Item	Unit	Item Description	QTY
LOT 18	Lot	**LOT 18- Approved Budget is P666,823.00**	
	units	**Sparkvue single user license**	2
		[1] Designed to support Touch	
		screen devices including Interactive	
		White Boards	
		[2] Intuitive icon-based navigation	
		keeps the focus on the learning and not on the tools	
		[3] Provides real-time quantitative	
		analysis and measurement of a broad line of sensors	
		[4] Includes 6 complete labs for free	
		[5] Display data in multiple simultaneous	
		representations, including graphs, tables, digital displays, and	
		analog meters	
		[6] Easily export data in a range of formats	
		[7] Create interactive labs for use on your	
		computer or on a handheld device	
		[8] Enables multiple modes of discovery --	
		from guided inquiry to open-ended exploration	
		[9] Language Support including:	
		• English	
		• Spanish	
		• Arabic	
		• Dansk	
		• Russian	
		• Kazakh	
		• Deutsch	
		• French	
		• Italian	
		• Nederlands	
		• Norsk	
		• Portugese	
		• Svenska	
		• Turkish	
		• Korean	
		• Simplified Chines	
		• Traditional Chinese	
		• Japanese	
		• Hebrew keyboard	
		[10] Built-in Analysis Tools:	
		• Prediction tool	
		• Smart tool (coordinates and deltas)	
		• Scale-to-fit	
		• Zoom	
		• Annotation	
		• Slope tool	
		• Statistics	
		• Curve fits	
		[11] This software is part of a platform solution	
		solution that supports running the same data collection	
		and analysis software on PCs, handheld dataloggers,	
		iPhones and iPod Touches, and netbooks.	
		[12] Journaling capability that allows students	
		to capture student responses alongside with their	
		measurements and analysis.	
		[13] Built-in Assesment tools that allow	
		the teachers to include multiple choice, fill-in-the-blank, and	
		student response questioning.	
		[14] The curriculum is fully customizable	
		by the teacher and can be easily transferred to all	
		platforms of supported	
		• Curriculum contains: Introduction,	
		Lab Challenge, Background, Sequencing Challenges,	
		Material Lists, Prediction, Setup,	
		Procedure, Analysis, Synthesis, and Multiple Choice questions	
		[15] This curriculum can be distributed	
		online and easily transferred to a handheld device, simplifying	
		large scale curriculum distribution.	
		[16] Supports connection Ocean Optics	
		Spectrometers via USB including Red Tide and Amadeus	
		spectometers	
		[17] Supports direct connection to	
		Ken-a-Vision Kena microscope	
		• Live video viewing	
		• Annotation of images	
		• Screen capture images and add to lab journal	
		• Digital zoom and pan images	
		• Use built-in measurement tool with images	
	units	**- SPARKlink Air**	2
		[1] Sensor interface with built-in	
		temperature and voltage sensors	
		[2] Two sensor ports for connectivity to	
		over 70 sensors including MultiMeasure sensors	
		[3] Simple USB connection to computer	
		with included USB cable	
		[4] Rugged polycarbonate case	
		Includes:	
		PS-2528 USB Connection Cable for the Xplorer	
		GLX and SPARK Science Learning System	
		Fast response temperature probe	
		Voltage probe	
		[5] Wireless connectivity through Bluetooth	
	unit	**Wireless Airlink**	1
		{1} Includes one PASPORT sensor port,	
		USB and Bluetooth connectivity and USB cable	
	Units	**- SPARK Science Learning System**	2
		[1] Rugged design including rubberized	
		handles and inclined resting position.	
		[2] Student friendly size and weight	
		• Light weight 595 grams	
		• Designed for portability, integrated hand	
		straps provide comfortable, secure single or two handed use.	
		• Two buttons on front of device allow data	
		collection to start and stop by either left or right hand grip.	
		• 17 cm x 14 cm x 4.5 cm	
		[3] Full-color touch screen display with large	
		splash resistant screen (for better data visualization --even	
		in groups. 15 cm diagonal display, 640 x 480 resolution.	
		[4] Temperature and voltage sensors built	
		in with probes for each included.	
		[5] Connect up to 4 sensors simultaneously.	
		• Connect any of more than 75 all-digital	
		sensors, many with multi-measure capability.	
		[6] Two USB ports for connection to a computer,	
		printer or USB flash drive.	
		[7] Rechargeable Lithium Polymer battery for	
		all day use in the classroom, lab, or field.	
		[8] 32 bit 300 MHz processor	
		[9] 2 GB FLASH memory	
		[10] Touch screen diplay requires no	
		stylus for interface interaction	
		[11] Language Support including:	
		• English	
		• Spanish	
		• Arabic	
		• Dansk	
		• Russian	
		• Kazakh	
		• Deutsch	
		• French	
		• Italian	
		• Nederlands	
		• Norsk	
		• Portugese	
		• Svenska	
		• Turkish	
		• Korean	
		• Simplified Chines	
		• Traditional Chinese	
		• Japanese	
		• Hebrew keyboard	
		[12] Built-in Analysis Tools:	
		• Prediction tool	
		• Smart tool (coordinates and deltas)	
		• Scale-to-fit	
		• Zoom	
		• Annotation	
		• Slope tool	
		• Statistics	
		• Curve fits	
		[13] Device is part of platform that supports	
		running the same data collection	
		and analysis software on PCs, handheld	
		dataloggers, iPhones, iPod Touches, iPads, and netbooks.	
		[14] Functions as both stand-alone datalogger	
		and pass-through interface for collecting data with a PC.	
		[15] More than 60 guided-inquiry labs available right onboard.	
