DATA HARVEST

Wireless Science
DATA LOGGING

VENTUS
Ciencia Experimental

5 Year WARRANTY

data-harvest.co.uk - ventusciencia.com

DATA HARVEST

ABOUT US

providing award-winning solutions

For over 30 years, Data Harvest has continually adapted to modern technology, redefining our approach as to how students and teachers explore science.

As new technologies such as Bluetooth and mobile devices are introduced into schools, the demands on the modern classroom change.

These changes enable us to deliver solutions that are right for today's approach to learning science.

We are proud of our success, winning many awards for design, development, and supply of high quality solutions for the UK and World education markets.

British Quality Assured

We design, develop & manufacture our products in the UK and are members of the British Educational Suppliers Association (BESA) and The Association of Science (ASE).

Customer Support

All Data Harvest products are covered by our five year warranty* and we give free support for the lifetime of your product.

The Association for Science Education
Promoting Excellence in Science Teaching and Learning

besa
BRITISH EDUCATIONAL SUPPLIERS ASSOCIATION

WARRANTY 5 Year

CONTENTS

Download brochure

Award-Winning Solutions

We are proud of our success, winning many awards for design, development, and supply of high quality solutions for the UK and World education markets.

www.data-harvest.co.uk

DATA HARVEST

Learn More Online

WIRELESS SENSORS

modern classroom science

Now the whole class can work untethered to a data logger, sharing and collaborating across multiple devices such as desktops and laptops running Windows & Apple Mac OSX, Chromebooks, iPads, Android tablets & SmartPhones.

The Power of Smart Wireless

Our Smart Wireless sensors build on the design of our legendary SmartQ sensors adding Bluetooth wireless connectivity that allows users to connect to tablets and mobile phones using the new EasySense2 software.

Smart Connectivity

No pairing, no passwords, find the sensor by its name and connect. The Smart Wireless sensors can also be used as a traditional data logger connected via USB to achieve ultra-fast data transfer and collection.

Smart Single Button

One press and the sensor is ready to connect to your Bluetooth compatible device. Three presses to start logging data on the sensor. Now that's smart!

Smart Battery

The Smart Wireless sensors have a large capacity battery making it a market leading sensor. A single charge powers the sensor for a whole term not just a class day!

https://store.data-harvest.co.uk/smart-wireless


WARRANTY
5 Year

ACCELERATION 3-AXIS SENSOR

Able to detect the magnitude and direction of acceleration

An accelerometer is an electromechanical device that will measure acceleration forces. These forces may be static, like the constant force of gravity pulling at your feet, or dynamic, caused by moving or vibrating the accelerometer.

- Forces when ball is kicked, thrown, or struck with a racquet
- Show acceleration due to gravity
- Show free fall

Ranges: ±20 to ±150 ms, ±4 to ±35 rad/s, Resulatant Acceleration

Learn More Online

Order No. 1192

BLOOD PRESSURE SENSOR

Designed to measure human blood pressure

It can be used to help explain why blood in arteries is under pressure due to contraction of heart muscles so that it reaches all parts of the body, and the factors that can contribute to high and low blood pressures such as exercise, smoking, weight, diet including salt, & saturated fat.

- Examine blood pressure and heart rate of different students in the class
- Includes Pressure sensor, cuff, pump, & release valve
- Explore effects of blood pressure on body position
- Show effects of exercise on blood pressure

Ranges: Pressure in mmHg, Pulse in bpm, Detailed waveform

Learn More Online

Order No. 1155

BREATHING RATE BELT PACK

Includes leak-free Luer locking connectors

The pack combines a ±25kPa Differential Gas Pressure Sensor and a medium sized Breathing Rate belt. The Breathing Rate Belt is a wide nylon belt that can be wrapped around a person's abdomen or chest region to measure breathing patterns and is ideal for measuring the effects of coughing, sneezing, laughing, moving, and talking while breathing.

Ranges: ±25 kPa (Resolution 0.01 kPa), ±1.5 psi (Resolution 0.001 psi)

Learn More Online

Order No. 1152

CARBON DIOXIDE (CO_2) SENSOR

Temperature, Pressure & Humidity sensors included for higher versatility!

Learn More Online

This sensor can be used to investigate the amount of CO_2 in the air and how it changes over time. A Nalgene bottle can be used to create a contained environment for the study of plants and small animals. NB for gaseous use only. Not for use in water.

- CO_2 levels around a photosynthesising plant
- Demonstrating the density of CO_2
- CO_2 level of expired and inspired air

Ranges: 0-100,000 PPM, Relative humidity
Ambient pressure, Ambient temperature

Order No. 1180

CHARGE SENSOR

Can also function as a high-resistance accurate voltmeter

Learn More Online

The Charge sensor can be used in many electrostatic experiments to measure the charge on a source when it's very small. It can replace a traditional gold leaf electroscope by showing not only the charge polarity (positive or negative) but also the quantity of charge.

- Magnitude and sign of the charge on different objects
- Faraday's ice pail investigations
- Electrostatic phenomena

Ranges: ±165 nC, ±5 V

Order No. Order No. 1250

COLORIMETER SENSOR

Includes 3 adaptors (Cuvette, Test & Boiling Tubes)

The Colorimeter & Turbidity sensor measures the amount of light penetrating a solution so can be used for investigations which result in a change of colour or opacity.

- Follow the reaction of anything that changes colour/intensity with time
- Beer Lambert's law (light absorbance vs. concentration)
- Growth curves of algal or fungal populations
- Reaction kinetics e.g Thiosulphate with Hydrochloric acid

Ranges: 5 Colorimeter wavelengths (470 nm, 520 nm, 573 nm, 625 nm, 660 nm), 850 nm IR for Turbidity

Order No. 1220

Note: Turbidity Pack sold separately

TURBIDITY PACK

To allow for calibration of the Turbidity sensor.

- 1 x 100NTU Formazin sample solution
- 4 x Empty calibration bottles
- 1 x Cleaning cloth

Order No. 1220

CONDUCTIVITY PACK

Includes Smart adaptor and Electrode

The Conductivity sensor is used to measure the conductivity of a solution. For most water solutions, the higher the concentration of dissolved salts, and therefore more ions, the higher the conductivity. Low conductivity will indicate an absence of ions and therefore purity of water.

- Electrolytes and Non-electrolytes
- Conductometric titrations
- Finding the equivalence point
- Ion number

Ranges: 1000 µS, 2000 µS, 100,000 µS, Temperature °C

Order No. 1112

Learn More Online

CURRENT AND VOLTAGE SENSOR

Includes a combined 5 V & 0.1 A sensor

This sensor can be used to measure both the electric current and the potential difference across a component in a circuit in low voltage AC or DC circuits.

