

## Meet the Periodic Table

### Skills to Develop

- Associate family name to description (especially for groups 1 - 2 and 16 - 18)

The Periodic Table is an essential tool for chemists. I have provided a simple version [here](#). It shows the symbols, atomic numbers, and average atomic masses for each element. If you point at a symbol, it will show the element name. You can search for an element by name or symbol and it will be highlighted so it's easy to find.

How do you use the periodic table? It can help you predict many important properties of elements. To make these predictions, you will need to know a little about the different families or **groups**, which are the columns of the table. The term for the rows is **period**. Here is some info about the important groups.

Group Number	Family Name	Description
1	Alkali Metals	soft, extremely reactive metals, valence 1, almost always $M^+$ ions
2	Alkaline Earth Metals	soft, less reactive metals, valence 2, almost always $M^{2+}$ ions
13	Boron Group	non-metals and metals, valence 3
14	Carbon Group	non-metals and metals, valence 4
15	Pnictogens	non-metals, valence 3
16	Chalcogens	non-metals, valence 2, often $X^{2-}$ ions
17	Halogens	non-metals, very reactive, volatile elements, valence 1, usually $X^-$ ions
18	Noble Gases	very unreactive monatomic gases, valence 0
3-12	Transition Metals	metals with multiple valences and ionic forms, initially hard to fit into periodic table, many exist as $M^{2+}$
*, **	Rare Earth Metals	(lanthanoides, actinoides) similar to each other, most have $M^{3+}$ ionic form

To learn your way around the table, try going to this much fancier [periodic table](#). Notice how metals are on the left and bottom of the periodic table, while non-metals are on the right and top. **Metals** are shiny, and they conduct heat and electricity. Non-metals don't conduct, and are often softer or easier to break than metals. Some elements are called **metalloids** because they are in between metals and non-metals, and you can see that the metalloids are also in between the metals and non-metals in the periodic table. The most reactive elements are on the edges of the table (groups 1 and 17), and the most reactive non-metals are O and F, in the top right corner.

### Outside Links

- [CrashCourse Chemistry: The Periodic Table](#) (11 min)
- [Khan Academy: Classification of the Elements](#) (9 min)

### Contributors and Attributions

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