

EVOLUTION

VOCABULARY – Use the resources on Mr. Hanna’s website to define the following key terms related to heredity.

- 1) EVOLUTION –
- 2) LAW OF SUPERPOSITION –
- 3) EMBRYO –
- 4) HOMOLOGOUS STRUCTURES –
- 5) VESTIGIAL STRUCTURES –

SHORT RESPONSE – Provide a short answer (a few sentences or less) in response to each prompt.

- 6) What does it mean to say that species have “evolved”?
- 7) How does the law of superposition help us interpret the fossil record to provide evidence supporting the theory of evolution?
- 8) When scientists compare the early-stage embryos of very different species such as fish, chickens, and humans, what do they notice?
- 9) When we compare the bone structure of a human arm with a cat leg, a whale fin, or even a bat wing, we notice similar bones with a similar layout. What does this suggest about these organisms?
- 10) Scientists have found pelvic bones in species such as whales and snakes that don’t have legs. Why might these animals have pelvic bones?
- 11) Why do scientists say that humans are more closely related to chimpanzees than orangutans (*we share a more-recent common ancestor with chimps*)? What evidence do we have to support this statement?
- 12) Slide 14 discusses the misconception that individual organisms evolve over their life span and pass these genetic changes on to their offspring, resulting in changes to the species. How does the picture of the Pondaung woman with the neck coils “disprove” this misconception?

- 13) Slide 15 addresses the misconception that evolution arises from a species' NEED to adapt. How do the examples of the Tazmanian Wolf or the Dodo Bird illustrate why this is an incorrect understanding of evolution?
- 14) If someone says in a conversation with you that they don't believe in evolution because "Man didn't come from no monkey!", how can you respond to them so you might correct their misconception?
- 15) Look at the highlighted green box in the phylogenetic tree of life on slide 11. What do you think this illustration trying to communicate?
- 16) If you could "zoom in" on the phylogenetic tree from slide 11 where it branches off to say, "animals," you might see something similar to the phylogenetic tree on slide 12. Zooming in on the bottom of that tree, we see a primate phylogenetic tree. Based on this illustration, do humans share a more-recent common ancestor with homo-erectus, chimpanzees, gorillas, or monkeys? How can you tell?