- Faraday's induction of voltage in a coil
- What changes the current in a circuit
- Electrical characteristics of an LED or diode
- High accuracy low voltage & current measurement activities

Ranges: ±5 V, ±0.1 mA

Order No. 1131

Learn More Online

CURRENT AND VOLTAGE SENSOR

Includes a combined 20 V & 1 A Sensor

This sensor can be used to measure both the electric current and the potential difference across a component in a circuit in low voltage AC or DC circuits.

- Ohm's law
- Start-up current of a lamp
- Electrical characteristics of a lamp
- High accuracy low voltage & current measurement activities

Ranges: ±20 V, ±1 A

Order No. 1130

Learn More Online

DROP & BUBBLE COUNTER SENSOR

Perfect for highly accurate automated titrations

The Drop/Bubble Counter can be used to count either drops of fluid falling from a dropping device e.g. during a titration, or bubbles rising through fluid in a column.

- Includes Reservoir, Stopcocks, and drop points
- Acid-base titrations
- Conductometric titrations
- Large bubble counting for rates of reaction work

Ranges: Counts, Volume, Drop rate

Order No. 1240

Learn More Online

EKG/ECG PACK

Supplied with a pack of 100 disposable E.C.G. electrode patches

Learn More Online

The E.C.G. (Electro-Cardio-Gram) sensor monitors the electrical energy produced during a heartbeat. The change in electrical energy is detected by two leads and referenced to a ground signal. The change in voltage is displayed as a waveform.

- Comparing heart activity to the waveform from the Heart Rate sensor
- Compare heart activity of resting and active heart
- PQRST waves and heart activity
- Combine with data from heart waveform and stethoscope

Ranges: 200 to 4,000 µV

Order No. 1158

FORCE ACCELEROMETER SENSOR

Combination of both a Force sensor and a 3-axes Accelerometer

Learn More Online

Measure compressive and tensile force, and acceleration in 3 dimensions.
Perfect for collisions, SHM, bungee jumping, and muscle fatigue.
Angular motion can be measured with the high performance 3-axes Gyroscope.

- Bungee jump (impulse, momentum, conservation of energy and resultant forces)
- Includes +/- 100 N Forcer, Accelerometer & Gyroscope sensors
- Simple harmonic motion of a spring
- Frictional forces

Ranges: ±100 N, 3 axis accelerometer, 3 axis gyroscope

Order No. 1120

GAS PRESSURE SENSORS - ABSOLUTE

Includes 400kPa sensor and Luer connectors

Absolute Gas Pressure (one port) that measures the total pressure on a system. When the single port is left open, the sensor will measure atmospheric pressure.

- Boyle's law
- Estimation of absolute zero
- Charles' law and Gay - Lussac's law

Range: 400 kPa

Learn More Online

Order No. 1150

GAS PRESSURE SENSORS - DIFFERENTIAL

Includes ±25 kPa sensor and Luer connectors

Differential Gas Pressure (two ports) that measures the difference in pressure between the two ports. If one port is left open, the measurement will be relative to atmospheric value.

- Gay-Lussac's law
- Estimation of absolute zero
- Depth gauge

Ranges: ±25 kPa

Learn More Online

Order No. 1151

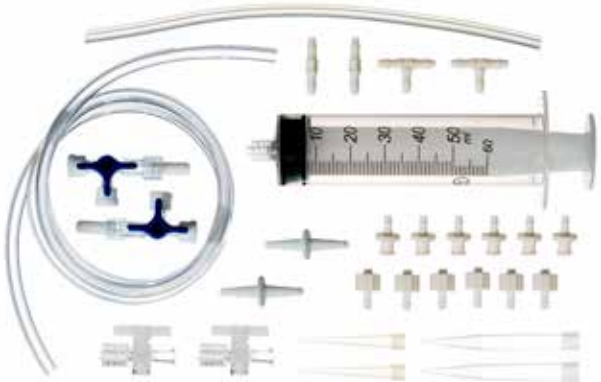
GAS PRESSURE ACCESSORY KIT

Includes a pack of everything you need for gas tight connections

Learn More Online

This pack contains a selection of tubing elements and valves, which will allow the user to make gas tight connections to a Smart Wireless Gas Pressure sensor.

- Luer (twist) connectors
- 50ml Syringe
- Tubing
- Assorted connectors



Order No. 1149

HEART RATE SENSOR

Includes Heart Rate adaptor & Pleth for BPM and Waveform

Learn More Online

Continuously monitor the heart rate at rest and after exercise. Simple finger clip design uses infrared to monitor blood volume in fingers and calculate heart rate.

- Effect of exercise on heart rate
- Heart rate from wave data
- Baroception – change in rate due to standing, sitting and lying

Ranges: 0 to 220 bpm, ±100 mV

Order No. 1156

HUMIDITY SENSOR

Measures water vapour content relative to the ambient temperature

Learn More Online

Humidity is an expression used to describe the amount of water vapour present in air. The warmer the air is, the more water vapour it can 'hold'.

- Transpiration of plants
- Examining different habitats
- Homeostasis (sweating, control of body temperature)

Ranges: 0 to 100% RH, Atmospheric pressure, Ambient temperature, Dew point, Absolute humidity

Order No. 1210

INFRARED SENSOR

Includes multiple ranges for ease of use up to 2000W/m2

Learn More Online

The Infrared sensor adds another dimension to heat loss and energy transfer experiments. This multi-range sensor detects the energy from radiant sources from ultraviolet to far infrared. Warm and cold-blooded animals, human body heat-loss, and disaster victims are just some of the investigations which can be done with this sensor.

- Measure Irradiance, Radiance, Temperature
- Investigate the IR coming from surfaces inside and out
- Investigate heat loss from buildings

Ranges: Irradiance (0 to 2000 W/m2), Radiance (0 to 3000 W/m2/sr), Temperature °C

Order No. 1205

LIGHT AND COLOUR

Includes Ambient, Fast, Colour sensors and an LED light

This sensor can be used to measure not only the level of light in the visible spectrum, but also the primary colours of that light within the electromagnetic spectrum.

- Comparison of the available light in an environment
- How LED lights are dimmed, and difference between ac and dc lighting
- Estimate visible light reflectance and transmission
- Follow iodine clock experiment

Ranges: Ambient Light - 30K, 200K Lux, Direct Light - 4K, 16K Lux slow, 1K, 10K, 100K Lux fast, Direct Colour: RGB + White

Learn More Online

Order No. 1160

LIGHT / PHOTO GATE

Learn More Online

Includes Double Light Gate and Laser detector

Use these Light Gates individually or in pairs (with connecting lead) to calculate average speed and acceleration, acceleration due to gravity, Newton's laws, momentum, and kinetic energy. Alternatively, the students can get the raw data to do all the calculations themselves.

