

8 The Periodic Table – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)		
Periodic Table	周期表	_____	_____	_____
elements	元素	_____	_____	_____
proton number	质子数	_____	_____	_____
periods	周期	_____	_____	_____
groups	族	_____	_____	_____
period	周期	_____	_____	_____
metals	金属	_____	_____	_____
non-metals	非金属	_____	_____	_____
group	族	_____	_____	_____
alkali metals	碱金属	_____	_____	_____
soft	柔软	_____	_____	_____
reactivity	活泼性	_____	_____	_____
melting point	熔点	_____	_____	_____
density	密度	_____	_____	_____

Recall

The **Periodic Table** 周期表 arranges all the **elements** 元素 in order of **proton number** 质子数. It is the chemist's map.

- The rows are **periods** 周期; the columns are **groups** 族.
- Elements in the same group behave alike.

Nothing here is hard —it just reads the table.

New ideas

Read these first, then do the Practice.

■ 1 The layout

- across a **period** 周期 (a row): **metals** 金属 on the left → **non-metals** 非金属 on the right.
- in a **group** 族 (a column): elements have the **same number of outer electrons**, so they react in similar ways.

The **group number** equals the charge of the ions: Group I → +1, Group II → +2, Group VII → -1.

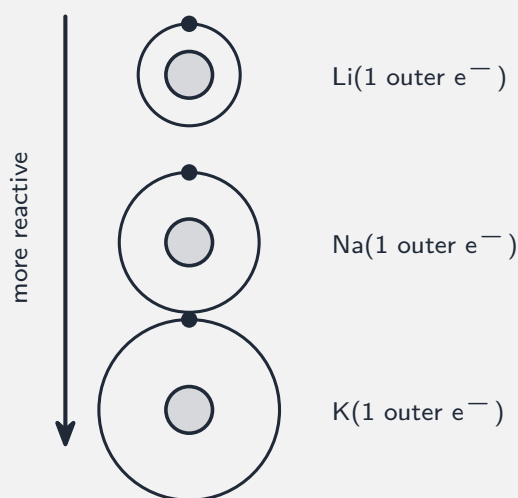
I	II					VIII

metals non-metals

■ 2 Group I —the alkali metals

The **alkali metals** 碱金属 (lithium, sodium, potassium) are **soft** 柔软 metals with **one** outer electron. Going **down** the group:

Property	Trend down the group
reactivity 活泼性	increases
melting point 熔点	decreases
density 密度	increases



Watch out: elements in a group share properties because they have the **same number of outer electrons** (the group number), not the same total. Group I gets **more** reactive *down* the group —the opposite of Group VII.

Practice

Try these in order.

8.1 In what order are the elements arranged in the Periodic Table? [1]

8.2 What are (a) the rows, (b) the columns called? [2]

8.3 Why do elements in the same group have similar chemical properties? [2]

8.4 What charge of ion does a Group I element form? [1]

8.5 State the trend in reactivity going down Group I.

[1]

8.6 Challenge. Potassium is below sodium in Group I. Predict whether potassium is more or less reactive than sodium, and explain why in terms of the outer electron. [3]