Curriculum Day

Dreams don’t work unless you do.
John C. Maxwel
Your Pathway through High School

Freshman

Honors Biology

Biology

Essentials of Biology

Sophomore

Honors Chemistry

Chemistry

Essentials of Chemistry

Junior

AP Physics 1

Physics

Essentials of Physics

Senior

AP option or Elective

AP option or Elective

Elective

AP options

AP Biology

AP Chemistry

AP Physics 1

AP Physics 2

AP Environmental Science

Electives

Botany (dual credit)

Human Anatomy & Physiology (dual credit)

Forensics (semester class)

Environmental Science (semester class)
Chemistry is the science of matter and its transformations.

Matter consists of the substances such as solids, liquids, and gases, and the atoms and molecules from which they are made.

Three levels of Chemistry are taught.
Physics is the science behind the why things behave the way that they do by studying

- Motion
- Forces
- Work and Energy
- Momentum
- Electricity and Magnetism
- Waves and Light.

Three levels of 1st year Physics are taught.
AP Courses—AP classes in Physics, Biology, Environmental Science and/or Chemistry with a chance to earn COLLEGE CREDIT in high school.

Dual Credit Courses—Human Anatomy and Physiology and Botany allow you to take the course at West Chicago and get credit for it plus get credit at College of Du Page.

Semester Courses—Forensics and Environmental Science (non–AP) are courses that last only a semester. Priority given to seniors in enrollment.
What type of Career Field or Area are you interested in? Take classes to help you prepare OR use classes you like to help you find a Career Field.
Learn More About STEM Careers at:

https://www.sciencebuddies.org/science-engineering-careers
Pick a STEM Field

Careers in Science

Earth & Physical Sciences  Life Sciences  Engineering  Math & Computer Science  Health

Explore Careers in Earth and Physical Science

Want to know more about careers in earth and physical sciences? Browse through detailed information on dozens of careers to discover what scientists, engineers, and other STEM professionals really do and what it takes to prepare for these careers. Each career profile provides basic career information such as salary, job outlook, degree requirements, and more. We have also included videos featuring interviews with real scientists or on-the-job profiles.

Career List

Earth and Environmental Science
- Aquacultural Manager
- Aquarist
- Cartographer or Photogrammetrist — In Demand!
- Climate Change Analyst — In Demand!

Physical Science
- Astronomer
- Audio and Video Equipment Technician
- Aviation Inspector
- Chemical Technician
- Chemist
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Career List

**Earth and Environmental Science**
- Aquacultural Manager
- Aquarist
- Cartographer or Photogrammetrist - *In Demand!*
- Climate Change Analyst - *In Demand!*
- Diver - *In Demand!*
- Emergency Management Specialist
- Environmental Compliance Inspector
- Environmental Scientist
- Geographer
- Geoscientist
- Hydrologist
- Industrial Health & Safety Engineer
- Meteorologist
- Park Ranger
- Soil and Water Conservationist
- Soil Scientist
- Surveyor
- Water & Liquid Waste Treatment Plant & System Operator

**Physical Science**
- Astronomer
- Audio and Video Equipment Technician
- Aviation Inspector
- Chemical Technician
- Chemist
- Chemistry Teacher - *In Demand!*
- Electrician - *In Demand!*
- Film and Video Editor - *In Demand!*
- Food Science Technician
- Food Scientist or Technologist
- Forensic Science Technician - *In Demand!*
- Nuclear Monitoring Technician
- Nuclear Power Reactor Operator
- Occupational Health & Safety Specialist
- Physicist
- Physics Teacher - *In Demand!*
- Pilot
- Power Distributor & Dispatcher
- Power Plant Operator
- Precision Instrument & Equipment Repairer
- Ship & Boat Captain
- Sound Engineering Technician

*Pick a Career*
Use the Key Facts Tab to learn about the career

Use the Education tab to see how much schooling it takes

Use the On the Job tab to watch a video of a person doing the job

Chemist

What do they do?  Key Facts & Information  Education  On the Job  Project Ideas  More

Key Facts & Information

Overview
Everything in the environment, whether naturally occurring or of human design, is composed of chemicals. Chemists search for and use new knowledge about chemicals to develop new processes or products.

Key Requirements
Perseverance, curiosity, and the ability to concentrate on detail and to work independently

Minimum Degree
Bachelor's degree

Subjects to Study in High School
Chemistry, physics, computer science, algebra, geometry, calculus, English

Median Salary
$73,749

Projected Job Growth (2014-2024)
Little or No Change (-2% to 2%)

Meet Leslie Garber, a Development Chemist testing and developing products at EPC Industries, the world's leading

Chemist

What do they do?  Key Facts & Information  Education  On the Job  Project Ideas  More

Nature of the Work
Everything in the environment, whether naturally occurring or of human design, is composed of chemicals. Chemists search for and use new knowledge about chemicals. Chemical research has led to the discovery and development of new and improved synthetic fibers, paints, adhesives, drugs, cosmetics, electronic components, lubricants, and thousands of other products. Chemists and materials scientists also develop processes, such as improved methods of chemical processing, that save energy and reduce pollution. Research on the chemistry of living things spurs advances in medicine, agriculture, food processing, and other fields.

Many chemists work in research and development (R&D). In basic research, they investigate the properties, composition, and structure of matter and the laws that govern the combination of elements and reactions of substances to each other. In applied R&D, these scientists create new products and processes or improve existing ones, often using knowledge gained from basic research. For example, synthetic rubber and plastics resulted from research on small molecules uniting to form large ones, a process called polymerization. R&D chemists use computers and a wide variety of sophisticated laboratory instrumentation for modeling, simulation, and experimental analysis.

The use of computers to analyze complex data has allowed chemists to practice combinatorial chemistry. This technique makes and tests large quantities of chemical compounds simultaneously to find those with certain desired properties. Combinatorial chemistry has allowed chemists to produce thousands of compounds more quickly and inexpensively than was formerly possible and assisted in the sequencing of human genes. Specialty chemists, such as medicinal and organic chemists, work with life scientists to translate this knowledge into new drugs.

Chemists also work in production and quality control in chemical manufacturing plants. They prepare instructions for plant workers that specify ingredients, mixing times, and temperatures for each stage in the process. They also monitor automated processes to ensure proper product yield and test samples of raw materials or finished products to ensure that they meet industry and government standards, including regulations governing pollution. Chemists report and document test results and analyze those results in hopes of improving existing theories or developing new test methods.

Work Environment
Chemists usually work in offices and laboratories. R&D chemists spend a lot of time in laboratories, but also work in offices when they do theoretical research or plan, record, and report on their lab research. Although some laboratories are small, others are large enough to incorporate prototypes of chemical manufacturing processes.
Other places to find info on STEM careers are:

**Naviance**: found on the student page of the school’s website. Log into it with your school email username and password
STEMJobs.com STEM Types Quiz

http://stemtype.com/quiz

Find out what “STEM Type” of “Learner/Doer” you are and what careers align to that STEM Type

- Advisor
- Designer
- Producer
- Solver
- Maker
- Explorer
- Integrator
- Investigator