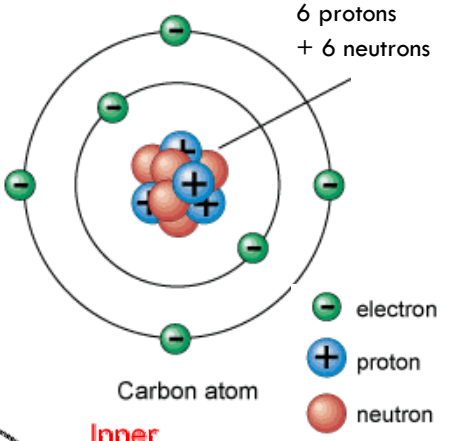
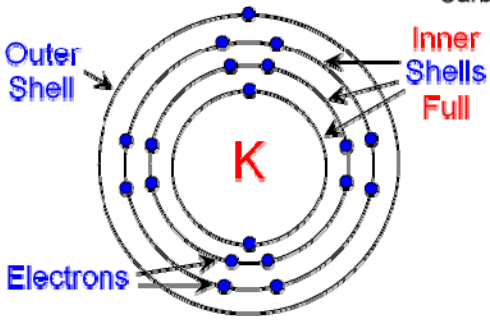
Year 7 Mastery — Particles (part 2)

PRIDE THROUGH SUCCESS

Mass number	Total number of protons and neutrons
Proton Number	Number of protons in the element
Atomic number	Number of protons in the element
Periodic table	A table containing all the chemical elements arranged in order of atomic number
Periods	The horizontal rows in the periodic table of increasing atomic number. An element's periodic number also shows how many electron shells are in its atoms.
Groups	The vertical columns in the periodic table of elements of similar properties. An element's group number also shows how many electrons are on its atoms' outer shell.
Electron	A negatively charged subatomic particle
Electron Shells	Electrons are arranged in shells or 'energy levels' around the nucleus. The arrangement of electrons determines the chemical properties of an element.
Outer shell	The number of outer shell electrons determines group number, if there are 7 electrons in the outer shell the element will be in group 7.
Reactivity	Reactivity is the tendency of a substance to undergo chemical reaction.
Reactivity on the periodic table	Within the periodic table there are patterns of reactivity. As you move down group 1 the element get more reactive, as you move down group 7 the elements become less reactive.

Energy shell	Max. electrons
First	2
Second	8
Third	8

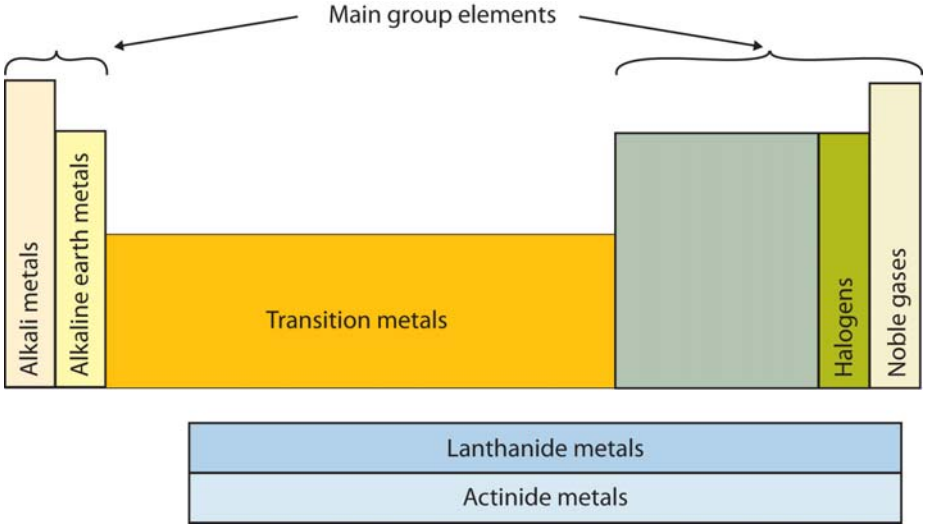


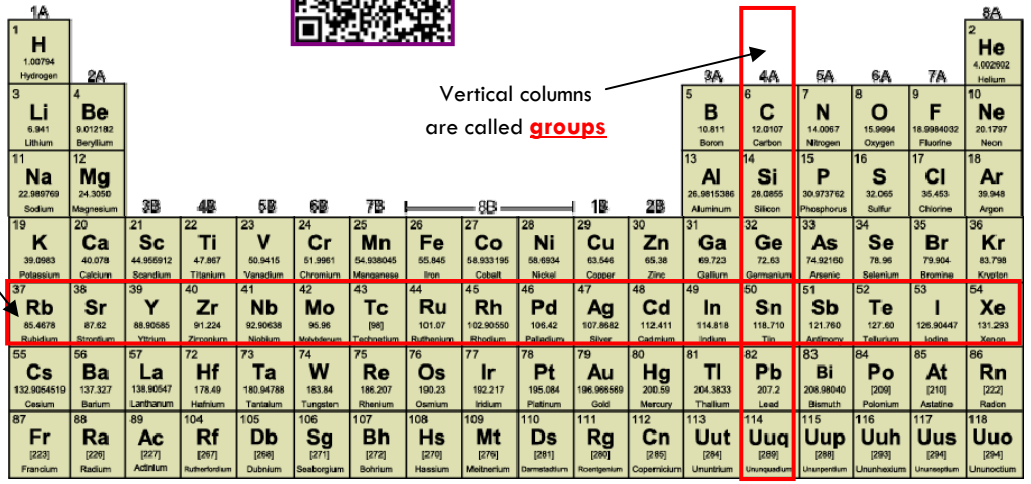


Atomic number and mass

Reactivity and the periodic table

RSC periodic table





Strengthen understanding If you can answer these question you have Mastered the LO.	PQ - Extend understanding If you can answer these you have exceeded the LO.
2.6 I can recall the meaning of the term mass number. 2.7 I can recall the term atomic number.	
1. What subatomic particles decide atomic mass? 2. What subatomic particles decide atomic number? 3. What is the atomic mass of neon?	4. What is the difference in number of protons between iron and Pt? 5. How could the atomic mass be different but atomic number remain the same? 6. How many neutrons in Os?
3.1 I can describe the sections of the periodic table. 3.2 I can describe that in the periodic table a. elements are arranged in order of increasing atomic number, in rows called periods. b. elements with similar properties are placed in the same vertical columns called groups.	
1. Horizontal rows are called……. 2. Vertical columns are called ……. 3. Where the alkali metals found?	4. What group is nitrogen in? 5. What period is potassium in? 6. In terms of atomic structure what are the similarities in neon, and argon?
3.3 I can describe the outer electron shells of the first 8 elements.	
1. Draw the electron structure for elements: oxygen, neon, calcium and boron. 2. How many electrons in the outer shell of iodine and bromine? 3. Draw the outer shell of phosphorus.	4. Draw the electron structure for elements: carbon, hydrogen, calcium. 5. Why do sodium and chorine atoms bond together ? 6. Draw the electrons for carbon and two oxygen, why do these element want to bond together?
3.4 I can describe patterns in reactivity.	
1. Describe the pattern in reactivity as you move down group 1. 2. Recall the definition of reactivity. 3. How can you tell a chemical reaction has taken place?	4. Why is flourine so reactive? 5. Why do the noble gases not react? 6. What about the electron structure make group 1 elements reactive?