

CHEMISTRY

TECHNOLOGY SOLUTIONS FOR CHEMISTRY

- LAB ACTIVITIES & CURRICULUM
- DATA COLLECTION SOFTWARE
- APPARATUS & EQUIPMENT
- WIRELESS SENSORS
- PASCO PORTAL

FEATURING!

- WIRELESS ABSOLUTE
PRESSURE AND
TEMPERATURE
SENSOR



PASCO®



PASCO PORTAL

FOR SCIENCE EDUCATION



CONTENT



SOFTWARE



EQUIPMENT



SUPPORT



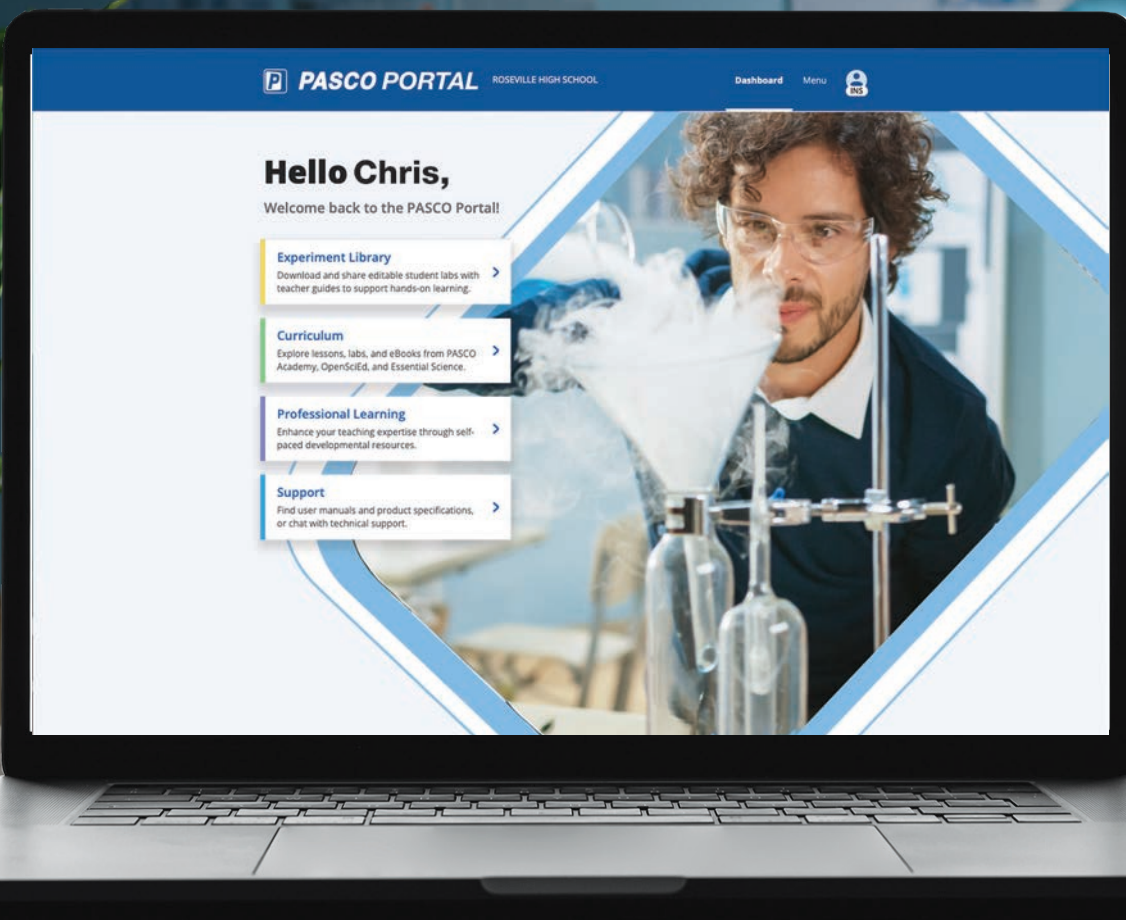
HOW TO'S



TRAINING



PRO DEV



PASCO Portal is a Gateway to Science Designed by Teachers for Teachers

Introducing a new digital learning resource to power your modern science lab. PASCO Portal supports hands-on learning through standards-based lessons, labs, and professional development.

- ✓ Reduce your prep time
- ✓ Complete PD on your own schedule
- ✓ Get back to doing science



Compatible with Your Device & Learning Management Systems

 ClassLink  Clever  Google Classroom  canvas  Blackboard  D2L BRIGHTSPACE  schoology



Sign up for **PASCO PORTAL®** and realize the full potential of PASCO's hands-on science solutions.

