Topic	Physical and chemical properties of group 1 metals	**Level**	GCSE (or any course for students aged 11-16)
Outcomes	1. To know that group 1 metals react by losing one electron 2. To describe the trend in physical and chemical properties as you go down group 1 3. To relate the physical and chemical properties of group 1 metals (reaction with water, melting point, conductivity and density) to a possible use		
Information for teachers	This activity is an imaginative way for students to apply and extend their understanding of group 1 metals. Make sure students understand this is an imaginary scenario. They should already have learnt about the chemical and physical properties of group 1 before completing this task. Read through the story together and set the scene. If you have a saucepan bring it in and pretend it is made from potassium! You can unpick whether this is true at the end of the lesson. Students begin by completing the context map to help organize their thinking. They then write an imaginary story about grandma.		
Pedagogy focus	Writing in science: http://thescienceteacher.co.uk/writing-in-science/ Provide explicit instruction in how to relate a cause to an event using words such as: because, due to and causing		
Other resources	Other resources on chemistry are here: http://thescienceteacher.co.uk/chemistry-teaching-resources/		

Grandma goes down the market and was sold a saucepan made from potassium. She is going to use it to boil some water. When she gets home, she places the saucepan on the stove, turns on the gas and adds the water…

Continue the story to tell us what happens next.

Explain, with reference to the chemical **and** physical properties of potassium, what would happen to (i) the saucepan (ii) the water and (iii) to grandma.

Finally, suggest which group 1 metal she would be *best* to use and explain why we actually use aluminum to make saucepans and not alkali metals.

Include equations and select information from the table.

	Li	Na	K	Rb
Melting point (°C)	180.54	97.72	63.38	39.31
Density (g/cm^3)	0.534	0.968	0.89	1.532
Atomic radius (pm)	152	186	227	248

Add your ideas to the context map before you start writing.