

K-8 SCIENCE

TECHNOLOGY SOLUTIONS FOR ELEMENTARY & MIDDLE SCHOOL

- DATA COLLECTION SOFTWARE
- APPARATUS & EQUIPMENT
- WIRELESS SENSORS
- LAB ACTIVITIES



FEATURING!

WIRELESS SENSORS WITH DISPLAYS

The onboard bright (OLED) displays allow students to immediately investigate solution properties with or without a computer or device.

PASCO



PASCO PORTAL

FOR SCIENCE EDUCATION



CONTENT



SOFTWARE



EQUIPMENT



SUPPORT



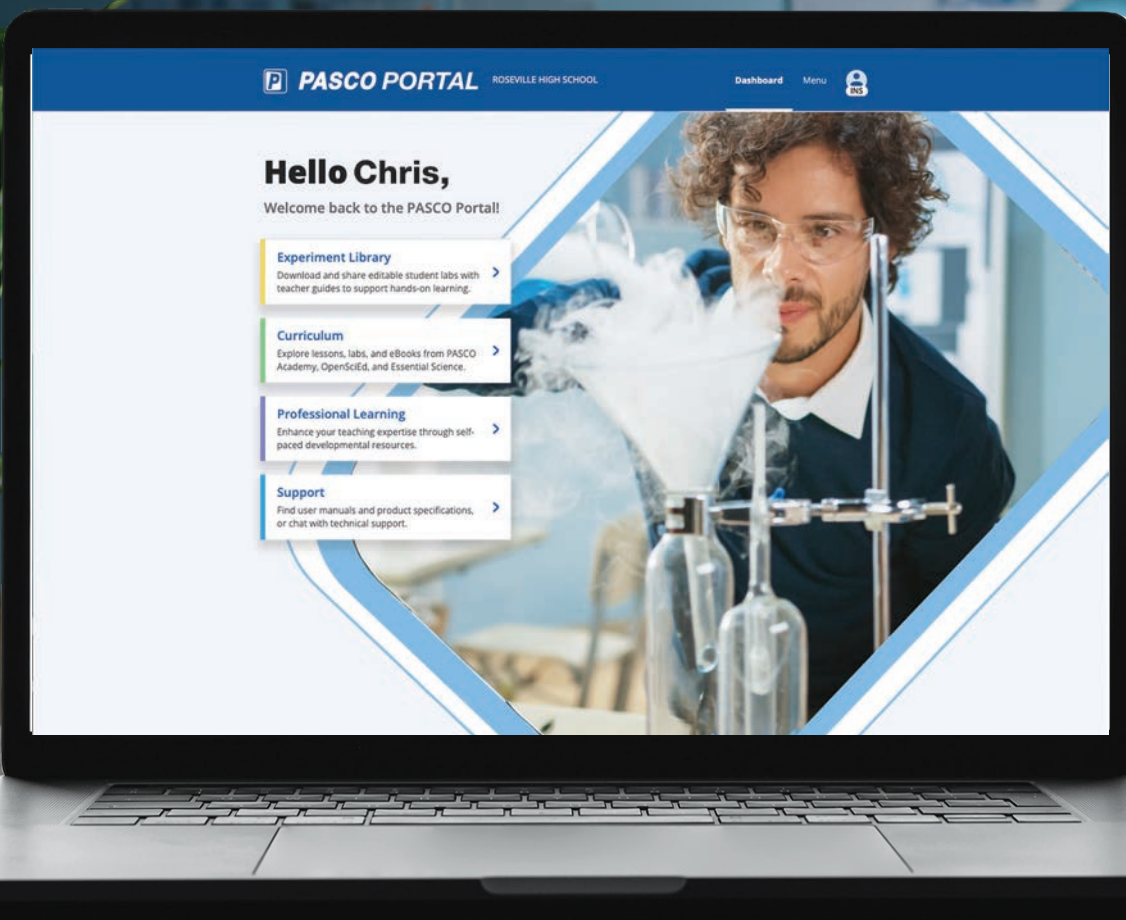
HOW TO'S



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 the PASCO Portal platform.