PASCO Portal provides instructors and lab managers with ready-to-use activities and content, suitable for core and supplemental curriculum. PASCO Portal keeps your teaching tools and professional learning resources in one place, facilitating seamless transition between instruction, assessment, and lab management practices. Utilize PASCO's award-winning hands-on solutions in science, STEM, and engineering programs, easier than ever before.



Access and distribute Essential Science or OpenSciEd curriculum labs or assignments right within your Learning Management System (LMS).



Search the PASCO Portal Lab Library which contains hundreds of engaging, standards-based lab activities for all science disciplines, including STEM.



Choose from PASCO's award-winning software, including PASCO Capstone, SPARKvue, and Chemvue—FREE with your PASCO Portal license



Tap into PASCO's 21st Century lab equipment and technologies. Our hands-on solutions are more accessible than ever with PASCO Portal.



Get toll-free phone, email, and live chat support for PASCO Portal. Plus, easily search products and technical manuals all within PASCO Portal.



Take advantage of a robust collection of how-to videos designed to assist you with your PASCO equipment, technologies, and lab activities.



New science teacher? No problem! With PASCO Portal, you are equipped to dive into hands-on science learning experiences with on-demand training & professional development. Learn the technology, get tips for instruction, and earn certificates. Explore PASCO Portal's professional resources designed to enhance your knowledge and hone your skills in applying PASCO's hands-on science and STEM solutions to your lab. These resources have been pre-recorded and are available on-demand for your convenience.

PASCO Portal is wrapped in modern technology, compatible with most Learning Management Systems (LMS) including Google Classroom, Canvas, D2L Brightspace, Blackboard, and Schoology. Sign-On through Google, ClassLink, and Clever.



SSO Support



D2L

BRIGHTSPACE



LMS Support

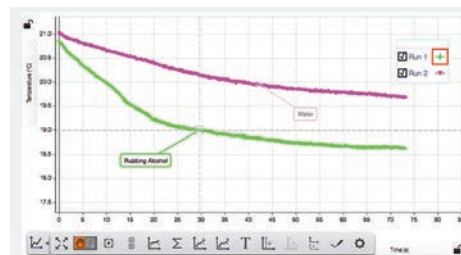
Award-Winning Hands-On Science Solutions

With PASCO Portal and our award-winning hands-on science solutions, you get the content and equipment you want, plus the functionality and support you expect. Basically, this is the science learning environment you've been looking for!



Sensor Technology

Our innovative, wireless sensors are rugged, low-cost, and easy to use. These powerful sensors provide students with an immersive and engaging method for collecting and analyzing data, eliminating the need for wires or interfaces. Explore our growing line of more than 40 wireless sensors!



Data Collection & Analysis Software

PASCO's SPARKvue is an award-winning tool for collecting and analyzing experimental data. The user-friendly platform optimizes data collection and provides tools for in-depth analysis within a compact yet powerful workspace. Works on all platforms.



Complete Lab Stations

PASCO Lab Stations make it easy to use sensor-based technology in your science classroom. Stations come with lab activities, wireless sensors and equipment. Discover Lab Stations for chemistry in this brochure.



Essential Science Curriculum Solutions

Essential Chemistry curriculum is the only curricular solution for chemistry that includes a Student Textbook, an e-Book, Teacher e-Resource, Lab Manual, and equipment kits.



Standards-Based Curriculum Solutions

PASCO developed kits to infuse OpenSciEd's trusted curriculum with our high-quality technology. The PASCO version of OpenSciEd's curriculum is especially tailored to integrate into your lessons, and only available on our digital platform, PASCO Portal.



Storage & Classroom Management

Use these rolling carts and storage trays to decrease your classroom management time and increase teaching and learning time.



Sensor Technology

PASCO's award-winning line of Wireless Sensors are durably designed, easy to use, and affordably priced to help educators bring real-world technology into the hands of students everywhere. Our Wireless Sensors feature student-friendly designs, manual and automated data collection, interactive displays and other modern features that enhance science learning. Plus, they connect directly to computers, Chromebooks, tablets, and mobile devices, making it easy to support student investigations, regardless of their device type.

- Original PASCO innovations, such as the //code.Node, Smart Cart, Modular Circuits and Wireless Weather Sensor with GPS
- Award-winning software supports Blockly coding for every sensor
- Onboard sensor memory with Logging Mode for long-term experiments
- Hundreds of free labs available for download from our online Experiment Library
- PASCO-ensured quality and backed by our five-year warranty



Wireless pH Sensor

The best tool for measuring pH since litmus paper. The Wireless pH Sensor connects via Bluetooth® to monitor the pH of solutions.



Wireless Conductivity Sensor

This waterproof sensor connects via Bluetooth® to measure both conductivity (ionic content in solution) and total dissolved solids.



