

The yearlong celebration of science continues...

Celebrate Chemistry: The YoS2009 November Theme

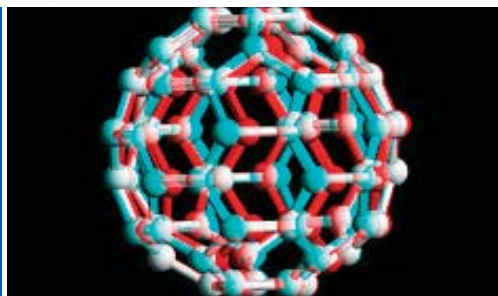


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➤ What is Chemistry?

Chemistry is the science concerned with the composition, behavior, structure, and properties of matter, as well as the changes it undergoes during chemical reactions [<http://en.wikipedia.org/wiki/Chemistry>]. Put most simply, chemistry is simply everything and everywhere! The chemical periodic table is the basis for everything we understand of our world. The elements comprise all things and help us predict the properties and utility of new compounds as applied to all facets of our existence!

Chemistry is the scientific nexus that connects us all in every way! Ever wonder why food tastes so yummy, colors are so vibrant, or smells can be so enticing? The answer is chemistry! Chemistry is responsible for the look, feel, and smell of every object all around you - even YOU! All the technology we enjoy and can't live without require chemistry. Below are just a small sampling of chemistry's inherent bearing on society and our lives.

➤ Connecting Chemistry to Society

The Evolutionary Road to Biofuels

Your corn is sweeter, your potatoes are starchier and your turkey is much, much bigger than the foods that sat on your grandparents' Thanksgiving dinner table.

Most everything on your plate has undergone tremendous genetic change under the intense selective pressures of industrial farming. Pilgrims and American Indians ate foods called corn and turkey, but the actual organisms they consumed didn't look or taste much at all like our modern variants do.

Drinking Water

We have come a long way from the first health scare regarding drinking water in the summer of 1858. It

was the hottest year on record and the filthy state of the Thames River combined with the heat, led to the river becoming anaerobic and the arrival of the 'Great Stink'. So how have things improved since those days? Is our tap water safe to drink? Are the chemicals added safe? Does bottled water provide more health benefits than tap water? Visit the Royal Society of Chemistry's Web site for answers to these questions and to learn more: <http://www.rsc.org/Chemsoc/Chembytes/HotTopics/DrinkingWater/Index.asp>.

Drugs In Sport

Chemistry plays an important role in the performance of athletes in training, recovery and competition. Sports medicines use a host of chemical compounds to help the athlete such as cold sprays to numb injuries and sports drinks and dietary supplements which provide energy sources for competitors. However, chemistry is controversial when it comes to performance enhancing drugs and the importance of chemistry in sports medicine is often overshadowed by the controversy.

Nanotechnology and its Applications

Over the last few years nanotechnology has emerged as the science of all things small, more specifically, 'nano'. The nanometre scale runs from 1 to 100 nm with a nanometer being one-billionth of a meter. To put that scale of measurement into perspective, a nanometre is 1/80,000 of the diameter of a human hair.

Materials this size display unusual physical and chemical properties caused by many factors including the increase in surface area compared to volume, which occurs as particles get smaller.

Thank you to all of the organizations that provided content for the Year of Science 2009 Chemistry theme, especially the Royal Society of Chemistry. Please explore more resources from all our contributors at www.YearofScience2009.org.