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

Blackboard

Schoology

LMS Support

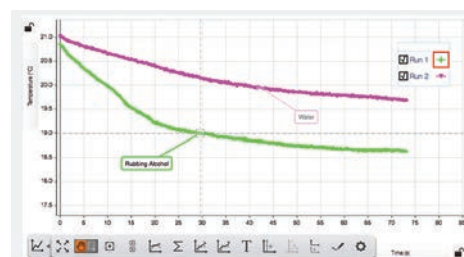
Award-Winning Hands-On Science Solutions

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 35 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 Middle School Science, and K-5 Science in this brochure.



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.



STEM & Coding Solutions

STEM Sense solutions promote early excellence in science and STEM education with cross-curricular investigations that help young learners build strong foundations in science, programming, and data literacy.



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 Weather Sensor with GPS

Capable of making 19 measurements and logging GPS data, this all-in-one instrument is ideal for investigating complex environmental conditions.



Wireless Motion Sensor

This sensor measures the position, velocity, and acceleration of objects, and it even includes a 180° rotatable head for creative applications.



Wireless Hand-Grip Heart Rate Sensor

Easily measure heart rate before, during, and after exercise with live data that wirelessly transmits to your devices.



Wireless Light and Color Sensor

This sensor features two separate apertures for measuring light level (lux), illuminance, UV Index, and color intensity.



Wireless Sound Sensor

Get two sensors in one wireless package: a sound wave sensor and a sound level sensor with both dBA and dBC-weighted scales.



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!



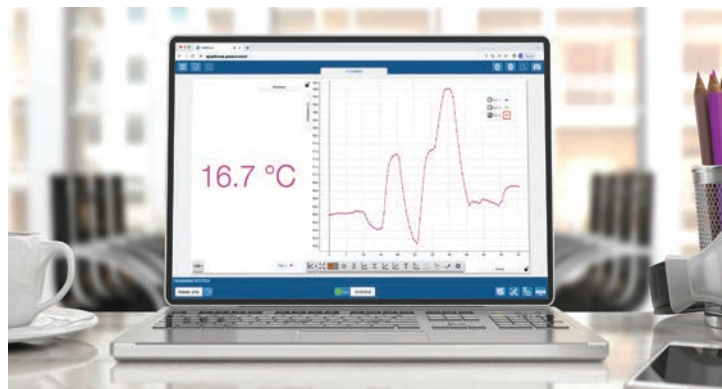
SPARKvue

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.

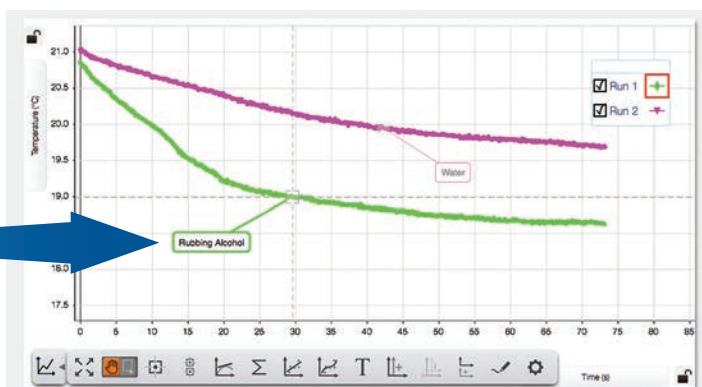
 Windows • Mac OS • iOS • chrome • 



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.



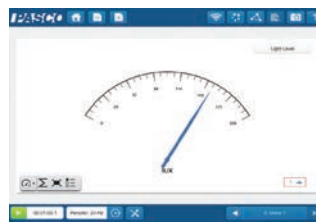
Rapid, Real-Time Data Collection & Analysis



Digits Display



Bar Graph Display



Meter Display



GIS Map Display

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 on all your devices 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, even 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.

