METALLIC BONDING

You will need a copy of the Periodic Table.

1. Potassium, calcium and scandium follow each other in the Periodic Table. Their melting and boiling points look like this:

	potassium	calcium	scandium
melting point (K)	336	1112	1814
boiling point (K)	1033	1757	3104

a) Write down the electronic structure of each of these in s, p, d notation.

b) Each of these is held together in the solid by metallic bonding. Using potassium as an example, explain the nature of metallic bonding.

c) The metallic bond isn't completely broken until a metal boils. State what happens to the strength of the metallic bond as you go from potassium to calcium to scandium.

d) Explain as fully as you can the effect you have described in part (c).