



BORED?

WORRIED ABOUT BRAIN ATROPHY
OVER THE SUMMER?

DEPRESSED ABOUT A SUMMER
WITHOUT ACADEMICS?

Here is some “Summer Fun” from your future AP Biology instructors.
Follow these simple directions:

- Get a copy of the book “**Your Inner Fish**” by Neil Shubin. Read this book and find out how much you have in common with a fish. Check it out from a library, buy a paperback, download an e-copy or find a used book.
- After reading “Your Inner Fish”, answer the questions on the back of this sheet. **A hard-copy of your answers is due the first day of class – Wednesday, August 28, 2019.**
- You must also **submit a copy of your answers to Canvas**, so your submission can be checked through Turnitin.com for originality. Your submission must be done **by midnight on Friday, August 30, 2019.**

We look forward to getting to know you all in the Fall – and sharing the exciting world of AP Biology!! See you then.

Pam Porter & Brittany Yonts

Neil Shubin is a paleontologist who ended up teaching human anatomy to University of Chicago first-year medical students. This book is a result of his experience exploring the connection between fossils & anatomy. Answer each of the following questions in complete sentences. Number your answers. Make sure your answers are thorough and detailed.

Chapter 1: “Finding Your Inner Fish”

1. What is Tiktaalik? Why was its discovery so significant? Describe the differences between fish and early land-living animals.

Chapter 2: “Getting a Grip”

2. Why is it important to find a fish with a wrist? Why would a fish want to be able to do a push-up? What is the evolutionary advantage of that?

Chapter 3: “Handy Genes”

3. What is a genetic switch? What is the Sonic hedgehog & what does it have to do with the formation of fingers? How can we find genetic switches in fossils?

Chapter 4: “Teeth Everywhere”

4. What are the differences between teeth of reptiles and mammals? How do teeth develop and what else is this type of process used for?

Chapter 5: “Getting Ahead”

5. Discuss the blueprint of how our head is built. What does this have to do with sharks and the four gill arches?

Chapter 6: “The Best-Laid (Body) Plans”

6. Explain the common architecture of the three layers of tissue in developing vertebrate embryos. What are Hox genes and what do they have to do with the development and organization of our bodies?

Chapter 7: “Adventures in Bodybuilding”

7. What is an “earth year” and when did organisms with bodies first develop? Why is a sponge a useful organism for studying the formation of bodies?

Chapter 8: “Making Scents”

8. What percentage of our genes is devoted to detecting odors? How do they do this? Are all of our odor genes functional? Explain your answer.

Chapter 9: “Vision”

9. How many vision receptors do we need to see both color and black & white? When did our type of color vision arise and what change in Earth’s history created the need for another unique color receptor?

Chapter 10: “Ears”

10. How many middle ear bones do humans have? What are the advantages of having middle ear bones? Where did these bones come from?

Chapter 11: “The Meaning of It All”

11. How do hiccups connect humans & tadpoles? What is the final message that Neil Shubin wants all of us to understand when we finish reading this book?