



COMPARATIVE ANATOMY OF THE DOMESTIC CHICKEN

Using the HHMI Click and Learn “Comparative Anatomy of the Domestic Chicken,” you will build a simplified evolutionary tree of chickens starting from their archosaur ancestor. The particular bone comparisons in this activity were chosen because the bones would be easy to find and see in a roasted chicken or turkey. As you work through the Click and Learn, answer the questions below.



INTRODUCTION

1. When did birds and crocodiles last share a common ancestor?
2. What types of evidence do scientists examine as they make hypotheses about how organisms are related to one another?

MAIN SLIDES

3. What are archosaurs and what is the defining feature of this group?
4. Archosaurs split into two major groups 250 million years ago. What are those groups?
5. Examine the hip joint structure and choose the bone that is most similar to the chicken hip joint. What features are shared by those two animal’s hip joints?



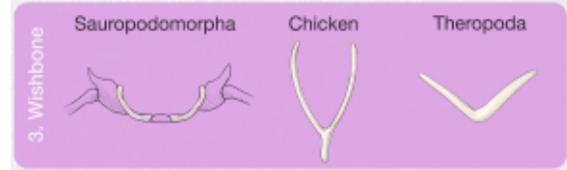
6. Compare some traits of the ornithischians and the saurischians.

7. In the diagram to the right, indicate which dinosaur group is most like the chicken most like based on the anatomy of digits, or fingers.



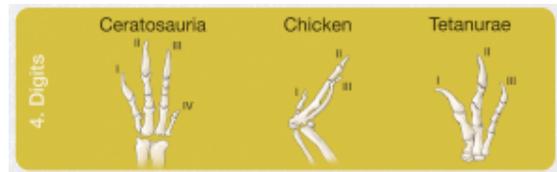


8. Explain how the clavicle, or collarbones, of a chicken are shaped and then, in the diagram below, indicate which group of dinosaurs has a furcula similar to that of chicken.

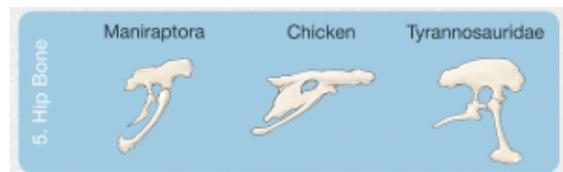


9. Fused clavicles been found only in certain dinosaur fossils. Explain which groups have fused clavicles and what that piece of evidence can mean to chicken evolution.

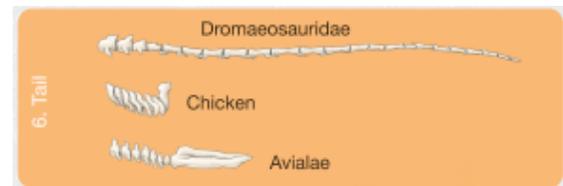
10. One characteristic that distinguished Ceratosaurians from Tetanurans is the number of digits. On the diagram to the right, indicate which is most like a chicken. What is one example of a dinosaur in that group with digits similar to chickens'?



11. Is a chicken is more like a Velociraptor or a T-rex? Explain using anatomical evidence.



12. Birds have a reduced and fused tail called a pygostyle. Which group of dinosaurs also has a pygostyle? What other traits does that group have in common with birds?



13. Examine the cladogram that built as you progressed through the Click and Learn. What is one shortcoming of this proposed family tree?