Wireless Colorimeter & Turbidity

Simultaneously measures the absorbance and transmittance of six different wavelengths. The sensor can be used to study Beer's Law (absorbance vs. concentration) and the rates of chemical reactions.



Wireless Drop Counter

Use the Wireless Drop Counter for more efficient and accurate titration data. Conducting a titration has never been easier!



Wireless Pressure Sensor

The Wireless Pressure Sensor allows students to easily collect accurate gas pressure data for a wide range of applications.



Wireless Temperature Sensor

A staple of every science class, this sensor drastically simplifies temperature measurements with its small footprint, long-lasting battery, and live datalogging.

Our growing line now includes over 40 Wireless Sensors!



SPARKvue

This FREE award-winning data collection and analysis software works on any platform!

SPARKvue's intuitive design has made it an award-winning tool for collecting and analyzing experimental data. The user-friendly platform optimizes data collection and provides tools for in-depth analysis within a compact, yet powerful workspace.

SPARKvue features Blockly coding, allowing students to use block-based code for sense and control of PASCO devices, including any of our sensors.

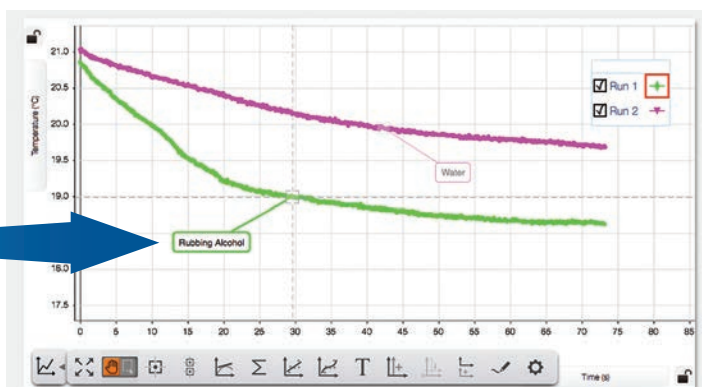
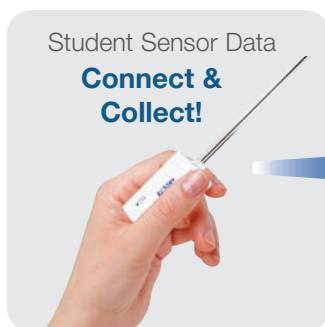
 Windows • Mac OS • iOS • chrome • 



Collecting & Graphing Sensor Data MADE EASY!

Automate sensor data collection to monitor measurements in real time.

Save time with pre-made experiment files, or build your own custom displays that will have you up and running in minutes.



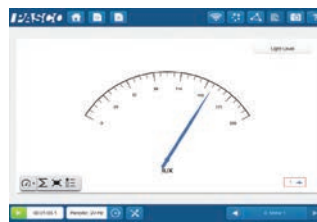
Rapid, Real-Time Data Collection & Analysis



Digits Display



Bar Graph Display



Meter Display



GIS Map Display

SPARKvue® Free award winning data collection and analysis software now runs in your browser!

We're excited to announce SPARKvue is now available **FREE** of charge as a browser-based application. This new version of our software as a Progressive Web Application (PWA) means you have free access to all the features of SPARKvue from Google Chrome and Microsoft Edge browsers. That's right: No download fees, subscription fees, or update fees for Windows® and Mac®. Plus, the app is always updated to the latest version automatically, so you never have to worry about it. **Go to sparkvue.pasco.com to access the PWA.** SPARKvue is also available as a **FREE** app for iPad®, Android™ tablets, and Apple® and Android™ smartphones.

Launch now as
a Web App

PWA +

Download on the
App Store

ANDROID APP ON
Google play

Looking for additional options? See pasco.com/sparkvue for more details.

Also available:

chemvue®

The Optimal Chemistry Lab Experience

Chemvue's live data collection provides real-time feedback so you can correct mistakes in your procedure as they occur, optimizing lab time.

Download a free 30-day trial at
pasco.com/chemvue

macOS or  Windows®

Chemistry Lab Stations

Together, the Chemistry Starter and Extension Lab Stations offer a lab-ready solution for exploring essential topics in chemistry. Complete with Wireless Sensors, lab manual, and a custom storage case, these convenient stations let students perform a wide variety of investigations. Explore concepts such as pH, acid-base titrations, and limiting reactants. Pair the Chemistry Starter and Extension Lab Stations with PASCO's Essential Chemistry Student Lab Manual (EC-6330), to perform an additional forty lab investigations – plus dozens of free activities from the PASCO Experiment Library.



Chemistry Station Lab Titles

The Chemistry Starter Lab Station supports 7 of the 10 included labs. Add the Extension Lab Station* to perform all 10 labs – plus more than 50 investigations from PASCO's Essential Chemistry Lab Manual.

