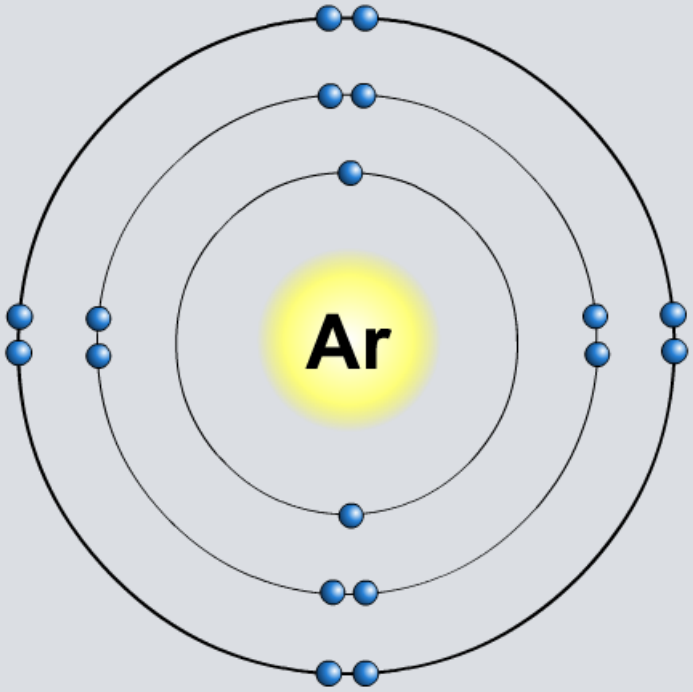
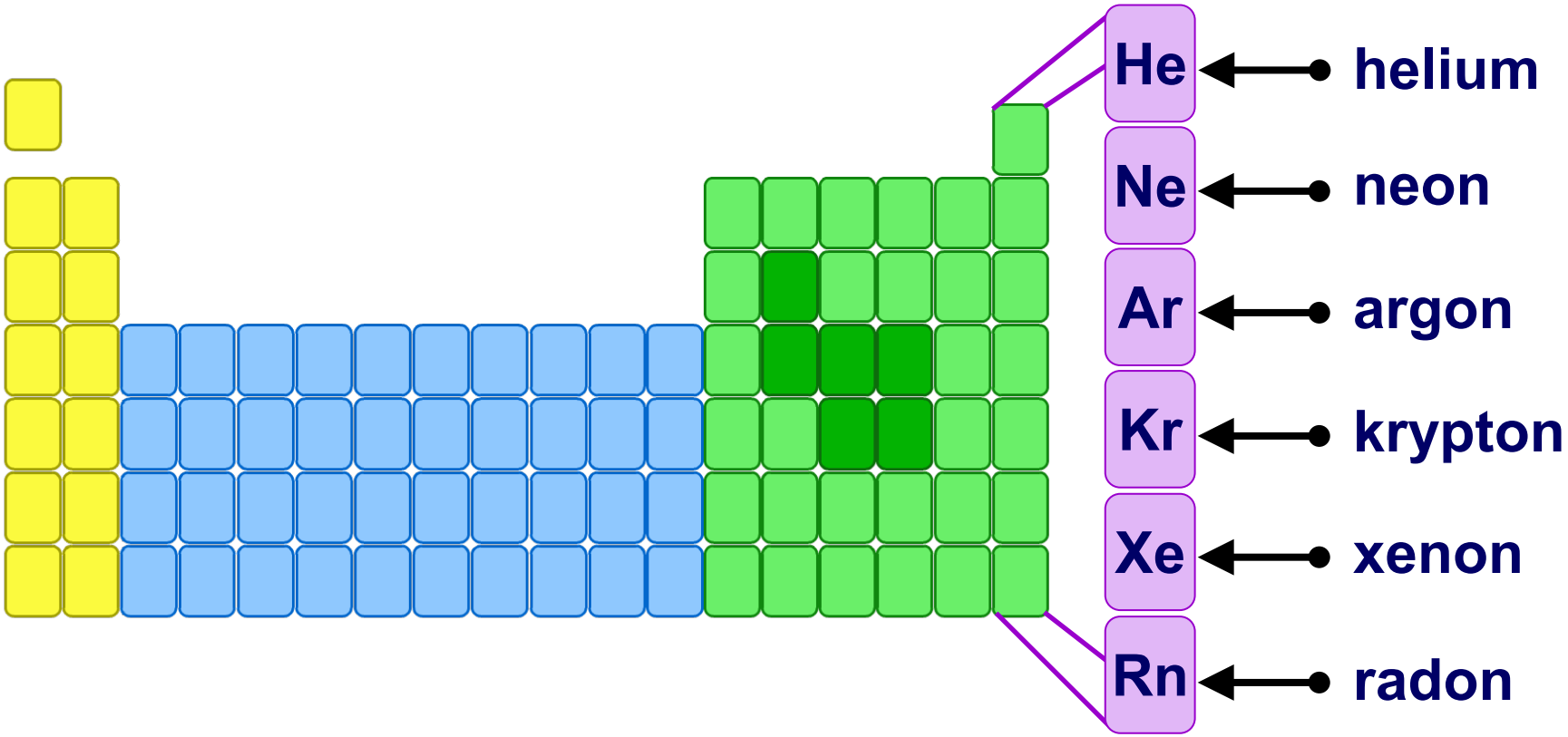
The Noble Gases