 **SPARKvue**® Launch now as a Web App **PWA** +



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

Elementary School Science Solutions

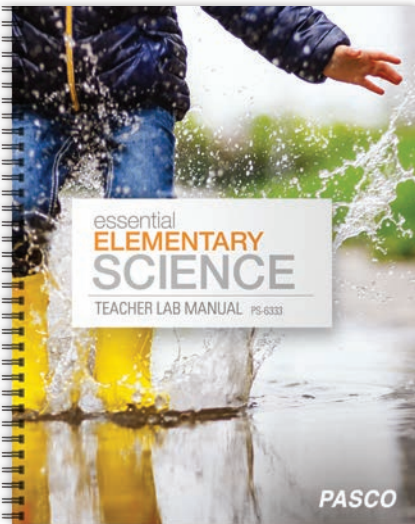


Introduce students to the foundations of science learning with hands-on solutions from PASCO.

Our simple designs let learners explore the world around them using intuitive sensors and software that bring science topics to life. From first studies of light and temperature to early explorations of weather and sound, PASCO has everything you need to connect your students to science phenomena.

Elementary Science Starter Lab Station

Together, the Elementary Science Starter and Extension Lab Stations provide a comprehensive solution for exploring a variety of key science concepts. Complete with Wireless Sensors, ten student activities, and a convenient storage case, the Elementary Lab Stations support student explorations of essential science topics such as temperature, light, and sound. Visit the PASCO Experiment Library to discover additional activities for elementary science, complete with student handouts, answer keys, and helpful teacher tips.



Elementary School Science Lab Titles

The Elementary School Science Starter Lab Station supports 7 of the 10 labs. Add the Extension Lab Station to do all 10 lab titles.

Starter Station Labs	Extension Station Labs
Temperature and Change	Determining Sound Levels
Evidence of Chemical Reactions	Weather and Climate: Microclimates
Thermal Insulators and Conductors	Weather and Climate: Monitoring Weather
Can Plants Survive Without Light?	
How a Greenhouse Works: Heat	
How a Greenhouse Works: Light	
MatchGraph	

The Elementary Science Starter & Extension Lab Stations include a lab manual as well as these Wireless Sensors and materials:

Elementary Science Starter Lab Station

- Temperature
- Light
- Motion
- Storage Case



Elementary Science Extension Lab Station

- Sound
- Weather



Elementary Science Starter Lab Station.....PS-3314

Elementary Science Extension Lab StationPS-3315

Middle School Science Solutions

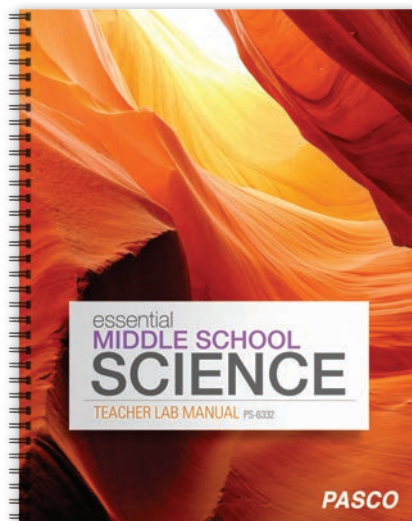


Equip your students for science success with world-class solutions from PASCO.

Our award-winning sensors and software empower students to explore real-world phenomena, while also helping them develop the skills they'll need for future science courses. Whether they're learning about forces and motion or uncovering local weather patterns, help prepare students for their next step with reliable solutions from PASCO.

Middle School Science Starter Lab Station

The Middle School Science Starter and Extension Lab Stations offer a turnkey solution for investigating an array of core science concepts. Complete with Wireless Sensors, ten student activities, and a convenient storage case, the Middle School Lab Stations let students study key concepts such as seasons, forces, and motion. Visit the PASCO Experiment Library to explore additional activities for middle school science and STEM.



Middle School Science Lab Titles

The Middle School Science Starter Lab Station supports 6 of the 10 labs. Add the Extension Lab Station to do all 10 lab titles.