- Motion in a straight line – velocity, acceleration
- Atwood's machine
- Newton's Second Law
- Pendulum period

(Sold individually)

Ranges: Timing Data

Order No. 1200

MAGNETIC FIELD SENSOR

Learn More Online

Includes Magnetic Field sensor along three axes of X, Y & Z

Explore the nature and strengths of magnetic fields of solenoids and permanent magnets with this robust sensor that accurately measures the magnitude and direction of a magnetic field along three axes at right angles (X, Y & Z).

- Investigating the earth's magnetic field
- Exploring magnetic field patterns and strength around magnets
- Magnetic flux vs. angle

Ranges: ±130 mT, ±5 mT

Order No. 1140

MOTION SENSOR

Includes Motion sensor up to 6m

Investigate distance-time, velocity-time, and acceleration-time graphs of students walking, falling balls for finding "g", a cart on an inclined plane, or being accelerated by a falling mass.

- Graphing time distance curves in real time
- Demonstrating the derivation of velocity and acceleration from time distance
- Acceleration due to gravity – free fall, pendulum swing, objects dropped or tossed upward

Ranges: 0.15 to 6m, 0 to 50,000 µs, -10 to 70°C

Order No. 1190

Learn More Online

OXYGEN IN AIR SENSOR

Includes built in O_2, Temperature, Pressure & Humidity sensors

Measure how the amount of O_2 varies in the classroom, and the variation of the rate of production in photosynthesis and respiration of small organisms such as microbes and maggots. A Nalgene bottle can be used for study of plants and small animals.

- Differences between inhaled and exhaled air
- Oxygen changes during photosynthesis and respiration of plants
- Consumption of oxygen as a measure of respiratory activity of animals, insects, yeast, or germinating seeds

Ranges: O_2 - 0 to 100%, Relative humidity, Ambient temperature, Ambient pressure

Order No. 1170

Learn More Online

OXYGEN - DISSOLVED

Includes 0_2 Adaptor & Electrode with Temperature compensation

Learn More Online

This electrode is used in combination with the Oxygen Adaptor to form the dissolved oxygen sensor for measuring oxygen levels in water. The anode and cathode are immersed in electrolyte and separated from the sample by a semi-permeable membrane.

- Monitoring dissolved oxygen concentration in an aquarium containing plants and/or fish
- On-site testing in streams & ponds
- Ecosystem monitoring

Ranges: 0 - 12%, 0 - 200%

Order No. 1114

PUSH BUTTON PACK

AVAILABLE EARLY 2023

Includes Adaptor and two Push Button Switches

A pair of Push Button switches can be used to test students' reaction times, as well as a number of other scientific activities such as:

- Recording the time taken by a vehicle to pass from one point to another
- As an event marker e.g. the point a chemical is added
- Stopwatch e.g. starting and stopping timing
- Counting

Ranges: Timing Data

Order No. 1261PK

PH SENSOR PACK

Learn More Online

Pre-set & user calibration makes this sensor ready for immediate use

This sensor can be used for testing acids and alkalis, acid-base titrations, dissolved oxygen in water, enzyme action, human or cell respiration, monitoring photosynthesis, fermentation, monitoring pH change during a chemical reaction, and examining water quality.

- Includes Adaptor and Electrode
- Acid-base titrations
- Testing acids and alkalis
- Monitoring pH change during a chemical reaction

Ranges: 0 - 14 pH

Order No. 1110PK

ROTARY MOTION SENSOR

This Rotary Motion sensor, with its accessory pack, is a must for Physics

Used to show conservation of angular momentum, angular velocity, pendulums, linear velocity, Young's double slits (with a light-level sensor), and so much more. Use EasySense2, to show phase relationship of distance, velocity & acceleration in a pendulum swing.

- Includes Rotary Motion sensor with multiple ranges
- Conservation of angular momentum
- Pendulum investigations

Ranges: ±4 revs/s, ±40 radians/s, ±200 mm, ±2000 mm, ±20 degrees, (See website for complete specification data).

Learn More Online

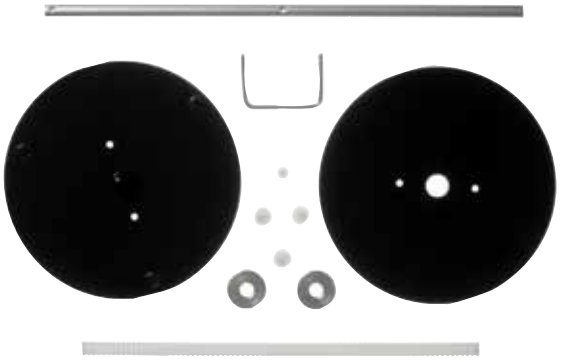
Order No. 1195

ROTARY MOTION ACCESSORY PACK

For use with the Rotary Motion Sensor

This accessories kit extends the use of the Rotary Motion sensor and comprises of a Pendulum Rod, an Angular Momentum Disk Set, and a Linear Rack.

- 1 x Pendulum Rod
- 2 x Adjustable Masses
- 1 x Angular Momentum Disc Set
- 1 x Linear Rack



Order No. 3288

Learn More Online

SOUND LEVEL SENSOR

Includes Sound sensor with 40-110dBA & Waveform

Accurately measures the pressure of sound in decibels (dB) and can show the frequency waveform using the mV setting.

- Decay of sound with distance
- Sound insulation
- Speed of sound

Ranges: 40 to 110 dBA, 40 to 110 dBC, Sound Waveform - ±25 mV, ±100 mV

Order No. 1145

Learn More Online

SPEED OF SOUND PACK

Includes Adaptor and two Stethoscopes

AVAILABLE EARLY 2023

The Speed of Sound sensors can either be used to listen to heart beats or to measure speed of sound through air and other materials.

- Speed of sound through Air
- Speed of sound through Wood
- Speed of sound through Metals

Order No. 1270PK

SPIROMETER SENSOR

For educational / demonstration use, not suitable for diagnostic or medical use

Measures air flow by pressure drop across a reference flow resistance whilst the user breathes. It is portable, small, compact, and needs no special gases or water. One filter is left fixed as a pressure divider, the other three are for use by test subjects.

- Includes Spirometer, Mouth pieces & Nose Clip
- Breathing patterns before, during, and after exercise
- Lung efficiencies FVC, FEV1 and FEV6, MVV
- Lung capacities

Ranges: ±10 L/s (Flow rate)

Order No. 1157

Learn More Online

TEMPERATURE SENSOR

Learn More Online

Includes Temperature sensor -40 to 125 0C

This general purpose Wireless Temperature sensor is the most commonly used sensor and can accurately measure the temperature of air, water, soil, and weak acidic solutions, making it indispensable in Science practicals.

