

Career Spotlight

Chemist

Chemists study the composition of matter and its properties such as density, acidity, size and shape. They carefully describe the properties they study in terms of quantities, with detail on the level of molecules and their component atoms. Chemists use this knowledge to learn the composition, and properties of unfamiliar substances, as well as to reproduce and synthesize large quantities of useful naturally occurring substances and create new artificial substances and useful processes.



EDUCATION

To become a chemist, a person needs to have a bachelor's degree in chemistry or a related subject such as mathematics. Materials scientists need a college degree in materials science, chemistry, physics, or electrical engineering. However, chemists and materials scientists usually need a Ph.D. for research jobs.

WHEN MATH IS USED

Chemists use math for a variety of tasks. They balance the equation of a chemical reaction, use mathematical calculations that are absolutely necessary to explore important concepts in chemistry, and utilize dimensional analysis to find any range of information about reactions from finding the mass of chemicals reacted to the concentration of a chemical in a solution. Math is also used to calculate energy in reactions, compression of a gas, grams needed to add to a solution to reach desired concentration, and quantities of reactants needed to reach a desired product.

POTENTIAL EMPLOYERS

About 4 out of 10 jobs are in manufacturing firms. A lot of the firms are in the chemical manufacturing industry, which produces plastics and synthetic materials, drugs, soaps and cleaners, paints, industrial organic chemicals, and other chemical products. Others work for scientific research and development firms. In addition, thousands of chemists teach in high schools and colleges and universities.

FACTS

Chemists are “paid to be creative, careful, and productive. It’s a career for people who think about the future.”

CITATIONS

<http://en.wikipedia.org/wiki/Chemist>
<http://www.cbsalary.com/national-salary-chart.aspx?specialty=Chemist&cty...>
<http://www.bls.gov/k12/science01.htm>
<http://www.princetonreview.com/Careers.aspx?cid=34>
<http://www.chem.byu.edu/Site/MajorAcademicPlans>
<http://answers.yahoo.com/question/index?qid=20081108091621AASNIHe>
http://wiki.answers.com/Q/How_does_a_chemist_use_math

MATH REQUIRED

- College Algebra
- Geometry
- Trigonometry
- Calculus I and II
- Statistics

Low-end Salary: \$38,602/yr
Median Salary: \$49,798/yr
High-end Salary: \$62,975/yr