



Lt is a cloud-based learning platform that engages chemistry students in active learning through interactive lessons.

Our **Understand Your Chemistry Collection** is an online, active-learning resource. Support your students to build their understanding of key chemical concepts with **40+** lessons, **1400+** questions, and **650+** diagrams!

These lessons address principles and concepts in introductory physical and inorganic chemistry through interactive questions and rich imagery.

- Complete lessons in 60 minutes or fewer
- Rigorous questions and instant feedback build student understanding
- Embedded calculation practice promotes problem-solving skills
- Seamlessly integrate lessons into blended or distance-learning courses
- Students can learn online: anywhere, anytime
- No additional materials, plug-ins, or extra hardware required



Professionally-developed lessons

Understand Your Chemistry has been developed by Professor Tony Macknight, co-founder of ADInstruments. This active-learning resource has been designed to support how people best learn and remember. Scaffolded questions build on prior knowledge, and provide instant feedback. Calculation practice supports students to build their mathematical skills and provides a strong foundation for success in chemistry.



Flexible



Time-saving



Track student progress



Low-cost

“Understand Your Chemistry does a thorough and smooth job of guiding students through the components of many important concepts in chemistry.”

- **Jack Randall**,
Director of College Outreach,
Vernier® Science Education



How to use Understand Your Chemistry



Select lessons

Select from 46 lessons. Each lesson is designed to be completed within 60 minutes.



Complete lessons anytime, anywhere

Understand Your Chemistry is an online resource that is ideal for blended learning and distance learning. No extra material or equipment needed.



Students learn as they go

Students actively engage in lessons by answering interactive questions, and receive instant feedback for every question.

Interactive Questions and Diagrams

Understand Your Chemistry has been designed for effective learning. Students actively engage with a range of question types, including label image, drag-and-drop, multiple-choice, table, annotate, and text questions. Learners are encouraged to dive into answering these questions and to reinforce or revise their understanding using instant feedback.

Complementing this scaffolded framework, professionally-designed images and diagrams further explain individual concepts. Extensive calculations are embedded throughout the content, developing strong mathematical skills for future scientific careers.

Flexible Online Learning Resource

G1 Redox principles

Oxidation-reduction (redox) reactions are frequently encountered in both inorganic and organic chemistry. Here we introduce some of the basic concepts that underlie these reactions including the definitions of oxidation and reduction and how to balance redox equations.

This lesson is part of **Module 6: Redox reactions**. Refer to the list below to view how it relates to the other lessons in this module.

Redox reactions

- Redox principles
- Electrochemical cells
- Redox in non-standard conditions

Oxidation and reduction

Take notes!

First, let's examine the reaction $2\text{Na} + \text{F}_2 \rightarrow 2\text{NaF}$.

Q1: What type of compound is NaF?
Enter your answer here

Q2: What is actually happening to the sodium and fluorine elements in this reaction?
Enter your answer here

You can see an animation of this reaction here.

Resonance, inductive effects on acid strength

On the previous page you learnt about the effects on acid strength of position in the periodic table. Now we discuss resonance and the inductive effect. You can review this [page](#).

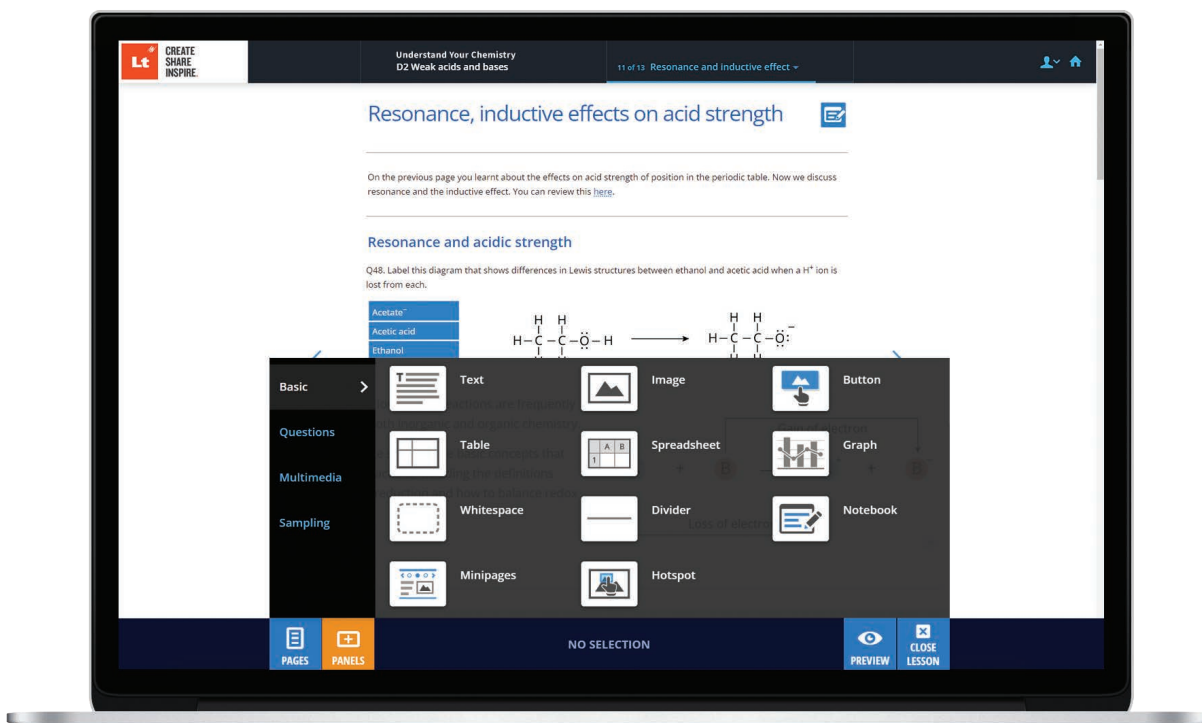
Resonance and acidic strength

Q48: Label this diagram that shows differences in Lewis structures between ethanol and acetic acid when a H^+ ion is lost from each.

