

Groups & Periods

Name:

Date:

INQUIRY

Group 1 metals explode in water. Group 7 elements are poisonous. Group 0 elements do nothing. Why such different personalities?

Discuss with your partner. Write your initial ideas below:

Key Vocabulary

Term	Definition
Group 1 (Alkali metals)	Very reactive metals: Li, Na, K. React with water.
Group 7 (Halogens)	Reactive non-metals: F, Cl, Br, I.
Group 0 (Noble gases)	Unreactive: He, Ne, Ar. Full outer shell.

Part A — Group Properties

1. Describe what happens when sodium is placed in water. Include observations and word equation. [3 marks]

2. Why are noble gases unreactive? Relate to electron arrangement. [2 marks]

Part B — Trends

3. In Group 1, reactivity INCREASES down the group. In Group 7, reactivity DECREASES down the group. Explain why using electron arrangement. [4 marks]

Part C — Application

4. Neon (Group 0) is used in signs throughout Nanjing and Seoul. Chlorine (Group 7) is used to purify Nanjing's water. Explain why these elements are suited to their uses. [3 marks]