Vernier®

SCIENCE EDUCATION



International University Catalog

2025

Welcome!

Dear Educators and Partners,

What a warm welcome I have received this year! I'm so thrilled to join the mission that Dave and Christine created at Vernier and to work alongside educators who are at the heart of everything we do. My decision to join Vernier as CEO was deeply personal—shaped by my father's career as a teacher and administrator—and grounded in a shared commitment to advancing science education through hands-on learning and tools that make STEM accessible and engaging for all students.

At Vernier, we know that STEM education is transformative. Our solutions are not just designed for data collection but to empower students to become active participants in their learning. When students can observe real-world phenomena, ask questions, conduct investigations, and analyze data, they move beyond what's possible from only reading or watching to gain a deeper understanding of science. This experiential approach helps students build critical thinking skills and fosters a resilient mindset that will serve them in any path they choose, from continuing in higher education to entering the workforce.

Vernier data-collection tools transform a classroom from a place where science is talked about to a place where it is actively experienced. Through real-time data collection and analysis, students begin to form critical connections and see firsthand how science shapes the world around them. This is where the inspiration happens—where science becomes personal, exciting, and meaningful. Our goal is for students to see themselves as real scientists and problem solvers, gaining confidence to navigate our rapidly changing world with knowledge, curiosity, and skill.

For me, the chance to support educators and create these moments of inspiration for students is a privilege and a passion. I am excited to continue the Vernier legacy of excellence and to work alongside all of you as we inspire the next generation of thinkers, explorers, and problem solvers. Together, let's make science accessible, engaging, and empowering for every student.

Warm regards,



Jill Hedrick
CEO

Why Vernier?
Endless Possibilities.

Our durable hardware and quality software are designed and priced for hands-on student use whether learning remotely or in the laboratory. We have ready-to-go experiments and resources in a wide variety of subjects.

BIOLOGY • CHEMISTRY • PHYSICS • ENGINEERING
AGRICULTURAL SCIENCE • ENVIRONMENTAL SCIENCE • PHYSIOLOGY

Our sensors and data-collection technology are so versatile that you can use them in nearly any science or engineering course.

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What's New

Accessories for an Eco-Friendly Lab

Three new products are now a part of the Vernier college chemistry lineup, offering reliable, easy-to-use solutions that enhance the lab experience for students and educators. These accessories can be used alongside Vernier Go Direct® sensors to provide impactful learning experiences that are both efficient and environmentally conscious.

Learn more on page 16.



ELECTROCHEMISTRY HALF-CELL PLATE
ECHEM-PLT
vernier.com/echem-plt



ELECTROCHEMISTRY METALS KIT
ECHEM-MTLS
vernier.com/echem-mtls



PRECISION VOLUME DISPENSER
DC-DISP
vernier.com/dc-disp

Now Shipping

Go Direct Salinity

Go Direct® Salinity precisely measures the total dissolved salt content of ocean or brackish water.

GDX-SAL
vernier.com/gdx-sal



Go Direct Soil Moisture

This sensor uses capacitance to measure the volumetric water content of soil.

GDX-SM
vernier.com/gdx-sm



Watch the video!

Go Direct Force Plate

Measure the forces developed during stepping, jumping, and other human-scale actions. Observe change in apparent weight as you ride an elevator or measure reaction forces as you lean against a wall.

GDX-FP
vernier.com/gdx-fp



Watch the video!

Cart Fan

Add this modular fan to the Dynamics Cart and Track System and Go Direct Sensor Cart to provide a constant force for kinematics and dynamics experiments.

DTS-CFAN
vernier.com/dts-cfan



Watch the video!

> Students don't learn effectively by just sitting and listening—they need to be consistently engaged in what they are learning about. As educators, we are always looking for ways to optimize the learning experience for our students, especially in today's increasingly remote environment.
>
> ***David Craig***
> ***Oregon State University***

Join these institutions, and hundreds of others, already using Vernier technology:

Arizona State University
Baltimore City Community College
Benedictine University
California State University—Fullerton
Cameron University
Canisius College
Charles University
Colorado School of Mines
Cornell University
Cuyahoga Community College
Delft University of Technology
Dickinson College
ETH Zurich
Georgia Tech
Harvard University
Haskell Indian Nations University
Immaculata University
Lehigh University
Lund University
Massachusetts Institute of Technology
McGill University
Miami University
Michigan Technological University
Mississippi State University
National University of Colombia
National University of Singapore
Oregon State University
Princeton University
Queensborough Community College
Quinnipiac University
San José State University
Stanford University
Stephen F. Austin State University
Sungkyunkwan University
TEC Monterrey
Texas A&M
The Ohio State University
University of Arizona
University of British Columbia
University of California—Los Angeles
University of Cambridge
University of Chicago
University of Hong Kong
University of Kansas
University of Minnesota—Minneapolis
University of Nebraska—Lincoln
University of Pennsylvania
University of Puerto Rico
University of Sydney
University of Tennessee—Chattanooga
University of Toronto
University of Washington—Seattle
University of Wisconsin—Madison
Vincennes University
Virginia Commonwealth University
Wake Technical Community College
West Virginia Wesleyan College
Yale University

Partnerships

LabArchives

We have partnered with LabArchives™ to bring high-quality biology content to instructors through the Lab Builder library. Because all content is structured and standardized, instructors can arrange, customize, and add content to their courses with ease. **Learn more at vernier.com/lab-archives**

ADInstruments

We have partnered with ADInstruments to provide state-of-the-art, customizable biology content using ADInstruments' platform, Lt. This platform supports real-time data collection and analysis with many Vernier sensors and includes instructional videos, quizzes, and classroom management tools. **Learn more at vernier.com/adinstruments**

Biology

Why Vernier?

Vernier biology solutions help students form a deep understanding of key scientific concepts. Whether you are introducing your students to enzymes or exploring primary productivity, our probeware and ready-to-go experiments are the right fit for your laboratory.

Quality

Durable hardware for lab and field use

Affordable

Designed for education and education budgets

Versatile

Supports a variety of devices and experiments



> Your great products and superb support of them have been a major part of my labs and are very much appreciated.

David Willey
University of Pittsburgh

vernier.com/biology

A Guide to Vernier Data Collection

We're here to support you as an educator as you incorporate data-collection technology into your instruction. See how our products provide you with affordable laboratory solutions designed for student success.

Our Guarantee: Most of our products are protected by a 5-year limited warranty. And after 5 years? We'll make every attempt to repair your equipment.

What You Need to Get Started with Go Direct Sensors

Go Direct Sensor

These versatile sensors connect to your device via Bluetooth® wireless technology or USB.

Device

Go Direct® sensors connect to a wide variety of commonly used devices, including Chromebooks, computers, tablets, smartphones, and LabQuest® 3.

Software

Vernier Graphical Analysis® Pro
Vernier Spectral Analysis®
Vernier Instrumental Analysis®

Lab Book

Our popular, award-winning lab books provide hundreds of well-tested, customizable experiments. Our lab books come with a generous site license—purchase once and share files across your department.

What You Need to Get Started with LabQuest 3

Sensor

Go Direct Sensor
These versatile sensors connect to LabQuest 3 via Bluetooth wireless technology or USB.
Go Direct spectrometers connect only via USB.

LabQuest Sensor
LabQuest sensors connect directly to LabQuest 3 sensor ports (BTA/BTD).

LabQuest 3

LabQuest 3 serves as a standalone data-collection platform that works with all Vernier sensors.

Software

LabQuest App

Lab Book

Our popular, award-winning lab books provide hundreds of well-tested, customizable experiments. Our lab books come with a generous site license—purchase once and share files across your department.

Software

Vernier Graphical Analysis Pro

Our award-winning app enables advanced data analysis, provides opportunities to reinforce and extend learning, and includes features that support hybrid teaching models. We're always working to add and improve features—check out the "What's New" tab in the app.

1-Year Site License (unlimited seats) GAP-1YR

3-Year Site License (unlimited seats) GAP-3YR

Free Trial for Educators

Try out Graphical Analysis Pro for free for 30 days. Access the sample experiments and enhanced analysis tools to use with your students. Get a free trial and learn about site license options at vernier.com/graphical-analysis



Vernier Spectral Analysis

Spectral Analysis supports our family of spectrometers on computers, Chromebooks, and compatible mobile devices. Use it to generate full spectra, create standard curves, and conduct kinetics experiments.

vernier.com/spectral-analysis

Vernier Instrumental Analysis

Vernier Instrumental Analysis is used for more advanced instrumentation such as Go Direct Mini GC,™ Go Direct Polarimeter, and Go Direct Cyclic Voltammetry System.

vernier.com/instrumental-analysis

Get everything you need with our new 4-in-1 software bundle!
3-Year Site License DCA-3YR | Learn more at **vernier.com/dca-3yr**

LabQuest 3



LabQuest 3 is a powerful, advanced, easy-to-navigate, and versatile data-logging solution for STEM students.

LabQuest 3 is a standalone data-collection platform that students can use to collect, analyze, and interact with data efficiently. With its touch-screen abilities, students can navigate the platform with ease, and because of its wireless capabilities, students can collect data anywhere.

LABQ3

vernier.com/labq3

LabQuest App

LabQuest 3 has built-in software that gives your students real-time graphing capabilities in a handheld device. It's powerful, yet beautifully simple.

General Biology

Go Direct CO_2 Gas

This sensor measures gaseous carbon dioxide concentration levels, air temperature, and relative humidity. With built-in temperature compensation and humidity protection, this sensor is ideal for measuring fermentation, respiration, and photosynthesis rates.

GDX-CO2

vernier.com/gdx-co2



Go Direct SpectroVis Plus

Use Go Direct SpectroVis® Plus to collect a full-wavelength spectrum (absorbance, percent transmittance, fluorescence, or intensity), study absorbance *vs.* concentration (create standard curves), or monitor enzyme activity (enzyme kinetics).

GDX-SVISPL

vernier.com/gdx-svispl



Vernier Spectral Analysis
FREE DOWNLOAD
Learn more on page 7.

Go Direct Tris-Compatible Flat pH

Use this sensor to measure the pH of solutions. It features a sealed, gel-filled, double-junction electrode, making it compatible with Tris buffers and solutions containing proteins or sulfides.

GDX-FPH

vernier.com/gdx-fph



Go Direct Optical Dissolved Oxygen

Use this sensor to measure dissolved oxygen, water temperature, and atmospheric pressure. It's ideal for experiments in biology, ecology, and environmental science.

