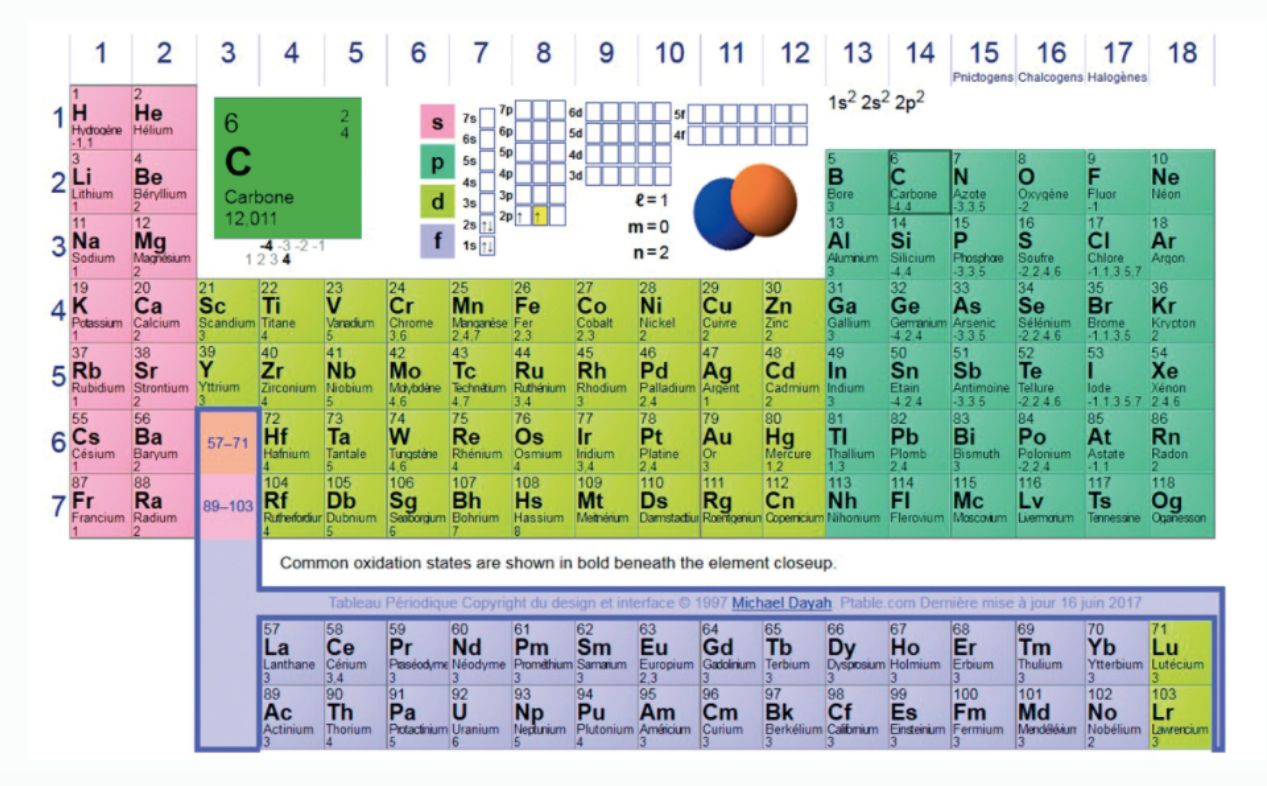
Analyzing the periodic table of elements

Document: Interactive periodic table « Ptable »



- Open the following website https://ptable.com/?lang=en to visualise the interactive periodic table Ptable.
- Disable the « wide » representation, and select the « electrons » tab.

1. **Determine the number of valence shell electrons for each of the following atoms: hydrogen, lithium, fluorine, neon, sodium, chlorine and argon.**
2. **For the atoms of the elements of a same column, determine what their number of valence shell electrons have in common.**
3. **Compare the number of valence electrons of an atom with the units of the column number to which it belongs. Any comments?**

- Select the « properties » tab.

4. **Among the elements studied above, identify those belonging to the following chemical families: alkalis, halogens and noble gases.**
5. **Look for the definition of a chemical family.**
6. **Explain how the elements of a chemical family are regrouped in the periodic table.**
7. **Use your answers to questions 3 and 6 to explain a link between electron configuration and chemical properties.**

- Select the « Compounds » tab.

8. **Search the eventual associations of the atoms of noble gases with other atoms. Can the same be observed with other elements?**
9. **State the number of valence shell electrons of the atoms of noble gases (except helium).**
10. **Establish a link between stability of an atom and its number of valence shell electrons.**
11. **Propose a stability rule for the elements of the s and p blocks.**