Starter Station Labs

- Describing Motion**
- Night and Day**
- Seasons and Temperatures**
- Thermoregulation**
- Introduction to Acids**
- Acid Rain and Weathering**

Extension Station Labs

- Photosynthesis**
- Humidity and Dew Point**
- Forces and Interactions**
- Waves and Energy**

The Middle/Secondary School Science Starter & Extension Lab Stations include a lab manual as well as these Wireless Sensors and materials:

Middle School Science Starter Lab Station

- Temperature
- Light
- pH
- Motion
- Storage Case



Middle School Science Extension Lab Station

- CO₂
- Weather
- Sound
- Force/ Acceleration



Middle School Science Starter Lab Station.....PS-3312

Middle School Science Extension Lab StationPS-3313



Standard Compound Optical Microscope

SE-6213

The Standard Compound Optical Microscope is great for general viewing of cell structures at magnification settings of 40x, 100x, and 400x. This microscope is ideal for lessons in biology, life science, anatomy and physiology, and cellular and field biology. It includes high-quality optical lenses that easily adjust to view the subject in appropriate detail, making this lab essential suitable for both beginner and experienced microscope users. This microscope is durable, making it perfect for student labs and years of normal class use. It's compatible with student-prepared slides as well as professionally prepared slide sets like the Kingdoms Survey Prepared Slide Set (SE-6214), giving students a solid start to the exploration of cellular features and concepts across all living kingdoms.

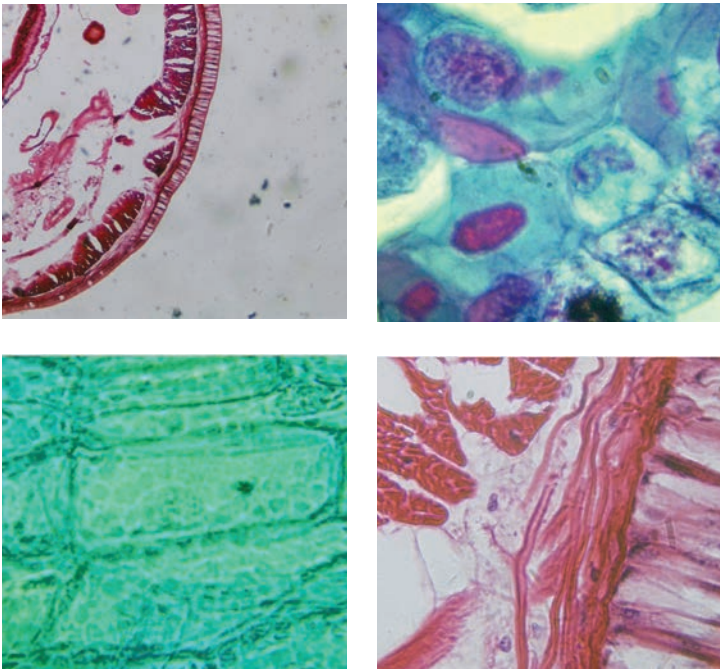
Features:

- Observe small specimens like plant, animal, and bacterial cells, translucent objects such as insect larvae, or fine particles like powder
- 10x eye piece
- 10x eyepiece and 4x, 10x, and 40x (oil) objective lenses provide magnification options of 40x, 100x, and 400x
- Adjustable focus between coarse and fine settings
- Dual light source (upper and lower LED) provides adjustable brightness
- Cord or cordless power options (External AC/DC Adapter or 3 AA Batteries)
- Equipped with a plain stage with clip and single lens condenser with disc diaphragm

Prepared Slide Set, Kingdoms Survey

SE-6214

This set of slides gives students an overview of cell types for biology and life science laboratory investigations. These slides are professionally stained and mounted, providing students an example of properly prepared slides for further slide preparation on their own, while offering an initial study of cellular features that is optimally visible. The set is compatible with the Standard Compound Optical Microscope (SE-6213), but also will work with other units.



Sample imagery above captured with standard eyepiece USB camera. Slides from the Kingdoms Survey Prepared Slide Set (sold separately)



The Standard Compound Optical Microscope, together with the optional USB (eyepiece) camera and Kingdoms Survey Prepared Slide Set, makes a great solution for primary (K-8) science classrooms.