GDX-ODO

vernier.com/gdx-odo



Biology with Vernier

This book includes 31 experiments for fundamental concepts in biology. The instructor information section included for each experiment contains reagent preparation information, sample data, and tips for successful completion.

Topics

- Cell respiration
- Membrane diffusion
- Osmosis
- Photosynthesis and transpiration
- Human physiology

vernier.com/bwv



Printed book + download
BWV

Download only
BWV-E

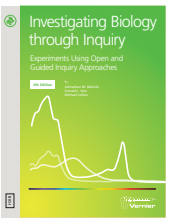
Investigating Biology through Inquiry

This book includes 22 investigations for many fundamental concepts in biology. Each investigation includes a preliminary activity, instructor information, sample researchable questions, and sample data.

Topics

- Cell and molecular biology
- Organismal biology
- Ecology
- Evolution

vernier.com/bio-i



Printed book + download
BIO-I

Download only
BIO-I-E

Biology Go Direct Standard Package

This package includes 11 sensors that work with Vernier Graphical Analysis Pro and LabQuest 3.

- Go Direct Temperature Probe
- Go Wireless® Heart Rate
- Go Direct Gas Pressure Sensor
- Go Direct CO_2 Gas Sensor
- Go Direct O_2 Gas Sensor
- Go Direct Conductivity Probe
- Go Direct pH Sensor
- Go Direct Colorimeter
- Go Direct Optical Dissolved Oxygen Probe
- Go Direct EKG Sensor
- BioChamber 250
- BioChamber 2000
- Go Direct Respiration Belt

GDP-BIO-ODX



Learn more at vernier.com/gdp-bio-odx

Human Physiology

Go Direct EKG

Use Go Direct® EKG to record electrical activity of the heart or skeletal muscles.

GDX-EKG **vernier.com/gdx-ekg**



Go Direct Hand Dynamometer

Measure grip and pinch strength, and perform muscle fatigue studies.

GDX-HD **vernier.com/gdx-hd**



Go Direct Respiration Belt

Use this sensor to measure human respiration rate and study breathing patterns.

GDX-RB

vernier.com/gdx-rb



Go Direct Spirometer

This multi-channel sensor can be used to measure tidal volume, vital capacity, flow rate, air pressure, and respiration rate.

GDX-SPR

vernier.com/gdx-spr



Go Direct O_2 Gas

Use this sensor to measure gaseous oxygen concentration levels and air temperature.

GDX-O2

vernier.com/gdx-o2



Go Direct Blood Pressure

This affordable, non-invasive sensor is designed to easily measure human blood pressure.

GDX-BP **vernier.com/gdx-bp**

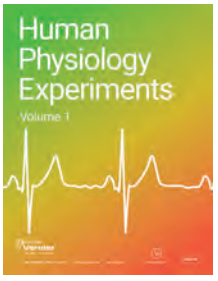


Human Physiology Experiments: Volume 1

This book contains 14 experiments that encourage students to investigate the physiology of the cardiac, muscular, respiratory, vascular, and nervous systems using Go Direct sensors.

vernier.com/hsb-hp

This lab book provides instructions for data collection with Vernier Graphical Analysis® only.



Printed book + download
HSB-HP

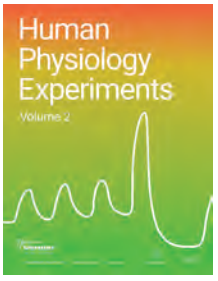
Download only
HSB-HP-E

Human Physiology Experiments: Volume 2

An expansion of our *Human Physiology Experiments: Volume 1* lab book, the setup for these experiments is minimal—students are collecting data within minutes.

vernier.com/alb-hp2

This lab book provides instructions for data collection with Vernier Graphical Analysis only.



Printed book + download
ALB-HP2

Download only
ALB-HP2-E

Human Physiology Go Direct Standard Package

This package includes 9 sensors that work with Vernier Graphical Analysis Pro and LabQuest® 3. Two useful accessories are also included.

SENSORS

- Go Direct EKG
- Go Direct Force and Acceleration
- Go Direct Surface Temperature
- Go Direct Hand Dynamometer
- Go Direct Respiration Belt
- Go Direct O_2 Gas
- Go Direct Blood Pressure
- Go Direct Spirometer
- Go Wireless® Heart Rate

ACCESSORIES

- Reflex Hammer Accessory Kit
- BioChamber 250

GDP-HP-DX

Starter package also available

Learn more at vernier.com/gdp-hp-dx



Biotechnology

Spectrometers

Go Direct SpectroVis Plus

Use Go Direct SpectroVis® Plus to collect a full-wavelength spectrum (absorbance, percent transmittance, fluorescence, or intensity*), study absorbance *vs.* concentration (create standard curves), or monitor enzymatic activity (enzyme kinetics).

GDX-SVISPL

vernier.com/gdx-svispl



** Fiber optic cable purchased separately*

Go Direct UV-VIS Spectrophotometer

The Go Direct UV-VIS Spectrophotometer connects to your device via Bluetooth® wireless technology or USB to generate full spectra, Beer's law data, and kinetic traces of ultraviolet and visible-absorbing samples such as aspirin, DNA, proteins, and NADH.

GDX-SPEC-UV

vernier.com/gdx-spec-uv



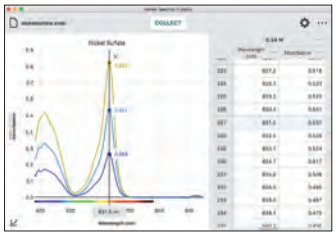
Go Direct Fluorescence/UV-VIS Spectrophotometer

This spectrophotometer measures the fluorescence and absorbance spectra of samples such as quinine sulfate, fluorescein, chlorophyll, and fluorescent proteins, all while connecting to your device via Bluetooth wireless technology or USB.

GDX-SPEC-FUV

vernier.com/gdx-spec-fuv





Vernier Spectral Analysis

Our free Vernier Spectral Analysis® app makes it easy to incorporate spectroscopy into your general biology and biotechnology experiments. Using the app, students can collect a full spectrum and explore topics such as plant pigments, enzyme kinetics, and Beer's law (standard curves).

FREE DOWNLOAD **vernier.com/spectral-analysis**

Go Direct Tris-Compatible Flat pH

This pH sensor features a sealed, gel-filled, double-junction electrode, making it compatible with Tris buffers and solutions containing proteins or sulfides.

GDX-FPH

vernier.com/gdx-fph



BlueView Transilluminator

BlueView™ Transilluminator uses super-bright blue LEDs to illuminate electrophoresis gels stained with fluorescent dyes (e.g., SYBR® Safe). This combination is a safer alternative to ethidium bromide and a UV transilluminator.

BLUE-VIEW

vernier.com/blue-view



Go Direct Temperature

This rugged probe measures the temperature of a variety of substances including air, soil, and water.

Range: –40 to 125°C

GDX-TMP

vernier.com/gdx-tmp



Go Direct Conductivity

Use this sensor to measure total dissolved solids (TDS) in aquatic samples or the salinity of soil samples.

GDX-CON

vernier.com/gdx-con



Vernier and Bio-Rad

Bio-Rad® combines high-quality supplies, equipment, and curricula with outstanding customer service and technical support—things we believe are important to teachers. Vernier and Bio-Rad enhance classroom experiences with joint experiments and curricula for biotechnology.

Download free sample experiments at vernier.com/bio-rad-kits

Environmental Science

Go Direct Optical Dissolved Oxygen

Use this sensor to measure dissolved oxygen, water temperature, and atmospheric pressure. It is ideal for experiments in environmental science.

GDX-ODO

vernier.com/gdx-odo



Go Direct Conductivity

Use this sensor to measure total dissolved solids (TDS) in aquatic samples or the salinity of soil samples.

GDX-CON

vernier.com/gdx-con



Go Direct Nitrate Ion-Selective Electrode

Use this sensor to measure nitrate concentration in water samples from water sources throughout your watershed.

GDX-NO3

vernier.com/gdx-no3



Go Direct Tris-Compatible Flat pH

The flat glass shape of this pH sensor is more durable and easier to clean than the traditional pH bulb shape, making it the best choice for environmental science.

GDX-FPH

vernier.com/gdx-fph



Go Direct Salinity

Easily and precisely measure the total dissolved salt content in an aqueous solution. Measure water with a wide variety of salinities, from brackish water to ocean water, and even hyper-saline environments.

GDX-SAL

vernier.com/gdx-sal



Go Direct Soil Moisture

This sensor uses capacitance to measure the volumetric water content of soil.

GDX-SM

vernier.com/gdx-sm



Go Direct Weather System

Easily monitor a wide variety of environmental factors with just one sensor. Go Direct® Weather System includes an affordable, wireless handheld sensor that measures ambient temperature, humidity, wind speed, wind chill, dew point, barometric pressure, and more.

GDX-WTVA

vernier.com/gdx-wtva



Go Direct PAR

Go Direct PAR (Photosynthetically Active Radiation) measures photosynthetic light levels in both air and water.

GDX-PAR

vernier.com/gdx-par



Environmental Science LabQuest 3 Package

This package includes LabQuest® 3 with 10 sensors that work with Vernier Graphical Analysis® Pro and LabQuest 3.

- LabQuest 3
- Stainless Steel Temperature Probe
- Go Direct Tris-Compatible Flat pH
- Go Direct Conductivity Probe
- Go Direct Optical Dissolved Oxygen Probe
- Go Direct Soil Moisture Sensor
- Turbidity Sensor
- Go Direct Weather System
- Go Direct Light and Color Sensor
- Go Direct CO_2 Gas Sensor
- Go Direct Energy Sensor

LQ3-EV-DX

vernier.com/lq3-ev-dx





Go Direct Sensor Clamp

Prevent accidental drops during field investigations with the Go Direct Sensor Clamp.

