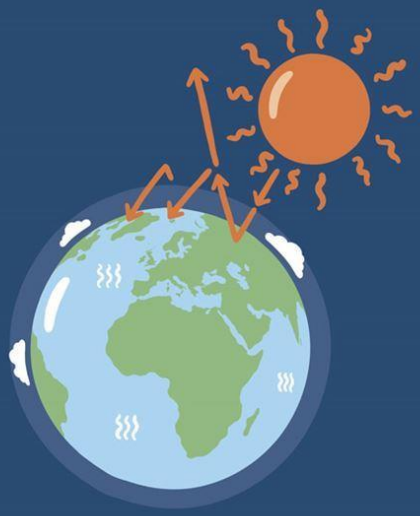
5 WORK SKILLS CHEMISTRY WILL GIVE YOU



COLLATING

In school: To understand chemistry you need to bring together information from different sources. This can include the chemical structure of elements, their properties and how they react with other elements. You'll need this information to develop a deeper understanding of things like...

PRESENTATION

In school: When you've carried out an experiment you'll need to present your findings. This can involve an oral presentation to your class.

INVESTIGATION

In school: When you're conducting experiments you need to pay attention to details and record the results. Then you have to work backwards to determine the reasons for your findings. You'll be looking for clues and evidence that link to accurate chemical processes to help you draw conclusions.

ANALYSIS

In school: Chemistry is all about analysing. It could be the analysis of the results of a practical investigation or theories to make sense of observations. You're always collecting data about how substances behave and their properties, including how they react. You'll analyse the findings...

ATTENTION TO DETAIL

In school: You need to carefully check every detail. When you're doing experiments, you have to watch closely for any changes that could indicate a reaction is happening and carefully monitor chemical properties. Recording what you observe in a methodical way is also important.

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Sources: For source data please request the information by emailing data@successatschool.org

WHERE CAN CHEMISTRY TAKE YOU?



ENERGY & UTILITIES

Today, about 500,000 people work in the energy sector. But with the demand for green energy growing, **by 2020 half a million people could be working in renewables alone.**

Career paths: Geochemist, mudlogger, renewable energy engineer

ENGINEERING

The proportion of young engineers has dropped over the last decade. This means there will be **high demand for younger workers** in the years to come!

Career paths: Chemical engineer, civil engineer, nuclear engineer

FAST CONSUMER GOODS

Online grocery shopping is **expected to grow by 68% between 2016 and 2021**, which means new "e-commerce" jobs will be created to match the growing demand.

Career paths: Food scientist, market research, quality controller

MANUFACTURING

The manufacturing sector employs around 3 million people and **accounts for 9% of employment in the UK.** That's a lot of jobs!

Career paths: Manufacturing manager, stock control manager

MEDICINE & HEALTHCARE

The UK healthcare industry **employs over 4 million people**, making it one of the biggest sectors. Four of the five highest average graduate salaries are in fields related to medicine.

Career paths: Doctor, nurse, optician

RECRUITMENT & HR

The Recruitment & HR industry employs around 100,000 people and this is only **expected to grow in years to come.**

Career paths: HR officer, recruitment consultant, training manager

SCIENCE & RESEARCH

Between 2016 and 2023, jobs in science and research will grow at twice the rate of other industries, creating 142,000 new jobs. **1 in every 6 jobs will be in science and research.**

Career paths: Lab scientist, pharmacologist, research & development

WANT MORE CAREERS ADVICE?

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Data sources: [1]https://www.engineeringuk.com/media/1356/enguk_report_2017_synopsis.pdf, [2]https://www.hesa.ac.uk/news/11-01-2018/sfr247-higher-education-student-statistics/subjects (Fig. 13), [3]No of workers: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/employmentbyindustryemp13 (May, 2018), No of new rail jobs: https://successatschool.org/advicedetails/947/careers-in-rail (YSP), [4]No of workers: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/employmentbyindustryemp13 - May, 2018, No of businesses: https://www.statista.com/topics/3797/construction-industry-in-the-uk/, [5]New jobs: http://ec.europa.eu/social/BlobServlet?docId=14107&langId=en (UK 2011 roadmap references here), No of workers: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/, [6]https://www.edfenergy.com/sites/default/files/jobs-of-the-future.pdf (p.4) employmentandemployeetypes/datasets/employmentbyindustryemp13 (May 2018)

Careers in Chemistry

Chemistry is exciting, there's no doubt about it. As one of the three main branches of science, its impact is wide-reaching and impressive. Through chemistry we have made great discoveries, such as penicillin and pasteurisation, and made the modern world possible with inventions including plastic and lithium ion batteries. Chemistry plays a role in almost every action on earth, and in every object we touch. It's the study of substances, and their composition, structure, and properties.

Chemical scientists are leading research on the world's most pressing concerns, including challenges around human health, climate change, and energy. They use their scientific, problem-solving, and analytical talents to pioneer new medicine, technologies, and discoveries. They're consulted in fields as broad as engineering, nuclear power, and space travel – working at the forefront of science is thrilling and challenging in equal measure.

Studying chemistry opens doors to a wide variety of employment opportunities. The range of available jobs is considerable and covers many different types of chemistry and industries such as nanotechnology, large scale chemical plants, the drinks and pharmaceutical industries or teaching.

Your skills will also be in demand in other areas. A study of chemistry helps you develop logical thought and numerical skills and the ability to write accurate and concise reports. As a result, chemists are in demand in national and local government, in hospitals and in education at all levels.

Jobs directly related to Chemistry include:

- Academic researcher
- Analytical chemist
- Biotechnologist
- Chemical engineer
- Clinical scientist, biochemistry
- Forensic scientist
- Nanotechnologist
- Pharmacologist
- Research scientist (physical sciences)
- Scientific laboratory technician
- Toxicologist

Jobs where Chemistry would be really useful include:

- Academic researcher
- Analytical chemist
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- Chemical engineer
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Typical employers

The main employers of chemistry graduates are in the chemical and related industries, such as:

- agrochemicals
- metallurgical
- petrochemicals
- pharmaceuticals
- plastics and polymers
- toiletries.

However, you'll also find opportunities with employers in other sectors, including the food and drink industry, education, utilities and research, health and medical organisations, the government and scientific research organisations and agencies.

Skills for your CV

Studying Chemistry allows you to develop excellent laboratory techniques but as it overlaps with other subjects, it also gives you skills that are useful in the areas of biology and medicine, physics and engineering, and geology and earth science.

Chemistry is also studied in an environmental and social context, so you can gain awareness of its ethical implications and issues relating to environmental impact and sustainability.

As well as developing strong mathematical/numerical ability, studying chemistry gives you transferable skills, including:

- analysis and problem solving
- time management and organisation
- written and oral communication
- monitoring/maintaining records and data
- research and presentation

Studying Chemistry at university – topics you may cover:

- medicinal chemistry
- molecular pharmacology
- physical chemistry
- environmental chemistry
- solid state chemistry
- geometry
- vectors
- computational maths.