Standard Compound Optical Microscope.....	SE-6213
Prepared Slide Set, Kingdoms Survey	SE-6214
Microscope Camera (USB)	SE-6216

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.

Perform These Experiments:

- Investigate gas production using yeast
- Measure changes in air pressure in a model respiratory system



Wireless Pressure Sensor PS-3203

Wireless CO₂ Sensor

Measure changes in carbon dioxide (CO₂) gas levels quickly and easily with the Wireless CO₂ Sensor. The sensor is temperature-compensated and can operate in high humidity environments, such as the included 250-mL sample bottle.

Demonstrate:

- Measure respiration in compost or other decomposer-rich environments
- Explore carbohydrate consumption rates due to human activity
- Monitor CO₂ levels during photosynthesis and respiration experiments
- Study carbon cycling in a model ecosystem
- Monitor CO₂ levels for indoor air quality



Wireless CO₂ Sensor (Carbon Dioxide) PS-3208

Wireless Barometer

PASCO's Wireless Barometer with Display allows students to monitor atmospheric conditions as atmospheric pressure and temperature are changing. Placed in a small weather shelter or by an open window, this sensor allows students to watch weather systems pass in real time. Great for students making weather journals or comparing weather features to changes in atmospheric conditions.



Wireless Barometer PS-4255

Wireless Hand-Grip Heart Rate Sensor

With these wireless hand grips, conducting physiology labs on the cardiovascular system or homeostasis is easier than ever before. Continuously monitor heart rate during exercise, or use the sensor to take initial and final measurements with fast and reliable heart rate detection.

Features:

- Wireless design enables free movement
- Long-lasting, coin cell battery
- Displays live graphs for student analysis



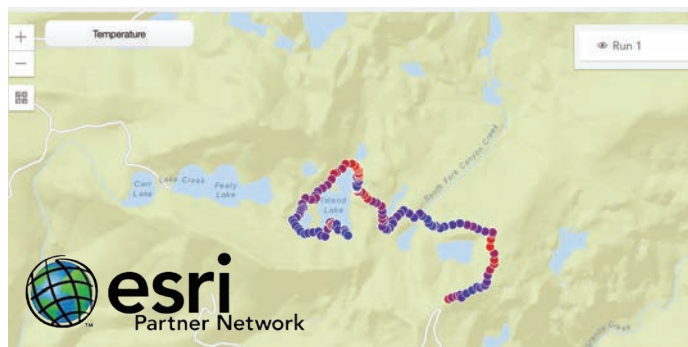
Wireless Hand-Grip Heart Rate Sensor PS-3206

Wireless Weather Sensor with GPS

The Wireless Weather Sensor houses several sensing elements within a single unit to provide 19 different measurements. Use the sensor in logging mode with the Weather Vane Accessory for long-term monitoring, or use it as a handheld instrument to study microclimates and record ambient conditions that are relevant to environmental phenomena.

Features:

- Logging mode for long-term experiments
- Water resistant for extended environmental monitoring
- 19 different measurements that can be collected and analyzed individually or simultaneously



Wireless Weather Sensor with GPS PS-3209

Weather Vane Accessory PS-3553

Wireless Sensors

Wireless pH Sensor

Equally capable in the lab or field, the Wireless pH Sensor eliminates the hassle of cables, reducing spills and improving safety. It can transmit data in real time, or store data for days when continuous monitoring is required. The Wireless pH Sensor enhances countless activities, including introductory pH lessons, investigations into household acids and bases, water quality studies, and much more.

Features:

- Bluetooth® connectivity and a long-lasting coin cell battery
- Logs pH data directly onto the sensor 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 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 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



Wireless Conductivity Sensor with Display PS-4210

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



Wireless Conductivity Sensor with Display PS-4210

Wireless Light and Color Sensor

The Wireless Light and Color Sensor features two separate apertures: One measures ambient light from the side of the box, and the other measures percent color of directional light at the end of the box.

