THE STANDARD

Comparative Embryology

Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.

DCI
DISCIPLINARY CORE IDEA

LS4.A · Evidence of Common Ancestry and Diversity

> *Comparison of the embryological development of different species also reveals similarities that show relationships not evident in the fully-formed anatomy.*

Adult animals can look nothing alike. A fish, a chicken, a lizard, and a human are wildly different as full-grown organisms. But rewind to early development and their embryos look strikingly similar. Same general body plan, same tail, same pharyngeal arches in the neck region. **Those shared early features are evidence that these species share an ancestor far back in time.**

SEP
SCIENCE & ENGINEERING PRACTICE

Analyzing and Interpreting Data

> *Analyze displays of data to identify linear and nonlinear relationships.*

Students aren't doing live embryology. They're looking at pictures and diagrams of embryos side by side and pulling patterns out of what they see. Which features show up in every embryo? Which species look most alike at the earliest stage? **The data is visual, and the job is to read it carefully and explain what the pattern means.**

CCC
CROSSCUTTING CONCEPT

Patterns

> *Graphs, charts, and images can be used to identify patterns in data.*

Patterns are the whole game here. The more similar two embryos look in early development, the more closely related the species tend to be. **Students compare images, group what matches with what, and use that pattern to make a relatedness claim they couldn't make from the adult forms alone.**