

Anticipation Guide

Name: _____

Directions: *Before reading the article*, in the first column, write "A" or "D," indicating your agreement or disagreement with each statement. As you read, compare your opinions with information from the article. In the space under each statement, cite information from the article that supports or refutes your original ideas.

Me	Text	Statement
		1. Mendeleev was the first person to categorize elements based on their physical and chemical characteristics.
		2. At the time when Mendeleev published his periodic table, there were 92 known elements.
		3. Mendeleev knew about protons.
		4. Mendeleev predicted the existence of elements that had not yet been discovered, along with their properties.
		5. Organizing the periodic table according to atomic number validated Mendeleev's approach.
		6. Hydrogen is found at the top of Group 1 because it is a metal.
		7. Mendeleev put the lanthanides and actinides below the main part of the periodic table.
		8. Period 7 in the periodic table is complete.
		9. The periodic table keeps changing.
		10. Nobel laureate Glenn Seaborg hypothesized the existence of a superactinide series of stable elements.

Graphic Organizer

Name: _____

Directions: As you read the article, complete the graphic organizer below to summarize what you learned about the periodic table from your reading.

3	New things you learned about the periodic table	
2	Ideas from the article that will help you in chemistry class	
1	Question you have about the periodic table	
Contact!	How do you think the periodic table might change in your lifetime, and why do you think so?	

Student Reading Comprehension Questions

Name

Directions: Use the article to answer the questions below.

1. What was Dmitri Mendeleev's dream that reportedly was the start of his periodic table?
2. What is periodicity?
3. How did (a) Antoine Lavoisier, (b) Johann Döbereiner, and (c) John Newlands attempt to organize the elements?
4. (a) What is a hydride, and (b) how did Mendeleev use hydrides in developing his table?
5. (a) What was Mendeleev's most insightful decision in organizing his early periodic table, and (b) why?
6. What revision to Mendeleev's original periodic table did he make in 1871?

Student Reading Comprehension Questions, cont.

7. How did Henry Moseley change the periodic table in 1913 to its modern form?

8. Why is the placement of hydrogen on the periodic table a debate for some scientists?

9. Although the elements in the lanthanide and actinide series sit below the main table, where do they really belong?

10. Explain (a) Seaborg's "island of stability" concept, and (b) how it involves the nucleus of the atom.

Critical-Thinking Questions

Write your answers on another piece of paper, if needed.

1. Compare electron energy levels and nuclear rings, both physically and chemically.
2. Use the Internet to research other periodic table arrangements and select one; then explain why you chose it and discuss its advantages and disadvantages over the commonly-used table.