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Chapter 18: Genomes and Their Evolution

***18.2 Scientists use bioinformatics to analyze genomes and their functions***

3. What is *bioinformatics*?

4. What is the goal of scientists who study *proteomics*?

***18.3 Genomes vary in size, number of genes, and gene density***

6. How do prokaryotic genomes of the two domains Bacteria and Archaea compare to eukaryotic genomes?

8. How are humans able to successfully compete in nature even though they have about the same number of genes as the nematode *C. elegans*?

***18.4 Multicellular eukaryotes have much noncoding DNA and many multigene families***

10. Define the following term.

**repetitive DNA**

11. What are *transposable elements*, and what percentage of our genome is made of them?

23. How might genes with novel functions evolve?

***18.6 Comparing genome sequences provides clues to evolution and development***

24. What is *evo-devo*, and how does it relate to understanding the evolution of genomes?

25. Explain what a *homeobox* is, and describe how it functions.