

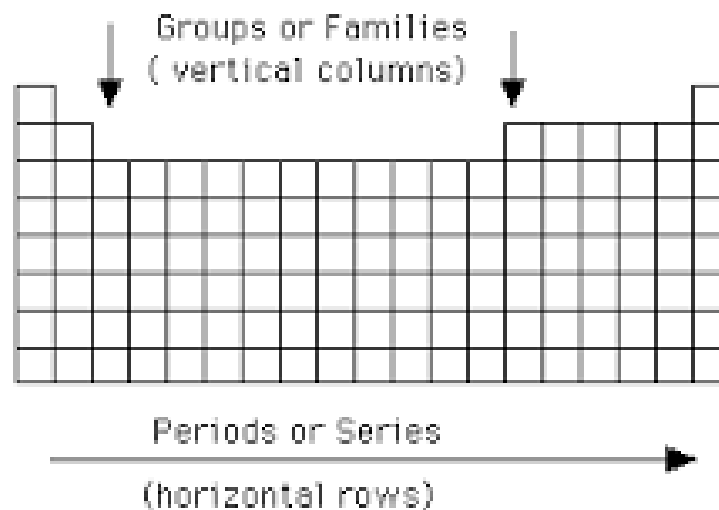


# The Periodic Table

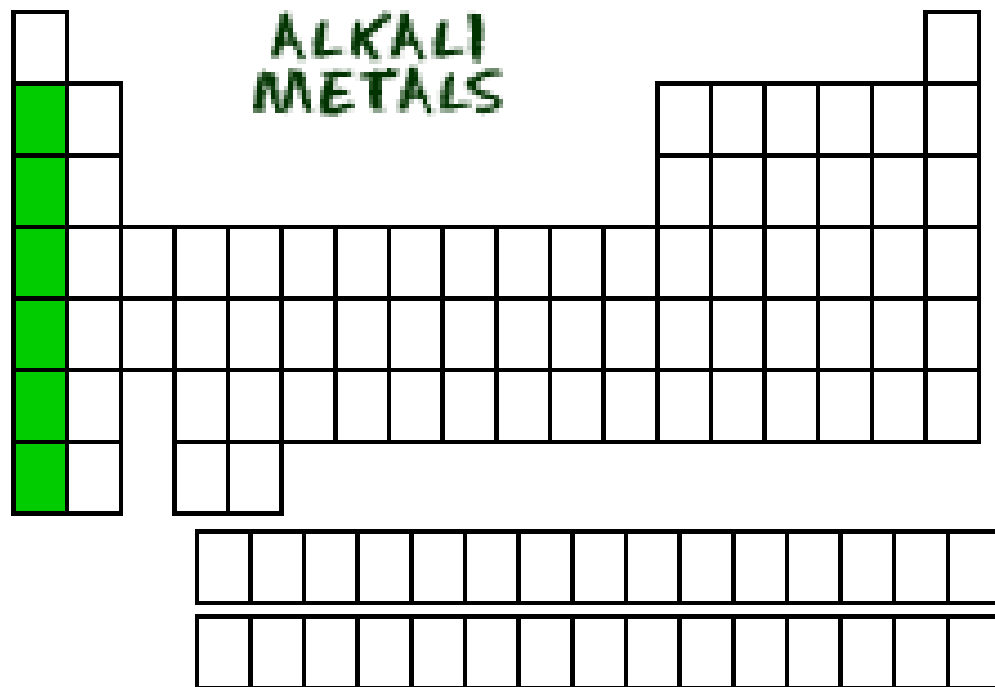


# Periodic Table Organization

- The horizontal rows are called **periods**. Elements in the same period have the same **number of energy levels / electron shells**
- Vertical columns of elements are called **groups** or **families**. Members of each group have similar **physical** and **chemical** properties because of the number of **electrons** in their outermost shell.



