

The periodic table

- an organized chart of all of the known elements

- Elements = substances that cannot be broken down into more simple substances

- Each element has its own unique properties

The Periodic Table of the Elements

Legend:

- alkali metals
- alkaline earth metals
- transition metals
- lanthanoids
- actinoids
- metalloids
- nonmetals
- halogens
- noble gases
- unknown elements

Electron configuration diagram:

1s 2s 2p 3s 3p 4s 3d 4p 5s 4d 5p 6s 4f 5d 6p 7s 5f 6d 7p

Notes:

- * all elements are known
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Information on the periodic table

A diagram showing a single element box from the periodic table for Carbon. The box contains the atomic number 6, the element symbol C, the element name Carbon, and the atomic mass 12.01. Four arrows point from labels on the right to these values: 'Atomic number' points to 6, 'Element symbol' points to C, 'Element name' points to Carbon, and 'Atomic mass' points to 12.01.

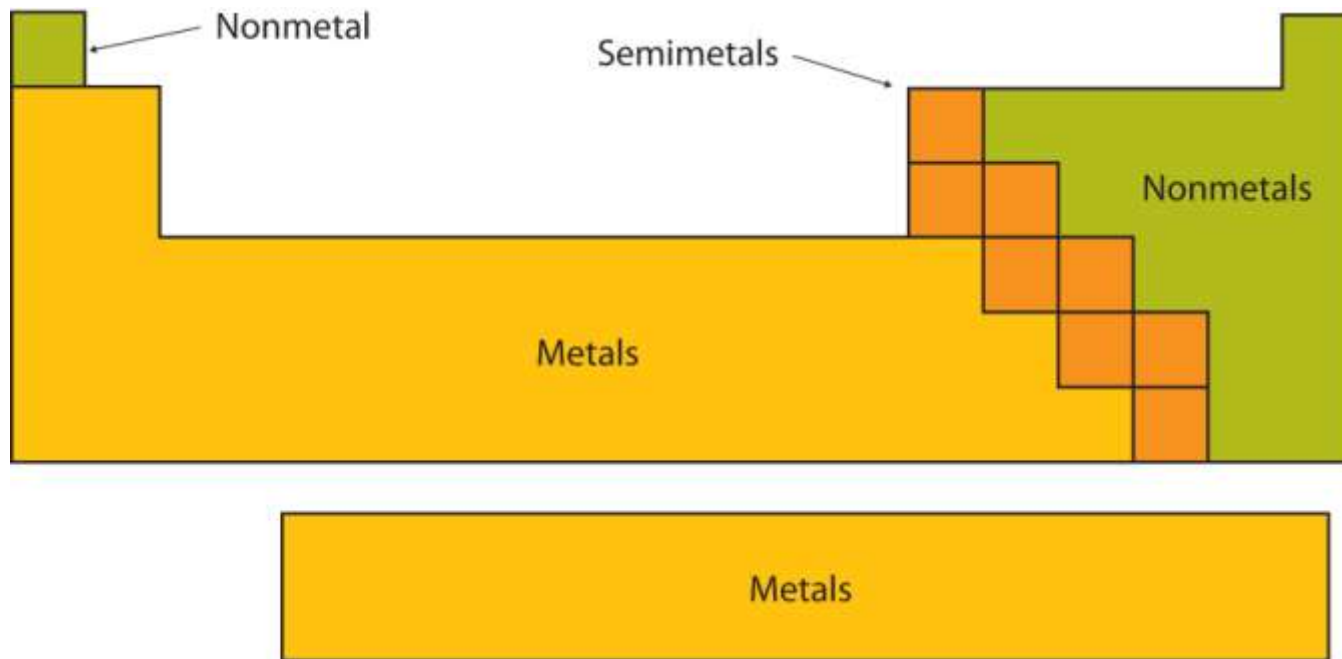
6	Atomic number
C	Element symbol
Carbon	Element name
12.01	Atomic mass