1. Physical or Chemical Change

2. Specific Heat

3. Chemical Reactions

4. Determining Limiting Reactions

5. Types of Bonding*

6. Evaporative Cooling

7. Solution Concentration*

8. What is pH

9. Investigation of Acid-Base Titration

10. Lemon Battery*



The Chemistry Starter & Extension Lab Stations include these Wireless Sensors and materials:

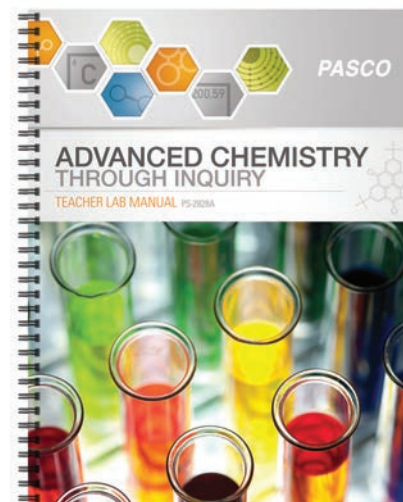
Starter

- Temperature
- Pressure
- pH
- Molecular Models
- Periodic Table
- Periodic Trend Cards
- Spectrum Cards
- Storage Case

Extension

- Drop Counter
- Colorimeter & Turbidity
- Conductivity
- Voltage
- Condenser
- Electrode Support

Lab Stations Support Advanced Chemistry



Advanced Chemistry Through Inquiry Teacher Lab Manual

(PS-2828A)

Add this teacher lab manual to support sixteen student investigations of advanced chemistry concepts.



Oxidation Reduction Potential Probe (PS-3515)

Use the ORP Probe with the Wireless pH Sensor to monitor redox titrations.



Wireless Spectrometer (PS-2600A)

Introduce students to spectrometry, Beer's law, and kinetics with our award-winning Wireless Spectrometer.

Chemistry Starter Lab StationEC-6362
Chemistry Extension Lab Station.....EC-6363
Essential Chemistry Teacher Lab Manual.....EC-6330

Advanced Chemistry Through Inquiry.....PS-2828A
Wireless Spectrometer (VIS).....PS-2600A
Oxidation Reduction Potential Probe.....PS-3515

Wireless pH Sensor

The Wireless pH Sensor is a must-have for any chemistry course. Equally capable in the lab or field, this sensor eliminates the hassle of cables to reduce spills and improve safety. It can transmit data in real time, or save measurements to its onboard memory, when continuous monitoring is required.

Features:

- Compatible with Ion-Selective Electrodes (ISE) and the Oxidation Reduction Probe (ORP)
- Bluetooth® connectivity and a long-lasting coin cell battery
- Saves pH data directly to the onboard memory for long-term experiments



Wireless pH Sensor PS-3204

Wireless pH Sensor with Display

The bright organic light-emitting diode (OLED) display allows students to immediately investigate solution properties with or without a computer interface. The Wireless pH Sensor enhances countless activities, including acid-base titrations, investigations into household chemicals, analyses of chemical reactions, water quality studies, and much more.

Features:

- Compatible with ion-selective electrodes (ISE) and the oxidation reduction probe (ORP)
- Bluetooth® connectivity and a long-lasting rechargeable Li ion battery
- Logs pH data directly onto the sensor for long-term experiments
- Brightly displays pH values on OLED display



Wireless pH Sensor with Display PS-4204

Wireless Drop Counter

The Wireless Drop Counter features a wide drop window that improves control and accuracy during titrations. Pair it with the Wireless pH Sensor to generate live titration curves (pH vs. Volume).

Features:

- Accurately records titrant volume in mL or drops
- IR filter prevents room lighting from affecting results
- Sensor unit can suspend up to three other probes in solution



Wireless Drop Counter PS-3214

Oxidation Reduction Potential Probe

Use this probe to monitor solutions during oxidation-reduction titrations, perform water quality studies, and study the effects of water chlorination. This probe is not a standalone sensor. It connects to and requires a wireless pH Sensor amplifier.

Required Accessories:

- Wireless pH Sensor PS-3204
- Electrode Support PS-3505



Oxidation Reduction Potential Probe..... PS-3515

Wireless Current Sensor

The Wireless Current Sensor accurately measures a wide range of electrical currents, making it ideal for student investigations of electrochemistry and electroplating.

Applications:

- Electrochemistry
- Ohm's Law
- Current flow in electrolysis solutions



Wireless Current Sensor PS-3212

Wireless Voltage Sensor

The Wireless Voltage Sensor is ideal for exploring topics in electrochemistry, such as voltaic cells.

