

The Periodic Table

Lesson 10 - Group 1 Metals

Science

Chemistry - Key Stage 3

Miss Willett



What have you learnt already?

1. What is the charge of a neutron?
2. How many elements are in a compound with a name ending in '-ide'?
3. What is another word for property, in science?



Group 1 metal properties

Melting and boiling points

Is there a pattern (a trend) and how would we describe it?

1. 'As you move _____ group 1.....'
2. '....the melting points _____ from 181°C for _____ to _____ for caesium. The boiling points _____ from _____ to _____.'

Group 1 element	Melting point (°C)	Boiling point (°C)
Lithium	181	1342
Sodium	98	883
Potassium	64	760
Rubidium	39	686
Caesium	28	671

Credit: Miss Willett



Group 1 metal properties

Identify the trend for density in group 1 metals

Group 1 element	Density g/cm³
Lithium	0.53
Sodium	0.97
Potassium	0.89
Rubidium	1.53
Caesium	1.87

Credit: Miss Willett



What observations did you make?

Fill in the gaps in your table:

Metal:	What happened when it was added to water?	Reactivity? 1 = most, 3 = least
Lithium		
Sodium		
Potassium		

Credit: Miss Willett



Which metal was it?

Exploded with a lilac flame?

Fizzed and dissolved?

Fizzed and turned into a ball?



What happens when group 1 metals react with oxygen?

Sodium + oxygen →

Potassium + oxygen →



Correct me!

Find my three mistakes this equation:

Caesium + air = caesium oxate



What are the symbols for the products of the following:

Caesium + oxygen →

Sodium + oxygen →

Potassium + oxygen →

Group 1 = +1
Oxygen = -2



What happens when group 1 metals react with water?

Potassium + water →



What are the symbols for the products of the following:

Caesium + water →

Sodium + water →

Potassium + water →

Group 1 = +1
Hydroxide = -1



Reactions of group 1 metals

Complete the following word equations:

- Lithium + oxygen → _____
- Sodium + oxygen → _____
- _____ + _____ → potassium oxide
- Lithium + water → _____ + hydrogen
- Potassium + water → _____ + _____
- _____ + _____ → sodium hydroxide + _____



Bringing it all together..

Consolidate your learning from today

1) Describe the trend in reactivity down group 1

2) What is your evidence for this trend?



Bringing it all together..

Consolidate your learning from today

3) What causes the fizzing when they react?

4) Hydroxides are alkaline. What colour would the water turn, after the reaction of water + Group 1 metals, if I added universal indicator?

