

Technology Inventory List

Robotics and Engineering Equipment

Due to COVID-19, there may be resources () on this list that are unavailable for checkout due to the complexity of parts and the ability to sanitize according to protocol.*

Item	Description	Quantity
*Arduino SparkFun Inventor Kits	This kit is a great way to get started with programming and hardware interaction with the Arduino programming language. Included are supplies for five projects consisting of 16 interconnected circuits that teach everything from blinking an LED to reading sensors (the culminating project is an autonomous robot). Previous programming or electronics experience is not necessary to use these kits. Recommended for ages 10 and up.	10
Dash and Dot Robots	Students use block coding on four different iPad apps to program and control these robots, which can be modified to support lessons in engineering, art, and music. Available accessories include squishy cases, launcher pieces, bunny ears and tails, and challenge cards.	12 dash robots, 12 dot robots
*EV3	The LEGO Mindstorms EV3 kit includes everything you need to create robots that walk, talk, and move. These robots can be programmed through their own intuitive software program or through a smart device.	13
iPads	iPad mini 4s in protective flip cases.	21
*LEGO WeDo 1.0 Kits	These kits are simple robotics tools designed for ages 7-11. Users can design their own interactive machines, and then program them using drag-and-drop software like Scratch.	13
*LEGO WeDo 2.0 Kits	These updated LEGO WeDo kits feature Bluetooth pairing and are compatible with tablets.	9
*Little Bits Kits	LittleBits consist of small circuit boards with specific functions built to snap together with magnets. This kit comes with 15 electronic building blocks, detailed instructions for 12 projects, and all the accessories and tools you need to develop science, technology, art, and math skills in young inventors.	13
Ozobots	Ozobots are tiny robots that teach kids programming by blending the physical and digital worlds. The robots can be trained to follow patterns on the surfaces they roll over, and are capable of identifying lines, colors, and codes on both digital surfaces (such as an iPad) and physical surfaces (such as paper).	16
Sphero Robots	Spheros are spherical robots capable of rolling around, changing colors, and running programs. These robots can be controlled by a smartphone or tablet, and support Macros, OrbBasic, and Oval programming languages.	8
*Strawbees	Strawbees are a light-weight construction system for all ages. These simple units allow you to connect straws and cardboard together to build mechanical objects both large and small.	1 large bag, 1 small bag

Vernier Probe Inventory List

Physics Equipment

Item	Description	Quantity
Current Probe	Used to measure currents in low-voltage AC and DC circuits, or it can be used in electrochemistry experiments.	24
Differential Voltage Probe	Used to measure voltages in low voltage AC and DC circuits, and is recommended for use in most experiments involving voltage.	11
Dual-Range Force Sensor	Best for most force experiments including: friction, simple harmonic motion, impact in collisions, and centripetal force.	14 (Brown Box) and 23 (White Box)
Dynamics System (Carts and Accessories)	Used to study kinematics, dynamics, momentum, and energy, and it the setup can easily be modified to study optics, color, and diffraction.	15
Force Plate	Best for human-scale force experiments such as: forces in pushing and pulling, forces in stepping and jumping, measuring the volume of a person, and impact forces.	1
Light Sensor	Used to approximate spectral response in the human eye and can be used in experiments including: polarizers, reflectivity, or solar energy.	24
Low-g Accelerometer	Best for most acceleration experiments including; one-dimensional motion of a car, elevator acceleration, pendulum bob, and amusement park rides.	11
Magnetic Field Sensor	Used to study the magnetic field around permanent magnets, coils, and electrical devices and is used in experiments involving strong magnetic fields around permanent magnets and electromagnets, weak fields (i.e. the Earth's magnetic field, and it can measure both transverse and longitudinal magnetic fields.	24
Microphone	Used to display and study the waveforms of sounds from voices and musical instruments, and it works well for experiments in studying the speed of sound.	12
Motion Detector	Used to collect data on moving objects such as; position, velocity, and acceleration.	11 (Brown Box) and 22 (White Box)
Photogate	Used in experiments involving: free falling, rolling objects, collisions, and pendulums.	24
Sanyo Color CCD Camera		1
SpectroVis Plus	This is a near-IR spectrophotometer and fluorometer that is used for a wide range of spectroscopy experiments in multiple subject areas (physics, chemistry, biology).	8
SpectroVis Optical Fiber	This attaches to the SpectroVis Plus and allows for the measurement of light emissions of LEDs, fluorescent bulbs, or incandescent bulbs.	8
Super Pulley Attachment (For Use with a Vernier Photogate)	When attached to the Photogate, the motion of a string can be monitored, or simply the motion of the pulley as it rolls along a table.	10
Voltage Probe	This probe is a bipolar sensor and is used to measure direct voltage.	37