		• 10 labs each for Biology, Physics, Chemistry,	
		Earth Science, Middle School, and Elementary School	
		[16] Journaling capability that allows students	
		to use the device to capture student responses alongside	
		with their measurements and analysis.	
		[17] Supports printing directly to USB attached printer.	
		[18] Built-in Assesment tools that allow the	
		teachers to include multiple choice, fill-in-the-blank, and	
		student response questioning.	
		[19] The curriculum is fully customizable by the	
		teacher and can be easily transferred to all other	
		supported platforms.	
		• Curriculum contains: Introduction, Lab Challenge,	
		Background, Sequencing Challenges, Material	
		Lists, Prediction, Setup,	
		Procedure, Analysis, Synthesis, and Multiple Choice questions	
		[20] Curriculum can be distributed online and	
		easily transferred to the device, simplifying large scale	
		curriculum distribution.	
		[21] Includes mains adapter	
		[22] Includes contact charging capabiity for	
		quick charging with optional Charging Station.	
		[23] Default calibration for sensors included	
		[24] Software supports easy 2 point calibration of most sensors.	
		[25] Display data in multiple simultaneous	
		representations, including graphs, tables, digital displays,	
		and analog meters	
		[26] Supports connection Ocean Optics	
		Spectrometers via USB including Red Tide and Amadeus	
		spectometers	
		[27] Supports using SPARK SLS as a USB mass storage	
		device allowing file transfer directly to a	
	Unit	**Advanced Biology Standard**	1
		Sensor Bundle	
		Bundle Includes	
		1. Colorimeter	
		2. Oxygen Gas Sensor	
		3. Carbon Dioxide Gas Sensor	
		4. Ethanol Sensor	
		5. Barometer/ Low Pressure Sensor	
		6. Conductivity Sensor	
		7. Weather Sensor	
		8. pH sensor	
		9. Quad Temperature Sensor	
		10. EcoChamber	
		11. Metabolism Chamber	
	units	**Advanced Water Quality Sensor**	2
		With the addition of the optical dissolved	
		oxygen probe, this new MultiMeasure sensor	
		makes it easier than ever before to get accurate	
		water quality data in one simple solution.	
		The integration of the optical dissolved oxygen	
		probe has several advantages over galvanic oxygen sensors,	
		including:	
		No warm-up time	
		No calibration required	
		Low maintenance (no filling solution or electrode polishing)	
		Built-in temperature and pressure compensation	
		No flow dependency	
		Optional salinity compensation	
		Calibration data is stored with the sensor, not the lab file	
		Includes :	
		1. Stainless Temperature Probe	
		35 °C to +135 °C with included probe (range is probe dependent)	
		±0.5 °C Accuracy	
		0.01 °C or better Resolution	
		2. pH probe	
		0-12 pH with included probe (pH range is probe dependent)	
		0.001 pH Resolution	
		3. Optical dissolved oxygen probe	
		Cable Length : 3m	
		Response Time : 90% in 25 seconds	
		Operating Temp: 0-50 degree Celcius	
		Operating Pressure: 375 -825 mmHg	
		Range : 0-20 mg/L or 0-300% saturation	
		Accuracy:	
		±0.1 mg/L or ±1.0% after calibration	
		±0.6 mg/L or ±3.0% out of box	
		Above 200% ±10%	
		4. Conductivity 10x probe	
		Range: 3 user selectable ranges	
		(with the included 10x probe) 0 to 1,000 µS/cm	
		0 to 10,000 µS/cm	
		0 to 100,000 µS/cm	
		All ranges accuracy ±0.1% (with calibration)	
		±10% (without calibration)	
		Resolution: Better than 0.05% of full scale	
		Maximum Sample Rate : 20 Hz	
	units	**PASPORT Weather / Anemometer Sensor**	
			2
		[1] Measure wind speed and	
		wind chill plus temperature, barometric	
		pressure, relative and absolute	
		humidity, dew point, and altitude	
		TYPICAL APPLICATIONS:	
		[1] Measure wind speed in direction of running on a track	
		[2] Study wind and pressure changes as a storm approaches	
		[3] Collect weather data for weeks inside or outside the classroom	
		[4] Wind speed: 1 to 65 miles per hour	
		[5] Barometer: 800 to 1090 hecto pascals (hPa),	
		800 to 1090 mili Bars (mBar) and 24 to 34 inches	
		Mercury (in Hg)	
		[6] Humidity: 0 to 100% RH+/-2%; 0g/m3 to 50 g/m3 +/- 10% AH	
		[7] Temperature: -20°C to 55°C +/-0.5°C	
		[8] Dew Point: -50°C to 55°C +/-2%	
		[9] Maximum Sample Rate: 5 Hz	
	Unit	**- Biology Starter Sensor Bundle**	1
		[1] Get started with pre-installed	
		Biology SPARKlabs and sensor set.	
		[2] Facilitate investigations with relevant,	
		standards-based science curriculum that is motivating and	
		easily integrated into your classroom.	
		[3] Supplemental instructions for	
		teachers are provided.	
		[4] Pre-installed Experiments:	
		1. Organisms and pH	
		2. Osmosis	
		3. Membrane Permeability	
		4. Catalase Enzyme Activity	
		5. The Role of Buffers	
		6. Cellular Respiration	
		7. Plant Respiration and Photosynthesis	
		8. Exploring Microclimates	
		9. Acid Rain	
		10. Transpiration	
		[5] Included Sensors:	
		• CO2 Gas Sensor	
		• O2 Gas Sensor	
		• Barometer	
		• pH Sensor	