GDX-CLAMP

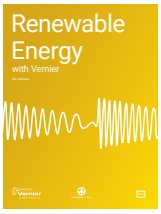
vernier.com/gdx-clamp



Renewable Energy with Vernier

The *Renewable Energy with Vernier* lab book features 26 experiments in wind and solar energy. The book contains a combination of explorations, classic experiments, inquiry investigations, engineering projects, and more.

vernier.com/rev



Printed book + download
REV

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REV-E

Investigating Environmental Science through Inquiry

This book contains 34 inquiry-based environmental science investigations.* Topics include Earth systems and resources, the living world, global change and population, energy resources and consumption, and pollution.

vernier.com/esi



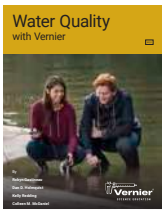
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ESI

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ESI-E

Water Quality with Vernier

With the 18 water quality tests in *Water Quality with Vernier*,* students investigate the water quality of a body of water by testing pH, total dissolved solids, dissolved oxygen, BOD, and more.

vernier.com/wqv



Printed book + download
WQV

Download only
WQV-E

** Instructions for Vernier Graphical Analysis app and Go Direct sensors are not yet available.*

Biology Products

Go Direct Sensors

Product	Order Code
Go Direct® Blood Pressure	GDX-BP
Go Direct CO_2 Gas	GDX-CO2
Go Direct Colorimeter	GDX-COL
Go Direct Conductivity	GDX-CON
Go Direct EKG	GDX-EKG
Go Direct Ethanol Vapor	GDX-ETOH
Go Direct Energy	GDX-NRG
Go Direct Force and Acceleration	GDX-FOR
Go Direct Gas Pressure	GDX-GP
Go Direct Hand Dynamometer	GDX-HD
Heart Rate Monitors	
Go Wireless Exercise Heart Rate	GW-EHR
Go Wireless® Heart Rate	GW-HR
Ion-Selective Electrodes	
Go Direct Ammonium Ion-Selective Electrode	GDX-NH4
Go Direct Nitrate Ion-Selective Electrode	GDX-NO3
Go Direct Light and Color	GDX-LC
Go Direct O_2 Gas	GDX-O2
Go Direct Optical Dissolved Oxygen	GDX-ODO
Go Direct PAR	GDX-PAR
pH Sensors	
Go Direct pH	GDX-PH
Go Direct Tris-Compatible Flat pH	GDX-FPH
Go Direct Pyranometer	GDX-PYR
Go Direct Respiration Belt	GDX-RB
Go Direct Salinity	GDX-SAL
Go Direct Soil Moisture	GDX-SM
Spectrophotometers	
Go Direct SpectroVis® Plus	GDX-SVISPL
Go Direct Fluorescence/ UV-VIS Spectrophotometer	GDX-SPEC-FUV
Go Direct UV-VIS Spectrophotometer	GDX-SPEC-UV
Go Direct Spirometer	GDX-SPR
Temperature Probes	
Go Direct Surface Temperature	GDX-ST
Go Direct Temperature	GDX-TMP
Go Direct Wide-Range Temperature	GDX-WRT
Go Direct Weather	GDX-WTHR
Go Direct Weather System	GDX-WTVA

LabQuest Sensors

Product	Order Code
PAR Sensor	PAR-BTA
Relative Humidity Sensor	RH-BTA
Salinity Sensor	SAL-BTA
Soil Moisture Sensor	SMS-BTA
Turbidity Sensor	TRB-BTA

Accessories and Lab Equipment

Product	Order Code
BioChamber 250	BC-250
BioChamber 2000	BC-2000
BlueView Transilluminator	BLUE-VIEW
Disposable Bacteria Filters (pkg. of 10)	SPR-FIL10
Disposable Mouthpieces (pkg. of 30)	SPR-MP30
EKG Electrodes (pkg. of 100)	ELEC
Go Direct Charge Station	GDX-CRG
Go Direct Sensor Clamp	GDX-CLAMP
Nose Clip (pkg. of 10)	SPR-NOSE10
OHAUS® Balances	vernier.com/ohaus
Primary Productivity Kit	PPK
Reflex Hammer Accessory Kit	RFX-ACC
Stir Station	STIR
Water Depth Sampler	WDS
Water Quality Bottles	WQ-BOT

Lab Books*

Product	Order Code
Biology with Vernier	BWV
Investigating Biology through Inquiry	BIO-I
Advanced Biology with Vernier (LabQuest® sensors only)	BIO-A
Human Physiology Experiments: Volume 1	HSB-HP
Human Physiology Experiments: Volume 2	ALB-HP2
Investigating Environmental Science through Inquiry (LabQuest sensors only)	ESI
Renewable Energy with Vernier	REV
Water Quality with Vernier (LabQuest sensors only)	WQV

** Includes printed book and download; also available as a download only*

See all our products for biology at vernier.com/biology

Chemistry

Why Vernier?

When you teach with Vernier, you're teaching with a complete chemistry solution. From titrations to spectroscopy, our sensors and instrumentation are backed by powerful analytical software, college-level experiments, and unparalleled support.

Quality

Durable hardware for lab and field use

Affordable

Designed for education and education budgets

Versatile

Supports a variety of devices and experiments



> The use of these technologies helps to build students' proficiency using instrumentation while providing them with hands-on experience that will better prepare them for careers in the chemistry field.

Seth Barrett, PhD
Muskingham University

vernier.com/college-chemistry

A Guide to Vernier Data Collection

We're here to support you as an educator as you incorporate data-collection technology into your instruction. See how our products provide you with affordable laboratory solutions designed for student success.

Our Guarantee: Most of our products are protected by a 5-year limited warranty. And after 5 years? We'll make every attempt to repair your equipment.

What You Need to Get Started with Go Direct Sensors

Go Direct Sensor

These versatile sensors connect to your device via Bluetooth® wireless technology or USB.

Device

Go Direct® sensors connect to a wide variety of commonly used devices, including Chromebooks, computers, tablets, smartphones, and LabQuest® 3.

Software

Vernier Graphical Analysis® Pro
Vernier Spectral Analysis®
Vernier Instrumental Analysis®

Lab Book

Our popular, award-winning lab books provide hundreds of well-tested, customizable experiments. Our lab books come with a generous site license—purchase once and share files across your department.

What You Need to Get Started with LabQuest 3

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Go Direct spectrometers connect only via USB.

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LabQuest 3

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Software

LabQuest App (Included)

Lab Book

Our popular, award-winning lab books provide hundreds of well-tested, customizable experiments. Our lab books come with a generous site license—purchase once and share files across your department.

Software

Vernier Graphical Analysis Pro

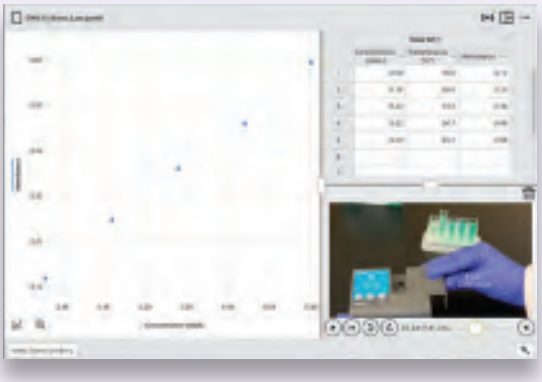
Our award-winning app enables advanced data analysis, provides opportunities to reinforce and extend learning, and includes features that support hybrid teaching models. We're always working to add and improve features—check out the "What's New" tab in the app.

1-Year Site License (unlimited seats) GAP-1YR

3-Year Site License (unlimited seats) GAP-3YR

Free Trial for Educators

Try out Graphical Analysis Pro for free for 30 days. Access the sample experiments and enhanced analysis tools to use with your students. Get a free trial and learn about site license options at vernier.com/graphical-analysis



Vernier Instrumental Analysis

Vernier Instrumental Analysis is used for more advanced instrumentation such as Go Direct Mini GC,™ Go Direct Polarimeter, and Go Direct Cyclic Voltammetry System.

vernier.com/instrumental-analysis

Vernier Spectral Analysis

Vernier Spectral Analysis supports our family of spectrometers. Use it to generate full spectra, conduct Beer's law investigations, and investigate kinetics.

vernier.com/spectral-analysis

Get everything you need with our new 4-in-1 software bundle!
3-Year Site License DCA-3YR | Learn more at **vernier.com/dca-3yr**

LabQuest 3



LabQuest 3 is a powerful, advanced, easy-to-navigate, and versatile data-logging solution for STEM students.

LabQuest 3 is a standalone data-collection platform that students can use to collect, analyze, and interact with data efficiently. With its touch-screen abilities, students can navigate the platform with ease, and because of its wireless capabilities, students can collect data anywhere.

LABQ3 vernier.com/labq3

LabQuest App

LabQuest 3 has built-in software that gives your students real-time graphing capabilities in a handheld device. It's powerful, yet beautifully simple.

General Chemistry

vernier.com/general-chemistry

Go Direct Temperature

Use this rugged temperature probe for investigating endothermic and exothermic reactions, determining the physical properties of water, and investigating intermolecular forces.

Range: –40 to 125°C

GDX-TMP

vernier.com/gdx-tmp



Go Direct pH

Go Direct pH is an important and versatile sensor for your laboratory. Conduct acid-base titrations, monitor pH changes during chemical reactions, and investigate buffers. The wireless connection makes it easier to do field-based studies such as testing the pH of surface water.

GDX-PH

vernier.com/gdx-ph



Go Direct Gas Pressure

Explore gas laws and the Clausius-Clapeyron equation with this sensor that measures the absolute pressure of a gas.

Range: 0 to 400 kPa

GDX-GP

vernier.com/gdx-gp



Go Direct SpectroVis® Plus

With a range of 380 to 950 nm, students can use this spectrophotometer to easily collect a full-wavelength spectrum, study absorbance *vs.* concentration, or monitor rates of reaction. Collect and analyze data using Vernier Spectral Analysis or LabQuest App.

GDX-SVISPL

vernier.com/gdx-svispl



Go Direct Drop Counter

As an alternative to using a buret, the drop counter precisely records the number of drops of titrant added during a titration and then automatically converts it to volume.

GDX-DC

vernier.com/gdx-dc



Stir Station

This combination stir plate/ring stand can be used with AC power (included) or four C batteries (not included).

STIR

vernier.com/stir



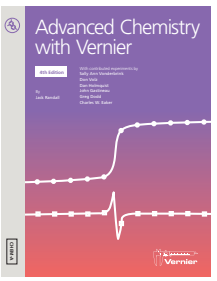
Advanced Chemistry with Vernier

This book contains 35 ready-to-use student experiments that support general chemistry. Instructor notes with sample data are also included.

Topics

- Gas laws
- Titrations
- Spectroscopy
- Electrochemistry

vernier.com/chem-a



Printed book + download
CHEM-A

Download only
CHEM-A-E

Biochemistry

vernier.com/biochemistry

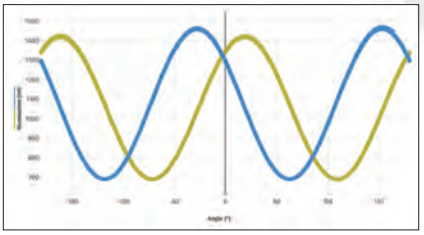
Go Direct Polarimeter



The concept of chirality can be difficult for students to visualize. Go Direct® Polarimeter provides a visual representation of this concept by measuring the optical rotation of optical isomers such as sugars, amino acids, and proteins.

