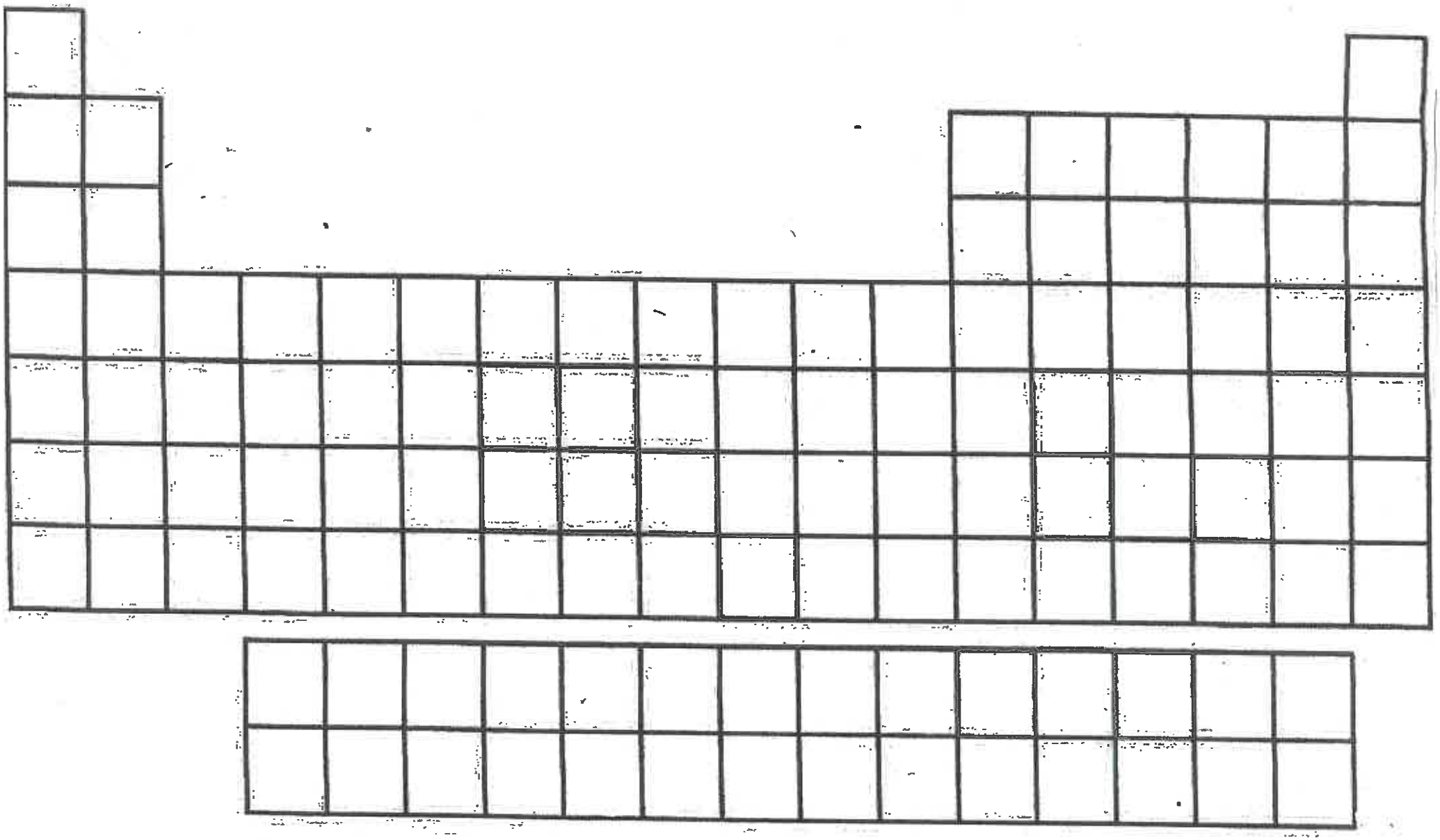
Chapter 16.3

Periodic Table of the Elements



Name Date Class

SECTION 3 Enrichment

Predicting an Element's Group and Period

Several scientists, including Newlands, Meyer, and Mendeleev worked on classification systems that grouped elements according to their properties. They found that these properties repeated in a regular or periodic manner. This fact was used to predict properties of undiscovered elements.

Review electron arrangement from your textbook. In Table 1, write the maximum number of electrons that can fill each energy level on the blanks in the table heading. Write the total number of electrons for each element in the first column labeled Total. For each element, assign the correct number of electrons to each energy level. Complete Table 2 by using the information from the six elements studied.

Table 1

Element		Electrons		
	Total	Level 1	Level 2	Level 3
1. Argon				
2. Carbon				
3. Helium				
4. Lithium				
5. Silicon				
6. Sodium				

Table 2

Element	Energy level of outer electrons	Located in period	Number of outer electrons	Located in group
7. Ar				
8. C				
9. He				
10. Li				
11. Si				
12. Na				

13. How is the element's period related to the number of energy levels over which its electrons are spread? _____

14. How can you predict an element's group and period? _____

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