THE PERIODIC TABLE (C)

1 Complete this table about the properties of group 1 metals and transition metals.

property	alkali metals	transition metals
melting points	**(relatively) low (for metals)**	**high**
electrical and thermal conductivity	**conduct**	**conduct**
hardness	**soft (can be cut with a knife)**	**hard**
reactivity	**high**	**low**
type of bonding in compounds	**ionic**	**ionic**
charge on ions	**+1**	**varies**
colour of compounds	**white**	**coloured**
ability to be used as catalysts	**cannot be used as catalysts**	**can be used as catalysts**

2 Lithium (Li) burns in oxygen (O_2) to form lithium oxide (Li_2O).

a Describe what you see in this reaction.

burns with red flame
forms white solid / powder

b Explain, in terms of electrons, why this reaction takes place.

Li atoms lose electrons to gain stable electron structures
electrons transferred to oxygen atoms
O atoms gain electrons to gain stable electron structures

c Write word and balanced equations for the reaction of lithium with oxygen.

word equation **lithium + oxygen → lithium oxide**

balanced equation **$4Li + O_2 \rightarrow 2Li_2O$**

d Explain why sodium, another group 1 element, is more reactive than lithium.

Na loses outer shell electron more easily
because it is further from nucleus
therefore weaker attraction between nucleus and outer electron