humans.
- ___ 66. The pituitary gland is the master gland of what system?
- ___ 67. What substances are produced by the pituitary gland?
- ___ 68. What is the organ involved in excretion?
- ___ 69. Name the tube that carries urine from the kidney to the bladder.
- ___ 70. What is the function of the bladder?
- ___ 71. What is the name of the capillary network that is in the Bowman's Capsule?
- ___ 72. Wastes enter into the nephron while _____ are reabsorbed back into the blood stream.

L.O. M – 2 Classes of Vertebrates

For this learning outcome, you must know the names of the 7 classes of vertebrates and the 14 orders, their description and examples of each. Below is merely a sample of possible questions.

- ___ 1. Name the class of vertebrates that the Lamprey belongs to.
- ___ 2. What type of skeleton does the *Class Agnatha* have?
- ___ 3. Give an example of an animal from the *Class Chondrichthyes*.
- ___ 4. The bony fish belong to the *Class* _____.
- ___ 5. Give four characteristics of the *Class Osteichthyes*?
- ___ 6. The class that have larvae that live in freshwater and posses gills, while their adult form, are terrestrial and contain lungs is called
- ___ 7. List the characteristics of *Class Reptillia*
- ___ 8. List the characteristics of *Class Aves*
- ___ 9. List the characteristics of *Class Mammalia*
- ___ 10. What is the name of the pouched mammals?
- ___ 11. Give an example of a cetacian.
- ___ 12. Horses belong to which order?
- ___ 13. What order do we belong to?
- ___ 14. What is distinctive about the chiroptera?
- ___ 15. Give an example of a Lagomorph?
- ___ 16. What order do cats belong to?
- ___ 17. What are Proboscids?
- ___ 18. What is distinctive about the duck-billed platypus?

L.O. M – 3 Exoskeleton Vs Endoskeleton

- ___ 1. Where is the exoskeleton located?
- ___ 2. What is the exoskeleton made up of?
- ___ 3. List three functions of the exoskeleton.
- ___ 4. What can be a negative trait of the exoskeleton if the animal wants to grow?
- ___ 5. Why must a species with an exoskeleton remain small?
- ___ 6. Where is the endoskeleton located?
- ___ 7. What is the endoskeleton made up of?
- ___ 8. List 6 functions of the endoskeleton.
- ___ 9. List one negative aspect of the endoskeleton.

L.O. M –4 Ecological Roles of Vertebrates

- ___ 1 Be able to determine several ecological roles of vertebrates