

REAL-WORLD CHEMISTRY LAB

Wednesdays, September 11-December 11 (no class October 16 or November 27; 12 weeks)

9:30am-10:45am

Ages 8-10

In this course, students learn about chemistry in every-day things, including why we call water "H₂O," how tie dying works, and why things burn. We focus on the periodic table and atomic structure throughout the course, and conduct hands-on activities and experiments in each lab. All lab costs are included in registration fee. Course enrollment is limited to 12 students.

Instructor: Christina St. Martin, BSc

Location: Science Center (suite 5)

Course fee: \$220 OR \$20/lab

10% off early registration discount through July 31

10% off sibling discount available beginning August 1

LAB SCHEDULE:

Periodic Table Basics – Wednesday, September 11

In our first lab, we investigate the elements and their atomic structure, learn how the periodic table is set up, and figure out why we call water "H₂O." Hands-on activities are included to increase their understanding of atoms and elements.

Density = Mass/Volume – Wednesday, September 18

Students use scientific tools to measure the mass and volume of objects to determine their density. They also learn about the density of liquids as we create density gradients and predict where different objects will float or sink in it.

Hydrogen: Acids and Bases – Wednesday, September 25

This week, students create color-changing experiments as they explore the role of hydrogen in measuring pH, determine whether liquids are acids and bases, and test how some fruits and veggies can be used as pH indicators.

Carbon: Life's Necessary Element – Wednesday, October 2

We focus on carbon in this lab, and its importance to life on earth. Students experiment with the properties of calcium carbonate (egg shells and coral skeletons) and frozen carbon dioxide (dry ice).

Tie Dye Chemical Reactions – Wednesday, October 9

In this lab, we study the chemistry of tie dyeing! Students learn about the reactions involved in the chemical bonding of dye to fabric, and make their own tie dyed creation.

Types of Pressure – Wednesday, October 23

Students explore and experiment with partial pressures and vapor pressure to determine the differences between these phenomena, and why they are important in real-world chemistry.

Copper: Electrochemistry – Wednesday, October 30

This lab explores fancy chemistry reactions (redox reactions) that create electricity! Students use electrochemistry methods to plate metals with copper, and create batteries with lemons and pennies.

Insulators and Conductors – Wednesday, November 6

This week, we study the properties of insulators and conductors, conduct experiments to determine what materials conduct electricity and heat better than others, and learn what is happening at the atomic level.

Sodium: Crystallization and Polymers – Wednesday, November 13

Students learn about the crystalline structure of compounds and how they form, and recrystallize sodium chloride from a saturated solution. They also experiment with sodium-based polymers to investigate their unique properties.

Boron: More Crystallization and Slime – Wednesday, November 20

Yep, making slime is science, and boron is the element that makes it happen. Students study the science of slime making, and how boron crosslinks polymers in glue. They also conduct a crystallization experiment to investigate how cooling rate affects crystal size.

Iodine: Clock Reactions and Starch Testing – Wednesday, December 4

Iodine is a reactive element that readily forms compounds with other elements. In this lab, we observe this reactivity in the form of a color change as students perform two experiments using this element.



Phosphorus: Fire Science – Wednesday, December 11

Ever wonder what chemical change occurs when you strike a match? Students learn about combustion and why things burn, try to (safely) start a fire, and observe a fire tornado.

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