

## THE STANDARD

# Comparative Anatomy

*Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.*



## LS4.A · Evidence of Common Ancestry and Diversity

*Anatomical similarities and differences between various organisms living today and between them and organisms in the fossil record, enable the reconstruction of evolutionary history and the inference of lines of evolutionary descent.*

Bodies carry evidence. The bones in a human arm, a bat wing, a whale flipper, and a cat leg follow the same basic blueprint, even though they do completely different jobs. Modern organisms and fossil organisms show the same kind of overlap. Those shared structures point to shared ancestors. **The anatomy itself is the evidence.**



## Constructing Explanations and Designing Solutions

*Apply scientific ideas to construct an explanation for real-world phenomena, examples, or events.*

Students aren't memorizing which species are related to which. They're applying a scientific idea (shared anatomy points to shared ancestry) to a real comparison and building an explanation. **The work is "here's what I see, here's what it means, here's why." If they can construct that, they're doing the science.**



## Patterns

*Patterns can be used to identify cause and effect relationships.*

Patterns are the whole point. The same arm bones show up across species that look nothing alike. The same leftover hip bones show up in animals that don't have legs. The pattern repeats across modern bodies and fossil ones. **Students use the pattern to figure out cause: shared structure traces back to shared ancestry.**