Vernier Probe Inventory List

Chemistry Equipment

Item	Description	Quantity
Conductivity Probe	Used to determine the ionic content of aqueous solutions by measuring the solution's conductivity. This probe has many applications not only in chemistry but biology and environmental science as well.	4 (Brown Box) and 11 (White Box)
Gas Pressure Sensor	Used to monitor the pressure changes of a gas, and can be used in both chemistry and biology experiments.	12
EasyTemp	This is a rugged, general-purpose temperature sensor for TI graphing handhelds	7
Go!Temp	Used to collect temperature data directly by connecting the probe to the USB port of a computer.	12
pH Sensor	Used to measure the pH of solutions and can be used in experiments such as: acid-base titrations, analyzing water quality in streams and lakes, or monitoring pH change during chemical reactions or in an aquarium as a result of photosynthesis.	4 (Brown Box) and 12 (White Box)
Stainless Steel Temperature Probe	This is a rugged, general-purpose temperature sensor that can be used in a multitude of mediums including organic liquids, salt solutions, acids, and bases. Can also be used in chemistry, physics, biology, Earth science, and environmental science experiments.	21

Vernier Probe Inventory List

Biology/Earth Science Equipment

Item	Description	Quantity
Barometer	Used to measure atmospheric pressure, and works well for experiments involving the weather or involving pressures that are close to normal atmospheric pressure.	8
BioChamber 2000 (With Lids and Black Rubber Stoppers)	This is a 2000 mL plastic chamber that can be used with the CO ₂ and O ₂ sensor to monitor gaseous carbon dioxide and oxygen in a closed system. Both sensors can be used simultaneously, or if only one is desired the black rubber stopper snugly fits in the grommet keeping the integrity of the closed system. This is particularly useful in experiments involving respiration and photosynthesis.	18
CO₂ Gas Sensor	Used to measure gaseous carbon dioxide either from 0 to 10,000 ppm or 0 to 100,000 ppm. Can be used on its own, or in conjunction with the BioChamber 2000.	9 in Individual Boxes and 9 in One Clear Tote
Exercise Heart Rate Monitor	Used to continuously monitor heart rate before, during, and after exercise, or while a person is stationary.	12
Flow Rate Sensor	Used to measure the velocity of water when studying discharge, flow patterns, and sediment transport of a stream or river.	2
O₂ Gas Sensor	Used to monitor gaseous oxygen levels – NOT aqueous oxygen levels – in different biology and chemistry experiments. Can be used on its own or in conjunction with the BioChamber 2000.	9 in Individual Boxes and 9 in One Clear Tote
Optical DO Probe	Used to measure the dissolved oxygen concentration in water. It requires no calibration, no filling solution, no warm-up time, and no stirring. It can also be used in the field or in the laboratory setting.	8
ORP Sensor	Used to measure the ability of a solution to act as an oxidizing or reducing agent.	2
Soil Moisture Sensor	Used to measure volumetric water content of a soil sample.	8
Thermocouple	This is a rugged sensor that can measure the temperature in the range of -200°C to 1400°C.	1

Vernier Probe Inventory List

General Equipment

Item	Description	Quantity
LabPro	Device collects and stores data from all Vernier sensors, and is compatible with Texas Instruments graphing calculators. It features six data-collection channels which allows multiple sensors to be used at once, and can take up to 50,000 readings per second. It also has an analog output that allows the user to control electrical devices such as DC motors, fans, LEDs, and more.	22
LabQuest2	This is a standalone interface used to collect data from the Vernier sensors that can also be connected to a computer through a USB port. It is compatible with all Vernier sensors, and can collect up to 100,000 samples per second. This is the next generation LabPro.	16
LabQuest Mini	This device collects data in conjunction with a computer – this is not a standalone device like the LabPro and the LabQuest. This small sensor interface features five sensor ports and is compatible with almost all Vernier sensors.	10
Go!Link	USB sensor interfaces which allows the user to collect data from a Vernier sensor directly onto a computer. This is a single-channel interface, so only one sensor can be used at a time.	8
Data Pro T3 Package for Palm OS Handhelds	Interface used to connect handheld data collectors to other Vernier data collection products.	9
EasyLink	Sensor interface used to connect sensors to Texas Instruments TI-Nspire Handheld or TI-84 Graphing Calculator.	8
TI-Nspire Calculators		37
TI-84 Graphing Calculators		12

Vernier Resource Book Inventory List

- Middle School Science with Computers
- Middle School Science with Calculators
- Physics with Computers
- Physics with Calculators
- Physical Science with Computers
- Physical Science with Calculators
- Chemistry with Computers
- Chemistry with Calculators
- Water Quality with Computers
- Water Quality with Calculators
- Biology with Computers
- Biology with Calculators
- Biology with Vernier
- Investigating Biology Through Inquiry