



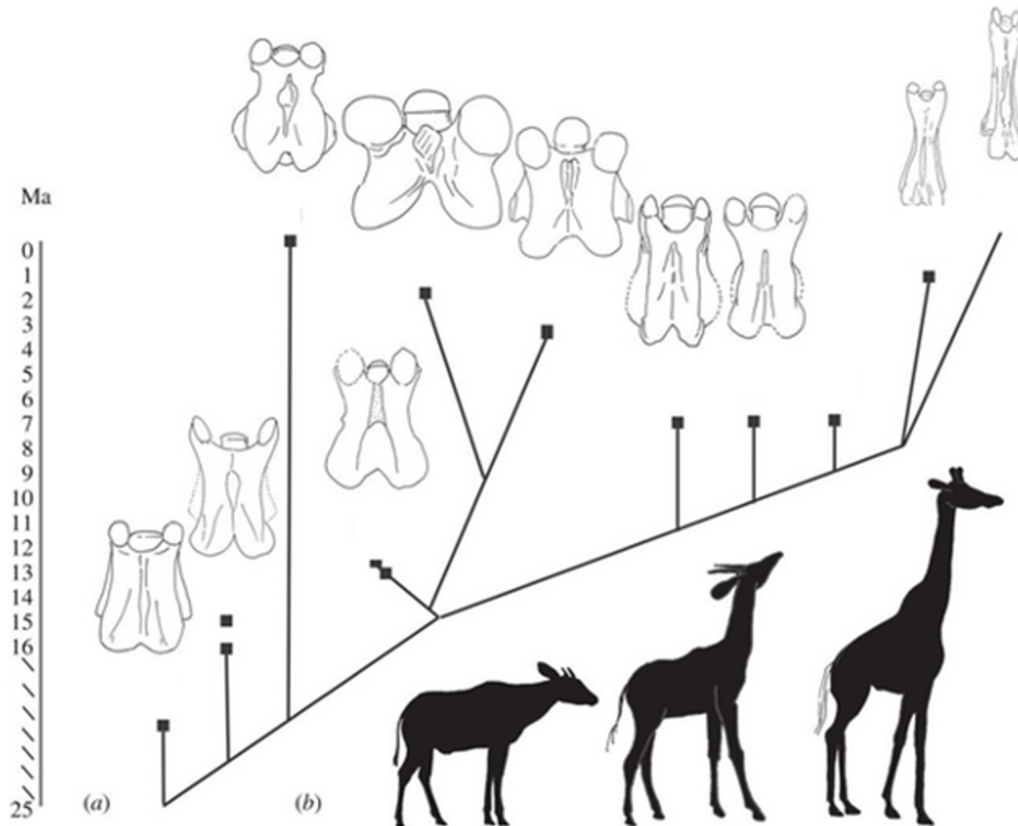
ADAPTATION INTRODUCTION

1. Randomly choose one adaptation card from the set of cards.
2. Think about the question on the card. In 3-4 sentences, write down how or why your animal or plant has this feature. Include in your explanation below why you think this structure might help this animal or plant function in its environment.

3. Share your thoughts with one or two classmates.
 - a. Do you agree or disagree with your classmates' thinking?
 - b. What questions do you have about your or your partner's animal's adaptations or adaptations in general?
 - c. What information would help you better evaluate their thinking?

Figure 1: Fossil Record of Giraffe

Ma = millions of years ago



(c)

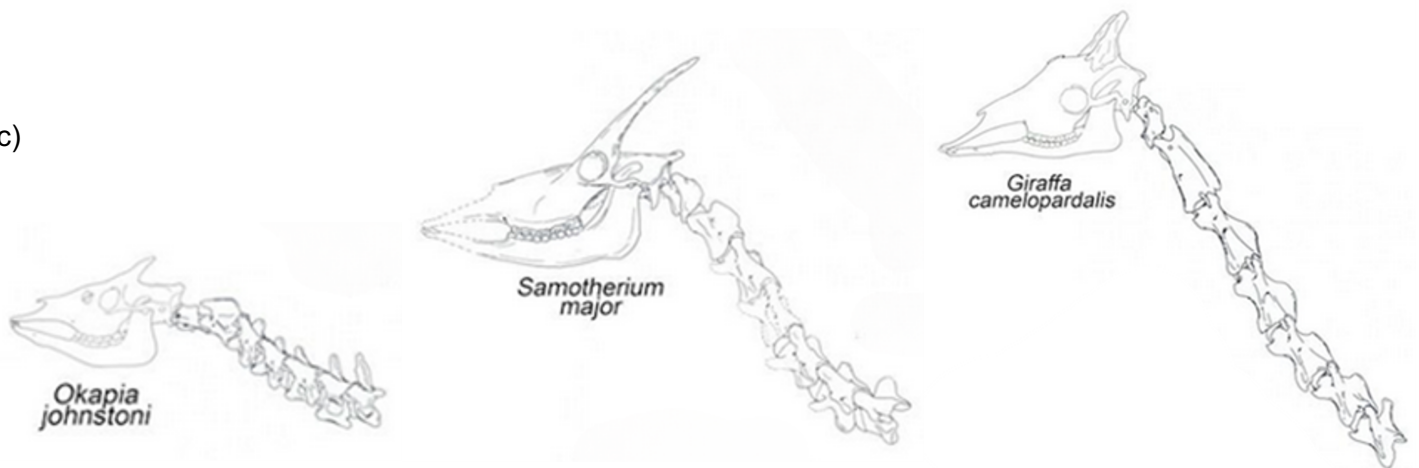


Figure from Danowitz, Vasilyev, Kortlandt, and Solounias. 2015. Fossil evidence and stages of elongation of the *Giraffa camelopardalis* neck. *Royal Society Open Science* 2(10): 150393. [doi:10.1098/rsos.150393](https://doi.org/10.1098/rsos.150393)

4. The above data shows a fossil record of a giraffe. The image shows how their vertebrae (back and neck bones) have changed (adapted) over time. The oldest giraffe ancestor species called *Okapia johnstoni* is shown at the left of part c, and the most recent giraffe species called *Giraffa camelopardalis* is shown on the right of part c.
- When you analyze the data in these images, what parts of the giraffes' neck stayed the same and what parts changed? Write your observations in the box provided.
 - How does the size of vertebrae in the neck relate to the overall proportion of the body? Write your observations in the box provided.

5. Explore one or more of the resources provided by your teacher to answer this question.
- How does the structure of the modern giraffe neck shape provide advantages or disadvantages to how the animal lives and functions?
 - How do you think the changes over time in the giraffes' necks have affected a giraffe's ability to survive?

Provide explanations 5a and 5b below. Be sure to include evidence to back up the explanations!