GDX-POL

Free experiment downloads available at vernier.com/gdx-pol



Comparing the optical rotations of fructose and sucrose

Free Software

Vernier Instrumental Analysis

See page 15.

Go Direct Fluorescence/ UV-VIS Spectrophotometer

This spectrophotometer measures the fluorescence and absorbance spectra of samples such as quinine sulfate, fluorescein, chlorophyll, and fluorescent proteins, all while connecting to your device via Bluetooth® wireless technology or USB.

GDX-SPEC-FUV

Free experiment downloads available at vernier.com/gdx-spec-fuv

Wavelength Range

- 220 to 850 nm

Light Sources

- Visible: LED-boosted tungsten
- UV: Deuterium
- Fluorescence: Exchangeable LEDs for excitation at 375 nm, 450 nm, and 525 nm (additional wavelengths sold separately)



Go Direct Tris-Compatible Flat pH

Go Direct Tris-Compatible Flat pH is a double-junction electrode for measuring pH in Tris buffers and solutions containing proteins or sulfides. The flat glass shape makes it easy to clean and useful for measuring the pH of semisolids such as soil slurries and certain foods.

GDX-FPH

vernier.com/gdx-fph

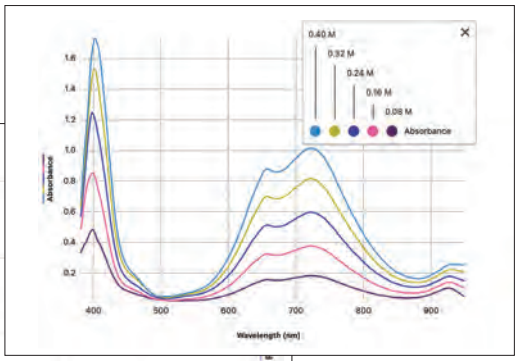


Vernier Spectral Analysis

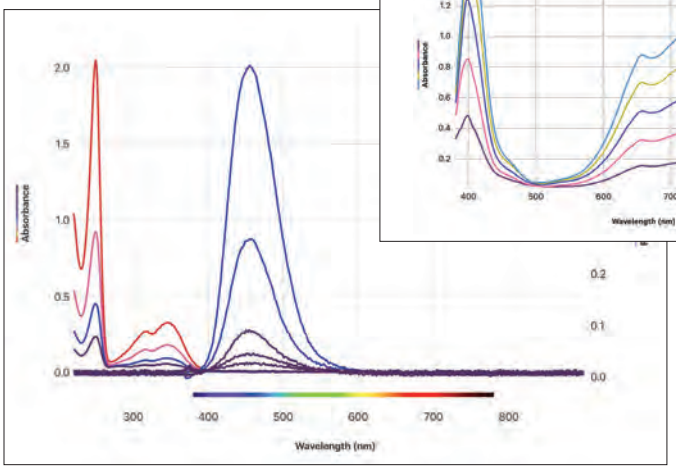
Our free Vernier Spectral Analysis® app makes it easy to incorporate spectroscopy into your chemistry experiments. Using the app, students can collect a full spectrum and explore topics such as Beer's law, kinetics, and fluorescence.

The user-friendly software includes analysis features such as curve fitting and data interpolation.

vernier.com/spectral-analysis



Nickel sulfate absorbance spectra at varying concentrations



Quinine sulfate spectra at varying concentrations; absorbance (left) and fluorescence with excitation at 375 nm (right)

Go Direct Melt Station



Go Direct Melt Station accurately measures melting temperatures of a solid (up to 260°C), and real-time graphing provides a unique perspective of the melting process.

GDX-MLT

vernier.com/gdx-mlt

Go Direct Wide-Range Temperature

Go Direct Wide-Range Temperature is designed to be used as you would use a thermometer for experiments such as the recrystallization of benzoic acid, simple and fractional distillations, determination of boiling points, the synthesis and analysis of aspirin and other organic compounds, and more.

Range: –20 to 330°C



GDX-WRT

vernier.com/gdx-wrt

Go Direct Mini GC

With the easy-to-use Go Direct Mini GC™ and the free Vernier Instrumental Analysis® app, students can separate, analyze, and identify substances contained in a volatile liquid or gaseous sample. This portable gas chromatograph detects polar and nonpolar compounds allowing for a wide range of experiments. Sample experiments include fractional distillation and Fischer esterification.

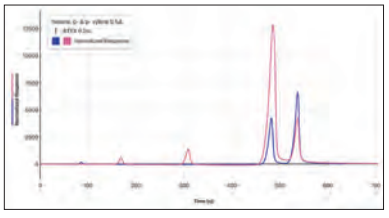


GDX-GC

vernier.com/gdx-gc

Vernier Instrumental Analysis

With our free Vernier Instrumental Analysis app, students can collect and analyze data from our Go Direct Mini GC, Go Direct Polarimeter, and Go Direct Cyclic Voltammetry System (page 16) using computers, Chromebooks, or compatible mobile devices.



Comparing chromatograms of a BTEX mixture with hexane and xylene isomers

vernier.com/instrumental-analysis

Go Direct UV-VIS Spectrophotometer

The Go Direct UV-VIS Spectrophotometer connects to your device via Bluetooth wireless technology or USB to generate full spectra, Beer's law data, and kinetic traces of ultraviolet and visible-absorbing samples such as aspirin, DNA, proteins, and NADH.

Wavelength Range

- 220 to 850 nm

Light Sources

- Visible: LED-boosted tungsten
- UV: Deuterium

GDX-SPEC-UV

vernier.com/gdx-spec-uv



Free Software

Vernier Spectral Analysis

See page 14.

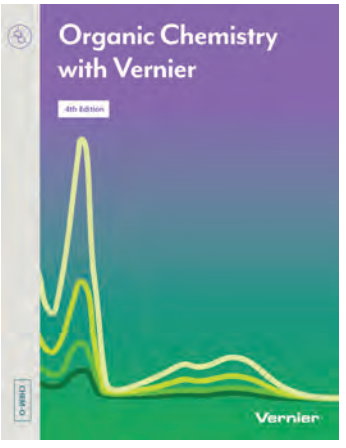
Organic Chemistry with Vernier

Organic Chemistry with Vernier contains 26 experiments that represent a broad range of topics and techniques taught in most college organic chemistry lab courses. The experiments in this book build upon prior knowledge, laboratory techniques, and skills that students learn in general chemistry courses.

Topics

- Distillation
- Chromatography
- Synthesis
- Polarimetry

vernier.com/chem-o



Printed book + download
CHEM-O

Download only
CHEM-O-E

Analytical and Inorganic Chemistry

Go Direct Cyclic Voltammetry System

Give your students hands-on experience with electrochemically active reactions using this affordable potentiostat and disposable screen-printed electrodes.

Easily incorporate electrochemistry into your curriculum using our e-book, *Electrochemistry Experiments with the Go Direct® Cyclic Voltammetry System,* available for free with your purchase.

GDX-CVS

Free experiment downloads available at vernier.com/gdx-cvs



Free Software

Vernier Instrumental Analysis®

See page 15.

NEW Accessories for an Eco-Friendly Lab

Three new products are now a part of the Vernier college chemistry lineup, offering reliable, easy-to-use solutions that enhance the lab experience for students and educators. These accessories can be used alongside Vernier Go Direct sensors to provide impactful learning experiences that are both efficient and environmentally conscious.

Electrochemistry Half-Cell Plate

The Electrochemistry Half-Cell Plate is a reusable, low-volume platform that holds up to eight metal-ion half-cells, each accessing the central salt bridge. When paired with the Electrochemistry Metals Kit and Go Direct Voltage Probe, it ensures precise, consistent exploration of oxidation-reduction reactions, the electrochemical series, and Nernst variables, while simplifying the setup and cleanup of electrochemical experiments.

ECHEM-PLT

vernier.com/echem-plt

Electrochemistry Metals Kit

The Electrochemistry Metals Kit provides a convenient, reusable set of seven different metal samples for conducting electrochemical experiments (aluminum, copper, iron, lead, nickel, silver, and zinc). When paired with a half-cell plate and voltage probe, this convenient kit simplifies the study of oxidation, reduction, the electrochemical series, and Nernst variables.

ECHEM-MTLS

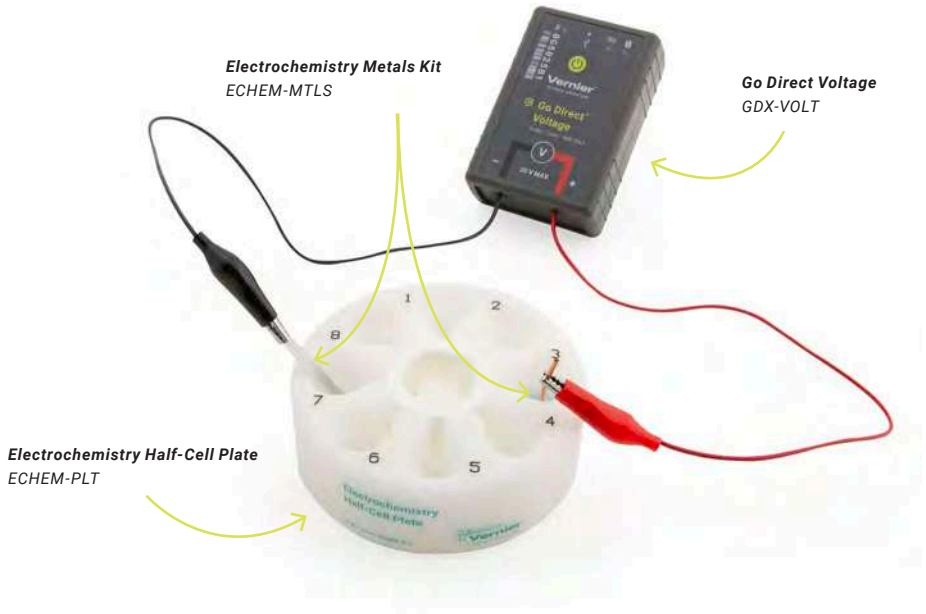
vernier.com/echem-mtls

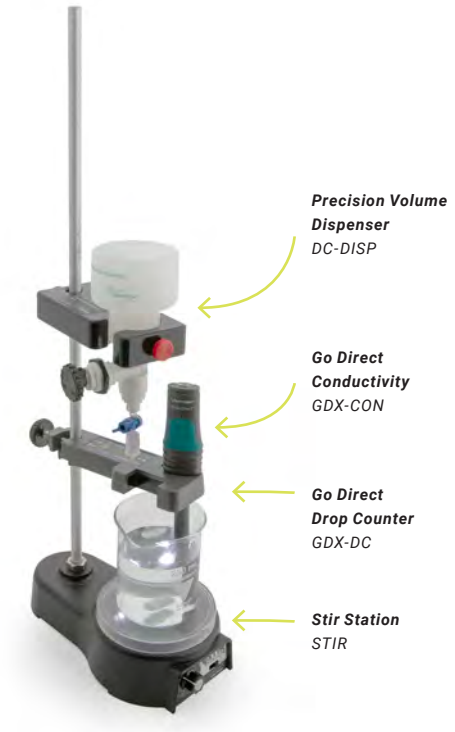
Precision Volume Dispenser

The Precision Volume Dispenser gives students and educators a precise, rugged, and easy-to-use alternative to a burette. It can be used with the Go Direct Drop Counter, Go Direct pH Sensor, Go Direct Conductivity Probe, and Go Direct Oxidation-Reduction Potential (ORP) Sensor to conduct acid-base, conductometric, or potentiometric titrations.

