

The Periodic Table

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Periodic table of the elements

group = All #2

① H - Atomic mass

+/- Ionic charge

Symbol name

Scientific notation

Noble gases stable

Separates metals from nonmetals

56-78

Vertical groups

Metals

Nonmetals

Alkali Metals

Alkaline Earth Metals

Transition Metals

Halogens

Noble Gases

Actinide elements

Lanthanide series

actinide series

Numbering system adopted by the International Union of Pure and Applied Chemistry (IUPAC).

** Numbering system widely used, especially in the U.S., from the mid-20th century.

*** Elements of atomic numbers 112-116 are claimed but not confirmed. Element names and symbols in parentheses are temporary assignments by IUPAC.

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- Elements are arranged to help us to explain and predict physical and chemical properties.

How to read the Periodic Table.

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- Period - elements in the same row; rows are numbered from top to bottom
- Horizontal.
- Family - elements in the same column; these elements have similar properties

Vertical groups

Metals

Nonmetals

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Elemental Families:

- tend to have similar chemical and physical properties

need to remember.

- ① Alkali Metals - shiny, silvery metals, compounds soluble in water All +1
- ② Alkaline Earth Metals - shiny, silvery metal, compounds insoluble in water All +2
- ③ Transition Metals - center columns
- ④ Halogens - non-metals, react readily with alkali metals -1 poisonous
- ⑤ Noble Gases - nonreactive

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Alkali Metals

- The elements that occupy the far left column of the periodic table are called Alkali Metals.

- Called Group 1 elements

- These elements are extremely reactive.

Why

+1 easy to give away 1 electron.

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Alkali Earth Metals

- Found in group 2.
- Form compounds that are often insoluble in water.

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Halogens

- Halogens occupy the 17th column of the periodic table. (F, Cl, Br, I, At)
- These elements are the most reactive non-metals. *why easy to gain 1 electron*
- All halogens are poisonous elements that react readily with sodium and other alkali metals.

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New! ⑥ Metalloids

- Metalloids are elements that possess both metallic and nonmetallic properties.
- They are found in different groups on the far right side of the periodic table.
- Examples: Silicon, boron, germanium, arsenic, selenium, antimony, tellurium, polonium, and astatine are all metalloids.

Both sides of stair case

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Noble Gases

- Noble Gases are the elements that occupy the far right column of the periodic table. (He, Ne, Ar, Kr, Xe, Rn)
- Also called inert gases because noble gases generally do not form compounds.
- Stable/Non Reactive
- All gases at room temperature.

Full Valence Rings why?

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Properties of Metals and Non Metals

Metals

- Shiny
- Malleable *mold or bend*
- Conductors
- Most of them react with acid
- Mostly solids

Non Metals

- Dull
- Brittle
- Mostly insulators
- Do not react with acid
- Solids, liquids and gases at room temperature.

pass electricity

Notes

no electricity

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Periodic Table Activity

- Name elements:
- 1-30, 35, 47, 50, 53, 56, 79, 80, 82
- Label the following families:
- Noble Gases
- Halogens
- Alkali Metals
- Alkaline Earth Metals
- Transition Metals

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