



The Periodic Table **Answers**

1. What is an element?

An element is a substance made of only one type of atom.

2. Calcium is an element whose name comes from the Latin term *calx*, meaning 'lime'. The symbol for calcium is written using the first two letters of its name.

What is the symbol for calcium.

Tick **one** box.

- ☐ ca
☐ cA
☒ Ca
☐ CA

3. Why did scientists find it hard to organise the elements at first?

Tick **one** box.

- ☐ They did not have the right technology.
☐ There were too many elements.
☒ Not all of the elements had been discovered yet.
☐ They didn't know what the properties of the elements were.

4. Explain how Mendeleev overcame this problem.

Mendeleev left gaps in the periodic table for elements that he thought had not yet been discovered.

5. Complete the sentences to describe the trend in the properties as you move across a period.

The atomic number **increases** as you move from left to right across a period.

The radius of an atom **decreases** as you move from left to right across a period.

6. Describe how elements with similar properties are organised on the periodic table.

Elements with similar properties are organised into columns called groups.

7. An element is a gas at room temperature. It has a low density and is a poor conductor of heat and electricity. The element reacts with virtually all other elements.

Which type of element is this most likely to be?

Tick **one** box.

- ☐ actinide
- ☐ alkali metal
- ☒ halogen
- ☐ noble gas

8. A shiny grey metalloid can conduct electricity, is very brittle and has a low density. Tick **one** box in each row to show whether each property is a typical metal property or a typical non-metal property.

| Property | Typical Metal | Typical Non-Metal |
|----------------------|---------------|-------------------|
| shiny | ✓ | |
| conducts electricity | ✓ | |
| brittle | | ✓ |
| low density | | ✓ |

9. Compare the properties of the alkali metals with the properties of the noble gases.
Alkali metals are solids at room temperature, whereas noble gases are gases at room temperature.
Alkali metals are very reactive. However, noble gases are unreactive.
Alkali metals are good conductors of both heat and electricity while noble gases are poor conductors of heat and electricity.
Alkali metals are shiny when cut, whereas noble gases are colourless.