Features:

- Long-lasting rechargeable battery
- Logging mode with onboard memory
- Variable sampling rate
- Range ± 15 V
- Accuracy $\pm 1\%$



Wireless Voltage Sensor PS-3211

Wireless Sensors and Equipment

Wireless Conductivity Sensor

The Wireless Conductivity Sensor measures the electrical conductivity of an aqueous solution. It is ideal for investigating the properties of solutions, including total dissolved solids (TDS) for water quality inquiry.

Features:

- Measure conductivity and total dissolved solids. 0 to 40,000 $\mu\text{S}/\text{cm}$ (0 to 32 ppt salinity)
- Automatic temperature compensation
- Battery life >1 year
- Remote logging with built-in memory
- Dust-proof, sand-proof, and water-resistant (1 meter for 30 minutes)



Wireless Conductivity Sensor PS-3210A

Wireless Conductivity Sensor with Display

The Wireless Conductivity Sensor with Display has an improved range and decreased error when measuring the electrical conductivity of aqueous solutions. Its bright organic light-emitting diode (OLED) display makes data points easy to read for quick spot checks even in bright sunlight.

Features:

- Measure conductivity and total dissolved solids
- Automatic temperature compensation
- Remote logging with built-in memory
- Able to monitor double replacement reactions to determine reaction completion



NEW

Wireless Conductivity Sensor with Display PS-4210

Wireless Temperature Sensor

Welcome to the modern thermometer. Students can access instant temperature readings, but also continuously monitor, log, and plot temperature data.

Perform These Experiments:

- Explore freezing and melting points
- Study temperature changes
- Measure the energy content of food
- Monitor temperature differences between light and dark surfaces
- Compare energy efficiency between light bulbs



Wireless Temperature Sensor PS-3201

Wireless Temperature Sensor with Display

Our modern thermometer just keeps getting better. We've added a bright organic light-emitting diode (OLED) display on the sensor for users who want the ability to see instant data readings without the need for additional software, even in bright outdoor explorations.

Features:

- Variable sampling rate for capturing small, fast changes or experiments that run for hours, days, or weeks
- Logs temperature data directly onto the sensor for long-term experiments
- Dust, dirt, sand and water resistant



NEW

Wireless Temperature Sensor with Display PS-4210

Melting Point Apparatus

Melt point range is an important factor for determining the identity and purity of compounds, which is primary focus of many college chemistry labs. The built-in magnifying eyepiece allows students to observe the melting process individually, or a USB camera can be mounted to record the process to view in real time on a screen for larger groups.

The variable ramp rates allow you to quickly raise the sample temperature near melting (to preserve lab time) before slowing the rate down again, and the hold temp command ensures all substances reach a uniform temperature. Check the current temperature easily with the built-in temperature sensor, and use the cooling fan between measurements to restore the heating block to room temperature fast.

Melting Point Apparatus Eyepiece Camera

Short focal length digital eyepiece camera to capture the melting process. Image stacks will be time coded to compare to temperature data from the Melting Point Apparatus. Images can be scheduled to be captured every 5 seconds during the heating curve for more accurate determination of substances melting points



Melting Point Apparatus PS-3239

Melting Point Apparatus Eyepiece Camera SE-6215

Wireless Thermocouple NEW

PS-4256

New wireless thermocouple extends the range of our temperature sensing line. Range from -200 °C to 1400 degrees C. Packaged with a type K thermocouple, students can follow solutions cooled with boiling liquid nitrogen, dry ice, or reached by commercial freezers. Temperatures of stove elements, matches, and non optimized bunsen burners (tip of the inner blue flame is close to the melting temp of the solder used for the two metals of the sensor and is not recommended). Small thermal mass responds quickly to changes in temperature. Good to thermally contact outsides of metal containers with reactions or heat exchange units.



Wireless Thermocouple.....PS-4256

Wireless Pressure Sensor

The Wireless Pressure Sensor allows students to easily collect accurate gas pressure data for a wide range of applications. It can also be used as a potometer.

Applications:

- Study Boyle's Law and Charles's Law
- Calculate the molar volume of a gas
- Explore reaction rates
- Study catalyzed reactions using hydrogen peroxide and catalase



Wireless Pressure Sensor PS-3203

Absolute Zero Sphere

The Absolute Zero Sphere is an effective tool for determining absolute zero temperature. Students connect Pressure and Temperature Sensors before immersing the sphere in water baths of varying temperatures.

Applications:

- Experimentally determine absolute zero
- Gay-Lussac's Law
- Ideal Gas Law
- Measure temperature and pressure changes in real time



Absolute Zero Sphere..... TD-8595

Ideal Gas Law Apparatus

The Ideal Gas Law Apparatus is an all-in-one solution to studying gas laws. Simply connect Pressure and Temperature Sensors to the syringe to investigate the relationship between pressure, temperature, and volume.