DC-DISP

vernier.com/dc-disp





Analytical and Physical Chemistry

Go Direct Fluorescence/UV-VIS Spectrophotometer

The Go Direct Fluorescence/UV-VIS Spectrophotometer measures the fluorescence and absorbance spectra of various samples.

GDX-SPEC-FUV

Wavelength Range

- 220 to 850 nm

Light Sources

- Visible: LED-boosted tungsten
- UV: Deuterium
- Fluorescence: Exchangeable LEDs for excitation at 375 nm, 450 nm, and 525 nm (additional wavelengths sold separately)

Free experiment downloads available at
vernier.com/gdx-spec-fuv



Free Software

Vernier Spectral Analysis®

See page 14.

Vernier Flash Photolysis Spectrometer

The Vernier Flash Photolysis Spectrometer is perfect for students to explore the fundamental principles of photochemical reactions.

VSP-FP

Wavelength Range

- 450 to 750 nm

Light Sources

- Xenon flashlamp (pump) white LED (probe)
- 13 exchangeable filters for detection wavelength
- 2 exchangeable colored glass filters for excitation wavelength

Free experiment downloads available at
vernier.com/vsp-fp



Free Software

Collect data with the free, all-inclusive Flash Photolysis Spectrometer Software.*

**Available for Windows® only*

Go Direct Visible Spectrophotometer

Conduct full-spectrum, equilibrium, kinetic, concentration absorbance studies, or emissions studies with the Go Direct Visible Spectrophotometer. Its quality optical bench delivers high-accuracy measurements, and the aluminum housing minimizes temperature fluctuations.

GDX-SPEC-VIS

Wavelength Range

- 380 to 950 nm

Light Sources

- Visible: LED-boosted tungsten

vernier.com/gdx-spec-vis



Free Software

Vernier Spectral Analysis

See page 14.

Go Direct Mini GC

With the easy-to-use Go Direct Mini GC™ and the free Vernier Instrumental Analysis app, students can separate, analyze, and identify substances contained in a volatile liquid sample.

GDX-GC

vernier.com/gdx-gc



Go Direct Wide-Range Pressure

Measure absolute pressures up to 690 kPa (100 psi) with excellent accuracy. The Gas and Liquid Compatible Go Direct Wide-Range Pressure (order code GDX-WRPL) can measure changes in liquid, gas, or vapor pressure. This liquid-compatible version is an excellent choice for agricultural and environmental studies, particularly those involving hydraulic lift and fluid pressure measurements. Go Direct Wide-Range Pressure (order code GDX-WRP) can measure changes in gas or vapor pressure.



Liquid & Gas Compatible GDX-WRPL
vernier.com/gdx-wrpl



Gas Compatible GDX-WRP
vernier.com/gdx-wrp

Chemistry Products

Go Direct Sensors

Sensor	Order Code
Go Direct® Colorimeter	GDX-COL
Conductivity Probes	
Go Direct Conductivity	GDX-CON
Go Direct Platinum-Cell Conductivity	GDX-CONPT
Current Probes	
Go Direct Constant Current System	GDX-CCS
Go Direct Current	GDX-CUR
Go Direct Drop Counter	GDX-DC
Gas Pressure Sensors	
Go Direct Gas Pressure	GDX-GP
Go Direct Wide-Range Pressure (Gas Compatible)	GDX-WRP
Go Direct Wide-Range Pressure (Liquid & Gas Compatible)	GDX-WRPL
Go Direct ORP	GDX-ORP
pH Sensors	
Go Direct Glass-Body pH	GDX-GPH
Go Direct pH	GDX-PH
Go Direct Tris-Compatible Flat pH	GDX-FPH
Go Direct Radiation Monitor	GDX-RAD
Temperature Probes	
Go Direct Surface Temperature	GDX-ST
Go Direct Temperature	GDX-TMP
Go Direct Thermocouple	GDX-TC
Go Direct Wide-Range Temperature	GDX-WRT
Go Direct Voltage	GDX-VOLT

See all our products for college chemistry online at vernier.com/college-chemistry

LabQuest Sensors

Sensor	Order Code
Colorimeter	COL-BTA
Conductivity Probe	CON-BTA
Current Probes	
Constant Current System	CCS-BTA
Current Probe	DCP-BTA
Drop Counter	VDC-BTD
Electrode Amplifier	EA-BTA
Gas Pressure Sensors	
Gas Pressure Sensor	GPS-BTA
Pressure Sensor 400	PS400-BTA
Instrumentation Amplifier	INA-BTA
Melt Station	MLT-BTA
ORP Sensor	ORP-BTA
pH Sensors	
Glass-Body pH Electrode BNC (requires Electrode Amplifier)	GPH-BNC
pH Sensor	PH-BTA
Tris-Compatible Flat pH Sensor	FPH-BTA
Radiation Monitor	VRM-BTD
Temperature Probes	
Stainless Steel Temperature Probe	TMP-BTA
Surface Temperature Sensor	STS-BTA
Thermocouple	TCA-BTA
Wide-Range Temperature Probe	WRT-BTA
Voltage Probes	
Differential Voltage Probe	DVP-BTA
Voltage Probe	VP-BTA

Instrumentation

Instrument	Order Code
Go Direct Cyclic Voltammetry System	GDX-CVS
Go Direct Melt Station	GDX-MLT
Go Direct Mini GC™	GDX-GC
Go Direct Polarimeter	GDX-POL

Spectrometers

vernier.com/spectrometers

Spectrometer	Order Code
Go Direct Emissions Spectrometer	GDX-SPEC-EM
Vernier Flash Photolysis Spectrometer	VSP-FP
Go Direct Fluorescence/UV-VIS Spectrophotometer	GDX-SPEC-FUV
Go Direct SpectroVis® Plus	GDX-SVISPL
Go Direct UV-VIS Spectrophotometer	GDX-SPEC-UV
Go Direct Visible Spectrophotometer	GDX-SPEC-VIS

Lab Equipment

Equipment	Order Code
Electrode Support	ESUP
OHAUS® Balances	vernier.com/ohaus
Stir Station	STIR
Cuvette Rack	CUV-RACK
Go Direct Charge Station	GDX-CRG
NEW Precision Volume Dispenser	DC-DISP
NEW Electrochemistry Half-Cell Plate	ECHEM-PLT
NEW Electrochemistry Metals Kit	ECHEM-MTLS

Lab Books*

Product	Order Code
Advanced Chemistry with Vernier	CHEM-A
Chemistry with Vernier	CWV
Food Chemistry Experiments	HSB-FOOD
Forensic Chemistry Experiments	HSB-FCHEM
Investigating Chemistry through Inquiry	CHEM-I
Organic Chemistry with Vernier	CHEM-O

** Includes printed book and download; also available as a download only*

Physics

Why Vernier?

Vernier started when one educator, Dave Vernier, decided to build solutions to bring physics to life for his students. Today, our complete physics solution is still powered by the desire to inspire students and foster learning and is backed by powerful software and unparalleled support.

Quality

Durable hardware lasts for years of use

Affordable

Designed for education and education budgets

Versatile

Supports a variety of devices and experiments



> I find your extensive suite of hardware—and your innovative software—extremely helpful in my teaching. Couldn't do it without your stuff!

Barbara Hughey
Massachusetts Institute of Technology
Cambridge, MA

vernier.com/physics

A Guide to Vernier Data Collection

We're here to support you as an educator as you incorporate data-collection technology into your instruction. See how our products provide you with affordable laboratory solutions designed for student success.

Our Guarantee: Most of our products are protected by a 5-year limited warranty. And after 5 years? We'll make every attempt to repair your equipment.

What You Need to Get Started with Go Direct Sensors

Go Direct Sensors

These versatile sensors connect to your device via Bluetooth® wireless technology or USB.

Device

Go Direct® sensors connect to a wide variety of commonly used devices, including Chromebooks, computers, smartphones, tablets, and LabQuest® 3.

Software

Vernier Graphical Analysis® Pro
Vernier Spectral Analysis®
Vernier Video Analysis®

Lab Book

Our popular, award-winning lab books provide hundreds of well-tested, customizable experiments. Our lab books come with a generous site license—purchase once and share files across your department.

What You Need to Get Started with LabQuest Sensors

LabQuest Sensor

LabQuest sensors share data with your device via a wired connection (BTA/BTD) to an interface from the LabQuest family.

Interface

An interface sends information from the sensor to the data-collection and analysis software. The LabQuest family includes LabQuest 3 and LabQuest Mini.

Software

Vernier Graphical Analysis Pro
LabQuest App
Vernier Video Analysis

Lab Book

Our popular, award-winning lab books provide hundreds of well-tested, customizable experiments.

Device

LabQuest sensors connect to computers, Chromebooks, and compatible mobile devices through a LabQuest interface.

Software

Vernier Graphical Analysis Pro

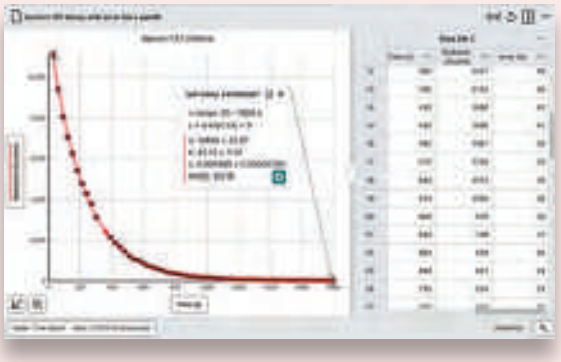
Our award-winning app enables advanced data analysis, provides opportunities to reinforce and extend learning, and includes features that support hybrid teaching models. We're always working to add and improve features—check out the "What's New" tab in the app.