Features:

- Wirelessly connects to computers, Chromebooks, tablets, and smartphones
- On-board memory enables the sensor to function as an independent datalogger
- Variable sampling rate for short, precise experiments or lengthy, multi-day data collection
- Bluetooth® connectivity and long-lasting coin cell battery



Wireless Light and Color Sensor.....PS-3248

Wireless Force Acceleration Sensor

Capable of simultaneously measuring force, acceleration, and rotational velocity, this sensor is ideal for experiments involving rotating platforms, moving carts, spring oscillations, collisions, and impulse. Students can use the finger-holes for handheld applications, or mount it onto a cart or rod.

Features:

- ± 50 N
- 3-axis accelerometer
- 3-axis gyroscope
- Built-in rod clamp
- Onboard datalogging



Wireless Force Acceleration Sensor.....PS-3202

Wireless Motion Sensor

The Wireless Motion Sensor connects via Bluetooth or USB to your device and uses ultrasound to measure the position, velocity, and acceleration of objects. This enables students to take turns measuring their own distance to the sensor, while the class observes their motion materializing as a graph in real time.



Wireless Sound Sensor

The Wireless Sound Sensor contains Sound Level and Sound Wave functions that measure true sound level (intensity) and relative changes in sound pressure level as sound waves incident on the sensor.

Applications:

- Measure sound level and frequency
- Explore sound and human hearing
- Measure the speed of sound in air
- Study sound waves



Wireless Sound SensorPS-3227

Smart Cart Patent Number 10,481,173

Smart Carts are ideal for studying mechanics topics, such as kinematics and dynamics. The built-in load cells enable two Smart Carts to visually demonstrate Newton's Third Law with ease. Built-in sensors for force and acceleration enable students to investigate Newton's Second Law in minutes. Smart Carts truly are a physics lab on wheels, and now you can own the most advanced physics cart ever created, all without the restrictions of cables.

Features:

- Records and displays live motion data
- Rechargeable battery
- Collects data on or off a track



