

CLASS 10

SCIENCE

REVISION NOTES

## Revision Notes: Class 10 Science Periodic Classification of Elements (Supplementary)

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Note: Not part of the current CBSE board-exam syllabus (excluded since the 2023-24 rationalisation), but retained in the NCERT textbook. These Class 10 Science Chapter 5 notes are ideal for quick revision just before exams.

### Contents

Class 10 Science Chapter 5 – Periodic Classification of Elements: Quick Revision Notes

Class 10 Science Chapter 5 – Solutions and Important Questions

## Class 10 Science Chapter 5 – Periodic Classification of Elements: Quick Revision Notes

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**Döbereiner's Triads (1817):** groups of 3 elements with similar properties where the middle element's atomic mass  $\approx$  average of the other two. Worked only for a few triads.

**Newlands' Law of Octaves (1866):** arranged elements by increasing atomic mass; every 8th element had similar properties (like musical octaves). Broke down after calcium and didn't leave room for new elements.

**Mendeleev's Periodic Table:** arranged ~63 known elements by increasing atomic mass into 8 groups (with sub-groups A/B) and periods. Left gaps for undiscovered elements (predicted properties accurately, e.g. eka-aluminium = gallium). Limitation: could not accommodate isotopes and a few elements didn't fit strict mass order (e.g. cobalt/nickel).

**Modern Periodic Law:** properties of elements are a periodic function of their **atomic number**, not atomic mass.

**Modern Periodic Table:** 18 groups (vertical columns), 7 periods (horizontal rows). Elements in the same group have the same number of valence electrons and similar properties. Elements in the same period have the same number of occupied shells.

**Periodic trends across a period (left to right):** valence electrons increase, atomic size decreases, metallic character decreases, non-metallic/acidic character of oxides increases.

**Periodic trends down a group:** number of shells increases, atomic size increases, metallic character increases (for metals), reactivity of non-metals decreases, electronegativity decreases.

**Valency** = number of valence electrons (if 4 or fewer) or  $(8 - \text{number of valence electrons})$  if more than 4.

## Class 10 Science Chapter 5 – Solutions and Important Questions

Need full answers or more practice? See the [Class 10 Science Chapter 5 Solutions](#) and [Class 10 Science Chapter 5 Extra Questions](#).