

Chapter 19

ENRICHMENT

Use with Section 1

● Introduction to the Periodic Table

Mendeleev's Periodic Table

The modern periodic table is based on the work of Dmitri Mendeleev, a nineteenth-century Russian chemist and professor. In the 1860s, while working on writing a chemistry textbook, he came up with a way to organize the elements by their atomic weights. He arranged the elements into groups with the same properties. What you see here is the table he had developed by 1871.

Answer the following questions, using complete sentences.

I	II	III	IV	V	VI	VII	VIII
H							
Li	Be	B	C	N	O	F	
Na	Mg	Al	Si	P	S	Cl	
K	Ca	—	Ti	V	Cr	Mn	Fe, Co, Ni
Cu	Zn	—	—	As	Se	Br	Ru, Rh, Pd
Ag	Cd	In	Sn	Sb	Te	I	
Cs	Ba						

1. How is this table different from the modern periodic table? _____

2. Why do you think some elements are missing from the table?

3. Mendeleev left a few blanks in the table (marked above with a dash). He knew that any spot on the table could only be filled by an element with a particular atomic weight and properties. He inferred that some elements hadn't yet been discovered, since no known elements at the time seemed to fit these blank spots. He expected that one of the spots would someday be filled by an element with properties similar to silicon (Si). Which spot do you think he had chosen for this element? Explain.