- A good thermometer substitute
- Evaporation, radiation, conduction, and convection investigations
- Insulation studies
- Cooling rates

Ranges: -40°C - 125°C, -40°F - 257°F

Order No. 1100

TEMPERATURE SENSOR - FAST RESPONSE

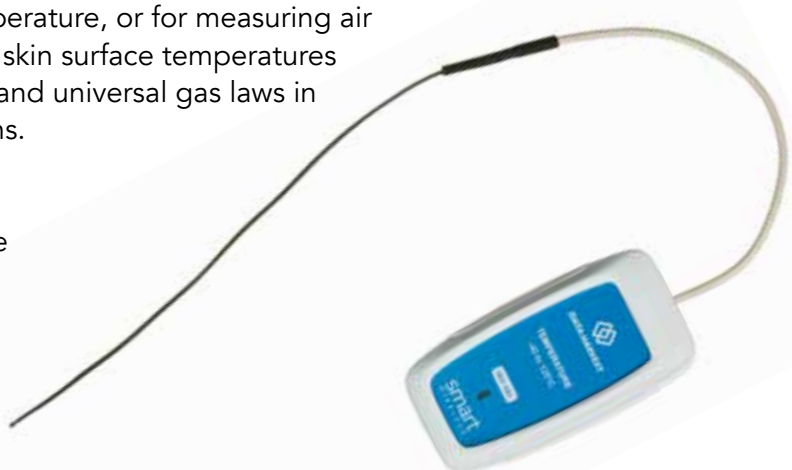
Learn More Online

Includes Temperature sensor (Fast Response) -40 to 125 0C

It is ideal for determining changes in skin temperature, or for measuring air temperature in tight spaces. Typically used for skin surface temperatures e.g. body mapping, changes due to exercise, and universal gas laws in Chemistry activities. Not to be used in solutions.

- Estimation of absolute zero
- Changes in skin temperature due to exercise
- Pressure / Temperature relationship of a gas

Ranges: -40°C - 125°C, -40°F - 257°F



Order No. 1101

TEMPERATURE - K-TYPE THERMOCOUPLE

Includes Adaptor and K-Type Thermocouple

Learn More Online

The wide temperature range of this sensor enables it to be used in a variety of experiments e.g. melting points and flame profiles. The sensing part is a replaceable K-type thermocouple, the junction of which is housed at the end of a stainless steel sheath.

- Measurement of low temperatures, for example comparing freezers
- High accuracy thermometer for estimation of absolute zero
- High temperature measurements, for example flames

Ranges: -200°C to 1,200°C

Order No. 1102

TIMING MAT PACK

Includes Adaptor and two timing Mats

AVAILABLE EARLY 2023

Introducing computer based timing e.g. acting as a stopwatch to start and stop timing.

- Average speed
- How fast can I run, hop or skip?

Ranges: Timing data

Order No. 1262PK

Images shown are not to scale

UV SENSOR

Includes Ultraviolet sensor with multiple ranges

Learn More Online

The Wireless Ultraviolet sensor can be used to investigate absorption of ultraviolet by different materials, UV in the environment e.g. effect of cloud cover, and blocking of UV by clothing, to name but a few.

- Absorption of ultraviolet by different materials
- UV in the environment e.g. effect of cloud cover
- Blocking of UV by clothing
- Sunglasses - good or bad value?

Ranges: 0 to 50 W/m2, 0 to 5 W/m2, 0 to 500 mW/m2

Order No. 1207

PHYSICS STARTER PACK

A starter pack ideal for basic Physics activities

- 2x Light Gate Sensors
- 1x Force Sensor
- 1x Motion Sensor
- 1x 20v/1A Current Voltage Sensor

Learn More Online

Order No. WSP001

BIOLOGY STARTER PACK

A starter pack ideal for basic Biology activities

- 1x Temperature Sensor
- 1x Heart Rate Sensor
- 1x Carbon Dioxide Sensor
- 1x Gas Pressure Sensor
- 1x Gas Pressure Accessory Kit

Learn More Online

Order No. WSP002

CHEMISTRY STARTER PACK

A starter pack ideal for basic Chemistry activities

- 2x Temperature Sensors
- 1x pH Sensor Pack
- 1x Gas Pressure Sensor
- 1x Gas Pressure Accessory Kit

Learn More Online

Order No. WSP003

VIDEO GUIDES
Learn more on our YouTube Channel
YouTube

PHYSICS ADVANCED PACK

Advanced Physics science pack for GCSE and A-Level practicals

- 1x Motion Sensor
- 1x Force Sensor
- 1x Current & Voltage 5V/100mA
- 1x Current & Voltage 20V/1A
- 2x Light / Photo Gates
- 1x Interrupt Card Set
- 1x Spoked Pulley
- 1x Acceleration Sensor
- 1x Sound Sensor
- 1x Light & Colour Sensor
- 1x Magnetic Field Sensor

Learn More Online

Order No. WSP004

BIOLOGY ADVANCED PACK

Advanced Biology science pack for GCSE and A-Level practicals

- 1x Temperature Sensor
- 1x Heart Rate Sensor
- 1x Gas Pressure Sensor
- 1x Gas Pressure Accessory Kit
- 1x Carbon Dioxide Sensor
- 1x Oxygen in Air Sensor
- 1x Conductivity Sensor Pack
- 1x pH Sensor Pack
- 1x Colorimeter & Turbidity Sensor
- 1x Oxygen Dissolved Sensor
- 1x ECG/EKG Sensor
- 1x Breathing Rate Belt

Learn More Online

Order No. WSP005

CHEMISTRY ADVANCED PACK

Advanced Chemistry science pack for GCSE and A-Level practicals

- 2x Temperature Sensors
- 1x pH Sensor Pack
- 1x Gas Pressure Sensor
- 1x Gas Pressure Accessory Kit
- 1x Conductivity Sensor Pack
- 1x Colorimeter & Turbidity Sensor
- 1x Drop Counter

Learn More Online

Order No. WSP006

DATA HARVEST

Learn More Online

5 Year WARRANTY

Wireless DYNAMICS

Speed, velocity & acceleration

The all new Data Harvest Smart Wireless Dynamics System provides an ideal way of investigating all types of mechanics work for GCSE & A level studies, enabling you to achieve accurate and repeatable results.