1-Year Site License (unlimited seats) GAP-1YR

3-Year Site License (unlimited seats) GAP-3YR

Free Trial for Educators

Try out Graphical Analysis Pro for free for 30 days. Access the sample experiments and enhanced analysis tools to use with your students.Get a free trial and learn about site license options at vernier.com/graphical-analysis



Vernier Spectral Analysis

Spectral Analysis supports our family of spectrometers. The user-friendly interface walks students through the data-collection process and includes analysis features such as curve fitting and data interpolation.

vernier.com/spectral-analysis

Vernier Video Analysis

Students use their smartphone or tablet in the laboratory or out in the field to record motion. They then import the video into Video Analysis on any device to mark the object in motion, set the scale, and create graphs of the motion.

vernier.com/video-analysis

Get everything you need with our new 4-in-1 software bundle!
3-Year Site License DCA-3YR | Learn more at **vernier.com/dca-3yr**



LabQuest 3

LabQuest® 3 is a standalone data-collection platform that students can use to collect, analyze, and interact with data efficiently. It can also double as a sensor interface for computers.

LABQ3 vernier.com/labq3



LabQuest Mini

LabQuest Mini is a sensor interface that brings you the power of our award-winning LabQuest technology when you don't need the versatility of a standalone device.

LQ-MINI vernier.com/lq-mini

Mechanics

Dynamics Cart and Track System with Go Direct Sensor Cart

The Dynamics Cart and Track System (DTS) with Go Direct Sensor Cart includes essential laboratory equipment for teaching dynamics and kinematics. With our Go Direct Sensor Cart, students can explore force, position, velocity, and acceleration directly on their device using Bluetooth wireless technology. There are no wires to create drag, and no additional equipment is required! Each cart features built-in sensors that simplify experiment setup and make this system the best choice for studying dynamics and kinematics.

with 1.2 m Track DTS-GDX
with 2.2 m Track DTS-GDX-LONG

vernier.com/dts-gdx

Additional Cart and Track options are available at vernier.com/dynamics



Cart Fan

The Cart Fan is a modular fan you can add to DTS and Go Direct carts that provides a constant force for dynamics investigations. Using one or multiple fans on a single cart, students can investigate constant acceleration, balanced/unbalanced forces, and variable thrust angles.

DTS-CFAN

vernier.com/dts-cfan



Go Direct Force and Acceleration

Measure forces as small as ±0.1 N and up to ±50 N with this sensor that couples a 3-axis accelerometer with a stable and accurate force sensor. It also includes a 3-axis gyroscope for experiments involving rotation.

GDX-FOR

vernier.com/gdx-for



Go Direct Centripetal Force System

Conduct a variety of rotational dynamics investigations with a single experiment setup. This combination easily measures angular velocity, centripetal force, and acceleration without the hassle of wires.

GDX-CFAF

vernier.com/gdx-cfaf



Moment of Inertia Accessory Kit

With the Moment of Inertia Accessory Kit, students can explore inertia in a broader context. The kit expands the capabilities of the Vernier centripetal force apparatus when investigating moments of inertia of different geometries.

CFA-MIK

vernier.com/cfa-mik



Go Direct Motion

Use ultrasound to measure the position, velocity, and acceleration of moving objects.

GDX-MD

vernier.com/gdx-md



Go Direct Force Plate

Measure the forces developed during stepping, jumping, and other human-scale actions. Observe change in apparent weight as you ride an elevator, or measure reaction forces as you lean against a wall.

GDX-FP

vernier.com/gdx-fp



Go Direct Photogate

This double-gate sensor includes two photogates built into the arms of the sensor. It accurately measures velocity and acceleration.

GDX-VPG

vernier.com/gdx-vpg



Waves and Sound

Go Direct Sound

This is really two sensors in one—measure sound level in decibels, or capture and evaluate sound waveforms.

GDX-SND

vernier.com/gdx-snd



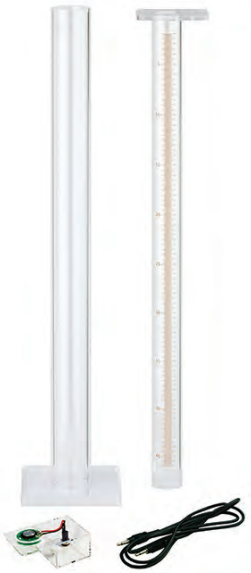
Resonance Apparatus

The Resonance Apparatus is used for the classic experiment of determining the speed of sound using the principle of resonance in a tube that is closed at one end.

RES-APP

vernier.com/res-app

Watch the video!



Power Amplifier

Use the Power Amplifier as a power supply for DC and AC circuit investigations or to drive devices such as speakers.

PAMP

vernier.com/pamp



Power Amplifier Accessory Speaker

Study mechanical waves on strings and springs.

PAAS-PAMP

vernier.com/paas-pamp



Frequency Generator

Use the Frequency Generator to create sine, square, sawtooth, and triangle waves at a wide range of frequencies.

FGEN-PAMP

vernier.com/fgen-pamp



Thermodynamics

Go Direct Gas Pressure

This sensor measures the absolute pressure of a gas.

GDX-GP

vernier.com/gdx-gp



Go Direct Temperature

Go Direct® Temperature is a durable, stainless steel temperature sensor for use in liquids or air.

Range: −40 to 125°C

GDX-TMP

vernier.com/gdx-tmp



Go Direct Surface Temperature

An exposed temperature sensor makes this an ideal choice for situations where low thermal mass and extremely rapid response are needed. Use this sensor in air and water only.

Range: −25 to 125°C

GDX-ST

vernier.com/gdx-st



Electricity and Magnetism

Go Direct Voltage

This sensor combines a wide input voltage range and high precision, making it an excellent choice for investigations of both AC/DC circuits and electromagnetism.

Ranges: ±20 V and ±1 V

GDX-VOLT

vernier.com/gdx-volt



Go Direct Current

Measure electric currents in circuits with this versatile sensor.

Ranges: ±1 A and ±0.1 A

GDX-CUR

vernier.com/gdx-cur



Go Direct Static Charge

Unlike a traditional electroscope, Go Direct Static Charge offers a means for quantitative measurement and analysis of positive and negative charges of objects that would not be possible in a traditional lab—such as measuring the charge on a balloon.

Range: ±100 nC

GDX-Q

vernier.com/gdx-q



Go Direct 3-Axis Magnetic Field

Determine the magnitude and direction of a magnetic field at any point in space with this 3-axis sensor.

Ranges: ±5 mT and ±130 mT

GDX-3MG

vernier.com/gdx-3mg



Electrostatics Kit

When using the Electrostatics Kit with Go Direct Static Charge, students can conduct a range of experiments in electrostatics.

ESK-CRG

vernier.com/esk-crg



High-Voltage Electrostatics Kit

Use this kit to investigate the distribution of charge on a sphere, transfer of charge on contact between two spheres, and charging by induction.

HVEK-CRG

vernier.com/hvek-crg



Extech® Digital Power Supply

This power supply provides constant current or constant voltage for physics activities that require DC power.

EXPS

vernier.com/exps



Vernier Circuit Board 2

Use this convenient platform to study basic series and parallel circuits as well as RLC circuits. Many components for experimentation are provided, and additional components can be added to expand the capability of this useful board.

VCB2

vernier.com/vcb2



Electrostatic High-Voltage Genecon

A great addition to the High Voltage Electrostatics Kit, the Electrostatic High-Voltage Genecon generates both positive and negative charges and reliably creates charge differences in high humidity.

HVEK-GEN

vernier.com/hvek-gen



Light and Optics

Go Direct Light and Color

This sensor combines visible light, UV, and RGB sensors to measure source emission, transmittance, and reflection of light in the visible light to ultraviolet electromagnetic spectrum.

GDX-LC

vernier.com/gdx-lc





Diffraction Apparatus*‡

This set includes a Red Diffraction Laser, Diffraction Slit System, and Combination Linear Position and High Sensitivity Light Sensor. It does not include the required Combination Track/Optics Bench.

DAK vernier.com/dak

Green Diffraction Laser *(optional)*

Add this laser to your Diffraction Apparatus to study the effect of wavelength on a diffraction pattern.

GDL-DAK vernier.com/gdl-dak



Optics Expansion Kit

Use the Optics Expansion Kit‡ with your dynamics track to conduct optics experiments, such as image formation with lenses and light intensity *vs.* distance. You can even use the kit to build a basic telescope.

OEK
vernier.com/oek

Kit includes

- 3 lenses (100 mm converging lens, 200 mm converging lens, −150 mm diverging lens)
- Screen
- Power supply
- Combination luminous and point light source
- Light sensor holder
- Aperture screen

The Optics Expansion Kit is used in experiments in our *Physics with Vernier* and *Advanced Physics with Vernier—Beyond Mechanics* lab books.

See website for replacement parts.

Accessories

Color Mixer Kit‡

CM-OEK vernier.com/cm-oek

Mirror Set‡

M-OEK vernier.com/m-oek

Polarizer/Analyzer Set‡

PAK-OEK vernier.com/pak-oek





**‡ Requires an interface such as LabQuest® 3 or LabQuest Mini*

‡ Requires a Combination 1.2 m Track/Optics Bench (TRACK)

Modern Physics

Go Direct Radiation Monitor

Our radiation monitor detects alpha, beta, gamma, and X-ray radiation. It can be used to explore radiation statistics, measure the rate of nuclear decay, monitor radon progeny, and investigate the effects of shielding. The sensor includes both LED and audible indicators.

GDX-RAD

vernier.com/gdx-rad



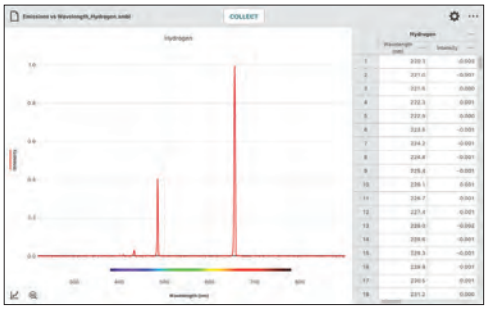
Go Direct Emissions Spectrometer

The Go Direct® Emissions Spectrometer connects to your device via Bluetooth® wireless technology or USB to give precise measurements over a range of 350–900 nm. Use it with or without the Vernier Emissions Fiber (not included) to examine spectra of light bulbs, spectrum tubes, or the sun.

