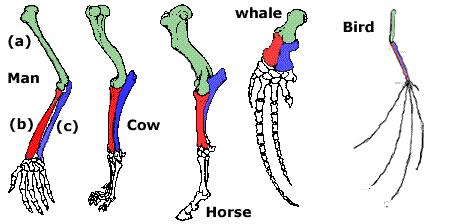
Attachment 2-27

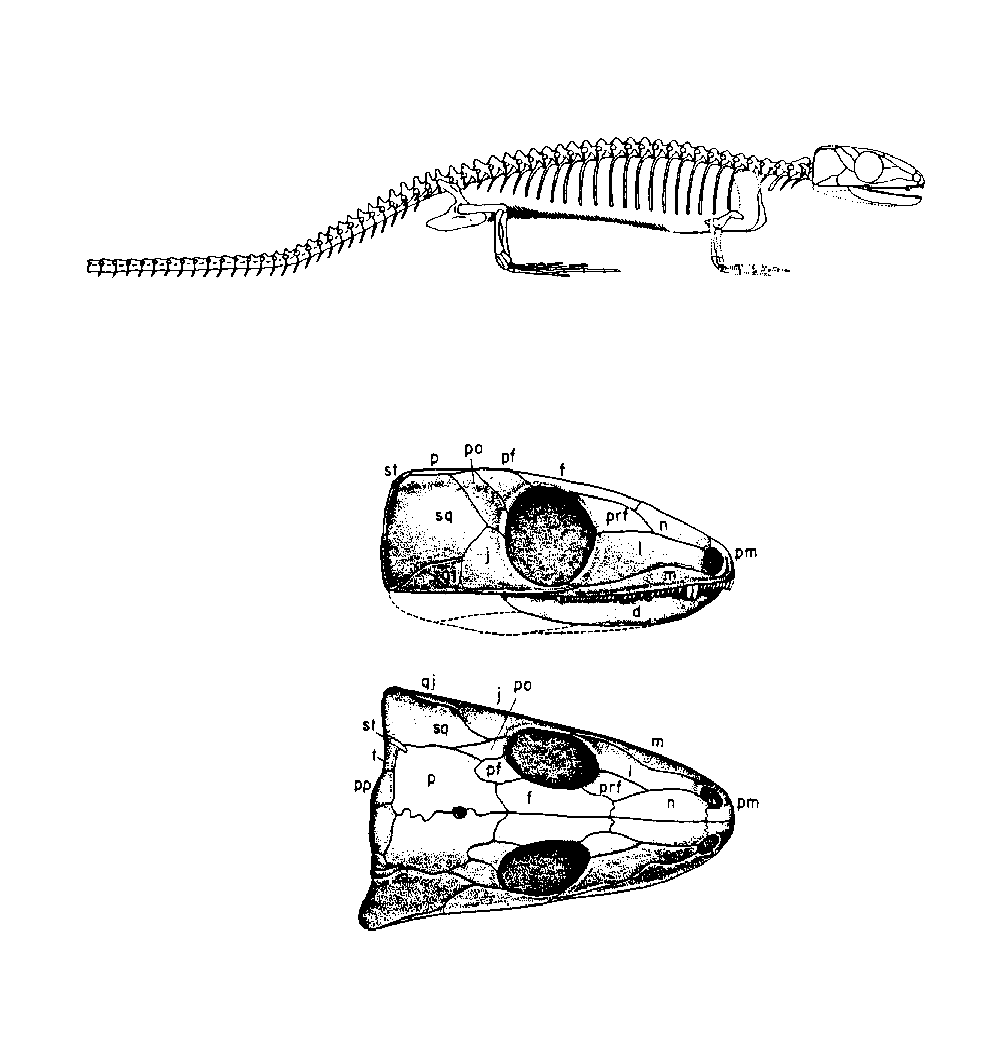
**Evidences of Evolution Summative Assessment**

1. Scientists observe data that shows the differences between the same protein found in two different animals. This type of evidence of evolution would show how closely these two animals are related. If the data shows that there are 2-3 differences between the two animal’s DNA sequence that codes for the protein, what conclusion would the scientists make concerning how closely related the two animals are to each other?
2. The protein mentioned in #1 was compared among several animals. The results are summarized in the chart below. What type of animal would you expect X to be? Explain your reasoning.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Differences in DNA sequence cytochrome C | Chicken | Duck | Pigeon | Pig | Tuna |
| X | 2 | 3 | 4 | 24 | 27 |

1. 

How would you describe these structures? Explain how they are used in providing evidence of common ancestry among animals?

1. 

Describe this type of evidence pictured above. In general, how do scientists use this evidence?

1. *“Fossil Hoax: In November 1999, National Geographic magazine published an article announcing and illustrating the discovery of a new fossil of an ancient bird, Archaeoraptor liaoningensis, discovered in China in July 1997.*

*The discovery was hailed as the finding of a new missing link! Then, 11 months later, it was shown that the*

*“missing link” fossil was a hoax perpetrated by a Chinese farmer trying to please fossil collectors.”*

<http://www.actionbioscience.org/evolution/lessons/lenskilessons.pdf>. This is a true story. What should scientists do to make sure this does not happen again?

1. The evidences of evolution suggest which conclusion?
   1. All organisms have changed at one specific time in their existence.
   2. Organisms change through time as a result of environmental changes.
   3. Fossil evidence is the most conclusive of all the evidences of evolution.
   4. One type of evidence is usually sufficient to provide the evolutionary path of an organism.
2. How do scientists explain why they sometimes change a previously held idea or conclusion about a specific evolutionary path?
   1. The original scientists misread the data that was collected.
   2. The general public does not understand scientific explanations of evidence.
   3. New and better technologies allow scientists to readjust their evaluation of evidence.
   4. Changing a foregone conclusion in science is not part of the scientific method.
3. In general, what is the strongest evidence of evolution?
   1. Embryological b. homologous structures c. biochemical d. geographical
4. How do scientists explain the relationship between biochemical evidence and the most recent common ancestor?
   1. The more differences in the biochemical data, the more recent the common ancestor.
   2. The more differences in the biochemical data, the more closely related the organisms are to each other.
   3. The fewer differences in the biochemical data, the more recent the common ancestor.
   4. The fewer differences in the biochemical data, the fewer similarities of the two organisms.
5. Why is it important for scientists to communicate their research through publications and presentations?
   1. Publishing research is expected by most universities throughout the world.
   2. Scientists report their research to disprove other scientist’s conclusions.
   3. Presenting research to colleagues allows others to use it and evaluate it for future use.
   4. Validation is important to all scientists and publishing insures validation.