

## SUMMER READING QUESTIONS

"Your Inner Fish: A Journey into the 3.5 billion year History of the Human Body"  
by Neil Shubin

*You will need to **purchase this book (paperback)** and bring it to class in August. In addition, write answers in complete sentences to each of the following questions. Answers to **each question** should be at least a paragraph long, but no longer than 1 page.*

1. Describe how scientists use the geologic record to predict where to find transitional fossils. [Ch. 1]
2. What are the main features of Tiktaalik? Why is this an important fossil? [Ch. 2]
3. What are the steps to building a limb from a single cell? Describe what happens during the 3<sup>rd</sup> to 8<sup>th</sup> week of embryonic development. [Ch. 3]
4. How are mammalian teeth different from other vertebrate teeth? How are teeth similar to feathers and hair? [Ch. 4]
5. Describe the similarities in organization of the head in sharks and humans. What is the role of the gill arches during development? [Ch. 5]
6. Explain the origin of organs from the 3 germ layers. Which embryonic structures are shared by all animals? [Ch. 6]
7. When did bodies arise? How did they come about and why do we have bodies at all? [Ch. 7]
8. Explain the experiments and discoveries that link our ability to smell with fish olfactory structure and function in fish. [Ch. 8]
9. What are light gathering molecules? How are these molecules arranged in tissues? Why are some animals born eyeless? [Ch. 9]
10. What is the role of each bone in the inner ear? How are our sensory capabilities related to jellyfish? [Ch. 10]
11. What is meant by "descent with modification"? Why is it important in biology? [Ch. 11]
12. Describe one modern medical problem that is related to our genetic history. [Ch. 11]
13. If you could ask the author one question, what would you ask?
14. What did you learn about the way science is conducted from this book?
15. Animals are only one kingdom of life. The others: plants, fungi, protists, bacteria (eubacteria & archaeobacteria) also have a history of "descent with modification". Explain what you would do to investigate the history of one other kingdom. [HINT: think about what makes that kingdom different from animals AND use the basic principles discussed in this book]. DON'T PANIC – this question does not require a summer long research project. Just one page of your thoughts.

**Visit my Blog over the summer to post questions and find helpful resources.**  
**[<http://teacher.haywood.k12.nc.us/bio4fun/>]**