

Chapter 9: The Mighty Atom

Directions: Read Ch.9 from the book *A Short History of Nearly Everything* by Bill Bryson and then answer the questions below.

Analogy 1: *The relative size of an atom is to a millimeter as a sheet of paper is to the Empire State building.*

Analogy 2: *If an atom is the size of a cathedral, the nucleus is a fly, but the fly is many thousands of times heavier than the cathedral.*

Statement to consider: *“You probably contain about a billion atoms from Shakespeare.”*

1. How small is an atom?
2. Why do you think Feynman said, “The most profound scientific statement ever made is “All things are made of atoms.”
3. Rutherford is often used as an example of a scientist who was looking for one thing but found something else. Why?
4. What is a quantum leap and why is it strange?
5. The very small is called “an area of the universe our brains just aren’t wired to understand.” Why do you think that is?
6. Why are the rules governing the very small different from the rules governing what we can see?

