

The Disappearing Spoon
Part II (Chapters 4-7)

Chapter 4: Where Atoms Come From: “We Are All Star Stuff” Fe Ne Pb Ir Re

1. **Pre-reading:** Before reading, write down anything that you currently know about stars and their life cycle.
2. Which elements are involved during the process of fusion in the sun?
3. Why don't stars fuse elements beyond iron on the periodic table?
4. Why is Jupiter such an interesting planet? Give several reasons, including some that relate to elements.
5. Summarize how Clair Patterson was able to conclude that the earth is about 4.55 billion years old. Most scientists agree that the universe is about 14 billion years old . . . how in general can scientists agree on something that none of us were around for?

Chapter 5: Elements in Time of War Br Os Cl Mo W Sc Ta Nb

1. **Pre-reading:** Before reading, write down some ways that you can think of where elements could be used in war. Include specific examples.
2. What do you think the word harbinger means in the second paragraph?
3. Nitrogen is an element that can be used for good and bad. How can uranium be used to benefit people? To harm people? What about the benefits and harmful ways of using hydrogen?

4. **Opinion:** Fritz Haber was a ruthless man who developed chemical warfare agents for Germany. If you had the expertise, would you work on weaponry for your country? Why or why not?
5. Why is it ironic that Haber won a Nobel Prize?
6. Why did the price of tungsten jump dramatically during WWII?
7. What continent holds the most tantalum and niobium? What country had brutal wars over them? Where do we get these elements from now? Why do we need them?

Chapter 6: Completing the Table . . . with a Bang **Pm Pu Co**

1. **Pre-reading:** Before reading, write down anything that you currently know about the element plutonium.
2. Briefly summarize the life and work of Henry Moseley.
3. What are two ways uranium and plutonium are similar? What are two ways that they are different?
4. Why is a cobalt bomb more horrific than a uranium bomb?

Chapter 7: Extending the Table, Expanding the Cold War **Bk Cf Md No Lr F Ni Sg**
Db Bh Hs Ds Cn

1. **Pre-reading:** Before reading, use the periodic table to identify as many elements as you can that are named after places. Additionally, identify as many elements as you can that are named after people. Write both the name and chemical symbols for any elements found.
2. Explain why the elements at the bottom of the periodic table are not really discovered so much as made. How is an element made?
3. How did Stalin thwart scientific progress in Russia?
4. Explain the “cold war of the elements” between the U.S. and Russia. Why were claims to have made an element often controversial?

Summary: Write down 5 facts from Part II that you found interesting.

- 1.
- 2.
- 3.
- 4.
- 5.

Reflection: Write at least a 5 sentence paragraph about your reaction to the book thus far up through Part II. Include evidence from the book to support your reaction. After reading the book thus far, are there any additional questions that are coming to your mind about any topics being covered that you want to know more about?