Applications:

- Ideal Gas Law
- Gay-Lussac's Law
- Boyle's Law
- Charles's Law



Ideal Gas Law Apparatus TD-8596A

Wireless Absolute Pressure-Temperature Sensor NEW

PS-4257

Pasco's wireless absolute pressure-temperature sensor is built to work with the ideal gas law apparatus (TD-8596A), Absolute Zero Sphere (TD-8595), and heat engine apparatus (TD-8572) (Not Included) to monitor pressure changes with increase or decrease of temperature. Great to display Boyles, Charles, Amonton's or the ideal gas laws. Helps gather the evidence to calculate work done by a gas. Can also show comparison of vapor pressure to temperatures of the exterior of sealed containers of liquids. Sensor reaches up to 7 atm pressure!



Specifications:

Compatible Temp Probes: Skin/Surface (PS-2131 incl), Fast Response (PS-2135), Stainless Steel PS-2135)

Temperature (quick response):

Range: -30 to 105 °C

Accuracy: ± 0.5 °C

Precision: ± 0.05 °C

Max Sample Rate: 10 hz

Pressure:

Range: 0 to 740 kPa

Accuracy: ±2 kPa or 2% of reading at higher pressures

Precision: 0.01 kPa

Max Sample Rate: 1000 hz

Connector: Female Leur Lock

Communication: USB C, Bluetooth 5.2

Logging: Yes

Wireless Absolute Pressure-Temperature Sensor.....PS-4257

Spectrometry Equipment

Wireless Colorimeter & Turbidity Sensor

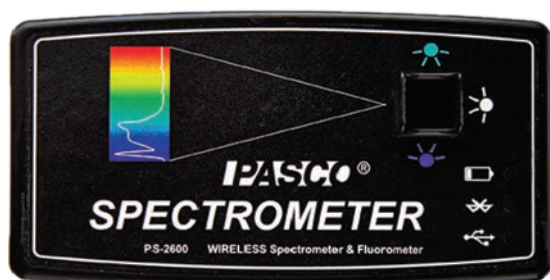
The Wireless Colorimeter & Turbidity Sensor simultaneously measures the absorbance and transmittance of six different wavelengths. The sensor can be used to study Beer's Law (absorbance vs. concentration), enzyme activity, photosynthesis, and the rates of chemical reactions (absorbance vs. time). After a simple calibration, students can quickly begin viewing live measurements as they materialize across the visible spectrum at 415 nm (violet), 445 nm (indigo), 480nm (blue), 515 nm (green), 555 nm (yellow/green), 590 nm (yellow), 630 nm (orange), 680 nm (red).

Features:

- Measures eight different wavelengths simultaneously
- Stabilized light source for consistent readings
- PASCO software displays the absorbance & transmittance at each wavelength in the appropriate color



Wireless Colorimeter & Turbidity SensorPS-3215



Wireless Spectrometer (Vis)PS-2600A

Wireless Spectrometer (Vis)

The award-winning PASCO Wireless Spectrometer is specifically designed for modern teaching labs. It connects to student devices via USB or Bluetooth Low Energy and includes free Spectrometry software with built-in tools for spectral analysis. Scan times are fast, enabling students to collect a full spectrum of data in less than a second. Built-in plots are provided for common applications, including Absorbance vs. Wavelength, Intensity vs. Wavelength, Absorbance vs. Concentration (Beer's law), and Absorbance vs. Time (kinetics).

Applications:

- Absorbance Spectra
- Beer's Law
- Kinetics
- Fluorescence (405 & 500 nm)
- Emission Spectra of Light

Wireless Polarimeter

PASCO's Wireless Polarimeter passes plane polarized light through a vertical sample, which contains a chiral compound, followed by an analyzer and detector. The optical rotation is determined by finding the angle between the starting position and the location where the optimum light level transmits through the cross polarizer. Students can use the rotation data to calculate the concentration of a chiral sample, while the specific rotation (amount turned per g/ml dissolved) is an intrinsic property that can be used to differentiate molecules or identify racemic mixtures.