GDX-SPEC-EM

vernier.com/gdx-spec-em





Vernier Spectral Analysis App

Our free Vernier Spectral Analysis® app combined with our Emissions Spectrometer makes it easy to analyze spectra. Students can quickly locate peaks or compare spectra from different sources.

vernier.com/spectral-analysis



Vernier Emissions Fiber

VSP-EM-FIBER

vernier.com/vsp-em-fiber

Spectrum Tube Power Supply

This power supply features an ultra-safe design for electrifying spectrum tubes.

ST-SPS

vernier.com/st-sps



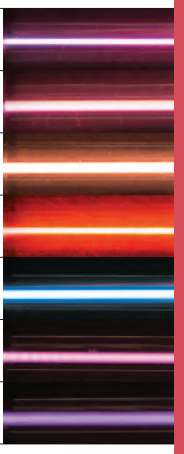
Spectrum Tubes

Spectrum Tubes are permanently enclosed in protective plastic carriers, with no exposed high voltage.

Spectrum Tubes carry a warranty of 2 years or 100 hours, whichever comes first (hydrogen tube: 2 years or 40 hours, whichever comes first).

vernier.com/spectrum-tubes

Spectrum Tube	Order Code
Hydrogen	ST-H
Nitrogen	ST-N
Helium	ST-HE
Neon	ST-NE
Carbon Dioxide	ST-CO2
Air	ST-AIR
Argon	ST-AR



Additional Physics Products

Mechanics

Product	Order Code
Go Direct® Acceleration	GDX-ACC
3-Axis Accelerometer	3D-BTA
25-g Accelerometer	ACC-BTA
Bumper and Launcher Kit	BLK
Cart Fan	DTS-CFAN
Dual-Range Force Sensor	DFS-BTA
Dynamics Cart and Track System	DTS
Dynamics Cart and Track System with Motion Encoder	DTS-EC
Eddy Current Brake	DTS-ECB
Encoder Fan Cart	CART-FEC
Fan Cart	CART-F
Force Plate	FP-BTA
Friction Block	PHY-FRBL
Friction Pad DTS	DTS-PAD
Go Direct Force Plate	GDX-FP
Go Direct Sensor Cart Accessory Kit	GDX-CART-AK
Hanging Mass	PHY-HM250
Independence of Motion	IOM-VPL
Low-g Accelerometer	LGA-BTA
Meter Stick	PHY-METER
Motion Detector	MD-BTD
Photogate	VPG-BTD
Go Direct Projectile Launcher	GDX-PL
Vernier Projectile Launcher	VPL
Projectile Stop	PS-VPL
Pulley Bracket	B-SPA
Go Direct Rotary Motion	GDX-RMS
Rotary Motion Sensor	RMV-BTD
Rotational Motion Accessory Kit	AK-RMV
Time of Flight Pad	TOF-VPL
Ultra Pulley Attachment	SPA

Waves and Sound

Product	Order Code
Microphone	MCA-BTA
Sound Level Sensor	SLS-BTA

Thermodynamics

Product	Order Code
Gas Pressure Sensor	GPS-BTA
Stainless Steel Temperature Probe	TMP-BTA
Surface Temperature Sensor	STS-BTA

Electricity and Magnetism

Product	Order Code
Magnetic Field Sensor	MG-BTA
Power Amplifier	PAMP
Differential Voltage Probe	DVP-BTA
Current Probe	DCP-BTA
Instrumentation Amplifier	INA-BTA
Optional Breadboard Kit for the Vernier Circuit Board 2	VCB2-OBBK
Extech® Digital DC Power Supply	EXPS
Charge Sensor	CRG-BTA
Solenoid	PHY-SN700

Light and Optics

Product	Order Code
Light Sensor	LS-BTA
Polarizer/Analyzer Set for Optics Expansion Kit	PAK-OEK
Combination 1.2 m Track/Optics Bench	TRACK
Combination 2.2 m Track/Optics Bench	TRACK-LONG
Green Diffraction Laser	GDL-DAK

Lab Books

Product	Order Code
Physics with Vernier	PWV*
Advanced Physics with Vernier—Mechanics	PHYS-AM*
Advanced Physics with Vernier—Beyond Mechanics	PHYS-ABM*
Physics Explorations and Projects	PEP*
Vernier Video Analysis: Motion and Sports	HSB-VVAMS-E
Vernier Video Analysis: Conservation Laws and Forces	HSB-VVACLF-E

** Includes printed book and download; also available as a download only*

To see the full suite of Vernier physics products, please visit vernier.com/physics

Engineering

Why Vernier?

Vernier engineering solutions harness the power of analytical software and the precision of high-quality sensors to help students sharpen their design skills and prepare to enter the workforce. As with all of our solutions, our engineering technology is backed by unparalleled support.

Quality

Durable hardware for lab and field use

Affordable

Designed for education and education budgets

Versatile

Supports a variety of devices and experiments



> Our projects are about more than just supporting the need for engineering education in local classrooms. Vernier products help deepen our students' learning through experiential, hands-on community engagement.

Maija A. Benitz, PhD
Associate Professor of Engineering
Roger Williams University

vernier.com/engineering

A Guide to Vernier Data Collection

We're here to support you as an educator as you incorporate data-collection technology into your instruction. See how our products provide you with affordable laboratory solutions designed for student success.

Our Guarantee: Most of our products are protected by a 5-year limited warranty. And after 5 years? We'll make every attempt to repair your equipment.

What You Need to Get Started with Go Direct Sensors

Go Direct® sensors connect directly (no interface required) to your computer, Chromebook,™ or compatible mobile device via USB or Bluetooth® wireless technology.

A Go Direct sensor

B Computer, Chromebook, tablet, smartphone, LabQuest 3

C Software

- Vernier Graphical Analysis® Pro
- Arduino IDE
- National Instruments LabVIEW™
- Python®
- JavaScript™

What You Need to Get Started with LabQuest Sensors

LabQuest® sensors have a cable with a plug that makes it easy to connect to an interface without any additional wiring. Use LabQuest sensors with a Vernier interface, Arduino,® NI ELVIS, NI myDAQ, or your own DAQ hardware. If using a non-Vernier interface, these sensors require a +5.0 volt supply voltage and output a 0 to 5 volt signal. Most sensors have a simple, linear calibration.

A LabQuest sensor

B Interface (LabQuest, DAQ, or Arduino)

C Computer, Chromebook, tablet, smartphone

D Software

- Vernier Graphical Analysis Pro
- National Instruments LabVIEW
- Arduino IDE
- Python

Vernier Graphical Analysis Pro

Our award-winning app enables advanced data analysis, provides opportunities to reinforce and extend learning, and includes features that support hybrid teaching models. We're always working to add and improve features—check out the "What's New" tab in the app.

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Free Trial for Educators

Try out Graphical Analysis Pro for free for 30 days. Access the sample experiments and enhanced analysis tools to use with your students.

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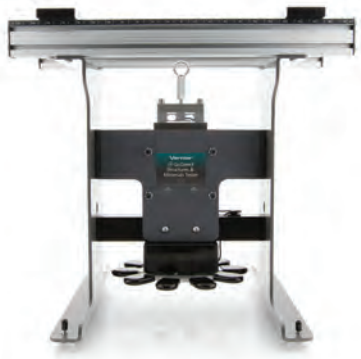
Introduction to Engineering

Go Direct Structures & Materials Tester

Use our Go Direct Structures & Materials Tester to evaluate the strength of model bridges and engineered structures by measuring the applied load. Utilizing both load and displacement sensors, your students can evaluate the properties of materials.

GDX-VSMT

vernier.com/gdx-vsmt





Advanced Wind Experiment Kit

Use this kit to teach the engineering design process. Investigate different blade designs, gear ratios, and generators.

KW-AWX

vernier.com/kw-awx



Vernier Variable Load

Use the Vernier Variable Load in conjunction with Go Direct Energy to provide a range of resistive loads for projects such as engineering wind turbines or investigating solar panels. Students can adjust the potentiometer to provide resistances between 2 and 200 Ω to determine the optimal load on a system.

VES-VL vernier.com/ves-vl



Go Direct Energy

Go Direct Energy measures voltage and current as well as displays power and energy output of scale model wind turbines and solar panels, so students can quantitatively evaluate the effects of their design changes.

GDX-NRG vernier.com/gdx-nrg



See all our products for engineering at vernier.com/engineering

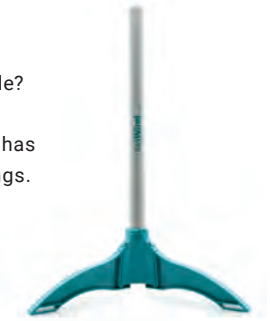
Wind Turbine Design

Tower and Base Set

Do you need a tower for your turbine nacelle? This is the same tower that comes in the Advanced Wind Experiment Kit. The tower has a diameter that fits inside 1-inch PVC fittings.

KW-TBS

vernier.com/kw-tbs



Basic Turbine Building Parts

The Basic Turbine Building Parts kit includes three hubs, a wind turbine generator, and 25 dowels, all in one package.

KW-BTPART

vernier.com/kw-btpart



Wind Turbine Generator with Wires

This is the primary generator for wind turbine experiments because it runs smoothly and provides high power output at a relatively low RPM.

KW-GEN3

vernier.com/kw-gen



Wind Turbine Hub (3 Pack)

With these 12-hole crimping hubs, made from recycled plastic, students can turn a DC generator into a wind turbine.

KW-WTH3

vernier.com/kw-wth3



Nacelle

Build your own wind turbine and use the KidWind Nacelle to hold the generator (motor). Package includes the KidWind Nacelle and the Motor Mount Pack. You will also need a generator and a way to affix the turbine blades.

KW-NAC

vernier.com/kw-nac



simpleGEN

Students can use the easy-to-build AC generator of the simpleGEN to explore the basics of electrical generator design.

KW-SGEN

vernier.com/kw-sgen



Gear Set

The small 8-tooth gear fits on 2 mm driveshafts that are found on many DC generators. The gears have a keying feature and can be changed quickly and easily using the included hex locks. The hex locks secure to our 9/64 inch hex driveshaft, which is included in the Drivetrain Set (KW-DS).

