

RAVEN CHAPTER 24 GUIDED NOTES: EVOLUTION OF GENOMES AND DEVELOPMENTAL MECHANISMS

Raven 9th edition

1. What is meant by the term genomics?

2. What is meant by the field of comparative genomics?

3. List three lessons learned from comparing the tiger pufferfish genome to the human genome.

a.

b.

c.

4. What is meant by the term “conserved” when referring to DNA sequences?

5. List three lessons learned from comparing the mouse genome to the human genome.

a.

b.

c.

5. List two lessons learned from comparing the chimpanzee genome to the human genome.

a.

b.

6. List and briefly explain the six mechanisms that cause genomes to change/evolve.

1.

2.

3.

4.

5.

6.

7. What is meant by gene inactivation? Give an example of genes that this happened to and explain how this can happen without significantly compromising the fitness of an organism.

8. What is meant by lateral gene transfer?

9. When in evolutionary time did this occur at a higher rate?

10. Birds and humans are both tetrapods. But the forelimb of birds develop into wings whereas the forelimb of humans develop into arms. How does “same gene, new function” explain this homology in development?

11. What was the interesting finding when the gene for lens formation in mice, *Pax6*, was inserted into the genome of the fruit fly?
