Questions for David Shenk's The Genius in All of Us. 2010

Please obtain the above book for summer reading. It is available at your local library and for purchase at bookstores. It is a fun and interesting introduction of the year!

Name: _____ **You will be able to use this paper for the first quiz of the year which is on the second day of school.**

Chapter 1 Questions

1.) What is the difference between G+E and GxE?

2.) What are the steps involved for a "Gene to direct the production of a protein."

3.) When Japanese children were raised in California, **how** and **why** did their heights change?

4.) Therefore, what causes Japanese children in Japan to be short? Their genes or environment? Explain.

5.) Provide three examples that show how genes are effected by the environment. pg. 25, Bottom.

a.)

b.)

c.)

6.) Do you believe you were born to be something? If so, what?

7.) What has led you to believe this?

Chapter 2 Questions

1.) What happens to London cab drivers' posterior hippocampus as they drive in London?

2.) What does this fact (London cab driver brains) tell us about human intelligence?

3.) "Children develop only as their environment demands they develop." What does this mean to you?

4.) Do you believe your parents/teachers have held you to a high standard? Explain an example to support your position.

5.) How high do you set the bar for yourself? Explain an example to support your position.

6.) What are some strategies that stretch the genetic potential of children?

7.) What is your favorite quote from this chapter? Why is it your favorite?

Chapter 3 Questions:

1.) How did scientists know S.F. was a normal student?

2.) How was S.F. able to remember up to 80 digits in a row?

3.) What are your best study strategies for remembering information?

4.) What is deliberate practice?

5.) Have you ever put yourself through deliberate practice? _____ If yes, what were you practicing?

6.) Through intense, deliberate practice, one may be able to "activate dormant genes." What does it mean to *activate dormant genes*?

Chapter 4

1.) If you clone your cat, why won't it act or look like the original?

2.) What do twins have in common besides their genes?

3.) "We inherit, but we also become." Select one characteristic of your personality...

a.) Who do you think you inherited this trait from?

b.) What have you seen? What have you done? etc... that have helped you become this way?

4.) Describe how Michael Jordan played pick up games. What did he focus on?

5.) When a child completes a puzzle what should you say to them...
A.) You must be smart at this.
B.) You must have worked really hard.
Why?

6.) What do your parents say to you when complete a difficult task? A or B

7.) Why are children who are viewed to be "Whiz Kids" not the most successful as adults?

Chapter 6

1.) Which Gene/Protein do Jamaicans have that supposedly gives them an advantage in running track?

2.) However, how many people in the United States have the same Gene/Protein?

3.) Why would buying school buses for Kenya reduce the superiority of Kenyan runners?

4.) What do Jamaicans kids do on Saturday mornings?

5.) What does it mean to delay gratification?

6.) Have you ever delayed gratification?_____ If so, explain why you delayed gratification.

7.) "A culture of the extreme, willing to devote more, to ache more, and to risk more in order to do better." Would you like to be a member of a culture of the extreme? Why or why not?

Chapter 7

1.) Thinking of talent as innate (you're either born with it or not) makes our world more manageable, more comfortable. In your own words, why is this the case?

2.) What are you deeply motivated to do (that'd you'd spend years and years pursuing?)

3.) What has caused you to be motivated to do this?

4.) What were Terman's Geniuses' Three regrets?

5.) What are the author's 7 tips for how to be a genius?

6.) What is your favorite sentence from this chapter? Why?

Chapter 8

1.) "...parents are not supposed to make things easier for kids. Instead they are supposed to present, monitor, and modulate challenges." What do your parents do for you?

a. make things easier, or...
b. present, monitor, and modulate challenges
c. Other? Explain

2.) What is your favorite sentence from this chapter? Explain.

Chapter 9

1.) Are you a HAM (thrives in competition) or a LAM (dislikes competition and prefers cooperation)? Explain.

Chapter 10

1.) What is epigenetics?

2.) What do histone proteins do?

3.) How did Darwin and Lamarck differ?

4.) How is it possible to change your genes?
a.) By changing the order of A, T, C, and G
b.) By changing which genes or turned on or off.

In Summary:

1.) Words you didn't know with a brief description-dictionary/context clues (at least 5)

Word you didn't know very well	Description of that word.

2.) This book describes two competing views of success. What are those two views?

3.) Which view of success does the author support?

4.) How has this book changed your view of intelligence and people who are successful?

Key Vocabulary from Freshman Biology to be familiar with...

Ecology
Producer
Consumer
Heat/90% rule
Cell Wall
Cell Membrane
Membrane Protein
Diffusion
Active Transport
Passive Transport
Nucleotide
DNA
RNA
mRNA
tRNA
Replication
DNA Helicase
DNA polymerase
RNA polymerase
Transcription
Translation
Mitosis
Cell Cycle
Interphase/Growth
Prophase-Chr. condense
Metaphase-Chr. Line up
Anaphase-Chr. separate
Telophase-2 nuclei form
Cytokinesis-2 new cells
Chromosome-DNA coiled
Darwin
Natural Selection
Selective Breeding
Overproduction
Mutation
Evolution
Vestigial Structures ex.
Homologous Structures
Analogous Structures
Ribosome
Nucleus
Lysosome
Mitochondria
Chloroplast
Divergent Evolution
ATCG, U
Types of Mutation
Deletion Mutation
Insertion Mutation
Substitution Mutation
Frameshift Mutation
DNA Synthesis
Protein Synthesis
Molecule
Compound
Atom
Tissue
Organ
Organ System
Organism
Prokaryotic
Eukaryotic
Selectively Permeable
Hypertonic/Cell reaction
Hypotonic/cell reaction
Isotonic/cell reaction
Osmosis
Flagella
Cilia
Cytoskeleton
Carbohydrates
Lipids
Fatty Acids
Nucleic Acids
Nucleotide
Proteins
Amino Acids
Hormones
Genes
Polypeptide
Photosynthesis
Combustion
Fossil Fuel
Water Cycle
Limiting Factor
Biotic Factor
Abiotic Factor
Frameshift mutation
Decomposer
Scavenger
Succession
Pioneer Species
Climax Community
Similarities
Canine Teeth in Humans
Equilibrium
Heterotroph
Autotroph
Vesicle
Enzyme
Variation
Gene
Somatic
Gamete
Virus
Endosymbiosis
90% rule
Evolutionary Tree
Meiosis
Crossing Over
Biodiversity
Causes of DNA mutation
Fungi
Embryo
Stem Cells
Hormones
Gene Activation
Homeostasis
Metabolism
Cellular Respiration
Carbon Cycle
Homozygous
Heterozygous
Hybrid
Purebreed
XY
XX
Phospholipid

-Coal/Oil/Fossil Formation
Damages to proteins
Phospholipids
Zygote Formation

-Differences between cells of the same organism
-How does a baby form from one cell?
-How does structure and function relate?
-Invasive/Introduced Specie