Specifications:

Connectivity: Bluetooth and USB

LED Light Source: 589 nm

Optical Rotation Accuracy: $\pm 0.09^\circ$

Cell Length: 101.3mm ± 0.8 mm



Wireless Colorimeter & Turbidity SensorPS-3215



UV-Vis Spectrometer

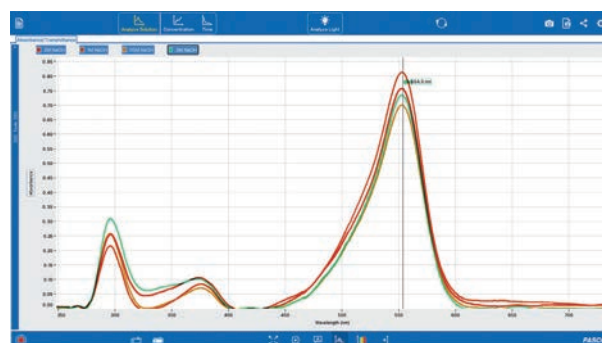
The SE-3607 is an easy-to-use, wide range UV-Vis spectrometer that delivers fast, accurate and reliable performance for routine analyses in chemistry and biochemistry teaching labs. With USB connectivity and cross-platform Spectrometry Software, the PASCO UV-Vis Spectrometer improves collaboration between lab members, enabling data collected on a computer or laptop to be analyzed on tablets, iPads, and Chromebooks. Additional accessories, such as the UV-Vis Fiber Optic Kit, can be used to extend the spectrometer's capabilities for the analysis of emission spectra, light sources, and the classification of lasers.

Highlights:

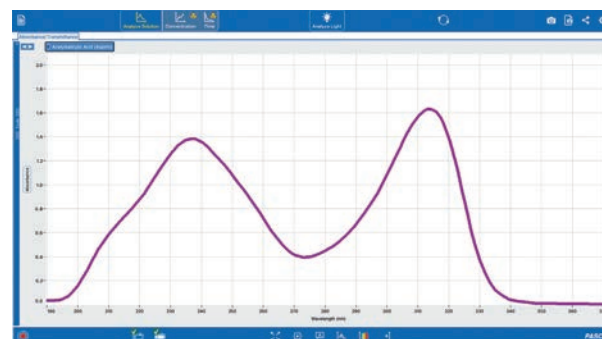
- Spectral Scans from 180 to 1050 nm
- Award-winning Spectrometry software
- Free, multi-platform Spectrometry app
- One-click light and dark calibrations
- Fast warm-up time (<10 minutes)
- Adjustable scan averaging, signal integration time and smoothing
- Graphs Absorbance vs. Wavelength (full spectrum scans)
- Graphs Absorbance vs. Concentration (Beer's Law)
- Graphs Intensity vs. Wavelength (emission spectra)
- Graphs Absorbance vs. Time (kinetics)

Applications:

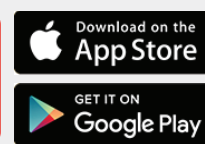
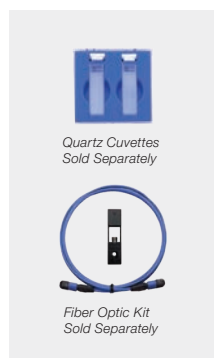
- Determination of solution concentrations
- Measurement of reaction rates or rate of decay
- Colorimetric assays (e.g., BCA, Bradford, Lowry)
- Purity testing of synthesized compounds
- Determination of the equilibrium constant
- Determination of molar absorption coefficients
- Quality testing (e.g., fermentation mediums, food adulteration, QA levels)



Absorbance of solutions containing various amounts of NaOH.



Absorbance spectra of Aspirin.



For Mac® and Windows® Computers
go to pasco.com/downloads

UV-Vis Spectrometer.....SE-3607
UV-Vis Fiber Optic Kit.....SE-7182

UV Quartz Cuvettes (Qty. 2)SE-3611
Disposable UV Semi-Micro Volume Cuvettes (Qty. 10)..... SE-3610

Comprehensive Chemistry Solution – Essential Chemistry



PASCO's Essential Chemistry curriculum is the only curriculum solution that includes a Student Textbook, Student e-Book, Teacher e-Resources, Student Lab Manual, Teacher Lab e-Resources, and Equipment Kits, all at a very affordable price. This 3-D STEM program includes a full year of instruction for both General and

Honors Chemistry classes. Use our complete solution or integrate Essential Chemistry into your existing curriculum. Essential Chemistry is multiplatform and works on iOS, Android™, Chrome™, Windows®, and Mac®. What's more, it includes 24/7 online access, as well as correlations to NGSS and your state standards.

