

PLEASE NOTE:

Conceptual Chemistry is funded by the Ohio Board of Regents' *Improving Teacher Quality State Grants Program*. The purpose of Conceptual Chemistry is to assist school districts by providing quality professional development experiences for middle and high school teachers. This program provides **free tuition, a \$2,240 value**, for all participants along with approximately \$850 worth of textbooks, activity books and hands-on materials for use in the classroom.

The *Improving Teacher Quality State Grants Program* is part of the No Child Left Behind Act of 2001 and distributes federal funds to all 50 states to support activities designed to increase student achievement by elevating teacher quality.

Enhance your understanding of basic chemistry by participating in Conceptual Chemistry! It's...

- *Enjoyable*
- *Usable Inquiry Lessons*
- *Down-to-Earth*
- *For the Non-Scientist*

Receive ideas and materials to teach your students effectively.



6000 Frank Avenue NW
Canton, OH 44720



330 University Drive, NE
New Philadelphia, OH 44663-9403

**INTERESTED IN PARTICIPATING IN
CONCEPTUAL CHEMISTRY?**

Write, call or E-mail for an application from:

Dr. Christopher J. Fenk, *CChem 2010*
Science and Advanced Technology Center
Kent State University at Tuscarawas
330 University Drive, NE
New Philadelphia, OH 44663-9403

Phone: 330.308.7467
E-mail: cfenk@kent.edu

Include in your request:

Name
Address
City, State, Zip
10-digit Phone number
E-mail address

or download application at:

[http://personal.tusc.kent.edu/~cfenk/chemistry/
ConceptualChemistry.html](http://personal.tusc.kent.edu/~cfenk/chemistry/ConceptualChemistry.html)

*All classes meet at
Kent State University Stark
6000 Frank Avenue NW
Canton, Ohio 44720
330.499.9600*

***Conceptual Chemistry is contingent upon
funding from the Ohio Board of Regents.
Final approval is expected in January 2010.***

EXCELLENCE in Action

Conceptual Chemistry

**Learn What It Takes to Really
Teach Chemistry**

For Teachers of Grades 4 - 9

FREE TUITION • FREE MATERIALS



Application Deadline: April 20, 2010



**Kent State at Stark
Kent State at Tuscarawas**

What is *Conceptual Chemistry*?

Conceptual Chemistry is a teacher-friendly, proven-to-be-effective graduate course for teachers of chemical concepts in grades 4 – 9. This tuition-free, 5-credit-hour Kent State University graduate course combines basic concepts in chemistry with hands-on activities and practice using them.

From Lab to the Classroom

This course includes ideas and models appropriate for intermediate and middle school teachers with constructivist teaching strategies that will lead to student (and teacher) involvement and understanding. Activities are designed to help teachers learn basic concepts, and these activities can be adapted for use in the intermediate and middle grades.

Instructors:

This experienced team has worked together on professional development projects in Northeastern Ohio for the past six years.

Mr. Gene Easter

Chemistry Teacher

Retired from Streetsboro High School
Streetsboro City Schools

Dr. Christopher J. Fenk

Associate Professor, Chemistry Department
Kent State University at Tuscarawas

Dr. Claudia Khourey-Bowers

Associate Professor, Science Education
Kent State University at Stark

Ms. Carol Thombs

Multi-grade Science Teacher
Outdoor School, Richland County
Retired from Brunswick City Schools
Medina County

CONCEPTUAL CHEMISTRY TOPICS

Properties of Matter

Some physical and chemical properties of matter and models to illustrate their differences are explored.

Density and Concentration

Mass, volume and dilution are introduced in order to develop the derived concept of *density*.

Solutions, Mixtures and Compounds

Activities help clarify the chemical differences between materials that are not single elements.

Chemical Reactions

Activities reveal evidences of chemical changes and the conservation of matter.

Particle Theory and the Periodic Table

A mini-history of ideas about and classifications of elements are themes of participatory lessons.

Acids and Bases

Teachers gain experience with acids and bases, their practical uses, and descriptive ways to explain pH.

Energy

An introduction to various forms of energy and energy transformations is developed with selected activities.

Chemistry of Food

Consumer-oriented activities explore the mixtures of basic nutrients in processed food.

Chemistry of Life

Some chemical principles are developed after seeing behaviors of carbohydrates, lipids and proteins.

Forensic Chemistry

The crime scene provides both a “need to know” and opportunities to apply knowledge and techniques developed in previous units.

Is this course for you?

Not much background in science, but you’d teach it if you could?

Would you teach chemical concepts and critical thinking better and more often if you had practical lessons for the middle grades?

You’ve noticed that children’s ideas about natural events are sometimes surprising and different from yours?

Does mention of Ohio Science Standards make you uncertain about preparing students to meet them?

You’d like a solid graduate course in which to explore selected topics in chemistry, children’s thinking and science education?

If you answered YES to two or more of the questions above, consider taking *Conceptual Chemistry*, a Kent State University course for teachers funded by the Ohio Board of Regents and supported by area schools.

CONCEPTUAL CHEMISTRY CLASS CALENDAR 2010

All classes meet from 8 a.m. to 4 p.m. at Kent State at Stark, E207.

June 14, 15, 16, 17 and 18 (Monday – Friday)

August 14 (Saturday)

September 18 (Saturday)

October 16 (Saturday)

November 5 and 6 (Friday and Saturday)

December 4 (Saturday)