

**ACTIVITY SEVEN: THROUGH THE 'THICK GREEN LIGHT'****Learning Objectives**

**ALL:** Students will know that chlorine was used in the war as a weapon

**MOST:** Students will know the developments in the use of chlorine has helped save many lives

**SOME:** Students will know the how we access chlorine and that the smell at a swimming pool is the chlorine reacting with substances and making the water safe

**Resources**

- Sample of table salt and container
- Suggestions for information hunt:
  - empty bottles of cleaners
  - samples of PVC (e.g. guttering, pictures of windows, plastic cards)
- For extension work: [Chlorine](#)

**STARTER:**

Show students a sample of table salt and ask, 'What is it?' (answers could vary from the chemical name- particularly if you give them a container, to a seasoning/flavouring, may be linked to it coming from the sea, some could even describe it as a crystal).

**INTRODUCTION:**

Describe salt as sodium chloride - a chemical that contains little bits of sodium and chlorine but they are joined together to make a new crystal.

Show students pictures [Periodic Table](#) (has pictures from a book)

Start by looking at a picture of sodium – a shiny silver metal, then look at chlorine – a greenish gas.

Focus students on Chlorine and make it clear to students that although table salt contains the substance that you will discuss in this lesson, huge amounts of energy are needed to get it out and that chlorine is always stored carefully.

## MAIN TASKS

Now that students are aware that chlorine is a greenish-yellow gas you can use a resource from the First World War that refers to it as such as part of Wilfred Owen's [Dulce et Decorum Est](#):

*Dim, through the misty panes and thick green light,  
As under a green sea, I saw him drowning.  
In all my dreams, before my helpless sight,  
He plunges at me, guttering, choking, drowning.*

Discuss with students that chlorine gas is very dangerous to living organisms as it can bond with water to form a corrosive (breaking down) substance which can burn through the edges of living cells. It was also heavier than air so it sunk into the lower trenches and would permanently injure, and sometimes kill, soldiers.

This property of chlorine was used very effectively as a weapon in the First World War and caused lots of long term problems for those soldiers who survived. The memory of the danger was enough to cause the British government to expect everyone to carry gas masks in WW2 in case it was used in bombs.

But in fact this living cell damage caused by chlorine when it is added to water is something that has actually saved many more lives than it ever killed.

This is because we can use chlorine to kill simple cells such as bacteria, which cause illness. Before we treated water and surfaces with chlorine mixtures these cells would grow to very large numbers causing stomach illnesses such as cholera, dysentery and other digestive illness.

Students should research uses of chlorine in everyday life: this could be done with an information hunt/IT Optional additions to info hunt could be:

- provide empty containers of bleach and other cleaners with list of chemicals contained
- could link it to making stable polymers such as PVC – students could research substances made of this

### Extension

Read the BBC article on Chlorine (in resources) and work out where we get chlorine from (linked to starter) and why swimming pools smell.

## REVIEW

Students to write a paragraph showing how, although chlorine was used by humans at some points to hurt each other, it has now saved many more lives through better water sanitation and helped us provide materials for an easier lifestyle such as plastics.