Student Textbook & Lab Manual

- 24 chapters cover a full year of instruction for General and Honors Chemistry
- One main idea per page
- Quality illustrations
- Section and Chapter Reviews
- 73 complete investigations
- 4 Design Projects

Student e-Book

- Browser-based version of the textbook
- Same layout with convenient 24/7 online access
- Embedded videos and animations bring content to life
- Interactive equations and simulations enrich key concepts
- Formative and summative assessment questions

Teacher e-Resources for Lab Manual

- Editable documents
- SPARKvue Software
- PowerPoint presentations
- Answer keys
- Video lab assistance

Teacher e-Resources for Textbook

- Infinite Test Bank
- Teacher User Guide
- Teacher e-Book (1-year or multi-year license)
- Alignment details for NGSS and state standards

PASCO Academy Chemistry Resources

- Available through your PASCO Educator account
- 25 engaging video labs with detailed instruction and data collection
- 25 datasets for student analysis and discussion
- 25 editable lab handouts with teacher answer keys
- Digital access to more than 70 labs for General and Honors Chemistry

Equipment

- Standard Equipment Kit supports 47 labs
- Extend your investigations with additional sensors and apparatus

Essential Chemistry correlates with NGSS and is constructed around the three dimensions:

- Science and Engineering Practices
- Crosscutting Concepts
- Disciplinary Core Ideas



Textbook + e-Book + Equipment

Essential Chemistry Student Textbook

EC-6350

This rigorous yet accessible textbook includes core Chemistry topics that cover a complete year of instruction. The lessons follow the 5E model and include tools for ELL students, as well as tools for students with different learning styles. And the curriculum aligns to your standards for both regular and advanced coursework. The accessible textbook includes one main idea per page, quality illustrations, 73 complete investigations, four Engineering Design Projects, and Section and Chapter Reviews. The 24 chapters cover these topics:

- The Science of Chemistry
- Measurement and Analysis
- Classifying Matter
- Temperature and Heat
- Chemical Compounds
- Moles
- Chemical Reactions
- Stoichiometry
- Atomic Structure
- Bonding and Valence
- Energy and Change
- Gases
- Solutions
- Reaction Rates
- Equilibrium
- Acids and Bases
- Oxidation and Reduction
- Electrochemistry
- Nuclear Chemistry
- Organic Chemistry
- Molecular Biology
- Biochemistry
- The Earth
- The Universe

Essential Chemistry Student e-Book

EC-6350-EB5 (5-yr. lic) or EC-6350-EB1 (1-yr. lic)

The e-Book is an electronic version of the full textbook plus interactive elements. Throughout the electronic text, content and theory are supported with optional audio reading, as well as interactive elements such as interactive equations, videos, animations, and simulations. Students may also expand content using the 'more' button to go deeper into concepts.

Essential Chemistry Student Lab Manual

EC-6352

The *Essential Chemistry Student Lab Manual* is a student-consumable print book. In the manual there are 73 labs that cover a full year of instruction. Best of all, the labs are completely integrated with PASCO equipment and software.

Essential Chemistry Lab Station Equipment Kits

EC-6362 & EC-6363

These equipment kits will outfit a single chemistry lab station of 2-5 students. When used in conjunction with the Essential Chemistry program, including the e-Book and lab manual, they create a complete solution for teaching high school chemistry. The equipment kits can also be used to supplement your existing textbook, serving as the lab components of your curriculum. This use is supported by the more than 70 standards-based Essential Chemistry labs that are available for free download in the PASCO Experiment Library.



Essential Chemistry Lab Station Equipment

42 labs are designed to use this equipment set.

Includes 1 of each of the following:

- | | |
|--------------------------------------|---------|
| • Wireless Temperature Sensor | PS-3201 |
| • Wireless pH Sensor | PS-3204 |
| • Wireless Conductivity Sensor | PS-3210 |
| • Wireless Pressure Sensor | PS-3203 |
| • Wireless Voltage Sensor | PS-3211 |
| • Wireless Colorimeter and Turbidity | PS-3215 |
| • Molecular Model Kit | PS-3400 |
| • Electrode Support | PS-3505 |
| • Periodic Trend Cards | EC-3405 |
| • Periodic Table | EC-3404 |
| • Spectrum Cards | EC-3403 |
| • Condenser | PS-3402 |
| • Wireless Drop Counter | PS-3214 |
| • Gratnells® Storage Trays (2) | |

*The equipment list (above) includes everything in the Chemistry Starter and Extension Lab Stations (EC-6362 + EC-6363).

Essential Chemistry 1st Edition: Student Textbook..... EC-6350A
 Essential Chemistry 1st Edition: Student e-Book (1 yr lic)..... EC-6350-EB1
 Essential Chemistry Student Lab Manual EC-6352
 Essential Chemistry Teacher Lab ManualEC-6330

Essential Chemistry Starter Lab Kit EC-6362
 Essential Chemistry Extension Lab Kit.....EC-6363

SPARK LX Air Datalogger

PS-3620

The SPARK LX Air Datalogger is PASCO's slimmed down all-in-one device for data logging, data display, and data analysis. Don't risk damaging your school computer during hands-on experiments! With the LX Air, you are in control of the technology in your classroom. Designed for a wet-lab environment, the LX Air is portable, durable, and splash-proof.



SPARK LX Air Datalogger..... PS-3620