What's Included:

Order No. 1500PK

- 1x 1.2m Aluminium Dynamics Track
- 2x Plunger/Collision Carts
- 4x Cart Masses (280g each)
- 2x Dynamics Track Feet
- 2x Dynamics Track Magnetic End Stops
- 2x Magnet Sets
- 2x Interrupt Cards
- 1x Spoked Pulley
- 1x Reel of cotton
- 1x Set of Slotted Masses
- 2x Light Gate Brackets

NEW

Practical Investigations Include: Velocity, Acceleration, Newton's Laws, Forces, Collisions, Conservation of Momentum, and Energy.

store.data-harvest.co.uk/wireless-dynamics-system

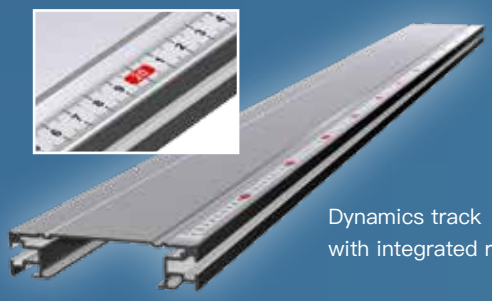
Smart Dynamics Features

The Dynamics pack is a complete solution supplied with a number of great features designed to make teaching physics easy and practical.

The Dynamics Track

The new wider dynamics track is 1.2 meters in length and constructed from extruded aluminium, providing a flat smooth base for the low friction carts to operate on.

The track also features an integral precision ruler for accurate results. A retort stand can be attached to convert the track to an inclined plane.



Dynamics track with integrated ruler

Cart Plunger & Masses

Includes a USB port for charging

The Wireless Smart Carts - AVAILABLE INDIVIDUALLY

The new wireless Smart Carts are Bluetooth-enabled with built-in, spring-loaded, 3-stop plunger to provide a graded set of constant force. You can also load the carts with the supplied stackable masses or attach magnets.

Cart Features:

- Force sensor: ±100N
- 3-axes Accelerometer: ±16 g, ±2000 (Degrees per second)
- Optical Encoder on the wheel
- 3 position plunger

The Track & Cart Accessories

The Dynamics System is supplied with 2 magnetic end stops with through holes to line feed the included Spoked Pulley accessory. The pack also includes 2 height and slide adjustable feet, 2 interrupt cards, 2 Light Gate brackets, a metal rod to further increase the slope height, and 4 cart masses.

VIDEO GUIDES
Learn more Dynamics on our YouTube Channel
YouTube

DATA HARVEST

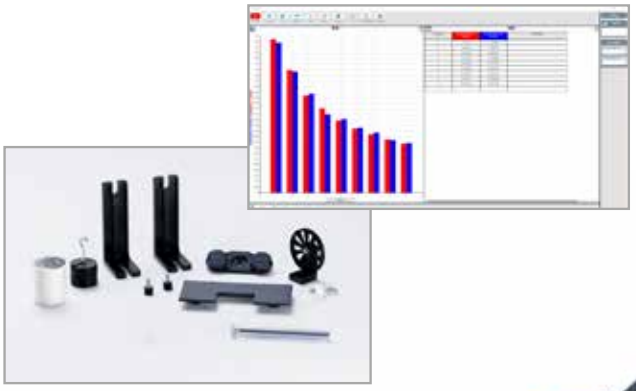
Learn More Online

5 Year WARRANTY

The New 2022 DYNAMICS SYSTEM

physics kit without the electronics

Are you are looking for a dynamics system but without the expense of the amazing internal sensors?



What's Included:

Order No. 1540PK

- 1x 1.2m Aluminium Dynamics Track
- 1x Collision Cart (without sensors*)
- 2x Cart Masses (280g each)
- 2x Dynamics Track Feet
- 2x Dynamics Track Magnetic End Stops
- 1x Magnet Set
- 1x Interrupt Card
- 1x Spoked Pulley
- 1x Reel of cotton
- 1x Set of Slotted Masses
- 2x Light Gate Brackets

**Cart supplied as either blue or white subject to stock availability*

Additional Dynamics Cart

Order No. 1541

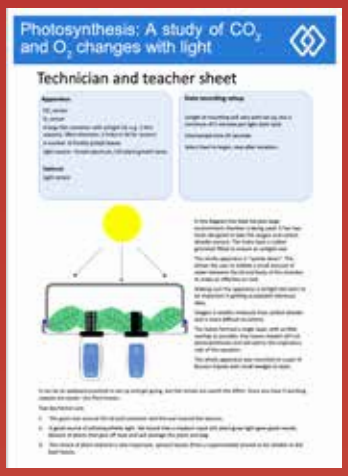
- 1x Dynamics Cart (without the sensors*)
- 2x Cart Masses
- 1x Magnetic bumper & accessories

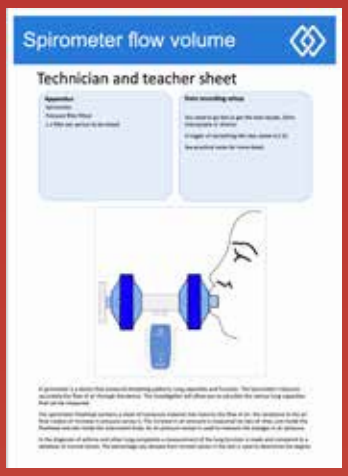
Curriculum Support
Free Teacher Worksheets

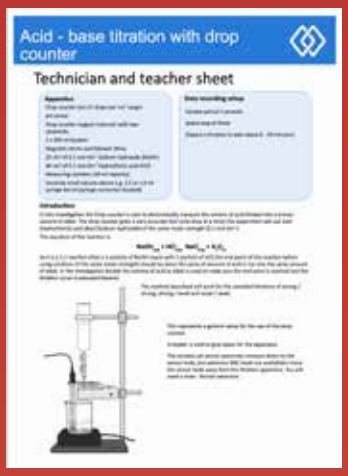
FREE DOWNLOADS

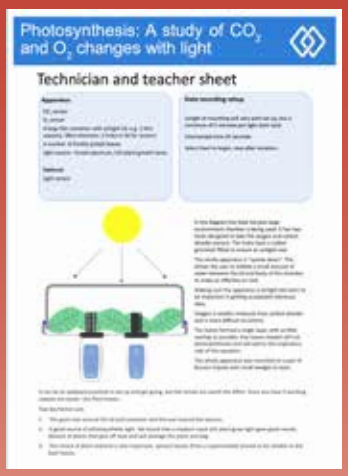
Our teaching resources are available to instantly download for free!

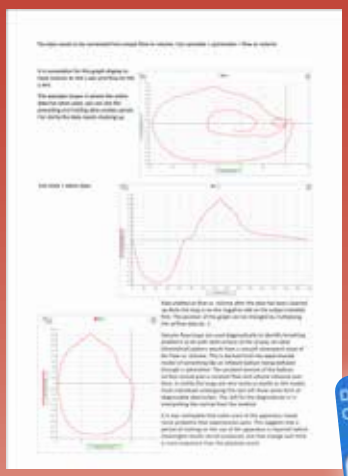
Developed to show how data logging can and should be incorporated into the practical skills.