Where are the noble gases?

The elements in group 18, on the right of the periodic table, are called the **noble gases**.



Why are they called the ‘noble gases’?

The noble gases all form colorless gases at room temperature.

They are all very unreactive.

Noble gases were originally called ‘inert gases’, as they were thought not to react with anything. Then in 1962, a British chemist, Neil Bartlett, made a compound with xenon.


Dr John Mileham

The name was changed to ‘noble gases’, as they were considered similar to the very unreactive precious metals gold and platinum, which are sometimes called ‘noble’ metals.

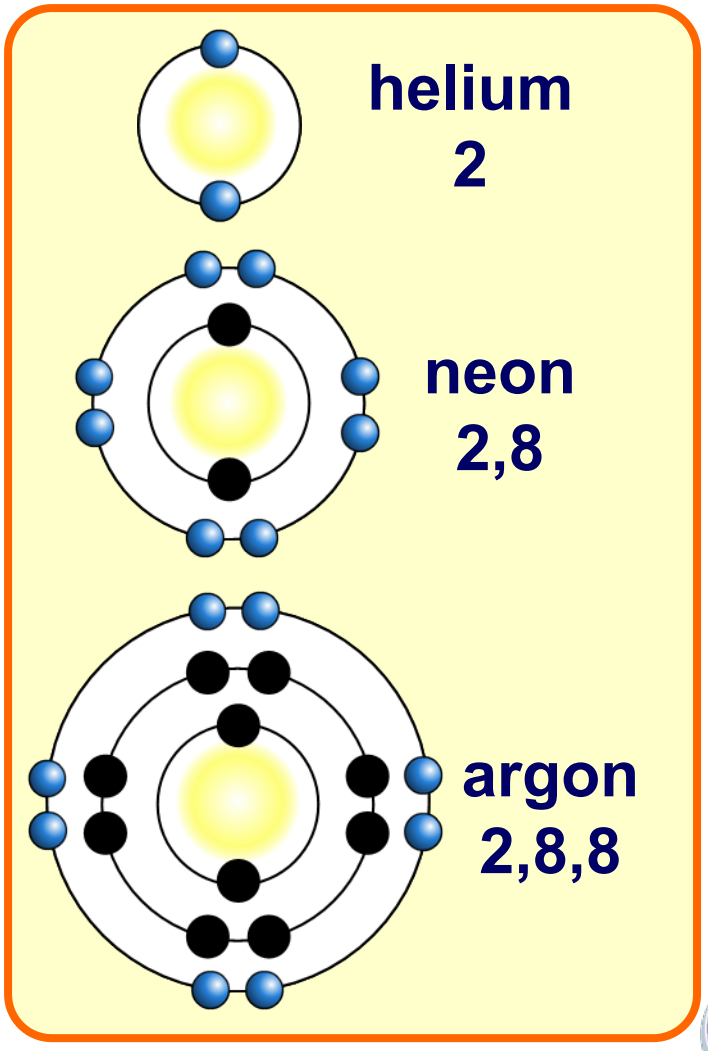
Now, only neon and helium have not yet been made to form compounds.

How does electron structure affect reactivity?

All noble gases have full outer electron shells and do not need to gain, lose or share electrons.

This means that:

- The noble gases are very stable and the most unreactive (or **inert**) of all the elements. All of the noble gases are similarly unreactive, up and down the group.
- They do not normally form bonds with other elements.
- They are **monatomic**, which means they exist as individual atoms. Most other gases are diatomic.



How do noble gases behave?