Organization of the table

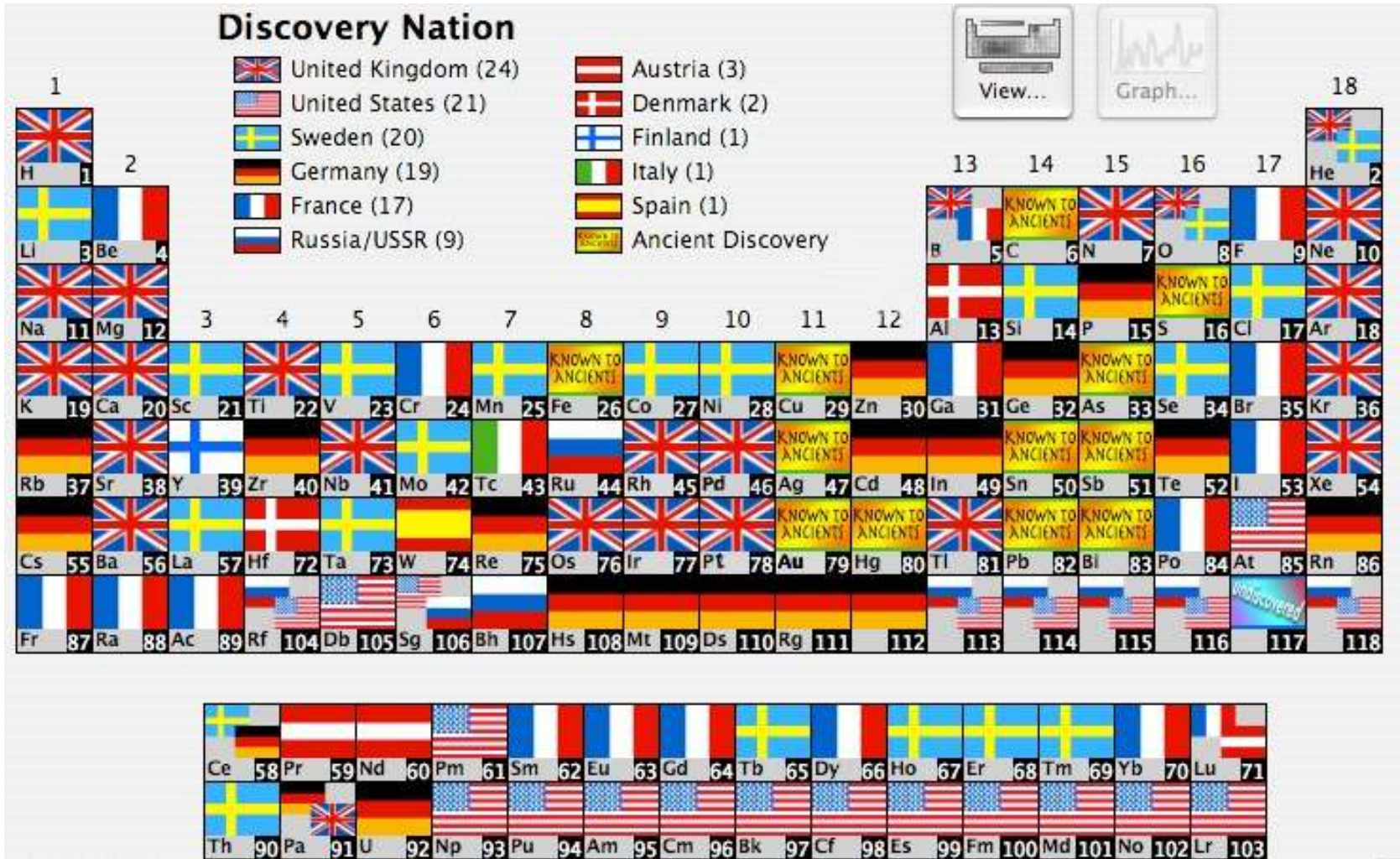
- Elements arranged by atomic number
 - atomic number = number of protons in an atom
- Elements are grouped in columns known as families.
 - Just like human families, element families share common characteristics.

Metals vs nonmetals

- Most elements on the table are metals and are found on the left. Non-metals are on the right with metalloids in-between



Where were they discovered????



Elements in Earth Science

- Of the 118 known elements, 98 are naturally occurring on Earth.
- Hydrogen and helium make up most matter in the Universe
- Iron = most abundant element inside the Earth
- Oxygen = most abundant element in the crust
- Nitrogen = most abundant element in the atmosphere