

# The Sixth Form at George Abbot

*'Academic excellence within a vibrant community.'*

Subject: Chemistry

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## Pre Sixth Form Tasks

Your ability to research and discover answers for yourself is crucial to your future success. Equally, scientists must develop the ability to communicate complex scientific ideas clearly and concisely. Your challenge is to produce a single page of A4 for each of these tasks. Just one page. It can include text, diagrams, photos or anything else you think will be useful. Be creative, think about communicating the science. You can complete each task however you want; by hand, using a computer or any other way you see fit.

Compound Chemistry ([www.compoundchem.com](http://www.compoundchem.com)) is an organisation that produces infographics about all sorts of chemical and scientific concepts. Their work is **awesome**. Some examples are found below to **inspire** you.

### Task 1: The chemistry of fireworks

What are the component parts of fireworks? What chemical compounds cause fireworks to explode? What chemical compounds are responsible for the colour of fireworks?

### Task 2: Why is copper sulfate blue?

Copper compounds like many of the transition metal compounds have got vivid and distinctive colours – but why?

### Task 3: Aspirin

What was the history of the discovery of aspirin, how do we manufacture aspirin in a modern chemical process?

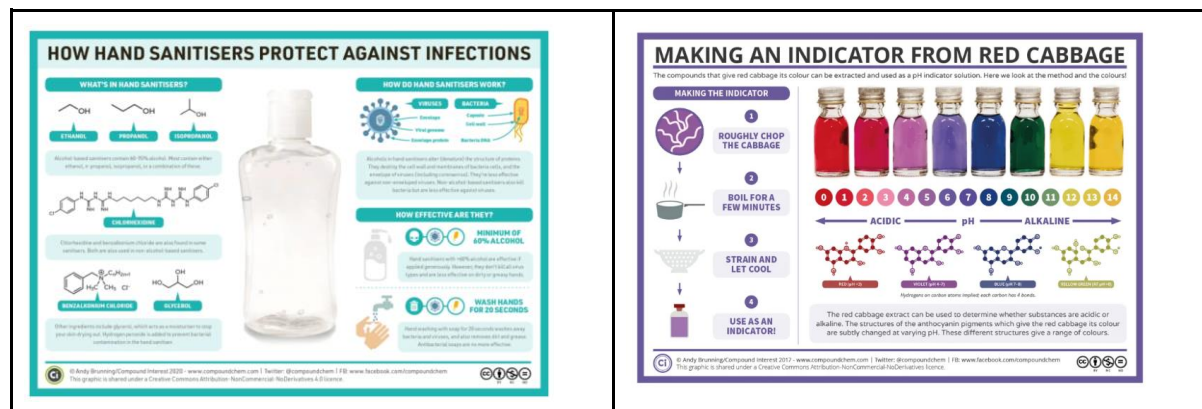
### Task 4: The hole in the ozone layer

Why did we get a hole in the ozone layer? What chemicals were responsible for it? Why were we producing so many of these chemicals? What is the chemistry behind the ozone destruction?

### Task 5: ITO and the future of touch screen devices

ITO – indium tin oxide is the main component of touch screen in phones and tablets. The element indium is a rare element and we are rapidly running out of it. Chemists are desperately trying to find a more readily available replacement for it. What advances have chemists made in finding a replacement for it?

Infographic Examples ([www.compoundchem.com](http://www.compoundchem.com))



The image contains two infographics. The first, 'HOW HAND SANITISERS PROTECT AGAINST INFECTIONS', explains the chemical structures of ethanol, propanol, isopropanol, benzalkonium chloride, and chlorhexidine, and details how they kill germs. The second, 'MAKING AN INDICATOR FROM RED CABBAGE', shows a step-by-step process to create a pH indicator from red cabbage, including a color chart from pH 0 to 14 and chemical structures of anthocyanin pigments.

