



SHAPE OF LIFE: CHORDATA

1. Amphioxus is a simple invertebrate chordate. Describe what it looks like.

Amphioxus looks like a tiny fish. It is burrowed in the sand. It has no eyes, ears, or a jaw.

2. What are four structures that amphioxus has that it shares with us?

Amphioxus has a nerve cord, gill slits (which humans have as embryos), segmented muscles, and a notochord (a rod that runs down their back and supports them).



3. Adult humans do not have a notochord. What do we have in its place?

Our notochord is replaced by a backbone made of disks.

4. What are chordates that have a spine called? Vertebrates

5. What has enabled vertebrates, such as elephants and monkeys, to be larger and more dominant than simple chordates such as amphioxus?

Vertebrates have four times more genes than amphioxus, which has very few genes. These genes allow them to make new structures in their bodies that amphioxus lacks.

6. Which new structure evolved in vertebrates that allowed them to switch from being microscopic plants (as amphioxus does) to eating larger food, including prey, in turn allowing them to grow larger?

Vertebrates developed jaws, which amphioxus lacks.

7. What were the first animals to possess jaws made of bone, allowing them to dominate their ecosystems?

Fish developed body jaws and were fierce predators.

8. Which structure developed in fish to protect their fragile, growing brain tissue? Cranium or skull

9. Which invertebrate chordate is a sessile filter feeder? Tunicates

10. Describe the salp.

The salp is a small, see-through, fish-looking creature that floats in the open water. They are approximately the size of a human hand. They form a chain when reproducing.

11. Which unique chordate forms a clear, cloudy looking mass around its body? Larvacean

12. As fish developed more genes, what did their bodies adapt to be able to do? Walk

13. Observe our first land ancestor as it moves from water to land. What does it look like?

The first land ancestor looks like a salamander or mudpuppy. It has webbed feet, a round head, gills, and a paddle-like tail. It walks slowly along land and looks equipped for both water and land.

14. The first land animals had similarities to monitor lizards. How did the first land chordates adapt to reproduction on land?

Monitor lizards laid eggs with a shell! Within the shell, the eggs contain nutrition for the developing embryos. The shell also prevents the eggs from drying out.

15. What are some features of snakes that allow them to capture and consume prey without limbs?

Snakes have venom which they can inject into prey with their teeth, paralyzing or killing their prey. The teeth of snakes also face backwards, simplifying the process of swallowing prey whole. It also appears that snakes have a very large jaw.



16. What were the largest chordates to ever walk the Earth? **Dinosaurs**

17. When did an asteroid crash into Earth? What impact did this have on the animal life on Earth?

An asteroid impacted with Earth 65 million years ago. The asteroid wiped out half of the animal species; however, nearly all of the large animals on Earth went extinct.

18. Which animals gained a stronghold after the dinosaurs died? Why were they now able to thrive?

Mammals became dominant. Dinosaurs were no longer around to hunt them.



19. Mammals are large and warm-blooded. What do they need to do to fuel their body?

Mammals need to constantly eat. They have a voracious appetite!

20. Which group of chordates are humans most closely related to?

Humans are most closely related to chimpanzees.

21. What are some similarities between humans and primates?

Primates have high intelligence, feel emotions, nurture and care for their young and each other, pass along social skills to the next generation, use tools, learn, mimic each other, and have memory!



22. List 5 different chordates that were shown or featured throughout this video.

The list is very long, but here are a handful that were not covered on this worksheet: human, elephant, alligator, hippo, giraffe, rhino, lemur, tiger, tortoise, deer, hawk, seal, manta ray, stingray, barracuda, shark, mouse, shrew, badger, bat, impala, wildebeest, lion, gazelle, bear, cheetah, wolf, dolphin

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The cover displays a collection of educational materials including a classification chart of chordates, diagrams of various chordates, and a 'Chordata Basics' section.

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The cover features a vibrant photograph of a green tree frog with red eyes and blue spots, sitting on a leaf.

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