

The Evolution of the Universe-Bryson

Be clear, concise, and complete. Make your sentences count. Each word is important and valuable. Make references, connections, examples and bring in new unique thoughts. If my question seems trivial, then bring some life to it. I am looking to see if you read Bryson. Remember each answer must be less than 990 words. Answer these questions in Microsoft Word and save them. When you are finished answering the questions go to the website and input them. Only answer the question that corresponds to your RedID number and your last name.

	A-J	K-Z
Even-Red ID	1	2
Odd-Red ID	3	4

Question #1: Introduction

1. Bryson is exposing himself to you about his lack of knowledge about the universe in which he lives. Is Bryson embarrassed, relieved, delighted, or unaffected by his revelation that he is really ignorant about the universe around him?
2. What are the many different ‘big ideas’ that Bryson uncovers in his decision to reacquaint himself with his world? Why did Bryson wait so long?
3. How does Bryson use his literary skills in describing the beginning of the universe, atoms, evolution and science education? Why is Bryson effective in his description?
4. Bryson is describing his ignorance of science. He is describing your own ignorance. Why are these ‘big concepts’ important for us to know?

Question #2: How to build a Universe (your universe)

1. What is the ‘ancient remnant’ of the Big Bang? Who discovered it and how did they do it? Why was it important to the theory of the Big Bang?
2. Describe the first three minutes of the Big Bang as laid out by Bryson. Why isn’t the Big Bang considered an explosion?
3. List and describe the scientists discussed in chapter 1. Why did Bryson bring them to life?
4. What is the Goldilocks effect? Are we at the center of the universe? Is the universe boundless?

Question #3: The Reverend Mr. Evans Universe

1. Who is Mr. Evans? What did he do? Why do you like him more than Zwicky?
2. Who is Fred Zwicky? What did he contribute to astrophysics? Do you like him?
3. Why are Supernovae important to our understanding of the universe?
4. Could Evans use better technology to help him? Why, or why not?

Question #4: The Measure of Things

1. Pretend that Isaac Newton is your uncle, and that he lives with you, how would you describe him to a friend?
2. What was one of the most inaccessible books ever written? Why? What was it about?
3. Who is Halley? How was he involved with Newton?
4. Who was Cavendish? How was he involved in 16th century science?

Question #5: Elemental Matters

1. Where did Mendeleev get the idea for the organization of the periodic table? What did Mendeleev do for chemistry?

2. Describe two of the chemists that Bryson introduces you to in chapter 7.
3. Chemists have interesting lives---describe Antoine Lavoisier's life in chemistry.
4. What were the chemical concepts discussed in chapter 7.

Question #6: Einstein's Universe

1. Hubble was an interesting man. What did he do? Who helped him? Do you like him? Where is his body?
2. Luminiferous ether, Albert Michelson and Albert Einstein, how are they linked?
3. How did the work done by one scientist lead to the work done by another scientist in chapter 7?
4. How did Henrietta Leavitt help Ed Hubble? How did Leavitt's work influence Einstein?

Question #7: The Mighty Atom (Let yourself go. Feel the force, Luke). This is the best chapter.

1. "Things reached such a pitch that at one conference Bohr remarked of a new theory that the question was not whether it was crazy, but whether it was crazy enough." How is Quantum physics different from Classical physics? Why were physicists afraid and defensive?
2. "All science is either physics or stamp collecting." Why are physicists scornful of scientists in other fields? What makes a physicist so smug? Read the chapter. Quantum physics does this to people. Give an example from the chapter?
3. "As physicists began to delve into the subatomic realm, they realized that it wasn't merely different from anything we knew, but different from anything imagined." What is quantum mechanics? Don't summarize it. Read the chapter, get a feel for it. Think about it, first.
4. "Things reached such a pitch that at one conference Bohr remarked of a new theory that the question was not whether it was crazy, but whether it was crazy enough." How is Quantum physics different from Classical physics? Why were physicists afraid and defensive?

Everyone does the same questions below. Please work by yourself. I like individual creativity more the group 'think and paste'.

Question #8: The Humor

Bryson chronicles many humorous events in the history of science, which was your favorite? Why? How do we begin to understand science?

Question #9: What did you discover?

How did Bryson help you look at your universe in a new light? What did you discover about yourself? Remember, Bryson didn't know the difference between a proton and a protein.

Question #10: Violation of the Laws of Physics

What is the 2nd law of Thermodynamics as explained in the link, 'Big Bang Cosmology'? How does the evolution of life seem to violate this most cherished law of physics?

Question #11: Go deep young grasshoppers.

What two simple tools were utilized in the 'Cosmic Evolution' video? How did the invention of these two devices open a window on our universe? How did these tools greatly influence our evolution?