Acetic acid
Ethanol
Hydroxide
Acetate

Understand Your Chemistry is flexibly designed and can be seamlessly integrated into your course. With thousands of questions, lessons can be assigned before a lab or lecture to eliminate misconceptions; after a lab or lecture for revision of key concepts; used as a reference during labs or tutorials; as a textbook substitute to ensure students are developing breadth and depth of understanding; or as a revision tool for exams.

Authoring within Lt is so simple and straightforward that you can easily modify lessons in Understand Your Chemistry to exactly complement your curriculum.



Understand Your Chemistry Collection Overview

The collection is organized into 10 modules. The lessons in each module are listed below:

Introduction

- 01 Units of measurement
- 02 How we name chemicals
- 03 Calculations in chemistry
- 04 Graphs in chemistry

Part A: Atomic structure

- A1 Atomic models
- A2 Quantum mechanics: Fundamentals
- A3 Electron configurations
- A4 Periodic table
- A5 Lewis structures
- A6 VSEPR and molecular shape
- A7 Hybridization and bonding

Part B: Chemical equilibria

- B1 Mass, moles, and molar mass
- B2 Stoichiometry
- B3 Equilibrium in chemistry
- B4 Equilibrium responses to change

Part C: States of matter

- C1 Intermolecular forces
- C2 Properties of gases
- C3 The gas laws
- C4 Liquids
- C5 Water
- C6 Aqueous solutions
- C7 Solubility and solubility product
- C8 Solids

Part D: Acids and bases

- D1 Acids and bases
- D2 Weak acids and bases
- D3 Buffer solutions
- D4 Acid-base titrations

Part E: Thermodynamics

- E1 Forms of energy
- E2 Enthalpy
- E3 Entropy
- E4 Gibbs energy
- E5 Phase transitions
- E6 Life and thermodynamics

Part F: Kinetics

- F1 Introduction to kinetics
- F2 Factors affecting rate
- F3 Rate law
- F4 Determination of rate law
- F5 Integrated rate law
- F6 Temperature and rate
- F7 Reaction mechanisms
- F8 Catalysts and enzymes

Part G: Redox reactions

- G1 Redox principles
- G2 Electrochemical cells
- G3 Redox in non-standard conditions

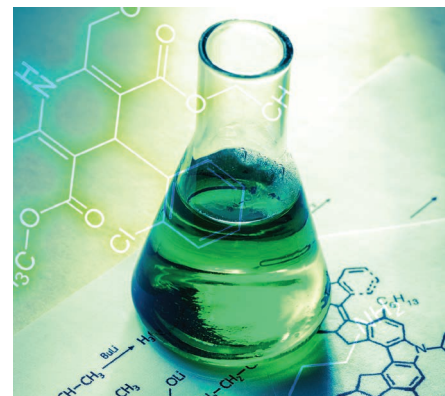
Part H: Transition elements

- H1 Transition metals
- H2 Transition metal complexes

“Understand Your Chemistry increases chemistry students’ engagement with challenging subject material through scaffolded problem solving and content that is relevant to their everyday lives.”

Kaitlynn Arnholt,

Business Development Manager for Chemistry Education, ADInstruments, 7 years of teaching experience





How can Lt help?

Educators

Authoring and customization

Easily edit, share and update our content or create your own in real-time, wherever and whenever you need. Drag-and-drop a range of content types including video, audio, images, quizzes and text directly into your lessons.

Collaborative

Share content and workload with your fellow educators and teaching assistants. Set varying levels of access to allow others to review content, add content, or publish revisions online.

Flexible grading

Automatically grade quizzes while keeping the flexibility to add feedback and positive reinforcement, and manually grade written assessments.



**90-DAY
FREE TRIAL**

Sign up now: adi.to/try_lt

Students

Learn anywhere, anytime

Lt's cloud-based platform means students can learn on almost any device that connects to the internet. Whether they use iOS or Android, tablet, mobile, or laptop, lessons will be resized and optimized to look great.

PowerLab and Lt Sensor integration

In the lab, students can record and view their own physiological signals live on screen with PowerLab or Lt Sensors. Sampling panels in Lt can record Pulse, ECG, Respiratory Rate, Blood Pressure, and more.

Learn from real patients

For future health professionals, our patient cases allow students to follow a real patient from initial presentation to diagnosis and management. Expert healthcare professionals provide their views throughout the journey and students can practice note-taking and reflection.

Administration

Simple setup

Lt needs only an internet browser to allow course administration, authoring, and publishing. Our data acquisition app, used for sampling, installs in 30 seconds.

Analytics

Our analytics allow you to view class progress in each lesson and section in your course, and provide valuable insights about where and how students are interacting with course material.

Secure and scalable

Totally secure, Lt is hosted on Amazon Web Service's encrypted servers with guaranteed 99% uptime and the ability to maintain speed as more students login to Lt.

Future-proof

Lt is automatically updated with new features by our team of engineers, developers, and education specialists.

Visit adinstruments.com or contact your local ADInstruments representative for more information

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