

Living organisms essay sample

[Science](#), [Genetics](#)



1. What does it mean when scientists say that living organisms share a universal genetic code? All living organisms are similar genetically, for example, a human could be 99.5% similar to a chimpanzee and 5% genetically similar to a frog.
2. Based on the amino acid sequence data for the Cytochrome-C protein, chimpanzees and humans share an identical coding sequence. What other species identified on the chart has a coding sequence that is most closely related to the humans and chimpanzees and most distantly related? Explain your answer. The next closest to humans and chimps are horses, because on the chart there are 3 differences and the rest are similar
3. How are self-replicating molecules, such as RNA molecules in the “RNA World” hypothesis, essential to the most popular hypotheses about the origin of life on Earth? The origin of life on Earth is said to be from a single organism, which branched out to create everything there is today. A universal genetic code takes the similarities in organisms and compares them to suggest that each organism came from a single organism from early Earth. Although, this is just a theory, but can support the beginning of life.
4. How might similarities and differences in genetic codes, or the proteins built as a result of these codes, be used to determine how closely related different species are? Scientists cut the DNA of the species into small segments, separate the strands, and mix the DNA together. When the two species' DNA bonds together, the match between the two strands will not be perfect since there are genetic differences between the species - and the more imperfect the match, the weaker the bond between the two strands.

Work cited: http://evolution.berkeley.edu/evolibrary/article/history_26