

# The Periodic Table

## Lesson 11 - Group 7

Science

Chemistry - Key Stage 3

Miss Willett



# **What have you learnt already?**

- 1. What do you find in the nucleus of an atom?**
- 2. What does the word 'ductile' mean?**
- 3. What charge do compounds have, overall?**



# Group 7 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 -220°C for \_\_\_\_\_ to \_\_\_\_\_ for iodine. The boiling points \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_, \_\_\_\_\_.'

<b>Halogen</b>	<b>Melting point (°C)</b>	<b>Boiling point (°C)</b>
Fluorine	-220	-188
Chlorine	-101	-35
Bromine	-7	+58
Iodine	+114	+183

Credit: Miss Willett



# Properties of Group 7

How many halogens are gases at room temperature?

Which halogen is solid at room temperature?

Which state of matter is bromine in, at room temperature?

What is the difference between the appearance of fluorine and chlorine?



# Group 7 properties

Complete the table to summarise the physical properties of Group 7

<b>Group 7 element</b>	<b>Colour:</b>	<b>State of matter:</b>
Fluorine		
Chlorine		
Bromine		
Iodine		

Credit: Miss Willett



## True or false?

The halogens were reacted with argon

When they reacted, an '-ate' was formed

Fluorine was the most reactive halogen



# What observations did you make?

**1. Which metal are the halogens being reacted with?**

**2. Name the product formed in each reaction**



# What observations did you make?

**3. Which of the halogens reacted is most reactive?**

**4. Which of the halogens reacted is least reactive?**



# What's missing?!

Sodium + chlorine → \_\_\_\_\_ chloride

Potassium + fluorine → potassium \_\_\_\_\_

Lithium + \_\_\_\_\_ → lithium iodide

Potassium + \_\_\_\_\_ → potassium bromide



# Reactions of group 7 + group 1

**Complete the following word equations:**

● Lithium + fluorine → \_\_\_\_\_

● Sodium + chlorine → \_\_\_\_\_

● Potassium + \_\_\_\_\_ → \_\_\_\_\_ iodide

● \_\_\_\_\_ + bromine → caesium \_\_\_\_\_

● \_\_\_\_\_ + \_\_\_\_\_ → sodium fluoride



# What's the charge? What's the compound?

Potassium?

Bromine?

Potassium bromide?

Sodium?

Chlorine?

Sodium chloride?



# Bringing it all together..

**Consolidate your learning from today**

1. Describe the appearance of chlorine at room temperature.
2. Describe the trend in reactivity down group 7.



# Bringing it all together..

**Consolidate your learning from today**

3. Why do group 7 elements form -1 charges when they bond?

4. Create the word equation for the reaction of caesium and iodine.

5. Create a symbol equation for the above reaction, showing charges.