Smart Cart (Red)ME-1240

Smart Cart (Blue)ME-1241



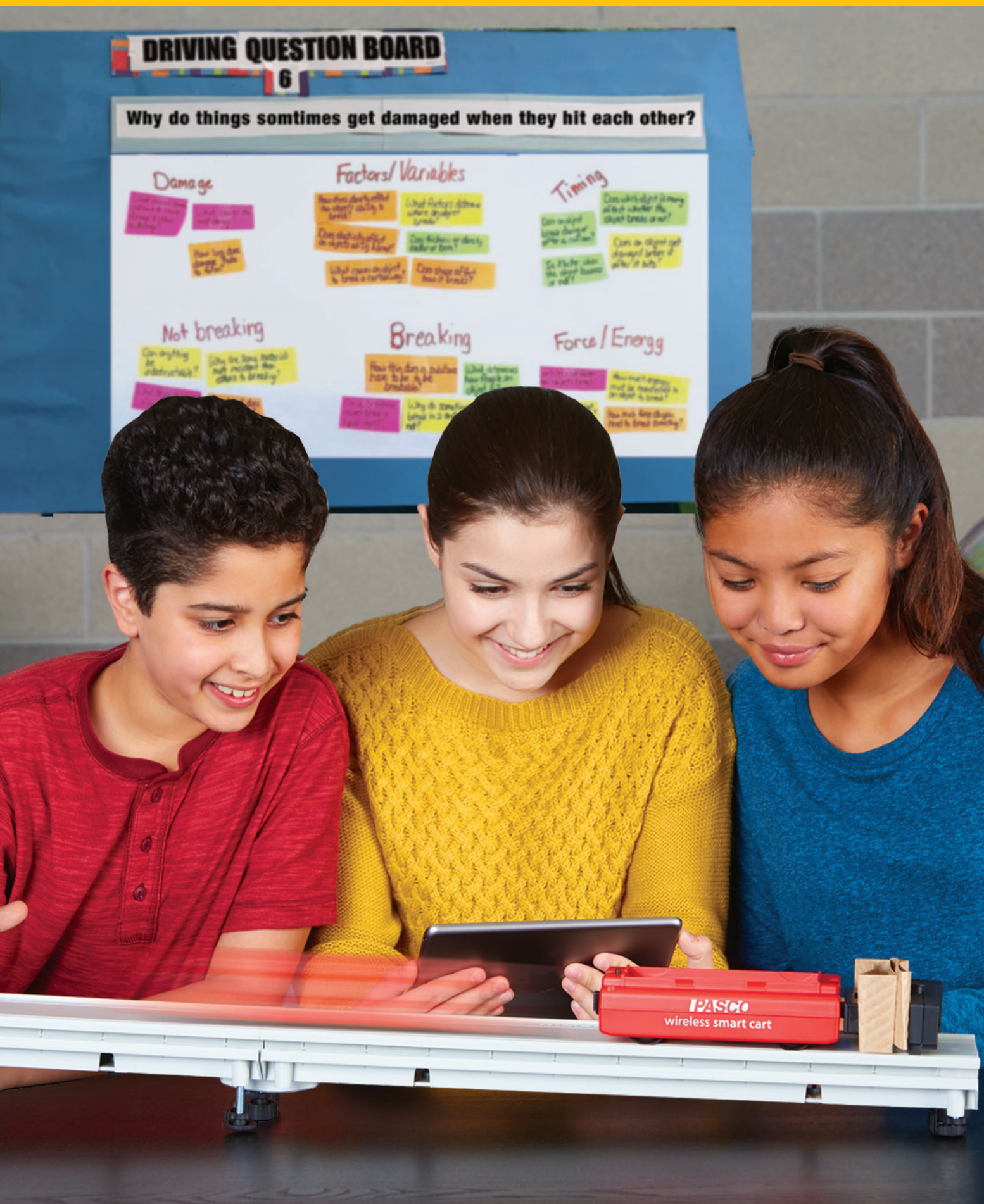
FREE MatchGraph! Software

Download Mac®, Windows® and Android™ versions at pasco.com. iOS version available on Apple App Store.

Applications:

- Pair with free MatchGraph software to teach motion-graphing
- Explore speed and velocity
- Clips directly to PASCO Dynamics Tracks

Wireless Motion SensorPS-3219





PASCO is proud to be partnering with OpenSciEd to bring NGSS-aligned science lessons into K-12 classrooms.

OpenSciEd curriculum extends beyond traditional lessons to foster investigative and collaborative student learning. PASCO provides instructional materials, technology-enhanced equipment kits, digital resources, print options, and professional learning for your OpenSciEd solution.



Elementary School Science - Grades K-5

NEW

The PASCO Certified Version of OpenSciEd Elementary School sparks curiosity about science for early learners. This K-5 program strives to provide a welcoming classroom culture and equitable support for all science students, including students from communities underrepresented in STEM classes, college majors, and careers. With seamless integration with ELA and mathematics, OpenSciEd Elementary School offers hands-on science opportunities that are engaging and meaningful for each developmental stage.



Middle School Science - Grades 6-8

EdReports has designated the OpenSciEd Middle School program with an all-green rating for meeting NGSS alignment and usability expectations. The PASCO version of OpenSciEd curriculum amplifies student engagement by integrating high tech sensors, equipment, and data analysis software into OpenSciEd's science investigations.

High-quality PASCO Equipment Kits

These high-quality kits infuse technology into OpenSciEd's trusted curriculum, simplifying experiment setup and data collection. Sensor-based investigations allow students to practice hands-on learning with equipment that mirrors what scientists use in their field.

- Hands-on & user-friendly devices
- Intuitive data-collection sensors and software
- Reliable devices with a 5-year warranty
- Professional development and support available for educators



Example of PASCO Equipment Kit includes Wireless Smart Carts, Smart Fan Accessory, PASTrack, Dynamics Track End Stops, Elastic Bumpers, Bumper Accessory Set and Cart Mass Set,

NEW! Wireless OLED Sensors

Convenient built-in digital displays



barometer



pH



conductivity



ethanol



temperature

For more information about PASCO's wireless sensor line, including these new OLED sensors, see pasco.com/product/sensors/wireless