	1	2	3	4	5	6
1	transition metal	Mendeleev	coloured compounds and useful as catalysts	Group 7	form molecular compounds	similar chemical properties
2	atomic weights	boiling points increase	isotopes	atomic number	+1 charge on ion	$Cl_{2(aq)} + 2KBr_{(aq)} \rightarrow 2KCl_{(aq)} + Br_{2(aq)}$
3	column	release H_2 on reaction with water	noble gases	reactivity increases down the group	diatomic molecules	left side and towards the bottom of the periodic table
4	full outer shell	same number of electrons in outer shell	Group 0	$Cl_2 + 2KBr \rightarrow 2KCl + Br_2$	groups	non-metal properties
5	alkali metals	low density	-1 charge on ion	gaps left in the ordering of the elements	higher M.P. and density than group 1	full outer shell
6	metals	predicted properties were very similar to actual properties when the elements were discovered	Group 1	form hydroxides that can	e.g. 2 or 2.8.8	chemical properties are similar

	1	2	3	4	5	6
1	transition metal	Mendeleev	coloured compounds and	Group 7	form molecular compounds with other non-metallic elements	?
2	atomic weights	?	isotopes	atomic number	+1 charge on ion	$Cl_{2(aq)} + 2KBr_{(aq)} \rightarrow 2KCl_{(aq)} + Br_{2(aq)}$
3	?	release H_2 on reaction with water	noble gases	reactivity increases down the group	diatomic molecules	left side and towards the bottom of the periodic table
4	full outer shell	same number of electrons in outer shell	?	$Cl_2 + 2KBr \rightarrow 2KCl + Br_2$	groups	non-metal properties
5	alkali metals	low density	-1 charge on ion	?	higher melting point and density than group 1	full outer shell
6	?	predicted properties were very similar to actual properties when the elements were discovered	Group 1	form hydroxides that can dissolve in water	e.g. 2 or 2.8.8	chemical properties are similar

4.1.2 The periodic table revision checklist

Can you…	☹	😐	☺
a) Explain how the position of an element in the periodic table is related to the arrangement of its electrons in its atoms and hence to its atomic number			
b) Predict possible reactions and probable reactivity of element from their positions in the periodic table			
c) Describe early attempts to order the known elements and why ordering against atomic weight led to incomplete tables and inappropriate groupings			
d) Explain how Mendeleev left gaps in his periodic table for undiscovered elements and how the idea of isotopes led to an understanding of why atomic weight order is not always correct			
e) Explain the differences between metals and non-metals on the basis of their characteristic physical and chemical properties			
f) Explain how the atomic structure of metals and non-metals relates to their position in the periodic table			
g) Explain how the reactions of elements are related to the arrangement of their electrons and hence to their atomic number			
h) Explain how properties of the elements in group 0 depend on the outer shell electrons of the atoms			
i) Explain the properties of group 1 elements from the outer shell electron structures			
j) Explain the properties of group 7 elements from the outer shell electron structures			
k) Predict properties from trends down groups 0, 1 and 7			
l) Describe the properties of transition metals in comparison to those in group 1, with particular reference to Cr, Mn, Fe, Co, Ni and Cu			