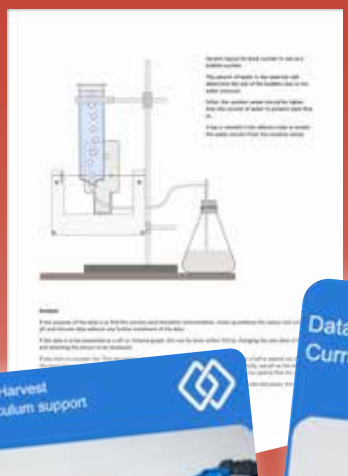


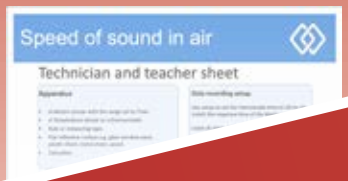


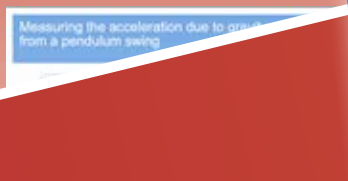












Wireless & SmartQ

DYNAMICS RESOURCES

DOWNLOAD THESE TWO RESOURCES FROM OUR WEBSITE AND START LEARNING HOW TO QUICKLY SETUP AND START USING YOUR DYNAMICS SYSTEM.

See the individual dynamics product pages to download your copy.

DATA HARVEST

Learn More Online

Science Software App

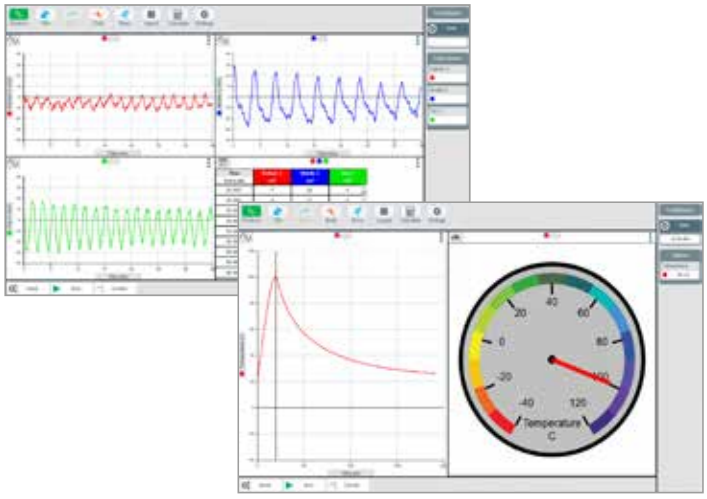
EASYSENSE2

A free learning platform that allows teachers to engage through science

What Is EasySense2?

EasySense2 is our most advanced educational scientific data capture and analysis software!

Designed with teachers and students in mind, EasySense2 provides a broad set of tools to capture, display, and analyse data from Data Harvest Smart Wireless Sensors and Data Loggers, using Bluetooth or USB connectivity.



Multi-device data capture

Recording from more than one device is now available, leading to endless possibilities and configurations, providing you with the ultimate flexibility.

EasySense2 is compatible with the following data capture devices: All Smart Wireless sensors, V-Log, V-Hub, VISION, Vu+, Vu Data Loggers

Download for free

data-harvest.co.uk/easysense2

Built upon 35 years of educational experience

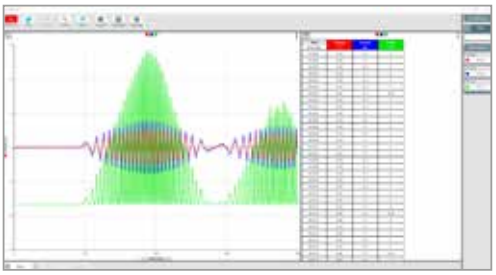
EasySense was first introduced in 2005 as a free science software solution that provides teachers with all the tools to teach scientific methods, and allow students to learn and better understand scientific experimental data using our range of data loggers and sensors.

Over its history, EasySense has reached a global audience and continues to feature at the heart of many science lessons in primary and secondary education.

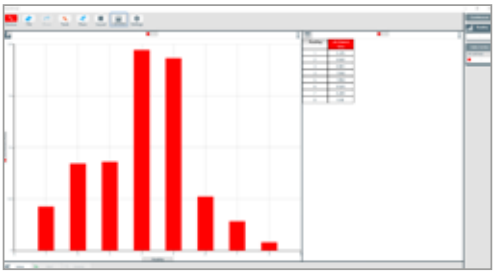
EasySense has grown to include a number of software leading features that benefit teaching and learning.

EasySense2 is fully cross-platform compatible, which means you can use the exact same toolset on all the major computer platforms such as Windows PC, Mac OS, iOS, Android, and Chromebook.

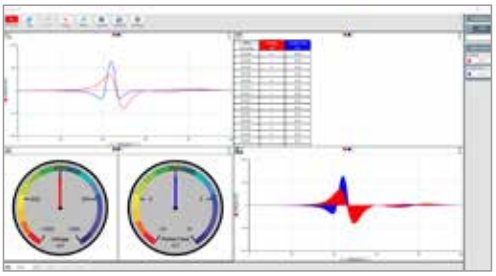
Our developers have been creating the all new EasySense2 software with smarter tools, an intuitive user interface, and support for our new Smart Wireless sensors.



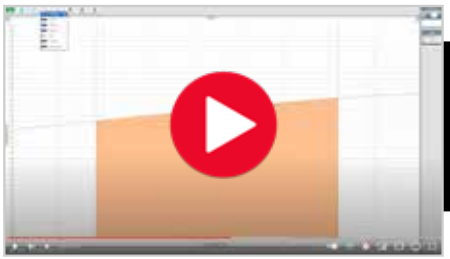
EasySense2 – Voltage, power and current



EasySense2 – Suntan lotions



EasySense2 – Magnet through coil multi screen



YouTube

VIDEO GUIDES

Learn to use EasySense2 on our YouTube Channel

Just some of the key features:

- ✓ Simple recording modes
- ✓ Combine multiple data views of your captured data series
- ✓ Line graphs, gauges, numbers, and bar charts
- ✓ Display up to 4 customisable chart layouts
- ✓ Import & merge multiple files and data sets
- ✓ Enhanced tools for mathematical operations on recorded data
- ✓ Logging modes: Continuous recording, Snapshot, and Timing
- ✓ Simple axis selection allows easy XY plots
- ✓ Export data to CSV File
- ✓ Share data between devices
- ✓ Windows, Apple (OSX & iOS), Android and Chromebook

DOWNLOAD OUR FREE SCIENCE SOFTWARE

DATA LOGGING & WIRED SENSORS

Want to make your existing SmartQ sensors wireless?