# Group 1 – Alkali Metals

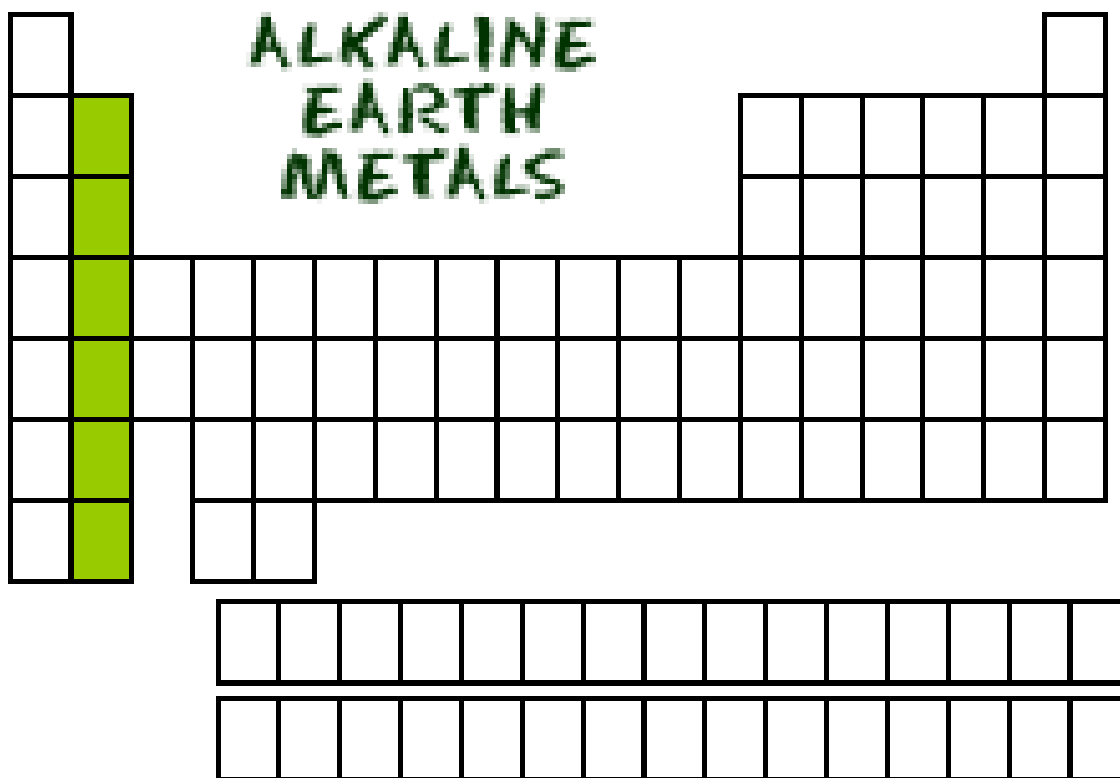


Chemical Group or Family	Valence Electrons	Common Physical Properties	Common Chemical Properties
<u>Group</u> <u>1</u> – <b>Alkali Metals</b>  (Li, Na, K, Rb, Cs, Fr)	1	-solids -shiny silvery colour -soft metals	-Extremely reactive -React with water to produce hydrogen gas -Found in nature only as compounds -Lose 1 electron form +1 ions

# Reactivity of Alkali Metals Video

<https://www.youtube.com/watch?v=uixxJtJPVXk>

# Group 2 – Alkaline Earth Metals



Chemical Group or Family	Valence Electrons	Common Physical Properties	Common Chemical Properties
<u>Group</u> <u>2</u> – <b>Alkaline Earth Metals</b>  (Be, Mg, Ca, Sr, Ba, Ra)	2	-solids -metals -more dense than group 1	-Very reactive -Found in nature only as compounds -Lose 2 electrons form +2 ions





Chemical Group or Family	Valence Electrons	Common Physical Properties	Common Chemical Properties
<p><u>Group 7</u> – <b>Halogens</b></p> <p>(F, Cl, Br, I, As)</p>	7	<ul style="list-style-type: none"> <li>-Nonmetals</li> <li>-<b>F</b> - yellow gas</li> <li>-<b>Cl</b> - yellow-green gas</li> <li>-<b>Br</b> - red-brown liquid</li> <li>-<b>iodine</b> - violet/black solid</li> <li>-<b>astatine</b> - radioactive solid</li> </ul>	<ul style="list-style-type: none"> <li>-Extremely Reactive</li> <li>-Very Corrosive</li> <li>-Found in nature only as compounds</li> <li>-gains 1 electron to form -1 ions</li> </ul>



Chemical Group or Family	Valence Electrons	Common Physical Properties	Common Chemical Properties
<p data-bbox="67 292 492 621"><u>Group 8</u> = <b>Noble Gases</b></p> <p data-bbox="67 778 463 1063">(He, Ne, Ar, Kr, Xe, Rn)</p>	<p data-bbox="531 292 598 385">8</p>	<ul style="list-style-type: none"> <li data-bbox="830 292 1255 357">-Nonmetals</li> <li data-bbox="830 378 1304 628">-Gases at room temperature</li> <li data-bbox="830 649 1236 892">-Odourless, colourless, tasteless</li> <li data-bbox="830 913 1149 1156">-stable electron structure</li> </ul>	<ul style="list-style-type: none"> <li data-bbox="1381 292 1825 364">-Very stable</li> <li data-bbox="1381 378 1874 714">-Unreactive because of full outer shell electrons.</li> <li data-bbox="1381 735 1758 1156">-Almost never combine with other elements.</li> <li data-bbox="1381 1178 1738 1420">-Do not gain/lose electrons.</li> </ul>

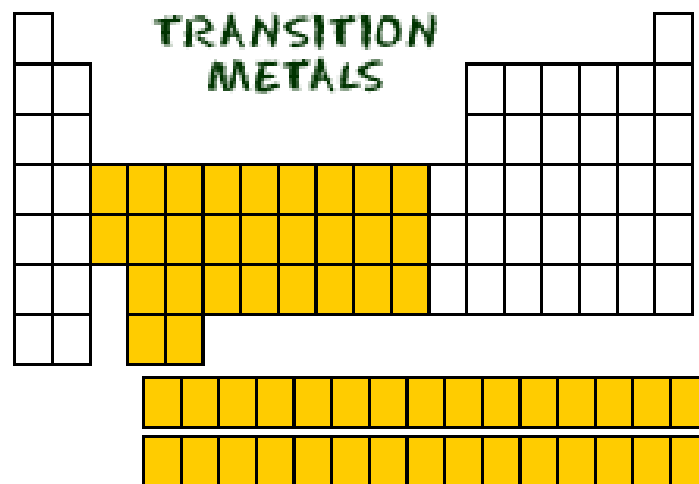
# Other Groups

## Transition Metals

- The sunken block between groups 2 and 3.

## Lanthanides and Actinides

- Removed and found at the bottom of the periodic table.
- Lanthanides are elements 57-70
- Actinides are elements 89-102
- All very rare.



# Facts

- Elements 1-92 are naturally occurring.
- Elements 93-102 are man made.
- Hydrogen is the misfit. Like the alkali metals it has 1 electron in its outermost shell, but has little else in common with this group.

# Periodic Table Song!

- <https://www.youtube.com/watch?v=VgVQKCcfwnU>

# To Do / Homework

- 1. Colour your periodic table!
- 2. Answer the Questions on the back of your note