Gear sizes: 64 teeth, 32 teeth, 16 teeth, 8 teeth

KW-GEAR

vernier.com/kw-gear



Photogate Bracket

The Photogate Bracket enables the measurement of rotations per minute (RPM) of a wind turbine with a Vernier photogate.

KW-PGBRAC

vernier.com/kw-pgbrac



Biomedical Engineering with Go Direct Sensors

With wireless options and multiple on-board sensors, Go Direct® sensors are perfect for analyzing and studying physiological functions.

Go Direct EKG

Go Direct EKG has five channels:
EKG, heart rate, EMG, EMG rectified, and voltage.

GDX-EKG

vernier.com/gdx-ekg



Go Direct O_2 Gas

This sensor measures gaseous oxygen concentration levels and air temperature.

GDX-O2

vernier.com/gdx-o2



Go Direct Blood Pressure

Go Direct Blood Pressure has seven channels: cuff pressure, mean arterial pressure, systolic pressure, diastolic pressure, pulse rate, oscillations, and envelope.

GDX-BP

vernier.com/gdx-bp



Go Direct Force Plate

Go Direct Force Plate has six channels: force, hang time, jump height, X balance, Y balance, and auxiliary voltage.

GDX-FP

vernier.com/gdx-fp



Go Direct Spirometer

Go Direct Spirometer has six channels:
flow rate, volume, adjusted volume, cycle volume, respiration rate, and differential pressure.

GDX-SPR

vernier.com/gdx-spr



Go Direct Surface Temperature

With a range of –25 to 125°C, this sensor is designed for use in situations in which low thermal mass or flexibility is required, such as on human skin.

GDX-ST

vernier.com/gdx-st



Go Direct Hand Dynamometer

Go Direct Hand Dynamometer has seven channels:
force, x-axis acceleration, y-axis acceleration, z-axis acceleration, x-axis gyro, y-axis gyro, and z-axis gyro.

GDX-HD

vernier.com/gdx-hd



Go Direct Respiration Belt

Go Direct Respiration Belt has four channels:
force, respiration rate, steps, and step rate.

GDX-RB

vernier.com/gdx-rb



Go Direct CO_2 Gas

Go Direct CO_2 Gas has three channels:
CO_2 gas, temperature, and relative humidity.

GDX-CO2

vernier.com/gdx-co2



Go Direct Acceleration

This 3-axis acceleration sensor has two acceleration ranges (±157 m/s² and ±1960 m/s²) plus an altimeter and a 3-axis gyroscope.

GDX-ACC

vernier.com/gdx-acc



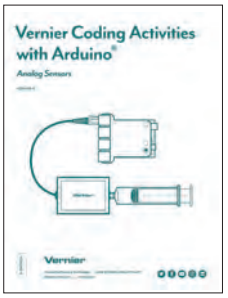
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Arduino with Vernier Sensors

Help students build coding skills and foster creative critical thinking by combining Vernier sensors with Arduino®.

Vernier Coding Activities with Arduino®: Analog Sensors

Combining Vernier sensors with easy-to-program Arduino microcontrollers is an engaging way for students to make connections between coding and the physical world. The 8 lessons in this e-book introduce students to programming functions, logic statements, and more.



DOWNLOAD ONLY
VCA-AS-E

vernier.com/vca-as-e

Vernier Ardunio Interface Shield

Conveniently connect the SparkFun® RedBoard or Arduino Uno to Vernier LabQuest® sensors with the Vernier Arduino Interface Shield.



BT-ARD

vernier.com/bt-ard

Gas Pressure Sensor

Use the Gas Pressure Sensor to monitor pressure changes of a gas.



GPS-BTA vernier.com/gps-bta

Surface Temperature Sensor

Measure temperature where low thermal mass or flexibility is required.
Range: –25 to 125°C



STS-BTA vernier.com/sts-bta

Motion Detector

The Motion Detector uses ultrasound to measure the position of objects.
Range: 0.15 to 6 m
Resolution: 1 mm



MD-BTD vernier.com/md-btd

pH Sensor

This is a general-purpose pH sensor.
Range: pH 0 to 14
Accuracy: ±0.2 pH units



PH-BTA vernier.com/ph-bta

Digital Control Unit

Use the digital output lines of an interface to control DC electrical devices.



DCU-BTD vernier.com/dcu-btd

Anemometer

This is an impeller-type anemometer for measuring wind speed.
Range: 0.5 to 30 m/s (1 to 67 mph)



ANM-BTA vernier.com/anm-bta

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Sensors and Coding

Students gain a deeper understanding of coding when they see their code interact with sensor data. Our coding solutions give students valuable experience using popular programming languages to affect things beyond the screen.

LabVIEW

Use our free activity book to introduce NI LabVIEW™ programming with Vernier sensors in your classroom.

vernier.com/ni-labview

National Instruments LabVIEW and Vernier

Introduce your students to NI LabVIEW software, a programming language used throughout the engineering disciplines. We have sample LabVIEW programs (VIs) for LabQuest Mini, myDAQ, Go Direct® sensors, and other Vernier hardware.

With LabQuest Sensors



LabQuest Mini

LabQuest Mini is a powerful, affordable, and easy-to-use sensor interface for data acquisition with more than 75 Vernier LabQuest sensors.

LQ-MINI

vernier.com/lq-mini

myDAQ Adapter

The myDAQ Adapter can be used to perform data acquisition with more than 75 Vernier LabQuest sensors and the NI myDAQ interface (sold separately). It is designed for use with NI LabVIEW software.

BT-MDAQ

vernier.com/bt-mdaq



Analog Protoboard Adapter

Use this adapter to connect Vernier LabQuest sensors to a non-Vernier interface, such as NI ELVIS. The connector fits into a standard prototyping board.

BTA-ELV

vernier.com/bta-elv



With Go Direct Sensors

Integrate over 50 wireless sensors into your LabVIEW project to acquire data or control your NI DAQ hardware.

Go Direct Acceleration  GDX-ACC vernier.com/gdx-acc

Go Direct Force and Acceleration  GDX-FOR vernier.com/gdx-for

Go Direct Rotary Motion  GDX-RMS vernier.com/gdx-rms

Go Direct Motion  GDX-MD vernier.com/gdx-md

Go Direct Light and Color  GDX-LC vernier.com/gdx-lc

Go Direct Weather  GDX-WTHR vernier.com/gdx-wthr

See all our products for NI LabVIEW at vernier.com/ni-labview

Python and VPython

We have created a guide and examples that make it easy to start using Vernier sensors with Python® and VPython.

vernier.com/python

Arduino IDE

Use our starter package to teach the basics of coding Arduino with Vernier sensors.

vernier.com/arduino

JavaScript

Students can use JavaScript™ to integrate Go Direct sensor data into their custom web applications.

vernier.com/javascript

Engineering Products

Wind Turbine Design

Product	Order Code
Advanced Wind Experiment Kit	KW-AWX
Balsa Blade Sheets (10 Sheets)	KW-BBS10
Basic Turbine Building Parts	KW-BTPART
Drivetrain Set	KW-DS
Gear Set	KW-GEAR
Go Direct® Energy	GDX-NRG
Hub (3 Pack)	KW-WTH3
KidWind Photogate Bracket	KW-PGBRAC
Nacelle	KW-NAC
Tower and Base Set	KW-TBS
Vernier Variable Load	VES-VL
Wind Turbine Generator with Wires	KW-GEN3

Engineering with Arduino

Product	Order Code
Anemometer	ANM-BTA
Digital Control Unit	DCU-BTD
Gas Pressure Sensor	GPS-BTA
Motion Detector	MD-BTD
pH Sensor	PH-BTA
Surface Temperature Sensor	STS-BTA
Vernier Arduino Interface Shield	BT-ARD
Vernier Coding Activities with Arduino: Analog Sensors lab book	VCA-AS-E

LabQuest Sensors

Sensor	Order Code
Barometer	BAR-BTA
Gas Pressure Sensor	GPS-BTA
Light Sensor	LS-BTA
Magnetic Field Sensor	MG-BTA
Microphone	MCA-BTA
Soil Moisture Sensor	SMS-BTA
Stainless Steel Temperature Probe	TMP-BTA

Learn more about over 80 LabQuest sensors at vernier.com/labquest

Biomedical Engineering

Sensor	Order Code
Go Direct Acceleration	GDX-ACC
Go Direct Blood Pressure	GDX-BP
Go Direct CO_2 Gas	GDX-CO2
Go Direct EKG	GDX-EKG
Go Direct Force Plate	GDX-FP
Go Direct Hand Dynamometer	GDX-HD
Go Direct O_2 Gas	GDX-O2
Go Direct Respiration Belt	GDX-RB
Go Direct Spirometer	GDX-SPR
Go Direct Surface Temperature	GDX-ST

NI LabVIEW and Vernier

Product	Order Code
Analog Protoboard Adapter	BTA-ELV
myDAQ Adapter	BT-MDAQ
LabQuest® Mini	LQ-MINI

Go Direct Sensors

Sensor	Order Code
Go Direct Acceleration	GDX-ACC
Go Direct Force and Acceleration	GDX-FOR
Go Direct Light and Color	GDX-LC
Go Direct Motion	GDX-MD
Go Direct Rotary Motion	GDX-RMS

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Any product that does not meet your needs may be returned within 30 days for a full refund. Equipment returned after 30 days may be subject to a restocking fee.

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All Vernier orders for use outside of the US are handled by our export office and a network of dealers around the world. Please email exports@vernier.com to be connected to your local dealer.

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Most Vernier-branded products carry a 5-year limited warranty. Product-specific details can be found under the Support tab on each product's web page. During the warranty period, Vernier will repair or replace the item if there is a defect in materials or workmanship. Outside the warranty, Vernier will attempt to repair most products. The Vernier warranty covers products when used by educational institutions only. Products manufactured by anyone other than Vernier are subject to the conditions of the warranty supplied by the manufacturer.

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SCIENCE EDUCATION

Vernier Science Education
13979 SW Millikan Way
Beaverton, OR 97005-2886
USA
phone +1-503-277-2299
fax +1-503-277-2440
www.vernier.com
exports@vernier.com

Vernier Asia Limited
Block B2A, 13F
Hoi Bun Industrial Building
6 Wing Yip Street
Kwun Tong, Kowloon
Hong Kong
Phone: +852-2790-3550
Fax: +852-2790-3551
www.vernier-intl.com
toyue@vernier-asia.com

Vernier Europe Limited
Unit 3
Templemichael Business Park
Ballinalee Road
Longford N39 P296
IRELAND
Phone: +353-43-334 1980
www.vernier-intl.com
venglish@vernier-europe.com

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