With the introduction of new bluetooth technology in the classroom, it doesn't mean that your existing sensors have to be left out! Your SmartQ sensors can still be used with our latest version of EasySense2 and all you need is one of our compatible devices; V-Log or V-Hub.

Both devices are very similar with only a few key differences. Both devices provide bluetooth connectivity for your existing SmartQ sensors and configurable with 4 built-in sensors, but which one should you buy?

If you are looking for a low-cost solution then V-Hub is the most cost-effective answer.

However, if you want a blend of traditional data logging features with all the benefits of bluetooth technology then V-Log will work best.

KEY DIFFERENCES EXPLAINED

V-Hub?

A compact 4 Channel sensor interface hub with the option of adding 4 built-in sensors.

Creates the link between existing wired sensors and bluetooth technology.

Data capture is taken care of in the latest version of the EasySense2 software.

One button menu system for easy device connectivity setup.

Purchasing Options - Bluetooth & USB

2504PK	V–Hub[4]
100432	V–Hub[4] 5 Pack
2508PK	V–Hub[8]
100434	V–Hub[8] 5 Pack

OR

Optional built–in sensors

Light

Air Pressure

Sound

Humidity

V-Log?

A traditional 4 Channel remote data logger with the option of adding 4 built-in sensors.

Sensor and information is displayed in real-time.

Data capture is either recorded internally as a standalone device or by using the latest version of the EasySense 2 software.

Advanced internal data capture possibilities such as snapshot & timing without a computer or tablet.

Purchasing Options - Bluetooth & USB

2406PK	V–Log[4]
100437	V–Log[4] 5 Pack
2410PK	V–Log[8]
100438	V–Log[8] 5 Pack

V-Hub Sensor Interface

Single V-Hub Pack Includes:

- 1x V-Hub[4] or V-Hub[8] Interface (USB & Bluetooth)
- 1x Mini USB cable
- 2x Short SmartQ sensor cables
- 2x Long SmartQ sensor cables
- 1x Mounting rod
- Free download of the full EasySense cross-platform science software

Learn More Online

"Our most affordable data logging solution for modern classroom science activities."

Classroom Pack of 5

Our convenient five pack solution includes 5 V-Hub data loggers, with integral USB charging system and a Gratnells storage tray.

V-Log Data Logger

Learn More Online

Single V-Log Pack Includes:

- 1x V-Log4 or V-Log8 Interface (USB & Bluetooth)
- 1x Mini USB cable
- 2x Short SmartQ sensor cables
- 2x Long SmartQ sensor cables
- Free download of the full EasySense cross-platform science software

Built-In Data Logging Features:

- 14 Days Remote logging
- Built-in 1300mAh rechargeable battery pack
- Fast logging (50,000 samples per second)
- Memory to store multiple recording sets
- Logging Modes: EasyLog, Fast Logging, Snapshot, Remote Logging & Timing

Classroom Pack of 5

Our convenient five pack solution includes 5 V-Log data loggers, with integral USB charging system and a Gratnells storage tray.

Looking for SmartQ Sensors? See Pages 28-30

Your SmartQ sensors can still be used with our latest version of EasySense2 and all you need is one of our compatible data loggers!

DATA HARVEST

Learn More Online

5 Year WARRANTY

SmartQ TECHNOLOGY

SmartQ

WIRED SENSORS

a range of wired sensors for use with our Data Loggers

SmartQ sensors are connected to a data logger via a USB connecting lead, where the data is collected either by a compatible data logging interface or the EasySense2 app.

SmartQ Sensor Range

SEE WEBSITE FOR FULL SENSOR SPECIFICATIONS

ACCELEROMETER

The accelerometer is an electromechanical device that will measure acceleration forces. These forces may be static, like the constant force of gravity pulling at your feet, or dynamic, caused by moving or vibrating the accelerometer.

Low g Accelerometer
3200
High g Accelerometer
3201

CONDUCTIVITY PACK

This pack contains both the electrode and the SmartQ Adaptor. Set to any of four ranges enabling accurate measurements, from very low ionic sources such as deionised or distilled water, to very highly conductive solutions including sea water.

Conductivity Pack
3135PK
Conductivity Adaptor
3135
Conductivity Electrode
3136

CURRENT – DIFFERENTIAL INPUT

There are three Current sensors with different ranges that measure both AC and DC. With differential inputs these sensors can be used anywhere within a circuit, and in conjunction with a Voltage sensor.

Current (±100mA)
3166
Current ±1A
3165
Current ±10A
3167

DROP AND BUBBLE COUNTER

This sensor offers exceptional value as it performs a dual role. In Chemistry its primary role is as a drop counter measuring accurately volume during a titration. It can also be used to monitor bubbles produced during gas production, from either a chemical reaction or a biological process.

Drop & Bubble Counter
3266

FORCE SENSOR

The sensor measures compression and extension forces applied perpendicular to the beam. Comes complete with accessories to use with the most common investigations. It is supplied with a 20 N spring, cushioned and non–cushioned stops, and a hook.

Force
3143

GEIGER MULLER

Housed in a robust casing, this self–contained sensor detects radiation from Alpha, Beta, and Gamma particles. The Geiger Muller sensor is very simple to use, as it does not require an external power source, deriving its power from the Data Logger.

Geiger Muller
3265

HEART RATE & PULSE WAVEFORM

Pupils of all ages are keenly interested in how physical and mental stress affects their heart rate. The sensing clip (pleth) can be attached to a finger or ear lobe to measure either blood flow (pulse waveform) or heart rate (beats per minute).

Heart Rate & Pulse Waveform
3147

LIGHT GATE

The SmartQ Light Gate is a digital switch–type sensor that has two states, ON and OFF. The Light Gate has an infrared transmitter and receiver that detects objects passing through the 'gate'. Light Gates can be used singly or in pairs for time, speed, velocity, and acceleration measurements.

Light Gate
3250

LIGHT LEVEL

This 5 range sensor cleverly measures light levels from 0 through to 100,000 Lux.
Four of the ranges are for general purpose, with filtering to eliminate the unwanted effects of modulation from room lighting (50Hz). The fast response range has no filtering and will clearly show the modulation on an incandescent or fluorescent light.

Light Level
3124

DISSOLVED OXYGEN PACK

This pack contains both the oxygen adaptor and the electrode.The sensor measures dissolved oxygen levels in water. It has built–in automatic temperature compensation.

Ideal for field studies and measuring oxygen levels around photosynthesising aquatic plants.

