



## **HIGH SCHOOL CHEMISTRY LABS – online labs**

Fridays, September 18-December 18

No class October 16, November 27

12:30pm-2:00pm

Ages 14+

Basic chemistry principles are reinforced by building models, using the periodic table of elements, and conducting lab experiments commonly required in many high school chemistry and physical science curricula. Students learn laboratory techniques and perform hands-on experiments, including investigating properties of gases, liquids and solids, conducting chemical reactions, and exploring polymers. A brief review of relevant material starts each lab, followed by a lab period which includes lab preparation, experimentation and clean-up. Lab supplies are included in registration fee (pick up or shipping options available).

### **THE METRIC SYSTEM - Friday, September 18**

We review the metric system and conversions of units as we practice the proper use of scientific measurement tools.

### **MOLECULAR ARRANGEMENTS - Friday, September 25**

Students investigate molecular arrangements and conservation of matter, learn how these molecular arrangements affect density, and explore unusual states of matter.

### **DENSITY - Friday, October 2**

This week we use the scientific method to explore the densities of various liquids and solids, and learn to calculate density to test our hypotheses.

### **DATA ANALYSIS - Friday, October 9**

Scientists must analyze their data to make conclusions about their results. This week, students learn to create proper tables and graphs to present scientific data.

### **ATOMIC STRUCTURE - Friday, October 23**

Students study the atomic structure of elements, how electrons are arranged around the nucleus of atoms, and why valence electrons are important.

### **THE PERIODIC TABLE - Friday, October 30**

This week, we learn to read the periodic table, how it is arranged and characteristics of groups of elements.

### **IONIC AND COVALENT BONDS - Friday, November 6**

Students learn how some elements form bonds to create compounds, and we play Valence to practice creating proper molecules.



### **PROPERTIES OF WATER** - Friday, November 13

We study the special properties of water that allow molecules to stick together, conduct experiments to observe these properties, and learn about capillary action.

### **CHEMICAL REACTIONS** - Friday, November 20

We conduct endothermic and exothermic reactions in lab to investigate how energy is used or transformed during some chemical reactions.

### **REACTION RATES** - Friday, December 4

This week, students conduct two chemistry experiments to demonstrate how different variables affect the rate a reaction occurs.

### **CHEMICAL EQUATIONS** - Friday, December 11

We create models of chemical equations to learn how matter is conserved during chemical reactions, and practice balancing simple chemical equations.

### **NON-NEWTONIAN FLUIDS** - Friday, December 18

We explore viscosity and unusual substances that have characteristics of both a solid and a liquid as we learn about shear stress.

We provide most supplies when needed for labs:

- Non-contact pickup of supplies is available 10:00am-4:00pm Monday-Friday beginning Sept 1 at Discover Science Center (2500 Old Alabama Rd, suite 5, Roswell).
- Shipping options are available for most camps at an additional cost (please register at least 10 days prior to the start of class for shipping option).

Location: Online - Zoom link will be emailed the day before class.

\$275/fall semester OR \$25/lab

50% off sibling discount available

[www.DiscoverScienceCenter.com](http://www.DiscoverScienceCenter.com)