Oxygen Pack
3130PK

Oxygen Adaptor (Included)
3130

Oxygen Electrode (Included)
3131

PH PACK

The pH adaptor and general pH electrode combine to form the immensely popular SmartQ pH sensor pack. The SmartQ pH sensor has both a pre–set calibration range (so the sensor is ready for immediate use) and a user calibration range.

pH Pack
3125PK

pH Adaptor (Included)
3125

pH Electrode (Included)
2253

PUSH BUTTON REACTION SWITCH

Fitted with a red LED, a pair of these switches can be used to test students' reaction times. One switch can be used for manual marking of events during data logging activities.

Push Button Reaction Switch
3261

SOUND LEVEL

This dual range sensor accurately measures both sound pressure level in decibels (dBA) or wave–form (mV). To make the measurements meaningful to learners, the sensor has been designed to approximate the normal human ear in the range and intensity that it 'hears' sounds.

Sound Level
3175

TEMPERATURE – GENERAL PURPOSE

This general purpose Temperature sensor is the most commonly used sensor in the range. It can accurately measure the temperature of air, water, soil, and weak acidic solutions. Housed in a stainless steel tube, it is resistant to dilute acids.

Temperature
3100

TEMPERATURE – FAST RESPONSE

This sensor is extremely responsive as it features an exposed thermistor. It is ideal for determining changes in skin temperature, or for measuring air temperature in tight spaces.

Temperature (Fast Response)
3101

ULTRA–VIOLET

This multi–range sensor is sensitive to both UVA and the harmful UVB band of the spectrum, and allows topical investigations into the efficiency of suntan creams, UV protection of clothes etc.

Ultra Violet
3277

VOLTAGE – DIFFERENTIAL INPUT

There are 4 Voltage sensors that measure the potential energy across any component for both DC and low voltage AC circuits.

The 4mm plugs attach to most of the standard available electronic kits. With differential inputs, these sensors can be used anywhere within a circuit.

Voltage (±20V)
3160

Voltage (±12V)
3160

Voltage (0 to 10V)
3161

Voltage (±1V)
3162

EXPLORE THE SECONDARY SCIENCE ACADEMY

Need to to learn more about our products and find the best tips for how to use them in your science lessons? We have a growing playlist of videos on our YouTube channel that cover the latest wireless science sensors, our new dynamics system, and getting started guides for the EasySense2 app.

We keep our videos very short and on point so you can learn more about our products and get back to what you love doing, teaching science!

https://data-harvest.co.uk/secondary-science-academy

https://www.youtube.com/dataharvestgroup

Subscribe to keep up to date!

VISIT OUR WEBSITE FOR THE LATEST BLUETOOTH SENSORS

5 YEAR WARRANTY

All Data Harvest products are covered by our five year warranty* and we give free support for the lifetime of your product. We ensure that your investment gives you a complete peace of mind.

*See website for terms and conditions.

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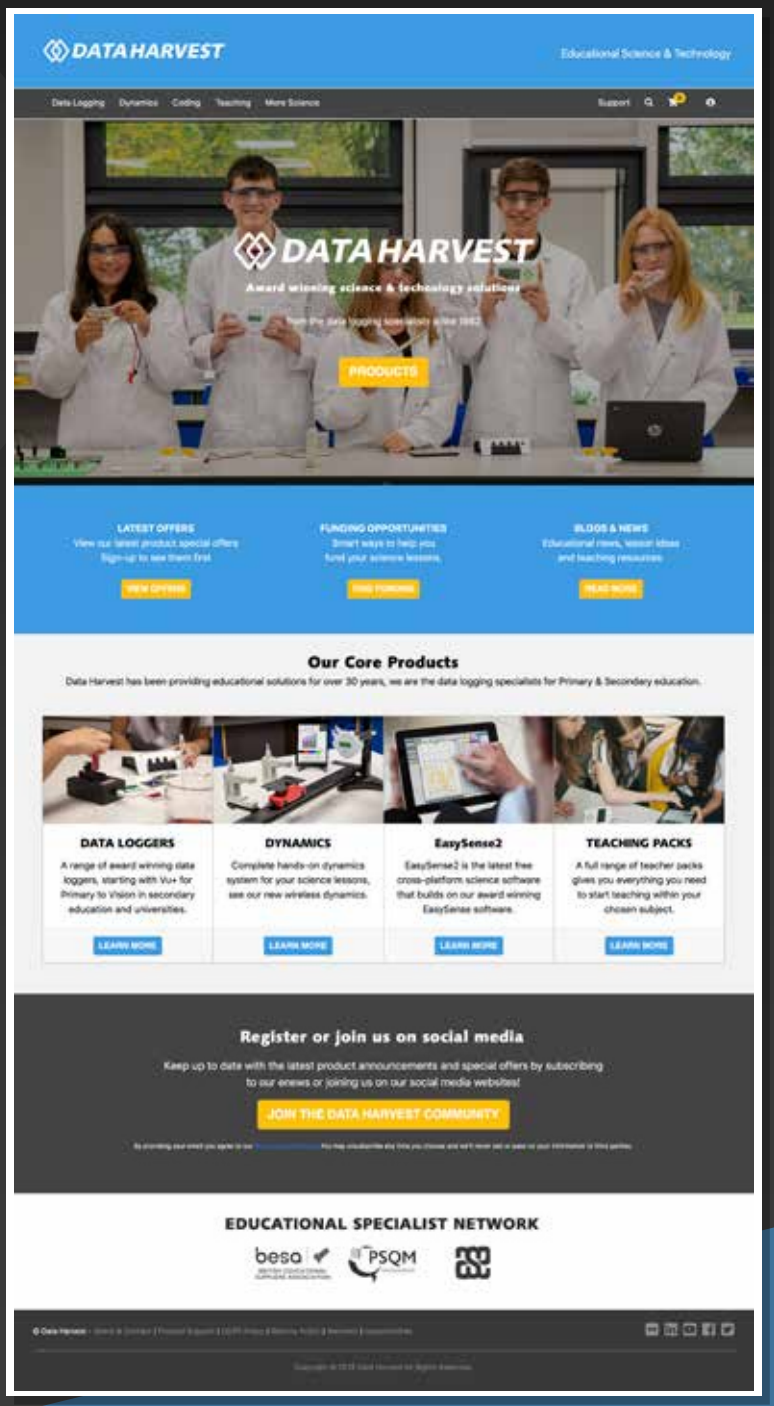

NEW

EasySense2 - Now Available

DOWNLOAD OUR LATEST FREE SCIENTIFIC DATA CAPTURE & ANALYSIS SOFTWARE

SEE PAGE 24&25 FOR MORE INFORMATION

www.data-harvest.co.uk

DATA HARVEST

VENTUS
Ciencia Experimental

VENTUS CIENCIA EXPERIMENTAL, S.L.
Argentina, 2 Nave A6 – P. I. Casarrubios
28806 – Alcalá de Henares – Madrid
Telf.: 918023562 – ventus@ventusciencia.com
www.ventusciencia.com

Download brochure

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